December 14, 2020

Via Electronic Mail

Natalie Rizzi
Tuolumne County Community Development Department
2 South Green Street
Sonora, CA 95370

Re: Appeal of Planning Commission's Approval of the Yosemite Under Canvas Project and Terra Vi Project

Dear Natalie,

My name is Brian Anderluh. I am co-owner of Evergreen Lodge and Rush Creek Lodge, both of which are located in Groveland. I have substantial experience running hospitality businesses in Tuolumne County and I am familiar with the details of such operations. I submit the following statement in support of Save Sawmill Mountain's appeal of the Planning Commission's approval of the Yosemite Under Canvas (YUC) as well as the Terra Vi project and ask that this correspondence be included in the administrative record for these projects.

- YUC estimates in their final EIR that they will need just 20-30 employees to run their 99 unit resort.

- The Initial Study reflected staff counts of "up to 40 seasonal employees."

- The final EIR states "Between 20 and 30 staff members would be employed by the project during the operational season, with 10 to 15 personnel working onsite at any given time."

- Yet page 4 of Appendix I of the Draft EIR states that for Under Canvas' Grand Canyon operation, which has 70 units, "On average, approximately 25 to 30 staff, including administration, maintenance, and housekeeping, are onsite daily" (this does not appear to include food service staff). Given 7-day-a week, multiple shift per day operations, implied total staff member count in Grand Canyon well over 50.

Evergreen Lodge
33160 Evergreen Road
Groveland, CA 95321
EvergreenLodge.com
(209) 379-2606

Rush Creek Lodge
34001 Highway 120
Groveland, CA 95321
RushCreekLodge.com
(209) 379-2373

- Yosemite Under Canvas is larger than Grand Canyon Under Canvas, with 99 dwelling units, not 70, and required staffing in Yosemite would be higher than in the Grand Canyon.

- The Initial Study staffing estimates for YUC were underestimated, and the final EIR estimate, for which there is no reason given for further reducing staff counts from the Initial Study, are completely unrealistic and drive incorrect final EIR impact conclusions.

- Evergreen Lodge, which is similar in size to YUC, employs over 125 people in peak season.

- Based on my experience operating Evergreen Lodge and Rush Creek Lodge, I estimate YUC will require 60-80 employees in peak season.

- Similarly, Terra Vi (TV) estimates that they will need just 40 employees to run their 126 room resort.

- Rush Creek Lodge, which is similar in size to TV, employs over 200 people in peak season.

- Based on my experience, I estimate TV will require between 80-100 employees as a limited service resort and up to 160 if chooses to operate as a full service resort.

- There are few potential employees in the Groveland area, so it's likely that almost all staff for YUC and TV will be recruited from outside of Tuolumne County.

- Out of Evergreen Lodge and Rush Creek Lodge's 325 peak season staff, only 30 are true locals.

- For their other locations, Under Canvas has a strong presence on CoolWorks, a remote resort recruiting site, and other similar sites. Under Canvas clearly draws most of their staff from other areas, bringing them in to live and work at their remote properties. As noted above, this is true of Evergreen Lodge and Rush Creek Lodge as well.

- There is literally no available seasonal rental housing in Groveland. All properties are being used as short term vacation rentals.

- I believe YUC should have to provide seasonal onsite housing for at least 40 staff members. Without this, the EIR's conclusion that staffing will not have a significant

impact on the local community is false. Their current plan is to build no onsite staff housing.

- Similarly, TV should have to provide onsite housing for at least 80 staff members. Their current plan is to build onsite staff housing for 22 employees.

- I know this from first-hand experience with my two lodges.

- At Rush Creek Lodge and Evergreen Lodge, we house 250 of our 325 employees in company-owned housing.

- We were appropriately required to build staff housing as part of our development approval conditions, just as YUC and TV should be.

- YUC and TV will struggle to find local staff and will have to recruit employees from outside Tuolumne County and then will not be able to house those employees.

- This will cause disruption in the local labor and housing markets, driving up costs for local businesses and driving up rental rates for moderate income earners.

- If YUC has 60-80 staff somehow living in local rental housing (which is 18 miles away in downtown Groveland), this will increase daily and peak trip generation to and from the site, furthering the need for a full traffic study for YUC.

- This should result in the need for YUC proponents to make the intersection of Hwy 120 and Hardin Flat Road safe, with the addition of a left turn lane and right turn pocket.

The failure to identify the true staffing needs of YUC means that the EIR does not adequately evaluate impacts on housing and public services, traffic, vehicle miles travelled, traffic safety, and water supply. This failure is amplified by a similar failure with respect to TV. Both EIR's must be revised to provide accurate project descriptions and analysis of the impacts of approving these projects.

Sincerely,

Brian Anderluh

From: Casas, Michael@DOT
To: Quincy Yaley; Ponce, Gregoria@DOT; state.clearinghouse@opr.ca.gov
Cc: Natalie Rizzi; Cody Nesper; Luke Evans; Schroder, Kevin@DOT
Subject: RE: Caltrans response letter for Yosemite Under Canvas Final EIR SCH 2019029073
Date: Thursday, December 17, 2020 8:52:38 AM

Hello Ms. Yaley,

Thank you for sending the Yosemite Under Canvas Hydrology report. This was the documentation that our staff wanted to evaluate. After reviewing the Hydrology Report Caltrans staff is in concurrence with the report.

Kind regards,

Michael Casas
Caltrans District 10
Office of Rural Planning
Division of Planning, Local Assistance, and Environmental
1976 E. Dr. Martin Luther King Jr Blvd.
Stockton CA 95205
Telework # 1-209-986-9830

From: Quincy Yaley <QYaley@co.tuolumne.ca.us>
Sent: Monday, December 14, 2020 2:20 PM
To: Casas, Michael@DOT <Michael.Casas@dot.ca.gov>; Ponce, Gregoria@DOT <gregoria.ponce@dot.ca.gov>; state.clearinghouse@opr.ca.gov
Cc: Natalie Rizzi <NRizzi@co.tuolumne.ca.us>; Cody Nesper <CNesper@co.tuolumne.ca.us>; Luke Evans <LEvans@esassoc.com>
Subject: FW: Caltrans response letter for Yosemite Under Canvas Final EIR SCH 2019029073

EXTERNAL EMAIL. Links/attachments may not be safe.

Good afternoon Mr. Casas,

I am attaching the drainage study for Under Canvas. I wanted to ensure that you weren't commenting on the Terra Vi project which is upslope of Hwy 120-the UC and TV projects have had concurrent review and they can sometimes get mixed up.

The nearest Under Canvas Project facilities would be located several hundred feet away and downslope from SR-120, and we believe is outside of Caltrans jurisdiction. The project does not require an encroachment permit onto 120 for the primary access or evacuation route. Below is the response we provided in the Final EIR.

2-1 Issues related to hydrology and drainage were evaluated in Section 3.5 of the Draft EIR. The Project site drains to the south towards the South Fork Tuolumne River, downslope and away from

State Route 120 (SR-120). The Project proposes no encroachments or alterations to SR-120, nor does the Project intend to alter any existing drainageways in such a manner as to impact SR-120. The nearest Project facilities would be located several hundred feet [and downslope] from SR-120. No discharges to Caltrans facilities would occur. With respect to SR-120, post-Project conditions would be unchanged from current conditions. Based on these considerations, a requirement to calculate peak discharges vis-à-vis Caltrans facilities is not applicable to the Project.

Can you please confirm that your letter from this morning was in response to Under Canvas?

Thank you,

Quincy

Quincy Yaley, AICP
Director, Community Development Department
48 Yaney (physical)
2 South Green Street (mailing)
Sonora, CA 95370
209-533-5633
https://www.tuolumnecounty.ca.gov/170/Development

From: Casas, Michael@DOT <Michael.Casas@dot.ca.gov>
Sent: Monday, December 14, 2020 11:46 AM
To: Quincy Yaley <QYaley@co.tuolumne.ca.us>; Ponce, Gregoria@DOT <gregoria.ponce@dot.ca.gov>
Cc: Natalie Rizzi <NRizzi@co.tuolumne.ca.us>; state.clearinghouse@opr.ca.gov; Cheydi Gonzales <cgonzales@co.tuolumne.ca.us>
Subject: Caltrans response letter for Yosemite Under Canvas Final EIR SCH 2019029073

Ms. Yaley,

Please find the attached Caltrans response letter to the Yosemite Under Canvas Final EIR. If you have any questions or comments regarding this letter you may contact me at: Michael.Casas@dot.ca.gov

Kind regards,

Michael Casas
Caltrans District 10
Office of Rural Planning
Division of Planning, Local Assistance, and Environmental
1976 E. Dr. Martin Luther King Jr Blvd.

Stockton CA 95205
Telework # 1-209-986-9830

BEFORE THE TUOLUMNE BOARD OF SUPERVISORS

DE NOVO APPEAL OF PLANNING COMMISSION

OF MATTERS PERTAINING TO UNDER CANVAS PROJECT

ADDENDUM OF EXHIBITS

SUBMITTED IN ADDENDUM

1) Cover letter June 18, 2018; Unlawful Land Division Complaint Tuolumne Cnty Brd. Spvsrs.

2) Table of Content; Unlawful Land Division Complaint

3) Certificate of Compliance; Exhibit "A"

4) Lot-Line-Adjustment; Decision of Cnty Surveyor, Peter Rei

5) Letter Aug. 8 2018; Matthew Chapman to Cnty Surveyor.

6) CEQA GUIDELINES; Appendix G at pg. 63

Matthew Chapman
December 14, 2020

June 18, 2018

Matthew Chapman
30445/11327 Sawmill Mt. Road
Groveland CA 95321
209/ 962-0663 home
209/ 206-1706 mobile

Tuolumne County Board Supervisors
Tuolumne County Surveyor
Office State Attorney General
Board Land Surveyors :

By letter dated April 4 2018, local residents and others were informed by HANSJI company of their plans to establish a major lodge development on commercial land adjacent to their residential lands. Unbeknownst to local residents, the single 140 +/- acre parcel had been divided into 4 parcels. Inquiry into that land division resulted in the initial knowledge that it was a result of a Lot Line Adjustment, a process that by law cannot create division of land. Further investigation of that Lot Line Adjustment, revealed the manner in which the Office of the Tuolumne County Surveyor accomplished the land division, without subjecting the division to county ordinance established pursuant to the State Subdivision Map Act.

This complaint submitted against that land division, relate the unlawful facts and circumstance by which that land division was undertaken in disregard of Tuolumne County Land Division ordinance established pursuant to the state Subdivision Map Act, Business and Profession Code of the State Land Surveyors Act, and California State Code of Civil Procedure.

Upon the facts and circumstance so related within the complaint submitted, I am clearly within my rights under the codes and regulations as an "Aggrieved Party" to demand an investigation for accountability, penal and/or otherwise, into the actions resulting in an unlawful Land Division and subsequent Lot line Adjustment, additionally investigation into the Business and Profession Codes in relation to the actions of the State licensed Land Surveyors involved in the unlawful Land Division, County employed or acting privately.

It is clear that Tuolumne County thru the Office of the County Surveyor did not abide by their own ordinance in the first instance, codes relating "strict enforcement" and that, "the general regulations set forth in this Title [16] for final **and parcel maps in the county must be complied with".** It should now be required of the **current** County Surveyor to act on this matter, as **"Whenever the County Surveyor has knowledge** that real property has been divided in violation of the Subdivision Map Act and this Title, he/she **shall cause to be mailed" see full text** Tuolumne County Code **16.22.040.** I request the County Surveyor act in accordance with the law as **"shall be enforced by the County Surveyor" ; see 16.22.060.** That the Tuolumne County Board of Supervisors rescind the Land Division, and act to strictly enforce the provisions of their own **Title 16, regardless of the fact that violations may have occurred through past actions accountable to the office of the Tuolumne County Surveyor.**

I request the oversight of the State Department of Justice and the Attorney General to ensure that Tuolumne County, as a unit of the state, in fact implements Public Policy as directed by the State Subdivision Map Act, despite whatever other motive may apparently possess Tuolumne county.

I request the California State Board of Professional Engineers, Land Surveyors and Geologists to act in accordance with any oversight to the Business and Professions Codes as may be appropriate to their duties regarding the practice of the State licensed Land Surveyors involved in the related land division, to further respect for the profession, and performance, in compliance with the codes thereto.

Matthew Chapman

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I. COMPLAINT UNLAWFUL LAND DIVISION

i. Cover letter to Tuolumne County
ii. Memorandum Facts and Circumstance (Points 1-23) 8 pgs.

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	Notice of Action Tuolumne County Planning Dept.		A7
B.	**Deeds: State of Calif. / Manly**		
i.	Easement Deed, Manly to State of Calif.;	Oct. 26, 2000	B1
ii.	Director's Deed (quitclaim), State of Calif. to Manly;	Dec. 7, 2000	B5
iii.	Director's Deed, State of Calif. to Manly (1997) recorded	Dec. 7,2000	B7
iv.	Grant Deed, Manly to State of Calif. ;	Aug. 25, 2003	B10
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vi.	Grant Deed, Manly to Yosemite Title;	April 5. 2004	B19
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C.	**LOT LINE ADJUSTMENT #04T-2 Tuolumne County**		
i	Application		C1
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iii.	County Surveyor's Decision		C3
iv.	Certificate of Compliance		C7
v.	Tentative Map Evaluation by Rebecca Cremeen		C9
vi.	Engineering Development Div. by Nancy Rotelli		C10
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D.	**GRANT DEEDS/ Records; Portions SE¼ Sec 26 T1S R18E**		
i.	Establishment of Parcel 68-120-57-0		D1
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iii.	Mazie Woolstenhulme to State of Calif. March 1960		D4
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vi.	Final Order Of Condemnation (Tuolumne Cnty Superior Court)		D13

E. CODES & LEGAL REFERENCE

Tuolumne Cnty Title 16, Calif. Code Civil Procedure §2077, Calif. Professional Land Surveyors Act, (2001), Save Mount Diablo v Contra Costa Cnty/Ronald E Young (2015)

F. PLATS

1960 "AS-BUILT" (2 plats) Project Calif. F.H. 39-A **F1**, Survey (pg 4 of 28) **F2,**
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Exhibit for Lot Line Adjustment **F5**, Assessor's Map 68-12 **F6**
Record Request to CalTrans by MATTHEW CHAPMAN

Recording Requested by:

Department of Public Works

WHEN RECORDED, MAIL TO:

Department of Public Works
2 South Green Street
Sonora, CA 95370

Doc # 2003024198
Page 1 of 2
Date: 09/18/2003 02:31P
Filed by: TUOLUMNE CO, D/P/W
Filed & Recorded in Official Records
of COUNTY OF TUOLUMNE
DAVID W WYNNE
COUNTY RECORDER
Fee: $0.00

CONFORMED COPY

CERTIFICATE OF COMPLIANCE

This certificate relates only to issues of compliance or noncompliance with the Subdivision Map Act and local ordinances enacted pursuant thereto. The parcels described herein may be sold, leased or financed without further compliance with the Subdivision Map Act or any local ordinance enacted pursuant thereto. Development of the parcels may require issuance of a permit or permits, or other grant or grants of approval.

This Certificate is issued pursuant to Section 66499.35 of the Government Code.

All that real property situated in the unincorporated area of the County of Tuolumne, State of California, being more particularly described as follows:

See Exhibit "A"

NOTE:
The parcels as described in Exhibit "A" are two (2) separate legal parcels.

OWNERS OF SAID PROPERTY ARE: Timothy R. Manly and Carol L. Manly.

ASSESSOR'S PARCEL NUMBER: a portion of 068-120-27, and a portion of 068-120-57.

LICENSED LAND SURVEYOR
CYRUS A. HOBLITT
EXP. 09/30/2005
NO. 4377
STATE OF CALIFORNIA

By: Cyrus A. Hoblitt
Cyrus A. Hoblitt, P.L.S. 4377
Deputy County Surveyor
License Expires 9-30-2005

Date: 9-18-2003

EXHIBIT "A"

All that certain real property in the unincorporated area of the County of Tuolumne, State of California, described as follows:

PARCEL 1

All that portion of the Southeast Quarter of Section 26, Township 1 South, Range 18 East, lying Northerly and Easterly of the Southerly line of that parcel described in deed recorded March 10, 1960, in Book 111, page 521 of the Official Records of Tuolumne County, and Southerly and Westerly of Line B of Parcel 5351 as described in deed recorded August 25, 2003, as Document Number 2003021597 of the Official Records of Tuolumne County.

EXCEPTING THEREFROM, any portion thereof lying within Parcel 6223A as described in said document.

PARCEL 2

All that portion of the Southeast Quarter of Section 26, Township 1 South, Range 18 East, described as Parcel No. 2 of deed recorded June 18, 1962, in Book 144, page 70 of the Official Records of Tuolumne County.

County of Tuolumne
Department of Public Works

PETER REI, R.C.E., P.L.S.
Director of Public Works

A.N. Francisco Building
48 West Yaney Avenue
Mailing: 2 South Green Street
Sonora, California 95370

Engineering and Road Operations Divisic
(209) 533-5601
Transportation Division
(209) 533-5603
County Surveyor Division
(209) 533-5626
Environmental Management
(209) 533-5588
Fax (209) 533-5698

COUNTY SURVEYOR'S DECISION

DATE: January 28, 2004

LOT LINE ADJUSTMENT APPLICATION: 04T-2

SURFACE/MINERAL RIGHTS OWNERS: Timothy R. and Carol L. Manly

PROJECT DESCRIPTION: Lot line adjustment between ~~two~~ four legal parcels ~~one~~ two of which ~~is~~ are described in Certificate of Compliance, Document Number 2003-024198

Assessor Parcel Numbers 68-120-57 and 29

LOCATION:

ENVIRONMENTAL EVALUATION: This project is categorically exempt from environmental review in accordance with Section 15268 of the State and County Guidelines for the Implementation of the California Environmental Quality Act.

August 8, 2018

Matthew Chapman
30445 Sawmill Mt. Road
Grovelamd Ca. 95321
209-206-1706 cell
209-962-0663 HOME

RE; Unlawful land division Complaint

Warren D Smith LS
Tuolumne County Surveyor,

Your responding letter of July 13, 2018 relates a mischaracterization of events represented by the facts and circumstance of my complaint of June 18 2018. Your assertion is unobservant of fact, and/or a negligent, willful, denial of fact.

In regard to parcels 1&2 derived via the "Certificate of Compliance" **no excess land was ever transferred between Manly and Cal Trans (there was no reconstruction of the highway as you assert in your response)** merely a deed correction utilizing a new "Basis of Bearing" **N 07° 18' 29" W** derived from the 1982 Survey of Record R/S 25-81, affecting that Manly/USFS property boundary; the East Line of the SE¼ of Sec. 26 T.1 S, R. 18 E, M.D.M. (see attached record at pgs. 1-2 **). A >7 degree difference from the 1960 survey "Basis of Bearing" N 0° E** (see attached record at pgs. 3-7)

A survey circa 1960 and the survey of 2003 utilizing **different** "Basis of Bearing" is an **undeniable** factual occurrence, both survey's indicate the highway land transferred by deed respective thereto **as identical in location by measure in relation to the 3 monuments set in 1960, referenced as found within the 2003 survey.** (see attached record at pgs.8-10) In relation to those monuments **as paramount** (as you assert in your response as "on point") there is no measurable distinction between the lands surveyed in 1960 and the survey of 2003. Thus no excess land transfer could occur, **the survey's reveal no excess land to transfer.**

Yet it is also an **undeniable** fact that the real land description of parcels 1&2 within the Certificate of Compliance clearly relate a measurable distinction of an offset/gap between the two survey's relative position of the highway's southern right of way boundary. All the land south and west of the 2003 survey calls and north and east of the 1960 survey calls; resulting in 15.1 acres, per the Lot Line Adjustment sketch.

It is not possible for these two occurrences to simultaneously exist. The Tuolumne County Office of the Surveyor, then, and apparently now, thru your response, fail to ascertain the reason for such an absurdity. What was lost at the time, and now attempted to be explained away via various subterfuge is the affect of the > 7 degree change in the "Basis of Bearing". Manly's Certificate of Compliance parcels 1&2 do not exist upon a proper retracing of the original 1960 survey utilizing the then "Basis of Bearing"or a **proper, lawful interpretation** of the 2003 survey with deference to the 1960 monuments as paramount.

The **changes** made by the 1982 USFS resurvey of the Manly/USFS common property boundary simultaneously **changing** and establishing a **new** "Basis of Bearing" for the highway survey of 2003 is being used to override the monuments set in 1960, apparently by relating the 1960 survey calls (derived from the 1960 'Basis of Bearing" N 0° E) to the changed "Basis of Bearing" of the 2003 survey (N 07° 18' 29" W), which is absurd. A fraudulent integrating of two separate survey's. The above assertion is evident within the Lot Line Adjustment sketch, wherein the 2 separate profiles of the highway's southern Right of Way boundary are depicted, and indicating by protractor a 7-10 degree divergence from their point of origin beginning at a **common "Basis of Bearing".**

You mischaracterize my complaint, I seek to have **unlawful land division** rescinded. Your efforts at subterfuge in defending the Lot Line Adjustment without the necessary **lawful parcels** is advanced by you in disregard of rudimentary Professional Land Survey practice. Rudimentary Land Survey practice articulated within Tuolumne County **Lot Line Adjustment** Code **16.09.020 (6)** referencing Section **8762 of the Business and Professions Code;** requiring a survey **upon material discrepancy in the position of points or lines or dimensions,** as set forth in my complaint at point 7 footnote 2 page 3. It is **undeniable fact**, that parcels 1&2 of the Certificate of Compliance exist as a result of **material discrepancy in the position of points, lines, and dimensions.** The Professional Land Survey Act placing it a duty of the county Surveyor at **8767 and 8768** requiring the noting of disagreement and explanation thereof, which did not occur in the creation of the above parcels 1&2. If it had it, the reasonable outcome would have revealed the fraudulent integration of the 1960 and 2003 survey I relate above.

As the 1960 survey and the 2003 survey indicate in reference to measurement in relation to the **set and found monuments, there was no transfer of land, moreover no reconstruction of the highway ever occurred in relation thereto, your reliance on SMA section 66428 (a)(2)** regarding the above parcels 1&2 is inapposite, I deny it's relevance as out of context. as there were no "excess parcels to relinquish to adjacent landowners."

I can see no point in meeting with you discuss this matter further, in light of your willful disregard of **undeniable objective fact.** If and when you come to realize your greater duty to Profession as a Land Surveyor and duty to enforce Tuolumne county Land Division Law, based on objective fact, please contact me.

Matthew Chapman

Matthew Chapman

Copy to:
Tuolumne County Board Supervisors
CA. State Board Professional Engineers, Land Surveyors
Geologists

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
~~d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?~~	☐	☐	☐	☐
~~e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?~~	☐	☐	☐	☐
~~f) Otherwise substantially degrade water quality?~~	☐	☐	☐	☐
~~g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?~~	☐	☐	☐	☐
~~h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?~~	☐	☐	☐	☐
~~i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?~~	☐	☐	☐	☐
~~j) Inundation by seiche, tsunami, or mudflow?~~	☐	☐	☐	☐
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☐
b) **Cause a significant environmental impact due to a conflict** with any ~~**applicable**~~ land use plan, policy, or regulation ~~**of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance)**~~ adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☐

emergency 2099705423 Zoom 1669-900 6655 #89051366812 x9 x6

Under Canvas Board of Supervisors Public Hearing Comments: December 17, 2020

Due to the time constraint of a 3 minute phone call during the Public Hearing, I will not be able to review all of the deficiencies of the proposed FEIR and the inadequate responses to my previously submitted concerns. I am forwarding this letter with additional detail regarding key matters: Inadequacy of the proposed FEIR, Evacuation, Wildfire, and Cumulative Effects/ Traffic Study.

I ask that all decision makers carefully consider and weigh everything that has been submitted through-out the planning process, especially the hundreds of letters from informed, concerned constituents of Tuolumne County, agencies, organizations, local businesses, and attorneys, to make non-biased conclusions based on the facts.

Inadequate FEIR

The Commission voted to approve the proposed FEIR for Under Canvas on November 18, 2020, without having ample time to thoroughly review thousands of pages of new information. The rushed schedule led to omissions and mistakes in the documents that should have been resolved prior to the public hearing. The EIR was inadequate and at least one commissioner acknowledged that she had concerns that the environmental analysis appeared incomplete and needed work in certain areas. She was correct.

Another Commissioner also had concerns and wanted to consider the issues raised by the community. He voted against approval of the FEIR. The Commissioner was correct to want to send the document back to staff for further studies. It was too soon to make such a hasty decision without adequate information.

There were multiple reasons to deny the application, yet the remaining Commissioners seemed to have missed very serious concerns and the lack of adequate mitigation measures. There was overwhelming strong opposition and every public speaker brought up valid points and suggestions:

The Groveland Community Services District said they would NOT respond to a fire at this location. An administrator with the County stated there would be no emergency funding in place prior to the seating of the next Board of Supervisors. CalTrans asserted they had not received a request for an encroachment onto Highway 120. Two different local inn keepers both provided multiple examples of accidental fires started on stoves by tourists. Two Sawmill residents illustrated how the property lots were created in violation of the Subdivision Map Act, yet the County failed to properly investigate. A traffic study was unbelievably not implemented even though there will be thousands of new cars introduced to Sawmill Mountain, especially with Terra Vi across the Highway. Many more shortfalls were pointed out such as a modified “fire pick-up truck” with a mere 125 gallons of water on board (about three bathtubs full) to fight fires, 99 wood burning stoves in flimsy tents in a Very High Fire Hazard Severity Zone, and inadequate evacuation or egress for the property, yet were not further evaluated by the Commissioners.

It seemed like the community members were completely disregarded. At a minimum, the FEIR should have been returned to staff for further study and consideration. What was the rush? We are here again today with an opportunity to reevaluate and make a more educated decision.

Overall, the proposed FEIR provided short-cut robotic responses by Under Canvas which minimized or outright dismissed the serious issues and concerns that were raised. These “Master Responses” assert that every factor is of no concern or without significant impact, yet do not offer adequate analysis or sufficient supporting evidence. Responses simply refer back to the illogical assertions of the DEIR with general answers that do not acknowledge the specific questions. However, the issues still exist and must be addressed: the bottom line is that the proposed Under Canvas project will have significant environmental impacts which cannot be mitigated.

Evacuation

The cumulative effects on emergency evacuation pose one of the most critical issues; local residents will be subject to safety hazards beyond their control. The DEIR concludes that the evacuation impact is less than significant, falsely claiming that the project site does not interfere with an emergency evacuation route or expose people or structures to a significant risk of loss, injury, or death involving wild land fires.

In fact, the DEIR fails to mention that the proposed egress access is located directly across from the Sawmill Mountain Area exit which is the ONLY evacuation access to Highway 120 for Sawmill Mountain residences. This location at the mouth of 120, would create a bottleneck should everyone from Terra Vi, Under Canvas, Sawmill Mountain area, Hardin Flat, Rush Creek, Evergreen Lodge, CalTrans, and Yosemite National Park attempt to simultaneously funnel through the exit area "intersection" in the event of an emergency or an evacuation.

Furthermore, the project assumes use of Forestry Route 1S09 which is not authorized for commercial use. The County mentioned the issue at the beginning of the Public Hearing by stating the "FS says the usage meets their standards." However, *Federal law 36 CFR 251.53 (6) prohibits special use authorizations, including permits, leases, and easements, for National Forest System roads, trails, highways, where such roads, trails, or highways are constructed and maintained in connection with commercial recreation facilities.* The presumed usage of this Forest Route precludes the conclusion that the Project's impact on the environment will be less than significant: it is not supported by substantial evidence.

Forest Service Ranger, Jim Junette questions the County in an email about 1S09 access and states that "there is no guarantee for approval." The Under Canvas response claims that "if the project is approved, they will work with the Forest Service to obtain permits." As previously stated, Federal law prohibits this. In fact, any such discussion triggers a NEPA study and a Federal EIS must be completed prior to approval of the FEIR to meet CEQA standards. The FS has said that a NEPA analysis is to be performed, yet the preliminary application hasn't even been processed and could take "several months," per Jason Kuiken, Forest Supervisor. This is something that should have been determined before any project designs were conceptualized.

Additionally, the usage of the road is integral to the project; without the Forest Route, the proposed project would fail. The Forestry Service is not permitted to provide access when alternate access is available (Hardin Flat Road and Highway 120). Nor is the FS permitted to commit use of Federal lands that would forever affect the Forest lands. The project cannot progress as designed with 1S09 as a dedicated egress route. An alternative reduced footprint design must be analyzed as an alternative option to allow for alternate ingress and egress access from Hardin Flat Road/120 only.

The Under Canvas information also incorrectly claims that the property is an "inholding" as justification for use of the route. The property is actually not an "inholding", but rather a "land adjacent to." The land must be "completely surrounded by National Forest Lands," to be defined as an inholding, which it is not. Highway 120 and Hardin Flat sides of the property are open and accessible. Instead, the Manly lands are "adjacent to" the forest lands, not an "inholding."

CEQA and NEPA must work in tandem so that one decision cannot be made regarding a project design haphazardly. In this case, the Under Canvas design is based on the assumed use of the Forest Route 1S09. Without this route, the project evacuation would be a significant impact because the site cannot provide adequate emergency access. The EIR cannot be certified when design decisions are reliant upon the NEPA study, which has not begun yet. As pointed out in my previous documentation to the County, use of this road for commercial purposes is prohibited by Federal Law. The Forest Service may not authorize use of 1S09 for commercial purposes.

Moreover, "t*he environmental document preparation and review should be coordinated in a timely fashion with the existing planning, review, and project approval processes being used by each public agency. These procedures, to the maximum extent feasible, are to run concurrently, not consecutively."* (Nepa/ Ceqa Handbook, Integrating State and Federal Reviews, February 2014)

Additionally, *"when the lead agency is a state agency, the environmental document shall be included as part of the regular project report if such a report is used in its existing review and budgetary process."* (Cal Code Regulations Title 14, Section 15004)

Also, *"to implement the above principles, public agencies shall not undertake actions concerning the proposed public project that would have a significant adverse effect or limit the choice of alternatives or mitigation measures, before completion of CEQA compliance."*

For example, agencies shall not: *"Otherwise take any action which gives impetus to a planned or foreseeable project in a manner that forecloses alternatives or mitigation measures that would ordinarily be part of CEQA review of that public project."*

NEPA requires agencies to assess the environmental effects of a proposed agency action and any reasonable alternatives before making a decision on whether, and if so, how to proceed. CEQA Guidelines section 15223 provides that if a state agency knows that its authorization will be needed for a project undergoing Federal environmental review, that agency *"shall consult as soon as possible with the Federal agency."*

I assert that if the NEPA study has not been completed (or even started in this case) the use of FR1S09 cannot be assumed. Furthermore, without the use of this road, the project as currently designed would not be able to move forward. An alternative for the project must be evaluated per CEQA. The EIR cannot be certified until the NEPA study has been completed.

The Forest Route 1S09 is not a viable access and further emphasizes that the Sawmill Mountain project site is not conducive for any high occupancy use that will require two exits, and should have never been considered for Under Canvas. The property does not allow for safe locations of two separate required exits that are spaced far enough apart to meet fire code regulations.

Therefore, the site layout *would interfere* with both the evacuation of the facility as well as the overall evacuation of the mountain. This life or death hazardous situation cannot be dismissed from the proposed FEIR. The project site does not even provide appropriate egress for the proposed usage. Why is the County so insistent on rushing to shoehorn this project through the approval process?

We just experienced two separate fires (dubbed "Mountain" and "Wheel") on Sawmill at the beginning of August this year, as well as the subsequent Moccasin (MOC) Fire in late August. These wildfires threatened the Groveland community and impacted evacuation all along the Highway 120 corridor between Priest Grade and Yosemite National Park. They also served as a sober reminder that we are in a VHFHSZ and fires are not a question of if, but rather when they will recur. Nineteen (19) hours were necessary just to evacuate the community of Pine Mountain Lake during the MOC fire. Communication was extremely limited due to electrical power, cell service, and internet outages for days. Imagine the terror of trying to flee during the evening and not knowing where to go.

Had the fire been in Yosemite or further up the 120 corridor, there would have been no safe evacuation route for residents of Sawmill, Hardin Flat, Buck Meadows, and other nearby communities. We would have all been trapped. Highway 120 leads to Yosemite in one direction and through small towns and winding, steep grades in the other. Priest Grade was closed periodically due to firefighting efforts and it was unclear if the Yosemite entrance gate was open, creating panic and confusion. The addition of 400+ tourists at YUC and over 600 vacationers at Terra Vi in this already compromised location is absurd.

Wildfire

The physical layout of the mountain cannot provide two or more distinct exits to support large scale high occupancy commercial developments, especially a safety consideration in a known VHFHSZ. We must learn from the MOC, Wheel and Mountain wildfires that simultaneous fire fighting activities and evacuation efforts in the same area, all on the same two-lane scenic Highway 120 route are dangerous and potentially fatal.

Common sense should prevail; it is clear that the area poses a tremendous fire risk. The casualties of the Camp Fire in Paradise had only one road in and out of the area; the residents of Sawmill Mountain and Hardin Flat are in the same terrible predicament. Why would the County knowingly exacerbate the danger and assume liability for developing Terra Vi and Yosemite Under Canvas in a Very High Fire Hazard Severity Zone without contemplating safe exits? The DEIR actually declares that "the project would not impair or interfere with evacuation procedures and is not further addressed." *Evacuation concerns are not further addressed.* Unconscionable. Let that sink in.

To reiterate: there is no public water system on the property and unreliable wells are the only water source, no emergency water storage, no fire sprinklers, no fire hydrants. There is no sewer or electricity. This is rural forest land, remotely located and devoid of existing public services without nearby fire protection, ambulance or law enforcement services. Cell service is spotty at best and emergency notification systems have failed to reach residents in previous fires, even those with land-line telephones.

There is no evidence to support the conclusion that the UC design features such as "Fire Marshal approved tent fabric" or "operational practices" would be effective in the prevention of wildfire ignition at the site. The Master Response #1 cavalierly rebuffs my concern as well as other commenters by stating that "a long list of fire prevention features would reduce the likelihood of wildfire ignitions to a less-than-significant level". This response is inadequate. Fire Marshall approved fabric will not thwart a wildfire.

There are no analyses in the DEIR that evaluate the increased chance of starting a wildfire, the hazards posed to Sawmill Mountain and Hardin flat residences created by evacuation onto local roads, nor the cumulative effects of the Terra Vi project. Stating that the development of the project would not exacerbate wildfire risks, nor substantially increase the likelihood that the project would expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire is frightening, naive, and unfounded.

The proposed plans for Yosemite Under Canvas with 99 tent cabins, open campfire pits, 99 wood-burning stoves, and barbecues magnify the potential danger for wildfire, just as the previous Rim Fire that was ignited by a campfire. That fire quickly raged out of control and burned 257,000 acres in the Stanislaus National Forest and 79,000 acres in Yosemite National Park. It was devastating for our community. Sawmill Mountain residences that have withstood five family generations barely survived the ravaging flames while others did not.

Wildfire is addressed in the DEIR by stating that the project would present a benefit to neighboring properties over current conditions, since the site's existing conditions would be improved. It is the property owner's (Manly) responsibility to clear out brush and dead trees; we don't need a new development to take on their tasks. It is absurd that the DEIR asserts that not building the project would increase the wildfire risk. Conversely, constructing a glamping site in the middle of a forest in a highly hazardous fire area *would*.

Cumulative Effects/ Traffic Study

Even more ludicrous is the DEIR claim that a Traffic Study is not warranted because Under Canvas does not exceed the trips necessary to generate a study. Again, it is imperative that the cumulative Under

Canvas, Terra Vi, Sawmill and Hardin Flat residences, Yosemite National Park, and general Highway 120 travelers are included in the requisite study. This is a very dangerous section of the highway and Under Canvas does not exist independently. Proposed changes to Highway 120 suggest the creation of up to *five* lanes between the Sawmill Mountain Area exit and Hardin Flat Road. Sight lines are compromised. Traffic obviously factors into the evacuation considerations and must be thoroughly evaluated; a traffic study is necessary.

Additionally, there are significant environmental impacts created by the two proposed Sawmill projects that I have asserted in previous comment letters, such as the threat of water contamination to the Tuolumne River, potential for wells to dry up, wastewater system failure and contamination of private wells, scenic and aesthetic impacts, wildlife, watershed, noise, air quality, traffic, employee housing shortages, and hazards to pedestrians crossing the highway to access amenities.

There are site alternatives that must be studied instead of disregarded, missing hydrology appendices, missing public comment letters, missing agency reports, lack of impact studies on Rainbow Pools or other nearby attractions that render the DEIR incomplete and deficient. These concerns were dismissed in the DEIR and again in the FEIR. Simply checking off boxes and declaring that impacts are insignificant does not make it so. There are numerous oversights, private reports/studies and serious concerns that counter the adequacy of the proposed FEIR and must be recognized by the decision makers.

The fact is that cumulative impacts from projects proposed in the area are significant. Please send the proposed FEIR back to staff for further investigation of the substantial impacts. It is vital that the County, Planning Commission, Board of Supervisors, Forestry, CalFire, CalTrans, and other Agencies reviewing and commenting on the proposed projects are looking well beyond the confines of the drawings to determine the overall impacts on the surrounding areas, now and in the future. We must all be good stewards of the land to protect our County and our community. I firmly deny the approval of the FEIR.

Sincerely,

Nancy Constantino

Tuolumne County Board of Supervisors

RE: Appeal of Yosemite Under Canvas Comment Letter

Part One of Two

December 17, 2020

Dear Supervisor,

I am writing to you as a second generation owner of a one bedroom cabin on fourteen acres of beautiful meadows, springs and forest on the outskirts of Yosemite National Park but sharing a long property line with the Timber Preserve now proposed for large high-end resorts.

As such I am essentially the "new kid on the block" as my neighbors, many of whom are cousins or uncles, have owned their Sawmill Mountain and Hardin Flat cabins for many more generations. Some neighbors are on their fifth generation here. My family has had many wonderful experiences here and the younger generations have been able to grow up with an appreciation and respect for nature. For example, I learned how to respect, and avoid, poison oak and stay out of the bushes when I was about 7.

I also learned about deer, Incense Cedars, hawks, natural springs , wild streams and rivers, stargazing and many other things.

This is a peaceful, tranquil and intensely beautiful location. All of the families have worked extremely hard to protect and care for our retreats, the wildlife which inhabits or visits and the centuries and the sensitive old growth forest which surrounds us.

We spent many, many days of hard work and many, many hundreds of thousands of dollars to restore our land following The Rim Fire. We took turns taking sentry duty along Sawmill Mountain Road when someone was lighting the fires on Sawmill Mountain this past August. We watch our neighbor's properties for burglars, timber thieves and unauthorized tree cutters. We look out for our land, our mountain, our forests, our rivers and each other.

We wish for our children and their children to have the same opportunity to grow up in such a wonderful natural environment and to take over for us in clearing the brush and dead trees, keeping the watercourses open, eliminating items which would attract bears, etc.

These are just a couple of reasons why we are so passionate and dedicated to contesting these large commercial Conversions of Timber Preserve to luxury resorts.

There is a place for everything. For close to one hundred years the Communities of Sawmill Mountain and Hardin Flat have been a place for small, low density family vacation cabins. Typically one bedroom cabins on five or more acres.

This just isn't the place for sprawling commercial resorts, restaurants, event centers, canvas tents with interior wood burning stoves, seven acre leech fields, deed high production wells, hundreds of

automobiles, thousands of lights, noise from hundreds and hundreds of tourists wandering into highly flammable dry forests and all the impacts which come along with large scale commercial development.

We understand The County needs to increase it's sources of tax. But there are other places where this can be accomplished, such as The Scare and also by keeping your existing hotels in business.

Hopefully by now you have accepted our invitation and have seen our Community, got a feel for our way of life and realize what a serene and tranquil area this is.

I am providing this backround so that you will understand why the **entire Sawmill Mountain and Hardin Flat Community** is **unanimously** and **adamantly OPPOSSED** to these developments and why we are determined to fight to the end to protect this Mountain and this River.

This community is populated by hundreds of successful, established, intelligent and dedicated individuals.

You are probably aware by now that an Approval of this project will lead only to expensive and time consuming litigation. Up to this point the entitlement process has been rushed and accelerated to prohibit the community and our experts to have a fair and reasonable chance to review and opine on the project. Almost all of the significant and substantially negative impacts have been ignored,, glossed over or rejected without valid supporting evidence. All timelines have been structured so as to minimize public participation. Word is getting out and the rest of Tuolumne County is starting to take notice and is watching your actions. Many residents prefer the Board they elected this November will be allowed to evaluate and vote on these projects. We hope you will make a decision today to change this direction by sending the project back to staff for further review.

By now you have seen hundreds and hundreds of pages of studies, letters, articles and much other data listing thousands of reasons why this is not the appropriate place for these developments and, at the very least, why more research needs to be conducted.

I will summarize a few of those in the next section of my Comment Letter.

Sincerely,

Dan Courtney

Trustee, The Jacqueline Courtney Trust

Owner, 11250 Sawmill Mountain Road

Groveland, CA

Cell: (858) 337-7019

Email: Dan@excaliburre.com

Central Sierra Environmental Resource Center

Box 396, Twain Harte, CA 95383 • (209) 586-7440 • fax (209) 586-4986

Visit our website at: www.cserc.org or contact us at: johnb@cserc.org

December 17, 2020

Tuolumne County Board of Supervisors
2 S. Green Street
Sonora, CA 95370

RE: Yosemite Under Canvas

To the Board:

Our staff recognizes the legitimate need for new development where appropriate to boost the County's economy and to support the building industry. The Under Canvas project can be promoted slickly and effectively as a luxury camping facility, but the true fact is that it is proposed at the wrong location.

The project simply cannot assure (even if the County adds a requirement for a water storage tank) adequate protection of guests and staff on the project site from the risk of a wind-blown high-severity wildlife. The project cannot assure sufficient well water supply in dry or drought years, nor can it assure that disposing of millions of gallons of septic effluent won't contaminate subsurface water, including well water.

Our Center urges the Board to carefully consider all the very clear defects in the FEIR and to vote to send this project back to staff for additional revision.

John Buckley

Executive Director, CSERC

From: Quincy Yaley
To: Natalie Rizzi
Subject: FW: Highway 120 Corridor Development.
Date: Tuesday, December 15, 2020 8:23:29 AM

For your files. Please compile another set of any comments you have received since the TCPC and let's post them and alert the Board.

From: John Gray
Sent: Tuesday, December 15, 2020 8:21 AM
To: Quincy Yaley <QYaley@co.tuolumne.ca.us>
Subject: FW: Highway 120 Corridor Development.

FYI

From: Suzanne Ctibor <yosemitesu@gmail.com>
Sent: Monday, December 14, 2020 8:03 PM
To: BOS Members <bosm@co.tuolumne.ca.us>
Subject: Highway 120 Corridor Development.

To Whom it May Concern,

I would like to voice my opinion of the proposed developments on the Highway 120 corridor.
I have lived in Groveland for for 44 years, a life-long resident of Tuolumne County, and a third generation native of Tuolumne County.

As far as I'm concerned, our Community 'South of the River' problems and concerns have never been a priority in the eyes of our Tuolumne County Powers that be, except for whatever is deemed a profit making development that goes into the Coffers of Tuolumne County, and does nothing for the Groveland and Big Oak Flat communities. We are basically ignored by Tuolumne County government, and always have been.

It will bring jobs to Groveland? In my 44 years of living here, and watching both Evergreen and Rush Creek become large developments, what has happened, and continues to happen, is only the lower echelons of our community are hired, for kitchen jobs or housekeeping jobs, the low paying jobs, not managerial or higher paying jobs. The high paying jobs are brought from outside.

Other concerns for both Terra Vi and Under Canvas are these:

Highway 120 is, and never has been, a road designed to handle the amount of traffic that we have now. It's a very dangerous road, ONLY two lanes, with many curves, blind corners, and tourists THAT DO NOT KNOW HOW TO DRIVE A MOUNTAIN ROAD. I invite anyone to take their life in their hands in the summer tourist season to drive this road just 3 miles to work and back. I can't even count how many times I have had to avoid a tourist passing another car on a blind corner, double yellow line. Just last week, I was doing the speed limit of 55, and had a man pass me on a double yellow, blind

corner, with a car in the opposite lane that was not visible until the last second, I had to slam on my brakes to let him in, he almost hit my vehicle and the car coming in the opposite direction. It was so close, I followed him to the local gas station and gave him a piece of my mind. It had scared him too, he was shaking, and very apologetic. Definitely not a local. These close calls happen to me on a regular basis. I'm serious. Please research the horrendous accidents and deaths on New and Old Priest Grade, and also all of the 120 Corridor.

I hate trash! There is no respect from tourists for the beauty of our area. I have picked up many bags of vomit, diapers, and yes, even used feminine products along our highway. The worst is Rainbow Pool. I have picked up countless bags of trash, and have paid for, myself, at the dump. Within a week of the high tourist season, it's all back, and even worse than the week before.

Next is the fire danger. There is no common sense for people when it comes to having a campfire, or throwing a cigarette out the window of their car. I've spent my entire adult life working in our forest.
I have put out many, many campfires burning in the forest here, in places where there is no campground, just some city folk who drive out a dirt road, set up camp, and leave an unattended campfire, and all their trash behind! Now, you are going to let a company with canvas tents, and wood stoves (!!) with a pickup truck and 125 gallon water tank onsite to put out any fires? You might as well have all the male employees go out and urinate on it, that would be more effective.

Emergency Services. It is a 30 plus minute drive on a good day, with no traffic, for the nearest ambulance, and first responders. It is also over a hour and a half drive to the nearest hospital. I would not want to wait that long for myself or my family, to get urgent care, would you? A Helipad is going to help? Good luck with that, it's still not just minutes from the nearest large Trauma Center, with nearly an hour for a Helicopter trip from a Modesto Hospital and back.

Another problem in our little community is housing. It is nearly impossible to find a rental here. A lot of vacation homes that were previously rented out to individuals and families are not available, as all of them are now either AirBnBs or occupied by their owners who have moved up here to get away from cities, because, for now, they can work remotely. Where are the employees that are brought in from out of town going to live?

The EIR report is so flawed, having lived here 44 years, I know where the wildlife trails are, where they go to drink, forage, and winter. One trail leads from Yosemite along the Middle and South Forks to the Tuolumne River Canyon, nearby these proposed developments. I don't believe that there will be no impact on Wildlife from more people, more cars, more danger from wildfires, as well as other statements that were made in the report about water quality, sewage, etc. that was in the EIR.

I am so opposed to these projects, because they will seriously impact the beauty, and the non-commercialism of our area. Ours is the last entrance into Yosemite that hasn't been turned into a city with Fast Food, hotel chains, and huge resorts. Our town is a community of small gift shops, locally owned mom and pop restaurants, and hotels, with all the problems of small businesses with the pandemic, let them recover! Allowing these already rich corporations to come here, and put our

small businesses even further from recovery, is absolutely ridiculous!
These Corporations don't need more business, they already have enough! Terra Vi is based in Southern California, but owned by a Chinese corporation. These huge resorts, and all the I'll that goes with them, do not belong on the 120 corridor.

Please, don't turn us into Oakhurst, or Sonora! We are a tiny, close knit community, with no stoplights, and many of us would like it to stay that way. You all should consider the opinions of your constituents, and not how much money you are going to make. Why is it always about the money? For once, let's forget about dollar signs and keep Big Business out of this beautiful community. If you want these Corporations taking over, and the County needs the revenue, put them up 108, where it is already over commercialized! Please.

We still need our wild places in this part of the State of California. Let people enjoy the wildness of our beautiful home, without all this commercialization! There are many, many locals who agree with me, I am not just speaking for myself. We don't need it, and don't want it! Once you start developing these commercial places, others will follow, and impact the beauty of Groveland and the Highway 120 corridor. Please, leave one, just one, place that has charm, ambiance of the old days, and wildness, without a McDonalds or Taco Bell on every corner. It's why we live here. There aren't many places like this left.

Thank you for your consideration of the concerns of many locals, myself included.

Sincerely,
Suzanne Ctibor,
Friends and Family

From: Denise Kern
To: Natalie Rizzi
Subject: Support FOR
Date: Friday, December 11, 2020 2:21:38 PM

Hello Natalie,

John Gray 4th District Supervisor

I fully support the Terra V and the Under Canvas Camping Project!!
I'm a long time county native and believe in backing local family owned projects when done for the benefit of the Future of Tuolumne County and their families that live here.

Thank you,

Denise Kern
Arbonne Independent Consultant
ID# 17935275
www.denisekern.arbonne.com
209-505-3719
209-984-4442
kerndenise71@gmail.com

Dr. Susan D. Shaw
President Shaw Institute
P.O. Box 1652
55 – Main Street
Blue Hill, Maine 04614

December 11, 2020

Dear Dr. Shaw,

On behalf of the Conservation Commission of Surry and the Town of Surry, we wish to thank your organization and especially Ms. Heather Richards for her efforts to assist us in solving our pollution problem in Patten Bay. We have made great progress this year and are looking forward to identifying the sources of our pollution this coming Spring and Summer!

We are excited to have Under Canvas supporting our efforts as well and they have made it possible to include areas of Patten Bay in front of their premises. We will keep Under Canvas informed of our progress and results as well!

Thank you again for your organization's support and great work. We are looking forward to working again this Spring and Summer with Ms. Richards.

Yours truly,

Thomas G. Minogue
Chairman Surry Conservation Commission

cc: Blue Hill Packet
Ellsworth American
Under Canvas
1472 Happy Lane
Belgrade Montana 59714

From: Quincy Yaley
To: Natalie Rizzi
Subject: FW: Supervisors vote re: Terra VI and Under Canvas
Date: Wednesday, December 16, 2020 2:13:53 PM

I'm going to let you compile these.

-----Original Message-----
From: joy lopez <ranchovertical@gmail.com>
Sent: Wednesday, December 16, 2020 2:01 PM
To: Quincy Yaley <QYaley@co.tuolumne.ca.us>
Subject: Re: Supervisors vote re: Terra VI and Under Canvas

As pro-development as we may be, (with the cachet of careful , slow , well-informed , serving-the-land-and-its-people-well kind of development), we would like to urge the Supervisors to NOT permit the Terra VI and Under Canvas until further deliberation , and resolution with public concerns.
The issues of the additional hundreds of people regarding campfires, water resources, septic responsibility are yet to be resolved to satisfaction. While each facility could be real assets to our county, to Yosemite, and to many visitors from all over the world, anything worth doing is worth doing well.
We urge you to hold off on voting this month on these projects.
Ron and Joy Lopez

Louis Rivara
31583 Hardin Flat Road
Groveland, CA 95321
925-200-6917

TO: Natalie Rizzi, Land Use Coordinator
Tuolumne County Board of Supervisors
RE: Under Canvas Appeal

For a number of reasons, the Under Canvas project should not be approved at this time without further study:

1. The risk of fire is not adequately mitigated in the proposed development plan. We have seen massive fire destruction in recent years. Firefighters have staged from my property and elsewhere. Retardant has been dropped from helicopters. The entire South Fork of the Tuolumne River was available as a water source. Yet fire has moved relatively unabated. The proposed safety measures for Under Canvas are sorely lacking. New fire-fighting technologies have been announced in recent weeks that are on the horizon and that need to be considered as part of this approval process for greater fire safety.
2. There is no public water source available for the property and no assurance that proposed wells will be able to sufficiently service Under Canvas and at the same time not adversely affect the water supply to nearby property owners.
3. In an emergency the addition of hundreds of visitors into such a tightly packed area, all trying to escape onto limited available roads, will put everyone at greater risk. Limited resources in Groveland, additional resources more than an hour away in Sonora, and a two-lane highway as the primary means of exit is a bad plan.
4. This will not benefit Tuolumne County in the way some are hoping. At other Under Canvas sites currently in operation, there are reports that the jobs created are primarily lower end jobs with inadequately trained people hired from outside the region. There are better ways to serve the residents of Tuolumne County through a broader, more cohesive and well thought

out plan. A broader vision would benefit residents throughout the county, not just a few developers and a single landowner family. An “island of development”, located nearly 50 miles from Sonora, will have little impact in the broader scheme of things.

Many objected to this project at the Planning Commission Hearing. Only three or four spoke in favor or offered advice. One commissioner suggested that if opponents wanted to stop this project, they should have taken their money and bought the land. When did the current landowner offer it for sale? Another commissioner commented, that since most of the residents in the county were not present to speak at the Planning Commission hearing, he needed to be their voice through his approval of this project. Question: How is it that those that do not attend public hearings and do not speak up when given the chance are given greater voice that those that do? Additionally, a real estate agent who is involved in the development on behalf of the developer suggested that opponents are just a bunch of environmentalists that are indifferent to the needs of the county and its financial plight. Yet, as a real estate Broker myself, I have worked with a number of developers over the years and absolutely believe that fair use of one’s property is appropriate. However, destructive or high-risk use is not!

Thank you,
Louis Rivara

It is Common Knowledge- The Areas of Saw Mill Mountain Rd., and Hardin Flat Rd. are marked on Fire Maps as "Extreme Fire Danger".

This area burned in the 2013 Rim Fire which was started by a careless person down by Groveland. The Fire traveled along Hwy 120 for more than 24 miles.

Studies Show 90% of Fires are caused by Humans. ¾ of those fires are caused by carelessness. Arson, Lightening, and equipment malfunction also are to blame.

Now is not the time to increase the Fire Risk and the Risking of so many lives. We are in a drought and we have little ground water, and because of that the trees are stressed and more susceptible to Fire. They are also more susceptible to the Bark Beetle which causes the trees to die. We should be conserving water and not lowering the water table in areas where it is already low which you can tell by the stress of the trees. It is actually dangerous to increase Development in High Fire Areas.

Berkeley Camp burned to the Ground in 2013 when the Rim Fire came thru this area. Many properties were also burned. Fortunately, Cal Fire was able to take some water out of the River and Air Lift in more, which saved some properties. The Fire burned all the way past the 120 Gate to Yosemite and almost burned down Merced Grove inside Yosemite.

Fire burns uphill faster than downhill and the location and placement of Terra Vi and Yosemite Under Canvas are at the top of the hill. Both are at the entry from 120 onto Saw Mill Mountain Rd., and Hardin Flat Rd. Should there be a Fire at either of the Developments they could potentially block the Exit of 1000-2000 people, and families from escaping in 967 Cars, R.V.'s, 5th Wheelers, Trailers, and Trucks in a panic in the middle of the night. This situation could be a disaster.

The Fire near Groveland this last Summer took 19 hours for Groveland to be evacuated. Just imagine what it would take at this location to evacuate almost the population of Groveland. The DEIR's for Terra Vi and Yosemite Under Canvas assume there would be time in an emergency to evacuate. That is not always the case.

When people are fleeing they will try 1st to Escape the way they came in. If that way is blocked then where do they go, and who will be directing them? Most vehicles, R.V.'s etc. enter to go to Yosemite Lakes, and Berkeley Camp at Hardin Flat Rd. and Saw Mill Mountain Rd.. This is dangerous to add any more development at that location, even if you added more lanes on 120. Hardin Flat Rd. is a narrow, winding 2 lane road which is meant to be traveled slowly. So is Saw Mill Mountain Rd. The other exit from Hardin Flat Rd. back onto 120 is long, narrower, steep and winding, and is not designed for Recreational vehicle traffic.

Saw Mill Mountain Road had two Fires this last Summer of which there are Fire Reports. It was fortunate they were spotted quickly so they could be put out by fire-fighting AIR equipment in time to stop the spread.

The Distance between Terra Vi and Berkeley Camp is 1.27 miles, where approximately 967 Vehicles will be navigating back and forth in this short distance of roadways. The number of cars entering and exiting Hwy 120 will be a hazard, for both those traveling 120 and those turning in or out.

There is a huge Cumulative Effect of all of these developments in one location, on the Traffic, the Supply of Water, the Noise, the Risk of Fire, the Waste, and the Damage to the Environment with 1000-2000 people, (many with small children who are not included in this count) and 967 vehicles during the busy time of the year. Hwy 120 cannot handle this traffic at this location even in a non-emergency situation, nor can Hardin Flat Rd. or Saw Mill Mountain Rd.

In addition Evergreen Lodge and RUSH Creek that are up Hwy 120, 5 miles will add approximately 200 vehicles, and at least 300-400 more people including families onto 120 in an emergency.

It has been impossible to get a Sheriff to even come to this area, unless you are willing to wait 3-5 days.

Emergencies services are at least 18 miles away, and if those services are already on another call this area of Hwy 120 is out of luck and will be left alone to handle whatever Emergency there is by whatever means they can.

Just because you can Approve these developments, does not mean you should.

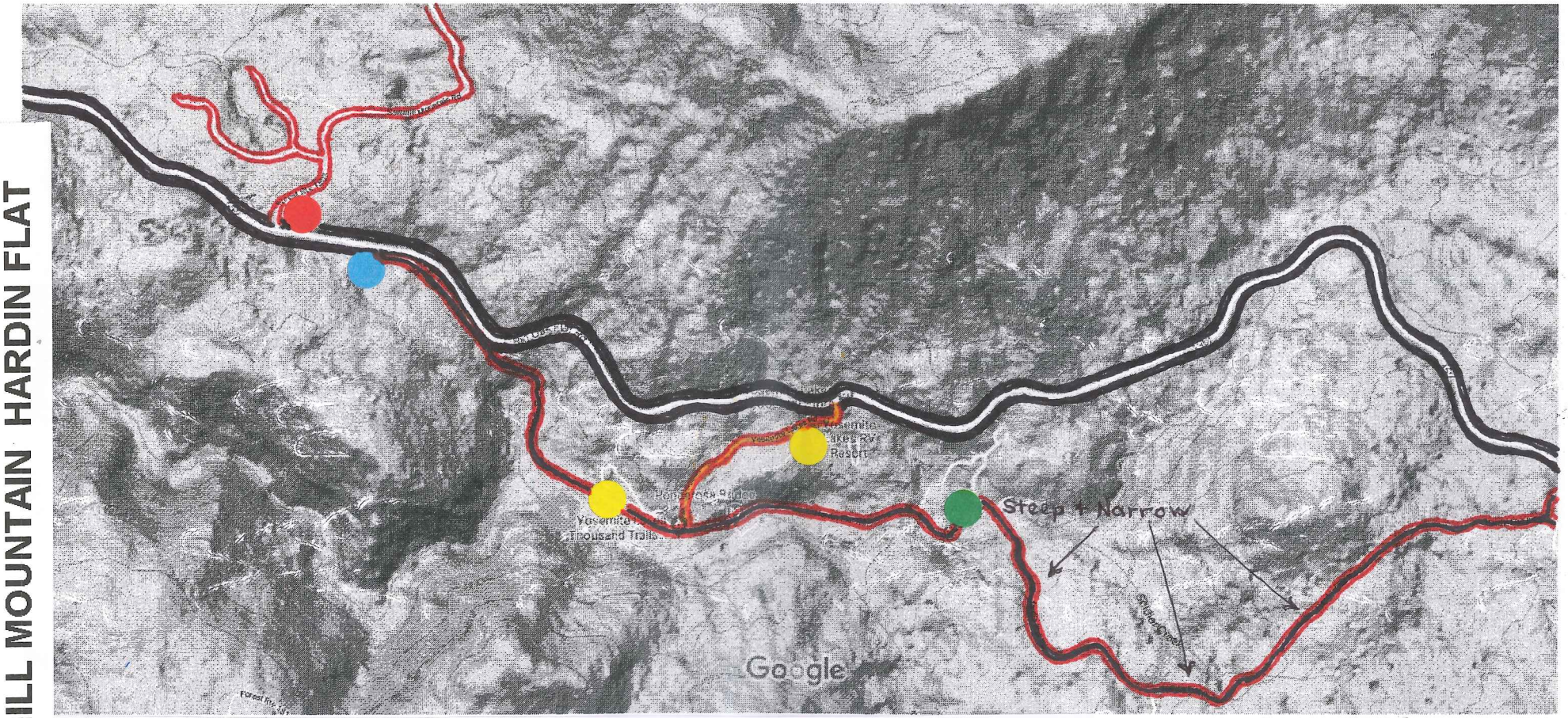
Margena Rivera
12-12-2020

Hwy 120 =
Saw Mill =
Hardin =

Google Maps Hardin Flat Rd

Private Homes Approx 45
plus more Cars + People

SAW MILL MOUNTAIN HARDIN FLAT



Map data ©2020 1000 ft

- Terra Vi
- Yosemite Under Canvas
- Berkeley Camp
- Yosemite Lakes

967 Cars, Trailers, R.V.'s
5th Wheelers, Trucks

2000 People
Kids, Pets

Distance 1.27 Miles
From Terra Vi to
Berkeley Camp

- Evergreen Lodge
- Rush Creek

200 Cars, Trucks, R.V.'s
Motorcycles etc.

300-400 People
Kids, Pets

Up Hwy. 120
5 Miles

From: Keith Martin
20139 Pine Mountain Drive
Groveland, CA 95321
December 10, 2020

To: Ms. Natalie Rizzi and Ms. Quincy Yaley
Tuolumne County Planning Dept
Tuolumne County Board of Supervisors
2 South Green Street
Sonora, CA 95370

Reference: Appeal to the Board of Supervisors concerning the Planning Commission Approval of the Environmental Impact Report and Site Development Permit SDP18-002 and Conditional Use Permit CUP20-018.

On November 17, 2020 I wrote a letter to the Planning Commission, copy attached, stating that the section of the California Building Code, CBC 450, whose compliance by Yosemite Under Canvas is to be verified by the Fire Prevention Division, does not permit a project like Yosemite Under Canvas. I also politely spoke at the meeting. I suspect only one of the commissioners listened.

The recent $32 million settlement against the City of Oakland because of their negligence with reference to the Ghost Ship fire, which killed 34 people, should be a wake-up call for the Tuolumne County Board of Supervisors. That is about a million dollars per victim, not including what was paid by PG&E, the electrical contractor, and the owners of the building. The Planning Commission and the Board of Supervisors approving the Yosemite Under Canvas project may well be considered aiding and abetting the applicant in committing a criminal violation of the California Building Code. The county has legal counsel and the board members should take advantage of this legal advice. In the January 2014 case of Gerhard Becker in the City of Los Angeles, the court found Mr. Becker criminally negligent and criminally guilty of manslaughter for his knowingly violating the building code and this action leading to the injury and death of a first responder to a fire. A similar event at Yosemite Under Canvas could result in a similar judgement. Yosemite Under Canvas could have hundreds of potential victims. The large community tent, alone, could singly account for several hundred victims.

Should this project be approved by the Board of Supervisors, and should there be a catastrophic event like the Ghost Ship fire with a multi-million-dollar judgement against Tuolumne County, will the current board and planning commissioners be able to live with themselves knowing they have brought economic hardship to the citizens of Tuolumne County? The commissioners cannot claim they did not know it was a violation of the CBC. My letter is part of the file. After reading this letter, you also cannot claim you did not know. If you do not believe what I have stated in the letter is accurate, then consult with your own county experts in the building department and legal department. Make sure your experts understand you want them to tell you what you need to know, not what they think you want to hear. If you think you get liability coverage from the county, make sure it pays if the judgement is for criminal negligence (insurance companies are famous for collecting fees but not paying claims). Even if you are no longer a supervisor at the time of a catastrophic event, you may still have liability since you were one of the individuals who actually approved the application.

Tuolumne County does not need Yosemite Under Canvas. There are several projects currently being proposed which will meet projected tourist needs and which will comply with the California Building Code.

Merry Christmas and Happy New Year,

Keith Martin

From: Keith Martin
20139 Pine Mountain Drive
Groveland, CA 95321
November 17, 2020

To: Ms. Natalie Rizzi and Ms. Quincy Yaley
Tuolumne County Planning Dept
2 South Green Street
Sonora, CA 95370

Reference: Certification of the Environmental Impact Report and Public Hearing for Site Development Permit SDP18-002 and Conditional Use Permit CUP20-018

I contend that the Conditions of Approval for Hardin Flat, LLC Site Development Permit SDP18-002 and Conditional Use Permit CUP20-018 are fundamentally flawed and should be sent back to the Planning Department for revision.

The specific flaw in the Conditions of Approval occurs on page 2 item 6: FDP All construction and plans shall comply with Section 450 of the California Building Code regarding organized camps.

Section 450.1.1.1 of the CBC, Description, states: An organized camp is a site with programs and facilities established with the primary purpose of providing an outdoor group living experience with social, spiritual, educational or recreational objectives, for five days or more during one or more seasons of the year.

The term organized camp does not include a motel, tourist camp, trailer park, **resort**, hunting camp, auto court, labor camp, penal or correctional camp, child care institution of home-finding agency nor does it include any charitable or recreational organization which complies with the rules and regulations for recreational trailer parks provided for by Section 18301 (b), Health and Safety Code.

In Section 4, "Tuolumne County Ordinance Code", second paragraph states: "…Staff determined that the proposed project most closely matches the land use of a **"hotel or motel"** as opposed to a "campground" use.

The staff determination of "hotel or motel" shows that the project does not comply with section 450 of the CBC and the conditions of approval are a violation of the California Building Code.

Sincerely yours,
Keith Martin

From: Sunset Inn
To: Natalie Rizzi
Cc: Mary Beth Campbell
Subject: Yosemite Under Canvas Appeal
Date: Thursday, December 17, 2020 8:59:07 AM

Yosemite Under Canvas Appeal-

The concept for an outdoor experience has merit. It is unfortunate that this project is ill-conceived for this location. There are a multitude of serious issues that were brushed aside at the Planning Commission meeting. Here are just a few:

Wildfire: This is a known wildfire hazard zone. This project would put many lives at risk in the event of a fire. There is simply no reasonable evacuation path. With the dramatic increase of visitors for both Under Canvas, Terra Vi, Thousand Trails, Berkeley Camp, as well as the employees and residents, this is a recipe for disaster. It would seem that the lessons of the Paradise Fire are being ignored in favor of TOT.

Fire Hazard: Why in the world would you approve wood burning stoves in tent cabins for summer use, to be operated by guests who have zero experience working with fire? They simply do not understand the danger. In our lodging cabins at Sunset Inn we have had guests place sox, and even the box of matches on top of the burning stove! They have even been so helpful as to clean the ashes out the stove and place them in a paper bag outside, on the wood deck! They just don't know!

Water & Pollution: With no existing infrastructure, there is tremendous potential for polluting domestic water supply, as well as contamination of the Wild & Scenic Tuolumne River. Speaking as a mother, my son and his young family reside adjacent to, and downhill from the south east corner of the development, which happens to be the location chosen for the septic system. How can you ensure that the spring on his property which provides his family's domestic water supply not be contaminated? Is it acceptable for the county to approve the potential pollution of private property? The location of this proposed project is also directly above, and drains into the protected Wild & Scenic Tuolumne River.

There are simply too many serious issues to warrant approval of this ill-conceived project in this location.

Lauren Nickell

Sunset Inn Yosemite Cabins

209-962-4360

From:	Andy Nickell
To:	BOS Members
Cc:	Natalie Rizzi
Subject:	Yosemite Under Canvas appeal public comments
Date:	Thursday, December 17, 2020 7:00:08 AM

Hi,
I am Andy Nickell, a lifelong resident of Hardin Flat Road, I am writing in opposition the Yosemite Under Canvas as it is currently proposed. I live on a property adjacent to the proposed site.

Leach field system #2 is less than 800' uphill from my domestic water source as well as being directly uphill from a year round creek that flows directly into the Tuolumne River.

The proposed use of Hardin Flat Road which is in very rough condition despite the county roads crew's efforts to maintain it concerns me greatly. The section of the road that would be frequented most by Under Canvas, is also the section of road that the majority Yosemite Lake's guests use and Berkeley camps guests will use. Yosemite lakes already pays significant county taxes part of which are supposed to be used to maintain the roads, and this section as well as the rest of Hardin Flat Road is in extremely bad condition, adding even more traffic will only exacerbate the problem.

Evacuation from Hardin Flat in the event of a fire would be a nightmare with the already existing Yosemite Lakes RV park, Berkeley camp and the year round residents of Hardin Flat, the addition of over one hundred cars to that potential evacuation is very concerning.

The certified EIR states no significant impact from anything, this is disingenuous at best.

This area currently has no artificial noise or light, aside from that generated from the highway. This development will significantly increase both noise and artificial light in the area which will have a negative impact on existing properties and wildlife.

Guests from Under Canvas will undoubtably walk across highway 120 to the also approved Terra Vi Lodge, across one the very few legal passing lanes on highway 120, this is a very dangerous stretch of highway for pedestrians because people are regularly passing each other at high rates of speed here.

The use of 100 wood burning stoves is very concerning from both an air quality standpoint , and a fire danger standpoint, if this project is to be approved it should be done so without the wood burning stoves at a minimum.

Thank you,
Andy Nickell
--
Andy Nickell

From: Angie Norquist
To: Natalie Rizzi
Cc: Quincy Yaley
Subject: meeting
Date: Wednesday, December 16, 2020 4:57:14 PM

Board of Supervisors for Tuolumne County

Natalie, please present this email to the Board of Supervisors, How many more letters and complaints against the project do we have to write, this is the biggest mistake you are making, when you allow these BIG CORPORATIONS
take over thinking, all because of MONEY,

Under Canvas, Terra Vi Lodge, do not belong in this area, It is not good for the environment, not good for the taxpayers you represent, and MOSTLY, NOT GOOD FOR FUTURE GENERATION, including all of yours.

There is no reason to rush these project through, when community of Tuolumne County is not able to be in person seeing eye to eye with you,

You are destroying the scenic view on Hiway 120 going to Yosemite. which for years people have enjoyed traveling so they may enjoy the wildlife, wild flowers, the peace and quite of it all.

Please STOP these projects for the sake of OUR COMMUNITY.

Norquist, Sawmill Mtn. area.
Dec. 16, 2020

Newcomb, Sawmill Mtn. area.

Tuolumne County Board of Supervisors
Re: Appeal of Yosemite Under Canvas

December 17, 2020

As you already know, the Planning Commission has approved the above mentioned development on the Hwy. 120 Corridor, 5 miles from the "Gateway to Yosemite". My previous comments which I have sent to the Planning Commission still stand in addition to the following comments and the attachments to this request. Please deny this development of approval at this time.The public outcry from the community is immense and because it is believed this Approval was rushed thru the Planning Commission in order to approve this project before many of the Board Members Retired, you must postpone Yosemite Under Canvas and listen to the reasons for the Public outcry.

The specific location proposed for Yosemite Under Canvas is inappropriate for this project. The safety of all who would be vacationing in the area is at stake because of the Extreme Fire Danger. At this point in time there is still an Opportunity to reverse the Approval to protect the Safety of the Public.

It is believed if this Land were up for Rezoning by the County today from "Rural Agriculture and Timber" to commercial Zoning for this type of Development, the Application would NOT be approved. It is over 30 years since the rezoning Approval took place, and a lot has happened in the California forests since then. We have had massive Wild Fires out of control, and many lives and properties have been lost. The expense to the Tax payers has been immense and the Environment has suffered greatly.

This development does not belong on a Wildlife-rich hillside such as this. This area is already designated as being in an "Extreme Fire Danger" area on Fire Maps. (See my attached comments). We feel that significant areas of potential impact have been insufficiently evaluated and considered, for Fire Safety, Water Quality and quantity, impact on Nature, and Cumulative Impact to the entire "Yosemite Gateway Corridor". You cannot allow so much to be destroyed, because of the fast-tracked approach, NOW in 2020. Even though "Glamping " is a Billion Dollar Industry, does not mean that Tuolumne County should approve this project for this area. These projects have been rejected so far in Sedona, Teton Valley and Idaho, because of public outcry.

Please see the Rough Draft Map attached of the Number of Cars, Trucks, R.V.'s, 5th Wheels, and the number of peoples' lives that could be at stake in an Emergency Situation that the County is not prepared to handle. Berkeley Camp burned to the ground in 2013, even though there were massive Firefighters, camped on Hardin Flat Road with Fire Equipment, and the So. Fork of the Tuolumne River to draw water from to fight the Fire.

Listen carefully to the points of concern by the Public and the experts, as you only have one chance to make the correct decision to Save Lives and the Environment in this time in History.

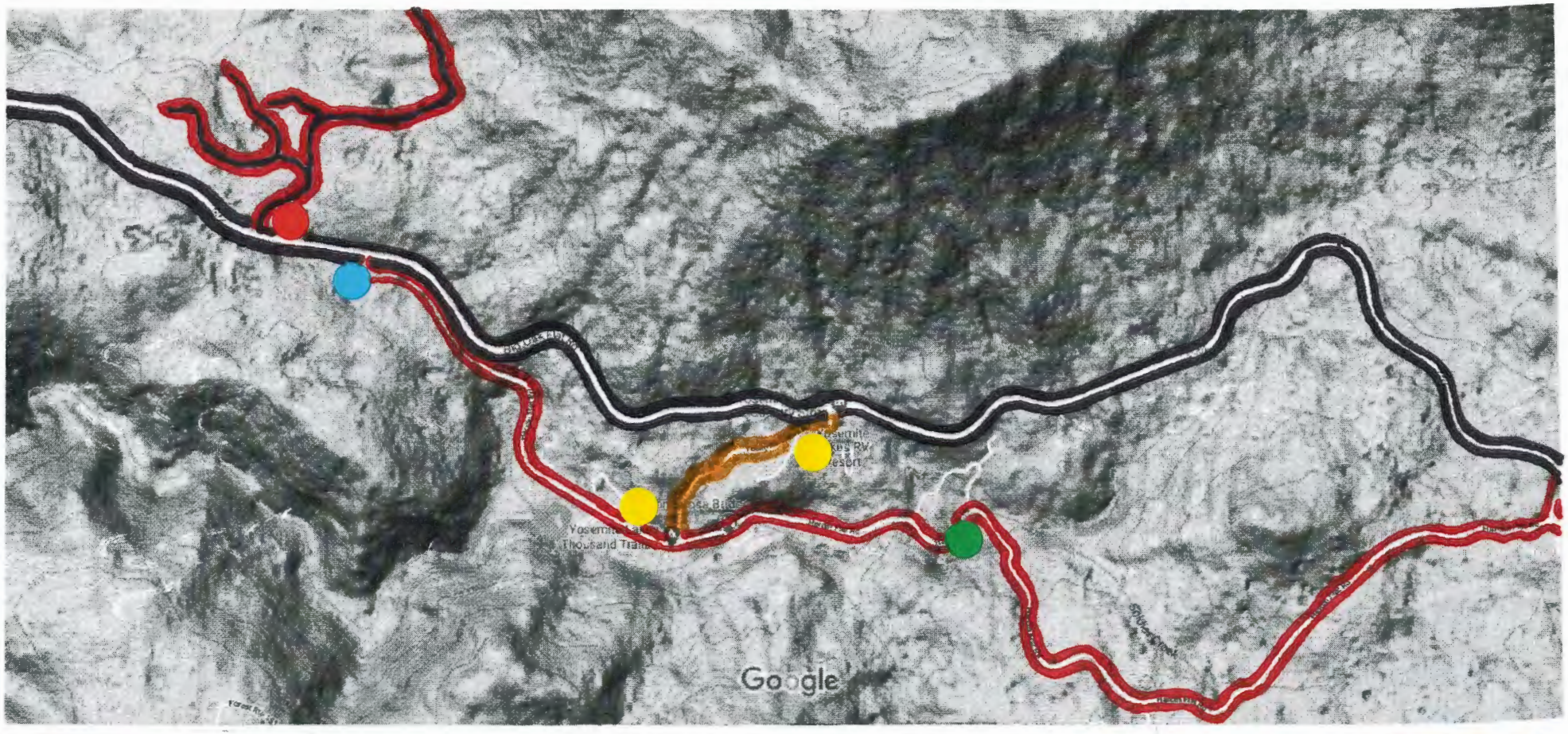
Margene Rivara
31583 Hardin Flat Rd.
Groveland, CA.

Margene Rivara

Sawmill Mt.
Hardin Flat

> Approx. 45 Private Homes Plus People in Cars etc.

Google Maps Hardin Flat Rd



Distance 1.27 Mile From Terra Vi to Berkeley Camp

Terra Vi Yosemite Under Canvas Berkeley Camp Yosemite Lakes	967 Cars, Trailers, R.V.'s 5th Wheelers, Trucks	2000 People Kids, Pets
Evergreen Lodge Rush Creek	200 Cars, Trucks, R.V.'s Motorcycles etc.	300-400 People Kids, Pets

> Up Hwy 120 5 Miles

It is Common Knowledge- The Areas of Saw Mill Mountain Rd., and Hardin Flat Rd. are marked on Fire Maps as "Extreme Fire Danger".

This area burned in the 2013 Rim Fire which was started by a careless person down by Groveland. The Fire traveled along Hwy 120 for more than 24 miles.

Studies Show 90% of Fires are caused by Humans. ¾ of those fires are caused by carelessness. Arson, Lightening, and equipment malfunction also are to blame.

Now is not the time to increase the Fire Risk and the Risking of so many lives. We are in a drought and we have little ground water, and because of that the trees are stressed and more susceptible to Fire. They are also more susceptible to the Bark Beetle which causes the trees to die. We should be conserving water and not lowering the water table in areas where it is already low which you can tell by the stress of the trees. It is actually dangerous to increase Development in High Fire Areas.

Berkeley Camp burned to the Ground in 2013 when the Rim Fire came thru this area. Many properties were also burned. Fortunately, Cal Fire was able to take some water out of the River and Air Lift in more, which saved some properties. The Fire burned all the way past the 120 Gate to Yosemite and almost burned down Merced Grove inside Yosemite.

Fire burns uphill faster than downhill and the location and placement of Terra Vi and Yosemite Under Canvas are at the top of the hill. Both are at the entry from 120 onto Saw Mill Mountain Rd., and Hardin Flat Rd. Should there be a Fire at either of the Developments they could potentially block the Exit of 1000-2000 people, and families from escaping in 967 Cars, R.V.'s, 5th Wheelers, Trailers, and Trucks in a panic in the middle of the night. This situation could be a disaster.

The Fire near Groveland this last Summer took 19 hours for Groveland to be evacuated. Just imagine what it would take at this location to evacuate almost the population of Groveland. The DEIR's for Terra Vi and Yosemite Under Canvas assume there would be time in an emergency to evacuate. That is not always the case.

When people are fleeing they will try 1st to Escape the way they came in. If that way is blocked then where do they go, and who will be directing them? Most vehicles, R.V.'s etc. enter to go to Yosemite Lakes, and Berkeley Camp at Hardin Flat Rd. and Saw Mill Mountain Rd.. This is dangerous to add any more development at that location, even if you added more lanes on 120. Hardin Flat Rd. is a narrow, winding 2 lane road which is meant to be traveled slowly. So is Saw Mill Mountain Rd. The other exit from Hardin Flat Rd. back onto 120 is long, narrower, steep and winding, and is not designed for Recreational vehicle traffic.

Saw Mill Mountain Road had two Fires this last Summer of which there are Fire Reports. It was fortunate they were spotted quickly so they could be put out by fire-fighting AIR equipment in time to stop the spread.

The Distance between Terra Vi and Berkeley Camp is 1.27 miles, where approximately 967 Vehicles will be navigating back and forth in this short distance of roadways. The number of cars entering and exiting Hwy 120 will be a hazard, for both those traveling 120 and those turning in or out.

There is a huge Cumulative Effect of all of these developments in one location, on the Traffic, the Supply of Water, the Noise, the Risk of Fire, the Waste, and the Damage to the Environment with 1000-2000 people, (many with small children who are not included in this count) and 967 vehicles during the busy time of the year. Hwy 120 cannot handle this traffic at this location even in a non-emergency situation, nor can Hardin Flat Rd. or Saw Mill Mountain Rd.

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Emergencies services are at least 18 miles away, and if those services are already on another call this area of Hwy 120 is out of luck and will be left alone to handle whatever Emergency there is by whatever means they can.

Just because you can Approve these developments, does not mean you should.

Morgana Rivera
12-12-2020

FITZGERALD·YAP·KREDITOR LLP

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Larry S. Zeman†

December 16, 2020

VIA EMAIL

Author's Email: drosenthal@fyklaw.com
FYK ref # 19077.01

Members of the Board of Supervisors
Tuolumne County
Administration Center
2 South Green St., 4th Floor
Sonora, CA 95370
Attn: Heather Ryan, Board Clerk

(bosm@co.tuolumne.ca.us) (hryan@co.Tuolumne.ca.us)

Re: Yosemite Under Canvas Appeal

Dear Members of the Board of Supervisors:

This letter is submitted on behalf of Matthew Moore in support of the Yosemite Under Canvas (YUC) Appeal, scheduled for hearing at a special meeting at 2:00 p.m. on December 17, 2020. Mr. Moore owns property adjacent to the proposed YUC "glamping" proposal and he has repeatedly expressed his opposition to this dangerous and poorly-conceived project throughout the review process. Despite the comments of many neighbors, the YUC plans continue to place a fire hazard in a high risk zone without considering the threat to undeveloped forest and existing neighbors, especially combined with the related Terra VI project across the two-lane highway.

Rather than repeat all of the many deficiencies in the YUC project plans and the County's environmental documentation, this letter attaches comments previously submitted in opposition. Unfortunately, the County has failed to address the serious environmental and safety issues raised by the YUC and Terra VI projects. Instead, the description of the proposed YUC project has become even more unstable and impactive over the course of County review, by proposing to conduct fire clearance over the entirety of the site instead of the handful of acres originally described by the applicant. Meanwhile, the project continues to use a two-lane road for emergency access that would not be necessary if the project were proposed for a safer location.

Mr. Moore encourages the Board to uphold the appeal, deny the project application, and refuse to certify the Final EIR until the YUC proposal is relocated and modified to protect the residents and natural environment of Tuolumne County.

Very truly yours,

Deborah M. Rosenthal, FAICP

Enclosures:

Letter from Deborah M. Rosenthal to Natalie Rizzi dated July 18, 2019
Letter from Deborah M. Rosenthal to Natalie Rizzi dated September 9, 2019
Letter from Deborah M. Rosenthal to William Snyder dated September 9, 2019
Moore Yosemite Under Canvas Extension Requested dated July 16, 2020
Comments On Yosemite Under Canvas Draft EIR dated July 17, 2020
Comments On Yosemite Under Canvas Quincy dated July 20, 2020
Letter from Deborah M. Rosenthal to Tuolumne County Planning Commission dated November 17, 2020

Cc: Mr. Matthew Moore (mattmoore1906@gmail.com)
Ms. Natalie Rizzi (nrizzi@co.tuolumne.ca.us)

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July 18, 2019

VIA U.S. MAIL & EMAIL

Author's Email: drosenthal@fyklaw.com
FYK ref # 19077.01

Ms. Natalie Rizzi
Project Planner
Community Resources Agency
County of Tuolumne
2 South Green Street
Sonora, CA 95370-4618

Re: Comments on Notice of Preparation (NOP) of Draft Environmental Impact Report (EIR) for Under Canvas Project (SCH#2019029073) (Hardin Flat LLC Site Development Permit SDP 18-002)

Dear Ms. Rizzi:

This letter is submitted on behalf of Matthew Moore, one of the owners of 30835 Hardin Flat Road, Groveland, California. Mr. Moore's property is located immediately south east of the Under Canvas Project ("Project") site and share access onto Hardin Flat Road. Mr. Moore, together with his co-owner, Kathryn Ruddon, submitted comments on the Project by email on July 29, 2018., a copy of which is attached to and incorporated into this comment letter.

Mr. Moore appreciates the County's decision to prepare an EIR on this Project. It is located on a highly sensitive site, with limited vehicular access, extreme fire hazards and variable water supplies. An EIR will allow the County and the public to analyze all aspects of the proposal, and to develop alternatives or mitigation measures that protect the environment from avoidable adverse impacts. We have reviewed the NOP for the Project and believe it understates a number of potentially significant impacts that must be fully analyzed in the Draft EIR. This letter details these issue areas and comments on other potentially significant environmental impacts that should be addressed in the County's environmental document.

1. Project Components. The Initial Study (IS) describes the Project Components in general. The Draft EIR requires considerably more detail.

- For instance, the Project will be open from approximately March to October. Will the tents be removed during the winter months? Will there be security to prevent the

- wooden deck (and tents, if they remain) from being used by squatters during the off season?
- The NOP states that electricity will be provided by PG&E and supplemented with solar systems. The IS states solar systems will provide electrical needs in guest tents and lighting in the lobby, common areas, tents and on trails. Where will the PG&E electricity be used? Will it require new wires to access the site? Will they be undergrounded to minimize fire risk? Will the tents be supplied with solar panels or will a solar farm be established on the site? Will the solar panels be removed during the winter? Will the laundry be supplied with washers and dryers, and will they be removed during the winter?
- How will natural gas be supplied to the site?
- The IS states that final tent locations will not be decided until final engineering. How much variation is likely?
- What flooring is proposed for communal bathrooms and a commercial kitchen if no concrete foundations will be used?
- Will the commercial kitchen prepare hot meals on demand throughout the day? The NOP describes it as a mobile kitchen. Is this similar to a food truck or a movable tent? How will it be secured? Will cooking and food preparation be allowed in the individual tents?
- Will parking areas and paths be paved? The IS states no paving is proposed at page 61, but gravel can also pose erosion and runoff problems during the rainy season, as well as dust during the summer.
- The IS states the Project will not have permanent facilities. Swimming pools, waste treatment facilities, wells and water systems are generally considered permanent.
- The IS states the Project will have communal bathrooms, but each guest tent will also have hot water for shower, sink and a water closet. How many communal bathrooms are planned if each tent will have individual washing and bathroom facilities?

2. Aesthetic Impacts. The IS concludes the Project will have a less-than-significant impact on the "existing visual character or quality of the site and its surroundings." (Checklist #1.(c).) The IS describes the setting as affected by the Rim Fire in 2013, when approximately 25% of the site was burned. The IS adds the "landscape is still recuperating from these fires and the vegetation of the project area is recovering." The Draft EIR should explain whether the fire damage was considered in determining whether the Project would affect the existing visual character or quality of the site. Will the Project be required to maintain the existing tree line so as to block views of the Project from off-site? The IS states that low level lighting will be used throughout the Project. However, the Draft EIR should quantify the cumulative impact of lighting throughout the Project on the existing dark skies. Even if the lighting is designed to reduce impacts, it may still have a significant adverse impact on the existing rural setting.

3. Forest Resources. The IS acknowledges the Project would result in the loss of some mixed conifer forest habitat. (Checklist #2.(d)-(e).) However, it concludes the Project will have a less-than-significant impact because it will remove the "minimum number

of trees possible" and will require a Timberland Conversion permit from CAL FIRE, unless it qualifies for a three-acre conversion exception. This discussion is inadequate. The IS states the total camp area footprint is approximately 3.0 acres, suggesting that it may have been designed to avoid the need for a Timberland Conversion permit. (IS, p. 61). The Draft EIR should quantify the number of trees that will be removed and determine whether the Project may qualify for an exemption before concluding that impacts will be avoided. Further, the Draft EIR should consider the cumulative impacts of the Project and other nearby proposals to develop within forest areas.

4. Air Quality. Mr. Moore agrees the Draft EIR should address air quality. The IS states there will be "no odor sources installed as part of the proposed project" because toilets will discharge into the proposed septic system and leach field. (Checklist 3.(e).) The Draft EIR should consider cooking odors from the mobile commercial kitchen and dining tent, as well as the location of the proposed septic system and leach field. Mr. Moore is especially concerned because the Project intends to locate a leach field in close proximity to his property, based on preliminary soils analysis. How will the septic system be protected from freezing during the winter months when it is not in use? The Draft EIR should also consider the potential impact of the fire pit and up to 100 camp fires using wood pellets on air quality.

5. Biological Resources. Mr. Moore agrees the Draft EIR should address biological resources. However, he questions the adequacy of evidence relied on to conclude significant impacts will be avoided in the IS.

- The IS acknowledges the Project site supports migratory birds that could be adversely affected through loss of nesting, roosting or foraging sites. (Checklist 4.(d).) Restricting construction activities during the breeding season may protect active nests, but will not preserve foraging sites. Raptors are especially susceptible to loss of foraging because they require large areas to support their families. The Project may cause the permanent loss of foraging areas, especially as a cumulative impact with other planned projects.
- The IS does not address the potential impact of wildfire on local fauna, as well as plant species. The area supports mule deer, Yosemite frogs, and others, all susceptible to increased wildfire risks.
- The IS acknowledges the Project area could potentially be used by a variety of wildlife species for dispersal and seasonal migration (IS, p. 29). Yes, it concludes the Project will have less-than-significant impacts on wildlife migration corridors because it is a small area and "similar habitat types are abundant in the local area." (IS, p. 38). The Draft EIR should discuss and confirm that the Project is not located within an established corridor, even if other areas may be available to serve as corridors based on the similarity of habitat types.
- Mitigation Measure BIO-3 improperly defers mitigation for potential impacts to sensitive plant species until after Project approval. While the County may delay final surveys for affected species to the construction phase, it must either require further

environmental review or adopt mitigation performance standards prior to Project approval. It is inadequate for the County to abdicate its responsibility to protect special status plants by deferring entirely to CDFW and unspecified protocols it may have in place when the Project proceeded. Mitigation Measure BIO-3 does not even require the Project applicant to consult with the County if special status species are found, and it suggests Project facilities could be relocated or open space zoning reevaluated primarily through consultation with CDFW. The public has a right to now the performance standards that will be adopted to protect special status plants before the Project is considered.

6. Cultural Resources. It is premature for the County to conclude there are no cultural or tribal resources on the Project site before it receives responses from Native American tribes in the affected area.

7. Soils. The IS acknowledges that the Project settling and leach fields are planned to utilize areas where there are "assumed to be acceptable soils." Mitigation Measure GEO-1 properly requires a soils evaluation to determine the viability of the proposed septic system. However, it does not address what happens if the soil is not viable for a septic system serving 99 units, or if the leach field must be moved to another location as a result. The location of the leach field in relation to water sources and adjacent properties is of critical importance to surrounding owners, and no significant changes should be made in the plans without further public review. The County cannot conclude the impacts will be less-than-significant without knowing whether the proposed septic system is feasible as planned.

8. Wildfire. The IS acknowledges, and all commenters agree, the Project is located in an area of very high wildfire hazard severity. In effect, the Project will create a wildland-urban interface zone (WUIZ) within a wildland area. The Project is not located near emergency services and is not served with fire hydrants.

- The IS concludes the Project will have a less-than-significant impact on wildfire, but fails to establish performance standards for fire-fighting and evacuation in the event of different fire scenarios. For instance, if a fire begins on site, how will the Project prevent it from spreading, given its distance from fire-fighting facilities.
- The Project proposes approximately 100 parking spaces for 99 two-to-four person tents. If evacuation is required, how will the addition of at least 100 cars affect the safe evacuation of surrounding residents. Critically, the Draft EIR must address the cumulative impact of the Project on safe evacuation and fire controls in the area. Combined with other proposed development, the Project is likely to have a substantial adverse impact on the safety of surrounding residents, during evacuation as well as fires.
- It is inconceivable that the County would consider approving a firepit and 100 additional campfires in the middle of a high risk area that has already burned within the last 10 years. Individuals fires and the fire pit should be prohibited during the dry season.

9. Hydrology and Water Quality. The NOP does not propose to consider water quality in the Draft EIR. This is inconsistent with the mandates of CEQA.

- The IS acknowledges the Project proposes to rely on groundwater of unknown quality to be drawn from a not-yet-drilled well. The IS describes the Project as incorporating maximum limits of 20 gallons per day (gpd) on the amount of groundwater (*i.e.* well water) to be used per person. However, the IS does not require the Project to conduct any investigation of the potential impacts of its water use, including the location of a future well, on groundwater resources serving neighboring property owners.
- Although the IS relies on the County's authority to regulate groundwater extraction to maintain sustainable groundwater use, there is no provision for evaluating the cone of influence or the cone of depression around the proposed Project water well, and determining whether it will affect nearby wells. There is no basis for the IS to conclude the Project will have a less-than-significant impact on groundwater supplies without knowing the location, depth and productivity of the proposed well.
- Further, the IS assumes the Project will not interfere with groundwater recharge because it largely consists of pervious surfaces. Without knowing the relationship between the groundwater recharge *rate* and the amount of water drawn from the well, there is no basis to conclude the Project will have a less-than-significant impact.
- The Draft EIR must consider potential contamination from the on-site septic system into drainages that flow directly to the Tuolumne River, along with potential groundwater pollution.

10. Noise. Other Under Canvas locations host weddings and concerts. The IS states the Hardin Flat location will not include such noise producing activities. Any Project approval should prohibit amplified sound at the site, including sound produced by private-owned amplification devices. Events attracting non-residents to the site should also be prohibited, both for noise and parking reasons. Modification of the sound prohibition should require additional environmental review to consider impacts on surrounding owners. The Under Canvas Project will also introduce an entirely new and larger noise source into a quiet rural areas. The contrast between existing noise and post-Project ambient noise may be significant to receptors, even if the new noise does not exceed General Plan levels applicable across-the-board to urban as well as rural uses. The Draft EIR should provide the public and decision-makers with information about the *change* in ambient noise levels that will result from the Project, and may want to consider including CNEL sound levels as well.

11. Population and Housing. The IS states it will provide jobs for "up to 40 seasonal employees during operation of the campground." (IS, p. 74.) Housing for seasonal workers will not be provided on site. Project employment is projected to be almost 7 percent of the total population of Groveland, which only had a 4.5% unemployment rate in 2018 and 0.0% rental vacancies. There appears to be no basis to conclude that seasonal workers will come from the local work force. In fact, it appears the Project will exacerbate an already difficult housing market in the area, and will attract low-

paid workers who will require housing and transportation during the crowded tourist season. Employment and housing needs generated by other projects will likely be cumulatively significant when combined with the Under Canvas Project, as well. By introducing more tourists into a remote rural location, the Project will also have the effect of attracting more population growth. The Draft EIR must consider whether the increased employment attributable to this Project and others will require mitigation to avoid potentially significant impacts.

12. Public Services. The IS analysis of Public Services is woefully inadequate. The Project will increase the are population by at least 250 *new* occupants for at least 6 months a year. Fire and police protection agencies are already stretched thin, and the high fire risk associated with the Project will increase their burden. In addition to ignoring the likely increase in fire calls, the IS does not address demands from medical or police emergencies. The Draft EIR should determine the likely response time for fire, policy and medical emergencies given current staffing patterns, and require appropriate mitigation to meet applicable response time goals and standards. The Draft EIR should also address whether the proposed internal circulation system on narrow gravel roads are adequate to accommodate fire and police vehicles.

13. Recreation. The Project will provide overnight facilities that do not currently exist, increasing tourist accommodations in the vicinity. The IS acknowledges it will increase the area's tourist population and the number of visitors to the region. (Checklist #15.(a).) There is no basis for the IS to conclude the Project will have less-than-significant impacts because it is "intended to accommodate visitors and tourists that are already in the project vicinity." (IS, p. 77.) The Draft EIR should explain how the Project will increase the number of visitors to Yosemite National Park and the Stanislaus National Forest without increasing usage of the parks. The pool, spa, yoga deck, fire pit, barbeque canopy and kids play area are typical motel amenities that do not seem likely to substitute for the splendors of Yosemite and Stanislaus.

14. Transportation and Traffic. The IS bases its traffic analysis on the Applicant's estimate that the Project will generate a total of 135 round trips (equivalent to 270 trip ends) per day.

- This estimate is intuitively inadequate, because it assumes that tents accommodating 2-4 persons will nonetheless have only 1 car per tent with a maximum of 1 round trip per day per tent. Up to 40 seasonal employees are estimated to generate less than 1 round trip per day per employee, with deliveries assumed to occur infrequently but less than once per day. The estimates require substantial verification because they are a fraction of normal traffic generation rates for lodging.
- SANDAG, for instance, estimates that standard motels generate approximately 9 trip ends (4.5 round trips) per weekday occupied room, while resort hotels generate 8 trip ends (4 trips) per occupied room. Using the lower figure of 4 round trips/8 trip ends per room, the 99-unit Project would be expected to generate at least 396 round trips –

or 792 individual trips – per day. This is well in excess of the 500 vehicle trips per day level that triggers in EIR under Tuolumne County regulations. Even assuming two round trips per day per tent and plus two round trips per employee and 5 deliveries, the Project would generate more than 500 trip ends.

- Impacts to Hardin Flat Road and SR 120 must be evaluated in the Draft EIR, together with cumulative impacts from the Project and other pending or contemplated projects, such as the Terra VI Lodge Yosemite Project.
- The Draft EIR must consider hazards from increased entry onto SR 120 from an unsignalized intersection.
- If there is a possibility that hauled water may be required, the Draft EIR must evaluate traffic impacts from water deliveries during the heavy tourist season.
- The Draft EIR should address the contribution of the Project to sprawl and the mandatory mitigation steps that will be taken to reduce impacts. For instance, the Project may be required to provide carpooling for employees, prohibit more than one car per tent, and take other steps to mitigate its goal of bringing more tourists to rural areas of the State.
- The traffic study should consider the Project's individual and cumulative impact on evacuation plans in the likely event that a wildfire breaks out in the vicinity.

15. Utilities/Water Supply. The NOP states the Draft EIR will analyze utilities and Service Systems, but the IS concludes there will be no significant environmental impacts in these areas. Instead, the IS assumes the Project will comply with all water and wastewater requirements, even though it is uncertain whether it will use well water or hauled water, deplete groundwater resources, or qualify for a septic system and leach field at planned locations.

- The NOP states the Project will be served by a public water system from on-site wells and a wastewater treatment system utilizing septic tanks and leach fields. The IS states the Project "will be served by private water and septic systems," thus resulting in no impacts on public wastewater treatment providers. (IS, p. 84). This inconsistency must be resolved, and the suitability of the proposed well and septic systems for public ownership/management should be addressed. Why would the County wish to accept ownership/management of these wholly private facilities, which are described as unavailable for expansion? How will the septic system be maintained, and who will be responsible for cleaning and replacing it?

- As noted above, the location of the settling and leach field is of great concern to Mr. Moore because of its potential to cause environmental damage. Similarly, the well requires additional drilling and may adversely affect surrounding groundwater resources. The IS does not offer any basis for concluding the Project will have less-than-significant impacts on water quality and supply, especially without mitigation measures based on pre-approval studies.

16. Project Splitting. The pending Terra Vi Lodge Yosemite Project is located immediately across SR 120, on land that was held in common with the Project site.

The two proposals appear to be coordinated, with similar timetables. In combination, the 140-unit Terra Vi and Under Canvas Projects will add 249 lodging units to the same stretch of Hardin Flat Road and SR 120. Their noise, water and utility impacts will occur at the same time, and will affect the same environmental setting. The County should analyze the two proposals concurrently through a single environmental document, so the cumulative impacts of the adjacent, concurrent projects are not obscured or avoided.

17. Cumulative Impacts. The IS misstates or misrepresents cumulative impacts from the Project and other past, present and foreseeable projects. The Draft EIR must conduct a thorough investigation of cumulative impacts before it is too late to address the potential flood of development applications. In particular, as noted above, there is a fair argument the Project will have cumulative impacts in the following areas: aesthetics; forest resources; air quality; biology; hazards; public services, water quality; noise; population and housing; recreation; traffic; and utilities and service systems.

For the purposes of the administrative record, this letter also incorporates by reference all comments submitted to the County in connection with this Project prior to issuance of the NOP. Thank you for your consideration of these comments as the County begins to prepare its Draft EIR for the Project.

Very truly yours,

Deborah M. Rosenthal

Deborah M. Rosenthal, FAICP

cc: Mr. Matthew Moore
Ms. Kathryn Ruddon

Enclosure

Unit 4550 Box 3158
DPO AP 96504-3158

RECEIVED
AUG 1 9 2018
COUNTY OF TUOLUMNE
Community Resources Agency

29 July 2018

Natalie Rizzi, Project Planner
Community Resources Agency
County of Tuolumne, California
2 S. Green Street
Sonora, CA 95370-4618

RE: Hardin Flat LLC Site Development Permit SDP 18-002
Assessor's Parcel Numbers: 068-120-062 and 068-120-063

Dear Ms. Rizzi:

Thank you very much for your letter of July 19, 2018 regarding the aforementioned SDP. Because I am on active duty and posted overseas, we only just received your letter on Friday, July 27, 2018. We are responding electronically today and will mail a hard copy of this letter to you on Monday, July 30; however, you are not likely to receive it by your deadline of Monday, August 6. Therefore, we consider this electronically submitted letter to be our official response, and we look forward to hearing from you regarding our questions and concerns.

As adjacent property owners, we have several questions and concerns about the proposal.

1. Zoning: Your letter indicates that the two "...parcels are zoned C-K (Commercial Recreation) and C-K and O-1 (Open Space-1)..." but it is not clear which parcel has which zoning designation, and it is not clear how either parcel can be zoned both C-K and O-1, as your letter suggests. We were not able to find this information at www.tuolumnecounty.ca.gov either. Without this information clearly stated, we cannot understand whether the proposal is in keeping with zoning requirements. Specifically, if either parcel is zoned only O-1, it seems that most of the proposed structures would not be permitted on that particular parcel. In addition, for whichever parcel is zoned C-K, the number of dwelling units seems far in excess of that permitted by the zoning regulations (1 unit per 2 acres). In fact, even if both parcels were zoned C-K, the number of proposed dwelling units (99) far exceeds that permitted (40).
2. The site plan notes that "tent locations, water, and sewer may be adjusted." What sorts of adjustments are possible? Is it the locations of tents, wells, and sewage facilities? Or is it possible that the number of tents, wells, and facilities could increase? Any of these changes would be very concerning to us.
3. Details regarding the proposed drain fields and disposal are vague in the site plan. For example what does the terminology "1 + 2 Alternative" mean? And what is the area designated as "Replacement" Drainfield/Mound Disposal? We would like to know specifically where these drainage and waste sites will be. Waste disposal is ex remely concerning to us because the parcels in question are situated uphill from our property. Waste from the proposed site could run downhill and threaten our drinking water. In addition, waste could run into a creek that runs through our property, our two ponds, and, ultimately, to the South Fork of the Tuolumne River. We are similarly concerned about any runoff from the as yet undescribed ditches and waterways mentioned on the site plan notes.

4. Your letter mentions a commercial kitchen and laundry facilities. Where will those facilities be located and how will waste—especially from the laundry facilities—be managed in an environmentally responsible manner?
5. Will the commercial kitchen be open to the general public? If so, what will be the hours of operation and what is the maximum number of customers that the facility will be able to serve on a daily basis?
6. The site plan also states that additional parking spaces shall be added along the oneway road. How many parking spaces? Why aren't they included on this plan?
7. The estimated traffic impact does not seem plausible. With 99 proposed tents, how could there possibly be only 25 trips during peak hours? This section of Hardin Flat Road was not designed to accommodate the level of traffic likely to be experienced by the development. What are the County's plans for regularly assessing the integrity of Hardin Flat Road given the additional stress of this traffic?
8. The site plan designates an "ESA" boundary but the definition of ESA is not included. Could you 22please define that term for us?
9. The area surrounding our property and the parcels in question is quite rugged and it can be very difficult for visitors to ascertain where one property boundary ends and another begins. How will the developer prevent guests on foot from straying off of the proposed development and onto our property?
10. According to the Under Canvas website (www.undercanvas.com), the developer frequently hosts live music events and gatherings of other groups (for example weddings of up to 400 guests) at their other developments. Such activity adjacent to our property would be extremely unwelcome and unacceptable for us and our neighbors. Additionally, overflow parking along Hardin Flat Road, could impede emergency vehicle access. Will parties of hundreds be permitted in this development?
11. Fire safety: We understand the interest of the developer to provide a pleasant experience for clients. However, given the condition of the surrounding forest over the past several years and the lack of evidence of reversal of this trend, it seems unwise to encourage fire building during the summer, even in the context of designated fire pits or trained staff.

Thank you for keeping us informed about this project, and we look forward to your responses to our inquiries.

Sincerely,

Matthew Moore

Kathryn Ruddon

Matthew Moore

Kathryn Ruddon

Owners of 30835 Hardin Flat Road, Groveland, CA 95321

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FYK ref # 19077.01

September 9, 2019

VIA U.S. MAIL & EMAIL

Ms. Natalie Rizzi
Project Planner
Community Resource Agency
County of Tuolumne
2 South Green Street
Sonora, CA 95370-4618
nrizzi@co.tuolomne.ca.us

Re: Under Canvas, Inc. Project

Dear Ms. Rizzi:

Our client, Matthew Moore, received written Notice that Under Canvas, Inc. intends to conduct a Timber Harvesting Operation as the first phase of its glamping facility on Hardin Flat, LLC lands. According to the Notice of Intent, "the proposed operations will facilitate development of roads and infrastructure for construction of a destination camping facility primarily to serve visitors to Yosemite National Park." The Timber Harvesting Operation will convert approximately 7 acres of forest lands to developed infrastructure and up to 73 acres to fuel break/defensible space.

This Notice of Intent indicates a major change in the environmental documentation for the glamping facility proposed for the Hardin Flat, LLC lands. At a minimum, it requires a new project description, initial study ("IS"), notice of preparation ("NOP") and impact analysis for the environmental impact report ("EIR SCH#2019029073") currently under preparation with Tuolumne County as lead agency. In addition, the proposed Timber Harvesting Operation appears to require a conditional use permit within the O-1 zoning district and substantial modifications to the site development plans submitted for the glamping facility.

Under Canvas is proposing to convert 7 acres of forest lands for roads and other infrastructure through its Timber Harvesting Operation. This estimate is more than double the 3 acres identified as the total impact area in the IS and NOP for the glamping facility. The Timber Harvesting Notice of Intent does not indicate whether the 7 acres will include areas later cleared for tents, service structures and trails, so the total impact area could be even larger. In addition, contrary to the project description in the NOP, the timber harvesting phase of the project will apparently affect the entirety of the property. Although the Notice of Intent suggests it will primarily remove dead trees or saplings, it also describes the work as creating up to 73 acres of

"fuel break" and "defensible space." Since there is no evidence that a fuel break or defensible space is needed at this location unless the glamping facility is approved, the Timber Harvesting Operation appears to be designed to avoid a full assessment of the glamping project's impacts under the California Environmental Quality Act ("CEQA").

Our client, Mr. Moore, is very concerned that the Timber Harvesting Operation will increase erosion and runoff on his property, reduce the suitability of the property to support native flora and fauna, and encourage urban development on the Under Canvas and Terra VI Yosemite Lodge sites, as well as surrounding properties. All of these impacts must be considered as part of the EIR for the Under Canvas project. Any attempt to avoid analysis of the entirety of the project impact, or to separate out the Timber Harvesting Operation, would be considered project-splitting in violation of CEQA.

Tuolumne County is the lead agency for environmental review under CEQA. Although Timber Harvesting regulations are considered CEQA-equivalent, all review agencies must consider the entirety of the project impacts. Since the Timber Harvesting notice makes clear that it is only the first phase of the permanent glamping project, CAL FIRE should be a responsible agency with review and comment responsibilities under CEQA. Review of the Timber Harvesting Plan must be combined with the glamping proposal for the purposes of environmental review by any agency with jurisdiction of any portion of the project.

Mr. Moore has not been able to review the proposed Timber Harvesting Plan for the Hardin Flat property, although as one of its nearest neighbors he will be directly affected. He looks forward to having an opportunity to comment on the County's assessment of the environmental impacts of the entire Under Canvas Project, from timber harvesting through glamping operations.

Very truly yours,

Deborah M. Rosenthal

Deborah M. Rosenthal

Enclosure
cc: Mr. Matthew Moore
Mr. William E. Snyder
Forest Practice Program Manager, CAL FIRE

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September 9, 2019

VIA U.S. MAIL & EMAIL

Author's Email: drosenthal@fyklaw.com
FYK ref # 19077.01

Mr. William E. Snyder
4787 Hillsboro Circle
Santa Rose, CA 95405
billesnyder@att.net

Re: Under Canvas, Inc. Project

Dear Mr. Snyder:

Our client, Mr. Moore, received written notice from you that Under Canvas, Inc. intends to conduct a Timber Harvesting Operation as the first phase of its glamping facility on Hardin Flat, LLC lands. Your letter asked Mr. Moore to provide information about any surface domestic water sources that could be impacted by the Timber Harvesting Operation, even though you did not attach a copy of the associated Timber Harvesting PlanBased on the extremely limited information in your letter, we have the following comments on behalf of Mr. Moore.

1. The proposed Timber Harvesting Operation is described as "facilitate[ing] development of roads and infrastructure for construction of a destination camping facility primarily to serve visitors to Yosemite National Park." As such, it is part of the proposed Under Canvas camping project and must be included in the project description for the environmental impact report (EIR) under preparation by Tuolumne County, as the lead agency under the California Environmental Quality act (CEQA).
2. If, for any, reason the California Department of Forestry and Fire Protection (CAL FIRE) refuses to act is a responsible agency under CEQA, it must consider the camping project as an integral and foreseeable element of the Timber Land Conversion Permit and related Timber Harvesting Operation. CAL FIRE has the same obligation as any other state agency to consider the full environmental impacts of its approvals, including a Timber Land Conversion Permit that will result in permanent conversation of up to 80 acres of forest lands to infrastructure and recreational uses. CAL FIRE cannot lawfully approve the Timber Land Conversion Permit or Timber Harvesting Plan without considering the full scope of impacts resulting from issuance of the approvals.

3. The description of the Timber Harvesting Operation is inconsistent with the project description for the proposed Under Canvas camping project circulated by Tuolumne County. Specifically, your letter describes at least 7 acres of impact to forest lands that will be permanently replaced with infrastructure. In addition, your letter describes up to 73 acres of forest clearance for fuel breaks and defensible space. In other words, the Timber Harvesting Operation is described as proposing significant changes to the entirety of the 80-acre Hardin Flat Road site. The County's notice of preparation (NOP) for the camping project describes no more than 3 acres of permanent land conversion and no impacts to the remainder of the forest. Assuming the later Timber Harvesting description is more accurate, the camping project description must be revised to reflect impacts to the entire site and to incorporate appropriate mitigation measures. The total impacts of all phases of the project must be considered.
4. Our client, Mr. Moore, is concerned that the proposed Timber Land Conversion will cause erosion and other environmental damage to his adjacent residential property.
5. Truck traffic related to the Tiber Harvesting Operation should be quantified and required to follow specified routes, developed to cause the fewest impacts to other occupants of Hardin Flat Road, such as Mr. Moore.
6. Attached are the comment letters submitted on behalf of Mr. Moore to Tuolumne County.

We would appreciate receiving a copy of the Timber Harvesting Plan associated with this project, as well as all environmental documentation under CEQA or any CEQA-equivalent programs. Please add me to your mailing list since Mr. Moore is stationed in southeast Asia and it takes him longer than the typical notice period to receive mail. Thank you for this opportunity to comment on the proposed Timber Land Conversion Permit and related applications.

Very truly yours,

Deborah M. Rosenthal

Deborah M. Rosenthal, FAICP

Enclosure
cc: Mr. Matthew Moore
Mr. Natalie Rizzi
Forest Practice Program Manager, CAL FIRE

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September 9, 2019

VIA U.S. MAIL & EMAIL

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Enclosure
cc: Mr. Matthew Moore
Mr. Natalie Rizzi
Forest Practice Program Manager, CAL FIRE

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September 9, 2019

VIA U.S. MAIL & EMAIL

Ms. Natalie Rizzi
Project Planner
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County of Tuolumne
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Sonora, CA 95370-4618
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Under Canvas is proposing to convert 7 acres of forest lands for roads and other infrastructure through its Timber Harvesting Operation. This estimate is more than double the 3 acres identified as the total impact area in the IS and NOP for the glamping facility. The Timber Harvesting Notice of Intent does not indicate whether the 7 acres will include areas later cleared for tents, service structures and trails, so the total impact area could be even larger. In addition, contrary to the project description in the NOP, the timber harvesting phase of the project will apparently affect the entirety of the property. Although the Notice of Intent suggests it will primarily remove dead trees or saplings, it also describes the work as creating up to 73 acres of

"fuel break" and "defensible space." Since there is no evidence that a fuel break or defensible space is needed at this location unless the glamping facility is approved, the Timber Harvesting Operation appears to be designed to avoid a full assessment of the glamping project's impacts under the California Environmental Quality Act ("CEQA").

Our client, Mr. Moore, is very concerned that the Timber Harvesting Operation will increase erosion and runoff on his property, reduce the suitability of the property to support native flora and fauna, and encourage urban development on the Under Canvas and Terra VI Yosemite Lodge sites, as well as surrounding properties. All of these impacts must be considered as part of the EIR for the Under Canvas project. Any attempt to avoid analysis of the entirety of the project impact, or to separate out the Timber Harvesting Operation, would be considered project-splitting in violation of CEQA.

Tuolumne County is the lead agency for environmental review under CEQA. Although Timber Harvesting regulations are considered CEQA-equivalent, all review agencies must consider the entirety of the project impacts. Since the Timber Harvesting notice makes clear that it is only the first phase of the permanent glamping project, CAL FIRE should be a responsible agency with review and comment responsibilities under CEQA. Review of the Timber Harvesting Plan must be combined with the glamping proposal for the purposes of environmental review by any agency with jurisdiction of any portion of the project.

Mr. Moore has not been able to review the proposed Timber Harvesting Plan for the Hardin Flat property, although as one of its nearest neighbors he will be directly affected. He looks forward to having an opportunity to comment on the County's assessment of the environmental impacts of the entire Under Canvas Project, from timber harvesting through glamping operations.

Very truly yours,

Deborah M. Rosenthal

Deborah M. Rosenthal

Enclosure
cc: Mr. Matthew Moore
Mr. William E. Snyder
Forest Practice Program Manager, CAL FIRE

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September 9, 2019

VIA U.S. MAIL & EMAIL

Ms. Natalie Rizzi
Project Planner
Community Resource Agency
County of Tuolumne
2 South Green Street
Sonora, CA 95370-4618
nrizzi@co.tuolomne.ca.us

Re: Under Canvas, Inc. Project

Dear Ms. Rizzi:

Our client, Matthew Moore, received written Notice that Under Canvas, Inc. intends to conduct a Timber Harvesting Operation as the first phase of its glamping facility on Hardin Flat, LLC lands. According to the Notice of Intent, "the proposed operations will facilitate development of roads and infrastructure for construction of a destination camping facility primarily to serve visitors to Yosemite National Park." The Timber Harvesting Operation will convert approximately 7 acres of forest lands to developed infrastructure and up to 73 acres to fuel break/defensible space.

This Notice of Intent indicates a major change in the environmental documentation for the glamping facility proposed for the Hardin Flat, LLC lands. At a minimum, it requires a new project description, initial study ("IS"), notice of preparation ("NOP") and impact analysis for the environmental impact report ("EIR SCH#2019029073") currently under preparation with Tuolumne County as lead agency. In addition, the proposed Timber Harvesting Operation appears to require a conditional use permit within the O-1 zoning district and substantial modifications to the site development plans submitted for the glamping facility.

Under Canvas is proposing to convert 7 acres of forest lands for roads and other infrastructure through its Timber Harvesting Operation. This estimate is more than double the 3 acres identified as the total impact area in the IS and NOP for the glamping facility. The Timber Harvesting Notice of Intent does not indicate whether the 7 acres will include areas later cleared for tents, service structures and trails, so the total impact area could be even larger. In addition, contrary to the project description in the NOP, the timber harvesting phase of the project will apparently affect the entirety of the property. Although the Notice of Intent suggests it will primarily remove dead trees or saplings, it also describes the work as creating up to 73 acres of

"fuel break" and "defensible space." Since there is no evidence that a fuel break or defensible space is needed at this location unless the glamping facility is approved, the Timber Harvesting Operation appears to be designed to avoid a full assessment of the glamping project's impacts under the California Environmental Quality Act ("CEQA").

Our client, Mr. Moore, is very concerned that the Timber Harvesting Operation will increase erosion and runoff on his property, reduce the suitability of the property to support native flora and fauna, and encourage urban development on the Under Canvas and Terra VI Yosemite Lodge sites, as well as surrounding properties. All of these impacts must be considered as part of the EIR for the Under Canvas project. Any attempt to avoid analysis of the entirety of the project impact, or to separate out the Timber Harvesting Operation, would be considered project-splitting in violation of CEQA.

Tuolumne County is the lead agency for environmental review under CEQA. Although Timber Harvesting regulations are considered CEQA-equivalent, all review agencies must consider the entirety of the project impacts. Since the Timber Harvesting notice makes clear that it is only the first phase of the permanent glamping project, CAL FIRE should be a responsible agency with review and comment responsibilities under CEQA. Review of the Timber Harvesting Plan must be combined with the glamping proposal for the purposes of environmental review by any agency with jurisdiction of any portion of the project.

Mr. Moore has not been able to review the proposed Timber Harvesting Plan for the Hardin Flat property, although as one of its nearest neighbors he will be directly affected. He looks forward to having an opportunity to comment on the County's assessment of the environmental impacts of the entire Under Canvas Project, from timber harvesting through glamping operations.

Very truly yours,

Deborah M. Rosenthal

Deborah M. Rosenthal

Enclosure
cc: Mr. Matthew Moore
Mr. William E. Snyder
Forest Practice Program Manager, CAL FIRE

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September 9, 2019

VIA U.S. MAIL & EMAIL

Author's Email: drosenthal@fyklaw.com
FYK ref # 19077.01

Mr. William E. Snyder
4787 Hillsboro Circle
Santa Rose, CA 95405
billesnyder@att.net

Re: Under Canvas, Inc. Project

Dear Mr. Snyder:

Our client, Mr. Moore, received written notice from you that Under Canvas, Inc. intends to conduct a Timber Harvesting Operation as the first phase of its glamping facility on Hardin Flat, LLC lands. Your letter asked Mr. Moore to provide information about any surface domestic water sources that could be impacted by the Timber Harvesting Operation, even though you did not attach a copy of the associated Timber Harvesting PlanBased on the extremely limited information in your letter, we have the following comments on behalf of Mr. Moore.

1. The proposed Timber Harvesting Operation is described as "facilitate[ing] development of roads and infrastructure for construction of a destination camping facility primarily to serve visitors to Yosemite National Park." As such, it is part of the proposed Under Canvas camping project and must be included in the project description for the environmental impact report (EIR) under preparation by Tuolumne County, as the lead agency under the California Environmental Quality act (CEQA).
2. If, for any, reason the California Department of Forestry and Fire Protection (CAL FIRE) refuses to act is a responsible agency under CEQA, it must consider the camping project as an integral and foreseeable element of the Timber Land Conversion Permit and related Timber Harvesting Operation. CAL FIRE has the same obligation as any other state agency to consider the full environmental impacts of its approvals, including a Timber Land Conversion Permit that will result in permanent conversation of up to 80 acres of forest lands to infrastructure and recreational uses. CAL FIRE cannot lawfully approve the Timber Land Conversion Permit or Timber Harvesting Plan without considering the full scope of impacts resulting from issuance of the approvals.

3. The description of the Timber Harvesting Operation is inconsistent with the project description for the proposed Under Canvas camping project circulated by Tuolumne County. Specifically, your letter describes at least 7 acres of impact to forest lands that will be permanently replaced with infrastructure. In addition, your letter describes up to 73 acres of forest clearance for fuel breaks and defensible space. In other words, the Timber Harvesting Operation is described as proposing significant changes to the entirety of the 80-acre Hardin Flat Road site. The County's notice of preparation (NOP) for the camping project describes no more than 3 acres of permanent land conversion and no impacts to the remainder of the forest. Assuming the later Timber Harvesting description is more accurate, the camping project description must be revised to reflect impacts to the entire site and to incorporate appropriate mitigation measures. The total impacts of all phases of the project must be considered.
4. Our client, Mr. Moore, is concerned that the proposed Timber Land Conversion will cause erosion and other environmental damage to his adjacent residential property.
5. Truck traffic related to the Tiber Harvesting Operation should be quantified and required to follow specified routes, developed to cause the fewest impacts to other occupants of Hardin Flat Road, such as Mr. Moore.
6. Attached are the comment letters submitted on behalf of Mr. Moore to Tuolumne County.

We would appreciate receiving a copy of the Timber Harvesting Plan associated with this project, as well as all environmental documentation under CEQA or any CEQA-equivalent programs. Please add me to your mailing list since Mr. Moore is stationed in southeast Asia and it takes him longer than the typical notice period to receive mail. Thank you for this opportunity to comment on the proposed Timber Land Conversion Permit and related applications.

Very truly yours,

Deborah M. Rosenthal

Deborah M. Rosenthal, FAICP

Enclosure
cc: Mr. Matthew Moore
Mr. Natalie Rizzi
Forest Practice Program Manager, CAL FIRE

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July 16, 2020

VIA U.S. MAIL & EMAIL

Author's Email: drosenthal@fyklaw.com
FYK ref # 19077.01

Mr. Quincy Yaley, AICP
Director, Community Development Department
County of Tuolumne
2 South Green Street
Sonora, CA 95370
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Re: Public Review Period for Under Canvas Draft EIR, SDP18-002 and CUP20-018

Dear Mr. Yaley:

The Draft Environmental Impact Report (DEIR) for the Under Canvas Project was released for public review on June 5, 2020, during a once-in-a-lifetime international pandemic that led most communities in California to shutter business and encourage residents to shelter at home. The time allowed for public review of the DEIR was forty-five days, the bare minimum allowed under CEQA Guideline 15105(a). Meanwhile, the DEIR document is well over 1200 pages, including densely-drafted appendices. The forty-five-day public review period is clearly inadequate to allow comprehensive review by citizens and residents whose futures are affected by the proposed project. For residents without private access to electronic copies of these lengthy documents, the pandemic restrictions make all review practically impossible. In fact, as of July 13, 2020, the Tuolumne County Health and Human Services Agency continued to advise residents to "limit time outside the home and travel only for permissible activities, such as healthcare, food, outdoor exercise and recreation." The City of Sonora issued stay-at-home orders with enforcement powers. Although Tuolumne County has fortunately escaped the worst of the pandemic, its elected officials have acknowledged that it is considered at relatively high risk because of the annual influx of visitors into the area during the summer months.

On behalf of our client, Matthew Moore, this letter requests that the County extend the time for submitting comments on the Under Canvas DEIR for a minimum of 15 days, to the full 60 days contemplated by the CEQA Guidelines for a complex project application under normal circumstances. In this case, he Public Notice of Availability for the Under Canvas DEIR is also confusing because two different versions were circulated, one signed as of June 3, 2020 and the other signed and filed on June 17, 2020, several weeks after commencement of the public review period. In addition, for the reasons set forth above, this letter requests that the County accept,

acknowledge and respond to all comments submitted to the County while any health orders restricting or advising against travel outside private homes remain in effect. Given the potential impact of the Under Canvas Project, the length of the document, and the difficulty of reviewing project files in person, the current 45-day public review period is a denial or due process and a violation of the environmental transparency purposes of CEQA. We believe that an appropriate extension of the public comment period beyond the 60 days allowed under normal circumstances is the minimum required to address the impact of the Covid-19 pandemic on the public review process.

Thank you for your attention to this important matter of due process and CEQA compliance. Our client is sure the County is not intentionally trying to take advantage of a tragic international pandemic to sneak through a highly controversial glamping proposal without the full level or review and public scrutiny required by CEQA.

Very truly yours,

Deborah M. Rosenthal, FAICP

cc: Ms. Natalie Rizzi (nrizzi@co.tuolumne.ca.us)
Members of the Tuolumne County Board of Supervisors (bosm@co.tuolumne.ca.us)
Deputy Clerk of the Board (ccunha@co.tuolumne.ca.us)
Mr. Matthew Moore (mattmoore1906@gmail.com)

COMMENTS ON YOSEMITE UNDER CANVAS DRAFT EIR
SUBMITTED ON BEHALF OF MATTHEW MOORE

JULY 20, 2020

These comments on the Yosemite Under Canvas Draft Environmental Impact Report ("DEIR") are submitted on behalf of Mr. Matthew Moore, one of the owners of 3085 Hardin Flat Road, Groveland, California. Mr. Moore's property is located less than 1,000 feet southeast of the Under Canvas Project ("Project") site and shares access onto Hardin Flat Road.

The Project DEIR seems designed to obfuscate, rather than reveal, the true impacts of the Under Canvas Project. For instance, it is almost impossible to tell how many acres will be completely cleared as a result of the Project, and how many others will be severely pruned for fire clearance. Water usage estimates fail to define the extent of the affected aquifer and omit critical information about other planned projects that depend on the same or nearby water sources. Wildfire analysis ignores the risk of placing large numbers of tourists more than 17 miles from fire facilities, without even acknowledging the evident conflict between fire access and evacuation on a one-lane access road and two-lane rural highway. The DEIR assumes that cumulative impacts are never significant, unless the Project is found to have significant individual impacts, and the fact that multiple locations on Highway SR-120 are concurrently proposed for development is simply ignored. In other words, the DEIR fails to inform the public of the Project's true impacts, and it plays word games with cumulative impacts, despite the obvious fact that the County is considering a major transformation of the physical environment along a significant stretch of Highway SR-120 without evaluating whether changing the scenic rural corridor from undeveloped to developed will have both a local and regional effect.

Even without the clear, detailed information demanded by CEQA, the DEIR demonstrates the perils of constructing multiple tourist facilities on a single rural road through fire-prone wildlands. It not only demonstrates the dangerous conflict between poorly located urban uses adjacent to wildlands but, in this case, it appears that both tourism and nature will ultimately lose from the proposed development. Guests of the luxury "glamping" facility will be isolated on a two-lane road with multiple fire sources, limited water supplies, and poor emergency access. Existing residents will be exposed to potential groundwater and air pollution, excessive traffic, urban noise and increased recreational activities with only faint assurances the Project will accept responsibility for its impacts. Nature, the very environmental characteristic that draws people to the area, will be pruned, tidied, deprived of a normal fire regime, and maintained for the benefit of ever-increasing numbers of tourists rather than the species that have depended on it for survival over thousands of years. By improperly splitting this Project from the other concurrent developments, and analyzing them separately, the DEIR downplays the true environmental costs of the current proposals.

1. Inadequate Public Review Period:

As set forth in Mr. Moore's letter of July 16, 2020, Tuolumne County ("County") has chosen to circulate the Project EIR for the minimum review period required under the California Environmental

Quality Act ("CEQA"), despite a pandemic that has made it practically and, in some cases, legally impossible for the public to access the 1200-page environmental review document. Under these circumstances, the County's refusal to extend the public review period to a more normal 60 days is a denial of due process and a violation of the public information purposes of CEQA. (A copy of Mr. Moore's letter is attached to these comments as Exhibit A.)

2. Improper Project Objectives:

DEIR Section 2.2 appears to confuse the purpose of the Project with implementation methods having nothing to do with legitimate project objectives. Under CEQA, project objectives must achieve public, not private, purposes. (CEQA Guidelines § 15021(d).) In this case, the majority of the Project objectives would be equally met by the "no project" objective, because they simply reflect mandatory design or mitigation measures. For instance, any claim the Project will "plan for land use compatibility" is not a public Project objective, but a self-serving argument that the Project will not conflict with County plans. Arguing the Project will meet General Plan objectives, be financially sustainable, and provide on-site utilities is not only factually inaccurate, but reflects planning consistency items, not Project objectives.

The two Project objectives actually mentioning the provision of additional tourist accommodations both call for increased tourists visits to Yosemite, which arguably threatens the environment and is inconsistent with Yosemite's own and long-term plans. The DEIR asserts the Project will serve existing tourists, rather than attracting new visitors. However, the DEIR does not consider whether the assumed need for more short-term accommodations will be met by the high-priced luxury amenities at Under Canvas rather than expanding affordable opportunities. In purely environmental terms, the DEIR fails to evaluate the environmental impacts of increasing tourism at Yosemite, which is already over-crowded during the summer months, especially when combined with other proposed projects. While the County and Project proponent are free to select their own Project objectives, they are not allowed to pad the record with objectives that fail to serve the public and reflect only the applicant's interests in a remunerative Project.

3. Inadequate Project Description:

The Project Description is unstable and apparently designed to obfuscate actual impacts. The DEIR states the Project will develop 50 percent of its 80.1 acres, with noise restrictions from 9:00 p.m. to 6:00 a.m. At other places, the DEIR states that 55 acres of the site will be affected by development, with only 25 acres left undisturbed. (DEIR3.4-28.) Yet, at the same time, the earlier Project Descriptions suggested a much smaller development footprint, with a different noise restriction period. Letters sent to surrounding residents suggested there would be between 3 and 7 acres of physical impact, while leaving it unclear whether the remainder would be left in its natural statue or annually pruned and cleared for fire protection purposes. The DEIR fails to describe how many acres will be developed with tent footprints, permanent water pipes, 50-foot smoking sections, communal facilities, leach fields, utilities, roads, paths, and driveways. Although the DEIR indicates that fire buffer requirements will be larger than the tent development areas, it fails to calculate impacts to the virtually pristine environment of the

Property. The DEIR also incorrectly states the Project will not install permanent infrastructure, although above-ground wood decking will be left in place during the winter months. In fact, in addition to the decking, the Project will install significant below-ground infrastructure, including wells and pipelines, a leach field, solar lighting, and graded gravel roads. Substantial multi-stall bathroom facilities, a commercial kitchen trailer, housekeeping, and maintenance containers will be left on-site, while individual and communal tents will be stored in large containers on site. Although technically removable, the above-ground facilities may remain on site year-round, rather than returning the site to its current natural condition in the off-season.

The Initial Study (IS) states that approximately 20 acres of the Project were affected by the 2013 Rim Fire. The DEIR reports that 25 percent of the Project burned, but then repeatedly claims inaccurately that "most" of the property burned in 2013, concluding that Project impacts would therefore be insignificant because the Project has not yet fully recovered. It has been 7 years since the Rim Fire and the DEIR is very inconsistent about the amount of natural recovery, clearance and restoration during that period. The DEIR fails to reveal that the majority of the Project is to be located in areas that were not burned in 2013, or have largely required, and gives no estimate of acreage impact to unburned portions of the Property. Previous communications indicate the entire Project site will be subject to brush clearance, including trimming of vegetation up to 20 feet from the ground and removal of important ground cover that serves as habitat for many species of special interest, but the DEIR is inconsistent in describing the amount, location and type of clearance. Other communications suggest the Project will permanently impact only 3 acres, or 7 acres, not the 40 acres described in the DEIR.

In addition, the amount of parking has varied by as much as 30 percent since the IS, while apparently assuming that employees will arrive by public transportation, and guests will use only one car per "glamping" tent. Although the DEIR states the Project will hold an unspecified number of special events, like weddings, it does not include their size or frequency in the Project Description and fails to include any analysis, except for a brief and misleading description in the Noise Section. The Project Description states the "glamping" facility will be open for 7 months, but at least one technical study is based on 250 days of occupancy, or more than 8 months. Deliberate failure to include essential information on environmental impacts does not avoid the CEQA requirement for describing and revealing the effects of a proposed Project.

4. <u>Inadequate Baseline</u>:

The Project baseline is inconsistent with CEQA, to the extent it can be determined. The most egregious example is the establishing that 20 acres, or 25 percent, of the Project site burned in 2013 as the baseline. Yet, the impact analyses all use the claim that "most" of the site burned as the baseline. The Project baseline also includes some 5 million visitors to Yosemite, and another 1.7 million to the Stanislaus National Forest, but fails to incorporate existing traffic, noise and other impacts.

5. Inadequate Environmental Analysis:

The DEIR makes several fundamental errors in its environmental impact analysis under CEQA. Most important is the DEIR's repeated conclusion that the Project will have less-than significant impacts simply because it will be required to obtain public permits prior to construction. CEQA Guideline §13126.4 states: "[c]ompliance with a regulatory permit or other similar process may be identified as mitigation if compliance would result in implementation of measures that would be reasonably expected, based on substantial evidence in the record, to reduce the significant impact to the specified performance standards." Although the DEIR summarizes a regulatory framework for the various impact areas, it does not provide any substantial evidence in the record regarding specified performance standards or implementation measures that are actually linked to a reduction in impacts. The DEIR's conclusion that virtually no Project-specific mitigation measures are necessary for a luxury tourist development on an undeveloped 80-acre site in a High Fire Hazard Zone is based almost entirely on future compliance with vaguely described permits permit requirements or General Plan policies.

a. Fire Risk

The Project proposes to place 99 fabric tents and communal structures, each with its own wood heating stove, up to four communal fire pits, a 70KW stand-by propane-powered generator, and designated smoking sections in the middle of a designated Very High Fire Hazard Severity Zone. Mitigation for fire risk primarily consists of tree and brush clearance, along with permanent annual brush maintenance, tree removal, pruning, and groundcover removal. Additional mitigation consists of training seasonal employees, all of whom will live off-site, installation of fire extinguishers near known fire hazards, and an Emergency Operation Plan describing proposed evacuation routes. Employees will be responsible for covering fire pits and storing fuel for the 100+ wood-fired stoves.

Fire-fighting access to the site will be from the two-lane SR-120 and one-lane Hardin Flat Road. Internal roads will be 20-feet (2 lanes) wide and either unpaved or topped with gravel where needed. (DEIR p.2-10.) A currently unimproved road through the Stanislaus National Forest will provide secondary emergency, if permission can be obtained prior to construction. The secondary road will provide an additional evacuation route and portions may be graded and gravel-topped. Although not discussed in the DEIR, presumably the Project will be responsible for seasonal maintenance of the access routes, especially in the event of rain or snow. Without requiring annual maintenance, and describing the level of maintenance in detail, the proposed Project mitigation is inadequate.

Responsibility for fire protection is split among a mix of federal, state, and local agencies. The United States Fire Service is responsible for fighting wildfires, like the Rim Fire. The Tuolumne County Fire Department is responsible for providing structural fire protection and emergency medical services. Wildfire fighting facilities are located between 7.8 and 9.2 miles from the Project. The nearest County fire station is approximately 17 miles west of the Project site and is staffed to lower than National Fire Protection Standards. Response times to rural areas are 14 minutes, and "remote areas" have an unspecified response time that depends on distance. The DEIR does not specify whether the Project site

is considered rural or remote, nor does it estimate actual response times for different events. However, given firetruck speeds, the Project location, and the absence of estimated response times, it seems likely the Project would be designated as remote, and thus expected to achieve no specified response time. The Project will expose at least 250 guests, plus employees to potential fire or emergency risks, but the gives no estimate of response times from existing fire or emergency facilities, except to report they will depend on distance.

At a minimum, the DEIR should disclose the most likely response times under different fire or emergency conditions. The fact that Tuolumne County has enough firefighters who can eventually reach the site, especially with no response time requirements, does not mean that fire risks associated with the Project are insignificant. Given the large distances covered by the Tuolumne County Fire Department, locating a new fire source with the potential for threatening the lives of more than 250 people more than 17 miles from existing fire facilities is likely to reduce the Department's responsiveness in other parts of the County. The DEIR ignores this potential impact.

The DEIR does not identify a source of water for extinguishing a large fire at or near the Project. In most cases, water tankers need to be hooked up to hydrants with sufficient water pressure to knock down large fires. The Project Description does not include fire hydrants, and the groundwater available to the Project for daily use appears to be inadequate for firefighting. Deficiencies in the DEIR's hydrology and utilities analyses are discussed below. But, for the purposes of firefighting, the DEIR simply ignores the need for large quantities of high-pressure water to fight the types of fires most likely in this area.

The availability of adequate water is particularly important during the dry season, which largely overlaps the months that Under Canvas will be open to visitors. The fire season picks up mid-to-late summer as brush dries and, in many cases, winds pick up and can blow embers several miles away where they can threaten existing residents and forests. Cars often trigger wildfires during this season, and Under Canvas will be bringing a large number of cars to a site located in a High Fire Severity Zone. Presumably, Under Canvas will be responsible for annual brush clearance, tree trimming and chipping, snag removal, and goundcover removal to minimal depths. The DEIR entirely ignores the need for extensive annual fuel modification on at least 50 acres of the Project site, either during the nesting season (February through September), or as tourists arrive in March. At a minimum, the Project must evaluate the impacts of required annual fuel modification over a large area on the forest, wildlife, and traffic.

The DEIR also fails to consider the viability of an evacuation plan at this location, especially given the multiple projects being proposed along SR-120. Although it requires an evacuation plan and training as purported mitigation measures, there is no evidence that Hardin Flat Road or SR-120 can handle an influx of fire-fighting equipment at the same time the Project and other developments must exit the sites going in the opposite direction. Interior roads are only 20-feet wide, meaning that stopping and unloading fire equipment at any point along internal traffic routes can block exiting by personal vehicles, vans, and trucks. Secondary access on an unpaved road through the Stanislaus National Forest, especially at night, is equally problematic. Even without considering the safety of the Project visitors and the safety of firefighters, the addition of two streams of traffic to SR-120 – fire equipment and fleeing tourists unfamiliar with the area – is likely to threaten the ability of existing residents to evacuate safely in the

event of fire. The DEIR simply requires preparation of emergency access and egress routes, without considering whether they constitute feasible mitigation measures for this isolated Project located on one- and two-lane roads.

Strangely, the DEIR argues that development of the Project will reduce current wildfire risks to the region by removing existing fuel sources from the site, but never addresses the risks inherent in bringing large groups of people and their cars, trucks, and vans to the forest. Again, at a minimum, the DEIR must consider the risks to existing residents, firefighters, and future guests from the addition of new and different fire sources to the site, as well as the need for safe evacuation routes.

b. Public Safety and Security

In addition to the fire and evacuation risks described above, the Project proposes to leave the site unoccupied and unprotected at least 5 months each year. Although the tents will be removed and stored, other infrastructure will remain both as a potentially attractive nuisance and accident risk. The Project is located many miles from the nearest law enforcement facilities, resulting in potentially serious impacts to surrounding residents who must rely on SR-120 and Hardin Flat Road, both of which could easily be blocked by Project traffic and a resulting accident.

c. Water Supply

The adequacy of groundwater to serve the Project has been the subject of much concern and controversy. During preparation of the DEIR, Under Canvas dug 3 test wells and conducted short-term pumping tests during the fall of 2019. The tests reportedly showed sufficient groundwater to serve the Project at full occupancy, and to recharge in adequate amounts. However, the DEIR acknowledges that fractured bedrock aquifers, like that underlying Under Canvas and other proposed projects in the vicinity, are extremely difficult to predict in terms of sustainable yield and storage capacity, especially where they are the sole source of water. (DEIR, App. G-32.) The DEIR also acknowledges that the adequacy of the Project water supply is based on assumptions about a relatively brief drought of less than a few years, while climate projections suggest that longer-term droughts and reduced snow pack may be the "new normal" over time. The DEIR summarizes water infrastructure as including cisterns but does not describe the size and location of water storage and, as noted above, fails to address water supply for special events or fighting the forest fires that will inevitably occur in the future.

The DEIR claims that groundwater tests showed no hydrological connection between the test wells drilled at Under Canvas and those at the Terra VI project to the north. In fact, the Hydrological Study reports "[[]t]he data necessary to evaluate the magnitude of potential impact(s) to groundwater supply resulting from the reported development north of the site has not been made available to [the EIR preparer] and therefore cannot be adequately evaluated. However, it can be reasonably concluded that some influences on water levels are likely in at least Well 1. The magnitude of this influence cannot be estimated at this time. Depending on the neighboring projects water demand and pumping schedule, some influence to groundwater availability to the project site is possible." (DEIR, App.G-6; *see also* App.

G-36.) Given the short period of concurrent pumping, the time of year, the absence of information about off-site or Tierra VI demand, and the fact the on- and off-site wells are hydrologically connected and drawing from the same aquifer, there is no basis for the conclusion that impacts to groundwater will be less than significant. In addition, while Under Canvas will be in operation only 7 months a year, Terra VI will operate year-round. Without know how much water will be needed for both projects, in combination, there is no way to calculate recharge rates, especially since Terra VI will continue to draw water during the winter months when groundwater storage can be expected to peak.

The Project also violates General Plan Policy 3.B.3 which "[e]courage[s] the logical extension of public water services infrastructure during review of new land development projects to provide a reliable and adequate distribution system to meet the future needs of the water purveyor." The Under Canvas Project turns this policy on its head. There is nothing logical about a self-contained well-water system supporting new development many miles from existing public infrastructure, or in concurrently permitting two projects that will draw water (in unspecified amounts in one case) from the same fractured bedrock aquifer.

Designating the water system as "public" simply worsens the potential environmental impacts. Typically, public water systems are required to provide water to residential uses on demand; in the event of drought, all users must share in necessary supply cuts. If the fractured bedrock aquifer proves unable to support existing users plus the two new projects and any others in the same aquifer, the public system will presumably have an obligation to continue providing water. Existing residents mayhave their water usage reduced, even though the potential for impacts to area water supply are predictable, even if inadequately studied in the DEIR.

Finally, it appears the current aquifer produces good quality water. The DEIR assumes the Under Canvas development will not affect water quality, but it does not address potential sources of groundwater contamination from cars parking on permeable surfaces, underground potable water and sewer lines, food waste disposal and at least two large leach fields. The DEIR does not describe how many users currently rely on the fractured bedrock aquifer, the amount of water that is currently removed, the size and shape of the aquifer, or the number and type of future developments that will either use the same aquifer or be required to install water pipelines to an existing public supply. The pump tests conducted after the tourist season in 2019 by Under Canvas answer only a few of the questions necessary to evaluate the impacts of the Project on water supply and quality. The DEIR discussion is wholly inadequate.

d. Wastewater

The Project Description describes provision of a "camping" experience for tourists who are already in the area, but desire accommodations that are a little more rustic or more luxurious that otherwise available. Far from the typical campground, the Under Canvas Project will include semi-permanent tents with wood foundations and 89 individual toilets, sinks and showers. Seventy-seven of the tents will have ensuite bathrooms, while the remaining 22 units will be served by 24 separate

toilet/sink/shower combinations in two large structures. (DEIR §2.4.1.) This is a fully urban and deluxe level of bathroom facilities, each of which will be connected to one of two sewer systems and on-site leach fields through a web of underground pipes. The larger leach field for high strength food facility waste will be located near the southeast corner of the Project, closest to Mr. Moore's home and property line. The sizes of the two leach fields are not fully described in the DEIR, nor the type of lining that will be required. Typically, leach fields are not located in close proximity to groundwater aquifers because of the possibility of contamination; in this case, Well 3 is located between the two leach fields with water found at a depth of 45.2 feet. The DEIR concludes that impacts from wastewater treatment, including the leach fields, will be less than significant because the Project will be required to comply with County wastewater ordinances and regulations, even though some of the wastewater will be routed back into the aquifer after treatment. (DEIR, p.3.5-20.) No analysis of the potential for contamination or off-site impacts is included in the DEIR. No mitigation, other than compliance with normal permitting requirements is required.

e. Habitat Loss

The DEIR tries to have it both ways in describing habitat loss attributable to the Project. First, the DEIR describes the Project site as "mostly" burned, but then describes it as a potential wildlife corridor and habitat for multiple species. Especially with cumulative habitat loss, the Project removes 80 acres from service as habitat and replaces it with what is essentially a groomed urban yard, with most habitat values carefully removed.

f. Traffic

The DEIR describes SR-120 as a "two-lane rural expressway that serves as a primary recreational route for tourists." (DEIR, p. 3.8-1.) Elsewhere, the DEIR states that Yosemite receives as many as 5 million visitors a year, while Stanislaus National Forest receives another 1.7 million. Yet, the DEIR states average annual daily traffic on SR-120 is 3,900 vehicles per day. (DEIR, p. 3.8-1.) The DEIR does not address the dramatic variance in tourist traffic between the peak summer season when huge crowds descend on Yosemite, versus the much lower winter season, when cars may be few and far between, especially during winter snow storms. Traffic impacts cannot be properly evaluated without understanding peak traffic conditions during times when the Project will be operating at peak capacity. It is essentially meaningless to use average daily traffic in a resort area where seasonal traffic can vary by several hundred percent, or more. The DEIR requires payment of a traffic mitigation fee as a condition of approval, even though it finds no significant Project impacts, and fails to identify any specific improvements serving the Project that will be funded by the fee. (DEIR, p.3.8-3.) In effect, the DEIR proposes no traffic mitigation whatsoever, without considering whether SR-120 or Hardin Flat Road may be impacted by seasonal traffic.

The DEIR also discounts automobile traffic on the ground that guests will use YARTS buses to access Yosemite, but fails to note that YARTS only operates for 5 months a year instead of the 7 months planned for the Project. YARTS provides 3 buses to Yosemite in the morning and 3 back to Hardin Flat Road in the afternoon. The buses often fill up during peak summer months and may not be available for

use by Under Canvas guests, especially if the much-larger Terra VI Lodge expects to rely on the same public transit. Mitigation Measure 3.8-1 requires Under Canvas staff to recommend alternate bus departure times during peak visitation, in coordination with YARTS. However, with only 3 buses per morning, and cumulative visitors exceeding 500, the DEIR should treat the possibility of transit demand exceedance as a potential Project impact and require mitigation in the form of funding additional bus service or other public transit option.

The DEIR fails to analyze the specific configuration of the SR-120 and Hardin Flat Road intersection, especially during peak travel hours and after dark. The DEIR does not describe lighting or signage along SR-120 that may be required for visitors unfamiliar with the area, both of which may impact the rural environment. The DEIR simply ignores traffic associated with special events which, although described as occasional, does not appear to be limited in any significant way. Depending on the popularity of the venue, special events such as weddings could be held weekly without further analysis. At a minimum, the DEIR should estimate the amount and frequency of additional traffic related to special events, determine whether it can be handled by the transportation and parking systems, and impose a mitigation measure requiring frequency limitations an a traffic control plan for all special events attended by more than a certain number of non-guests.

The DEIR's analysis of vehicle miles traveled ("VMT's"), a relatively new CEQA requirement, is entirely misleading. It assumes the Project will only serve tourists who are already in the vicinity, and will neither attract visitors from outside the area nor increase the total number of visitors to Tuolumne County. In effect, the DEIR assumes that tourists who would otherwise have rented rooms at other lodgings will book tents at the Under Canvas "glamping" facility, but they will not be replaced by other visitors interested in the area. The DEIR offers no evidence in support of this assumption, which suggests that other tourist accommodations in the area will be left vacant as a result of Project construction.

The DEIR calculates Project VMT through comparison with existing campsites, rather comparing the Project to luxury lodgings available at similar price points. In other words, the DEIR focuses its VMT analysis only on in-County travel. As a result of the Project's favorable location near Yosemite and Stanislaus National Forest, the DEIR estimates that tourists will drive fewer VMT to reach recreational opportunities, after they arrive in eastern Tuolumne County through travel that is not considered in the DEIR. (DEIR, p. 3.8-9.) The DEIR offers no evidence, much less substantial evidence, that the Under Canvas Project will serve only already-existing visitors, rather than attracting new visitors who want to experience a new high-end "glamping" experience in one of the most beautiful areas in the country.

g. Noise

The Project proposes to construct a 100-unit "glamping" facility in an undeveloped rural area, where almost the only sounds louder than birds and coyotes are those attributable to traffic on a two-lane rural highway. The Project will add cars, vans, delivery and trash trucks, generators, kitchen equipment, toilets, showers for more than 250 people to this essentially pristine area. Yet, the DEIR applies the same standard for noise impacts as applied in a totally urban area. The DEIR also fails to

calculate noise impacts from SR-120 impacts over existing setbacks. In general, noise impacts decrease relatively quickly over distance, but are highly noticeable depending on the existing environment.

In this case, the County largely ignores the impact of distance on traffic noise. But it applies the same noise significance standards to this historically undeveloped area as to congested urban neighborhoods. An increase of 5 dB from 60 dB to 65 dB may be accommodated in an urban environment, but severely impact rural residents unused to significant noise. There is no question that existing residents will experience a significance increase in ambient noise from the Project, but it is defined as insignificant by the DEIR.

The DEIR also ignores the serious potential impact of amplified sound associated with special events until 10:00 pm. In effect, the Project claims the right to increase noise to urban levels until 10:00 pm if special events are booked. Although described as occasional, there are no restrictions on the size or frequency of such special events, like weddings, and the County proposes to allow amplified sound in connection with each special event. Although celebrants may enjoy the amplified sound, impacts to existing residents may be severe, and the DEIR does not evaluate the likely impacts of urban sound systems on scattered rural residents such as our client, Mr. Moore. There is no question that amplified sound from special events may have a significant environmental effect on the environment surrounding the Project, but it is simply ignored by the DEIR.

6. Inadequate Cumulative Analysis:

The DEIR makes additional fundamental errors in its cumulative impact analysis under CEQA. The EIR finds that cumulative impacts need not be considered if individual Project impacts are reduced to less than significant, rather than being demonstrated as non-existent. In contrast, CEQA clearly states that "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." (CEQA Guidelines 15130(a)(a). An impact that is purportedly reduced to less than significant must still be evaluated as contributing to a cumulative impact; only projects that have no impacts may be excluded from cumulative analysis. As described above, all of the Projects environmental impacts are purportedly reduced to the less than significant, a conclusion with which Mr. Moore disagrees. But, even if they were reduced to insignificant through mitigation measures, they must still be considered in terms of their contributions to cumulative impacts. The cumulative impacts of this Project are both significant and serious, given the scope and number of concurrently development applications.

For instance, the DEIR concludes the Project will not have significant adverse impacts on aesthetics, because it will largely be hidden from drivers along SR-120. However, the Project will clearly alter the aesthetic appearance of the Project site through brush clearance, tree removal, and access signage. Even if these impacts are not individually significant, which Mr. Moore disputes, they are cumulatively significant when considered with changes associated with Terra VI and other pending projects along SR-120. The changes include both the appearance of this rural stretch of SR-120, along with multiple other impacts described above.

The Project Description states a timber harvesting plan will be implemented prior to commencement of Project construction. The DEIR devotes almost no discussion to conversion of the property from timberlands to recreation, through harvesting of existing timber. Loss of timber from the Project site may be significant on its own, but it is likely a far more significant cumulative impact when development of adjacent timberlands are considered.

Cumulative air quality receives little attention in the DEIR. As noted above, the Project proposes additional wood stoves, fire rings, propane-powered generators, kitchen emissions, and traffic emissions. The DEIR concludes each of these air quality impacts are individually mitigated through Project design, such as requiring staff to douse fire rings each evening. However, air quality emissions from the Project, which will clearly result from more than 100 wood-fired stoves in a limited space, must be evaluated in conjunction with the proposed Terra VI Lodge across SR-120. Construction of the Project and Terra VI, when considered as cumulative concurrent projects, arguably result in significant unmitigated impacts to air quality. The DEIR must evaluate these impacts without treating the projects as separate proposals under CEQA, when they will clearly result in cumulative impacts.

Traffic is another environmental impact where the County attempts to evaluate impacts as though they are in a ”silo,” instead if considering them as concurrent projects, with cumulative impacts. In this case, the Project does not generate a large number of peak hour trips, according to the applicant. However, when combined with traffic from Tierra VI, impacts to SR=120, the YARTS transit system, and other transportation requirements may be significant. The DEIR fails to include essential information about the Terra VI Lodge, and therefore erroneously concludes that cumulative impacts will be less than significant. Accurate date about transportation and traffic is likely to show that additional evaluation is required. The DEIR is therefore inadequate in concluding that additional traffic impacts need not be evaluated. CEQA requires assessment of all potential impacts.

Finally, the DEIR effectively ignores fire risks revealed through the DEIR and recent history. Not only is the Project a fire risk, but the addition of other developments along SR-120 add to the cumulative risk of fire, the problems with evacuation routes and the alteration of the natural fire regime with corresponding harm to surrounding residences and the environment.

7. Other DEIR Defects

The DEIR also fails to impose meaningful mitigation measures on the Project, either for its own environmental impacts or for cumulative impacts related to the multiple tourist development currently proposed for the SR-120 corridor. Finally, the Project fails to address the significant impacts of the Project and the massive changes to SR-120 currently proposed by multiple developments.

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July 21, 2020

VIA E-MAIL

Author's Email: drosenthal@fyklaw.com
FYK ref #

Ms. Quincy Yaley, AICP
Director, Community Development Department
County of Tuolumne
2 South Green Street
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(quincy@co.tuolumne.ca.us)

Re: Comments on Under Canvas Draft EIR, SDP18-002 and CUP20-018 (SCH # 2019029073)

Dear Ms. Yaley:

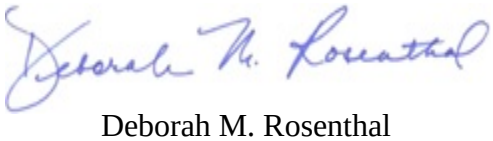
Enclosed are comments on the above-referenced Draft Environmental Impact Report (DEIR) for the Under Canvas Project ("Project"), submitted on behalf of our client, Mr. Matthew Moore. Mr. Moore is a co-owner of 3085 Hardin Flat Road, Groveland, California. His property is located less than 1000 feet to the southeast of the Project along the one-lane road that will give access from SR-120 to both the Project and his residence. He has expressed multiple concerns about the Project since it was first proposed, and he submitted eight pages of comments and questions to be addressed in the DEIR. Unfortunately, most of these questions remain unanswered despite the hundreds of pages composing the DEIR. Mr. Moore is disappointed that the County has apparently elected to ignore the potentially disastrous impact of allowing a 250-guest luxury tourist facility in the middle of a Very High Fire Hazard Severity Zone that is already occupied by long-time residents. Not only does the Project propose to supply wood-fired stoves, fire pits, a propane-powered generator, and designated smoking areas, it will be constructed immediately across SR-120 from a much larger year-round hotel with equally severe fire impacts. Both Projects propose to rely on groundwater for all their uses, and to build giant septic systems to treat urban levels of density. It beggars belief that this Project would have NO significant impacts on the environment, as found by the DEIR.

Mr. Moore asks the County to take a serious look at the impacts of the Project, along with the Terra VI and other pending proposals, in accordance with CEQA. Some of the deficiencies in the DEIR are described in the attached comments, while others were pointed out in earlier comments, and in letter submitted by surrounding residents. This Project and Terra VI Lodge

will adversely and permanently change the environment along an important stretch of SR-120, which serves as a gateway to the natural beauties of Yosemite. This is an area of internationally-recognized environmental importance and sensitivity, while the Project is a cautionary example of unsustainable development.

Mr. Moore looks forward to reviewing the County's responses to comments and to continuing to press for better, less impactive development at this location.

Very truly yours,



Deborah M. Rosenthal

Enclosures

cc: Ms. Natalie Rizzi (nrizzi@co.tuolumne.ca.us)
Members of the Tuolumne County Board of Supervisors (bosm@co.tuolumne.ca.us)
Deputy Clerk of the Board (ccunha@co.tuolumne.ca.us)
Mr. Matthew Moore mattmoore1906@gmail.com

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November 17, 2020

VIA EMAIL

Author's Email: drosenthal@fyklaw.com
FYK ref # 19077.01

Tuolumne County Planning Commission
County of Tuolumne
2 South Green Street
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(cdd@tuolumnecounty.ca.gov; pw@tuolumnecounty.ca.gov)

Re: Yosemite Under Canvas Site Development Permit, Conditional Use Permit and Certification of Final Environmental Impact Report

Dear Members of the Tuolumne County Planning Commission:

This letter is submitted on behalf of our client, Matthew Moore, who owns property directly adjacent to the Yosemite Under Canvas ("YUC") property that takes access from the same underdeveloped road system. Mr. Moore opposes construction of the YUC "glamping" project ("YUC Project") at the proposed location. The YUC Project is incompatible with surrounding development and the natural environment. This letter incorporates all of Mr. Moore's prior comments on the YUC Project, all of which are part of the administrative record before the Commission, but some of which may have been omitted from the Final Environmental Impact Report ("FEIR") as posted by the County.

Mr. Moore asks the Planning Commission to reject the YUC Project outright due to its unavoidable adverse impacts on the natural environment in Tuolumne County. In the alternative, Mr. Moore asks the Commission to require additional public review and circulation of the FEIR to address serious deficiencies in the analysis, as well as new information. In addition to Mr. Moore's previous comments, we ask the Planning Commission to consider the following before voting on the YUC Project.

1. The recent record-breaking fires in Tuolumne County demonstrate the complete inadequacy of the evacuation and fire risk analysis in the FEIR. Fire pits and wood burning stoves are proposed for the YUC Project, in an area of extreme fire sensitivity. Existing residents fleeing the fires, together with Yosemite visitors, were caught in miles-long traffic jams as they attempted to outrun the catastrophic area fires. The YUC Project proposes to add at least 99 cars to an evacuation route that is already over capacity. Glampers who take public transportation will be in an even more precarious situation, with no method of escape, other than mass transit that may be unable to reach the facility. Bluntly, it is indecent for the County to

consider adding to the burden of area roads in the event of another forest fire that triggers widespread evacuation requirements. The impact of adding the YUC Project, plus the concurrent Terra VI Project, must be reevaluated in light of the County's recent disastrous fire experience.

2. The FEIR's cumulative impact analysis is grossly inadequate. The Terra VI project is proposed across a two-lane highway from the YUC Project. Yet, the FEIR contains only the most rudimentary traffic analysis of the traffic analysis, completely ignoring the evacuation, public transit, storm water and utility impacts of the concurrent projects. This issue was fully discussed in Mr. Moore's prior comments, and the FEIR fails to evaluate cumulative impacts. In fact, the separate FEIR for Terra VI has not yet been completed, so there is no way for the Commission to evaluate cumulative impacts in the absence of full information. The YUC and Terra VI Projects have been processed concurrently, are located on the same roads, and impact the same or similar environmental concerns. There is no excuse for the County treating them as "unrelated" projects in violation of CEQA's project-splitting prohibitions.

3. The County gave inadequate notice of the contents of the FEIR and failed to circulate a complete FEIR, including all comment letters and responses. Mr. Moore understands the County omitted some of the most significant comments from prominent environmental groups in the County. Whether these omissions were deliberate or inadvertent is irrelevant, they deprived the public of an opportunity to review the concerns of other members of the public, as well as the adequacy of the County's response. The entire FEIR must be available to other public agencies and the public for the statutory period, which was not met in this case.

Mr. Moore's family has honored and cherished the natural environment surrounding his family's property for many years. He is extremely concerned the County is proposing to trade the prospect of additional tax revenues for the safety and security of existing residents. He asks the Planning Commission to pay attention to the critical health and safety concerns of existing residents who oppose this high-density, semi-urban glamping facility in state-designated wild lands. Their future safety and security depends on the County's planning decisions.

Very truly yours,

Deborah M. Rosenthal, FAICP

cc: Quincy Yaley, AICP
Mr. Dan Courtney
Mr. Matthew Moore

From: Jamie Schmidt
To: Natalie Rizzi
Subject: <no subject>
Date: Tuesday, December 15, 2020 10:58:11 AM
Attachments: image001.png
letter Shaw Institute .docx

Hi Natalie-

Please see attached letter from the Surry Conservation organization. We received the towns approval last February for an Under Canvas camp located in Surry Maine. We made a voluntary donation to support the Shaw institute in a water quality monitoring project in Patton Bay, which is where the camp is located. The town and the conservation organization were thankful for our contribution.

Thanks!
Jamie Schmidt

signature_604794987

Director of Entitlements C: 775.750.4997

Dr. Susan D. Shaw
President Shaw Institute
P.O. Box 1652
55 – Main Street
Blue Hill, Maine 04614

December 11, 2020

Dear Dr. Shaw,

On behalf of the Conservation Commission of Surry and the Town of Surry, we wish to thank your organization and especially Ms. Heather Richards for her efforts to assist us in solving our pollution problem in Patten Bay. We have made great progress this year and are looking forward to identifying the sources of our pollution this coming Spring and Summer!

We are excited to have Under Canvas supporting our efforts as well and they have made it possible to include areas of Patten Bay in front of their premises. We will keep Under Canvas informed of our progress and results as well!

Thank you again for your organization's support and great work. We are looking forward to working again this Spring and Summer with Ms. Richards.

Yours truly,

Thomas G. Minogue
Chairman Surry Conservation Commission

cc: Blue Hill Packet
Ellsworth American
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December 16, 2020

Via E-Mail

Tuolumne County Board of Supervisors
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Re: Yosemite Under Canvas Project Appeal Hearing re Site Development Permit SDP18-002, Conditional Use Permit CUP20-018, and Certification of November 2020 Final Environmental Impact Report

Dear Members of the Board of Supervisors:

We write on behalf of Save Sawmill Mountain, a community group committed to preserving the rural nature and character of Groveland, California. We respectfully request that you grant the appeal of the Tuolumne County ("County") Planning Commission's November 18, 2020, approval of the Yosemite Under Canvas project, including approval of Site Development Permit SDP18-002, approval of Conditional Use Permit CUP20-018, and certification of the November 2020 Yosemite Under Canvas Final Environment Impact Report ("FEIR") (collectively, the "Project") and reverse the Planning Commission's approval of the Project.

Like the Draft Environmental Impact Report ("DEIR"), the FEIR for the Project reveals many serious violations of the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000 *et seq*. Among other deficiencies, the EIR[1] fails to adequately analyze the Project's significant environmental impacts on wildfire, evacuation and emergency response, water quality and water supply, noise, public services, housing, traffic, and roadway hazards. Moreover, the EIR fails to adequately mitigate project impacts and relies on mitigation measures that are infeasible and

[1] Except where otherwise noted, references to the "EIR" in this letter refer to both the DEIR and to the FEIR, which made only minor changes to the earlier document.

inadequate. Further, the EIR relies on an inadequate project description and fails to analyze a reasonable range of Project alternatives. Finally, the County failed to include the Mitigation Monitoring and Reporting Program in the DEIR as required by the County Code. Tuolumne County Code § 17.72.220. When combined with the County's extremely abbreviated public review period for the FEIR, this omission deprived members of the public the opportunity to adequately review and comment on the feasibility and enforceability of mitigation for the Project. Without revision to the FEIR and recirculation, the County may not legally certify the FEIR or approve the Project.

In addition to violating CEQA, the Project is also inconsistent with numerous provisions of the County General Plan and the County Ordinance Code. Because the Project conflicts with fundamental, mandatory policies of the General Plan, approval of the Project would violate the California Planning and Zoning Law, Gov't Code § 65000 *et seq*.

On behalf of Save Sawmill Mountain and the many other members of the public potentially affected, we urge you to reject this ill-considered and environmentally harmful Project. As you will hear in the appeal hearing on this Project, the answer is clear: this Project is incompatible with Tuolumne County's commitments to protecting its residents' safety, quality of life, and the environment.

I. Introduction

The proposed Project entails construction of a large, permanent luxury campground facility, including 99 platform tents of 200 to 400 square feet in area per tent, which would host over 240 guests. DEIR at 2-2, 2-6, 2-12. Seventy-seven of the tents would have private ensuite bathrooms, and the Project would also include two communal bathroom facilities, a large reception and dining tent, a commercial kitchen, a laundry facility, and housekeeping and maintenance structures. DEIR at 2-2, 2-6. The Project would require construction of two separate wastewater treatment systems, including septic systems and two leach fields, as well as utilities, buried water pipes, driveways, culverts and bridges crossing several drainages on the site, paths, and parking for 130 cars. DEIR at 2-10, 2-11, 2-12. All of this infrastructure would be constructed on an environmentally sensitive, currently undeveloped natural site surrounded by National Forest land. DEIR at 2-2. However, the EIR fails to adequately analyze or mitigate the Project's myriad environmental effects, including impacts on wildfire risk, evacuation and emergency response, water quality and water supply, noise, traffic, and roadway hazards. For example, despite the Project's location in a Very High Fire Hazard Severity Zone (DEIR at 3.9-1), the EIR does not adequately analyze the risks posed by the

Project's numerous sources of potential wildfire ignition, including outdoor fire pits and wood-burning stoves inside canvas tents. The Project would expose the campground's guests and staff to a high risk of wildland fire and increase the risk of wildfire that will adversely impact the surrounding environment, but the EIR does not sufficiently evaluate the adequacy of fire protection measures or means of emergency evacuation.

For these reasons, as well as those identified in our prior letters to the County dated November 17, 2020 and November 25, 2020 (which are hereby incorporated by this reference), and in numerous other public and expert comments, we respectfully request that the Board grant the appeal, reverse the Planning Commission's decision, and reject this ill-conceived Project. Following are additional comments for the Board's consideration, elaborating on the EIR's many deficiencies.

II. The EIR Violates CEQA.

A. The EIR Lacks an Adequate Project Description

In order for an EIR to adequately evaluate the environmental ramifications of a project, it must first provide a comprehensive description of the project itself. "An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730 (quoting *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193). Even if an EIR is adequate in all other respects, the use of a "truncated project concept" violates CEQA and mandates the conclusion that the lead agency did not proceed as required by law. *San Joaquin Raptor*, 27 Cal.App.4th at 729-30. Furthermore, "[a]n accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *Id.* at 730 (citation omitted). An inaccurate or incomplete project description renders the analysis of significant environmental impacts inherently unreliable. Here, the EIR's description of the Project is inconsistent and lacks essential information about the Project's facilities and operational characteristics, making accurate environmental analysis impossible.

1. The EIR's Description of the Project Footprint is Inconsistent and Incomplete.

CEQA requires that an EIR provide a stable and consistent project description. *San Joaquin Raptor,* 27 Cal.App.4th at 730. Here, however, the EIR provides a shifting and inconsistent description of the Project's footprint on the site. The EIR's Project Description states that '[o]f the 80.1 acres on the overall project site, *less than half of that amount would be developed* for the proposed use, and the remaining portions would

remain undeveloped." DEIR at 2-2 (emphasis added). Elsewhere, however, the EIR states that "of the approximately 80-acre site, *development would occur on about 55 acres of the site*, with approximately 25 acres left fully undisturbed." DEIR at 3.4-28 (emphasis added).[2] The FEIR does not clarify this inconsistency. The EIR cannot employ an incomplete and shifting Project Description that alters Project characteristics whenever it is convenient to support an argument or obscure the Project's impacts. The EIR must be revised to provide a stable description of the Project that remains consistent throughout the document. Moreover, as noted below, the EIR does not make clear how many acres of the site will be developed with tent platforms, bathrooms, kitchen and laundry structures, other communal facilities, septic systems and leach fields, utilities, water pipes, roads, paths, and driveways. Nor does the EIR make clear how much of site's natural vegetation would be impacted by fuel treatment measures. The EIR must provide a complete Project description that makes clear how much of the Project site would be developed for each of these uses.

2. The EIR Fails to Adequately Describe the Project's Bathroom, Kitchen, Laundry, and Other Communal Facilities.

The EIR's Project Description notes that in addition to 99 guest tents, the Project would include two communal bathroom facilities, a reception and dining tent, a commercial kitchen, a laundry facility, and housekeeping and maintenance structures. DEIR at 2-2, 2-6. The EIR does not adequately describe these facilities. For instance, while the EIR notes that guest tents would range from 200 to 400 square feet of area per tent (DEIR at 2-6), it does not provide the square footage of the bathroom facilities, the (presumably much larger) reception and dining tent, the commercial kitchen or the other support facilities. This makes it impossible to fully evaluate the structures' environmental impacts, including but not limited to impacts on aesthetics, stormwater runoff, and wildlife habitat. While the EIR notes that the guest tents would be built from canvas and mounted on wooden decks, it does not describe the building materials for the bathrooms, kitchen, laundry and other support structures, merely indicating that these structures would be prefabricated and built of "high-quality materials." DEIR at 2-6, 3.1-10. The FEIR notes that the structures would not use framed construction or shingled roofs, but still does not describe the building materials that would be used for the non-tent structures. FEIR at 3-15. This deficiency makes it impossible to accurately evaluate the fire risks posed by these non-tent structures. The EIR misleadingly characterizes these

[2] Elsewhere, the EIR states that "[t]he project development and fuel treatment footprint covers approximately 55 acres" (DEIR at 3.2-6) and that "[a] substantial portion of the site (25 acres) would remain wholly undeveloped and undisturbed" (DEIR at 3.4-34).

structures as "non-permanent," but acknowledges that they would all likely remain on the site year-round. DEIR at 2-6. The EIR entirely fails to describe the Project's laundry facility and associated commercial laundry equipment, propane, and electrical components, providing no information at all about year-round handling of the structure and associated protections from fire and other risks. The EIR must be revised to fully describe all of the proposed structures on the site, so that the Project's environmental impacts can be accurately analyzed.

3. The EIR's Description of Project Structures is Inaccurate and Inadequate with Regard to Fire Risk and Fire Code Compliance.

The FEIR describes the Project as "provid[ing] heating within the guest tents on an as-needed basis through the use of wood heating stoves." DEIR at ES-2. The DEIR's analysis of the potential for these stoves to increase the Project's wildfire risk was limited at best. In particular, the DEIR noted only that the stoves would be equipped with spark arrestors (DEIR at 2-15) and that ashes from the stoves would be removed by camp staff in metal containers and disposed of in steel containers (DEIR at 2-15).

Unsurprisingly, many commenters raised concerns about the obvious fire risk posed by the operation of wood stoves in small enclosed tents, as well as the DEIR's failure to analyze related compliance with the California Fire Code (CFC), the California Building Code (CBC), the County Ordinance Code, and the County General Plan.[3] In response to these concerns, the FEIR claims that because the Project will not contain "traditional structures," requirements for "fire sprinklers and a dedicated standby water supply do not apply." FEIR at 2-4. Similarly, the FEIR states that "[t]he requirement to provide fire sprinklers in new development applies to only permanent and traditional structures. The canvas tents that would make up the bulk of the Project are not traditional hard structures, and thus are not subject to the same requirements as traditional buildings." FEIR at 2-258.

This description of the Project's structures (and the applicable building and fire codes) is both inaccurate and misleading. First, the Project's structures are permanent for the purposes of state and local building and fire codes. In particular, the CBC section regulating "Temporary Structures" applies only to "structures erected for a period of less than 180 days." CBC § 3103.1. The County Ordinance Code, which adopts the CBC by

[3] General Plan Policy 9.H.2 requires the County to "Enforce the provisions found in Title 15 of the Tuolumne County Ordinance Code and the California Fire Code for built-in fire suppression equipment in all new development in order to improve fire safety and offset the need for increased fire department staffing and equipment." *See also* DEIR at 3.7-5.

reference, is no different. County Ordinance Code § 15.04.010. The Project's tents will be erected for the entirety of the Project's "operational season"—March through October—a period that exceeds 180 days. DEIR at 2-17. Moreover, the platforms and other foundational structures will remain in place and are not temporary. It is therefore inaccurate to say that the Project is not subject to fire safety requirements that apply only to permanent structures.

As noted above, beyond the Project's 99 guest tents, there will also be communal bathroom facilities, a large reception and dining tent, commercial kitchen, laundry facility, and housekeeping and maintenance structures. DEIR at 2-2, 2-6. Only vague details are provided about the nature, size and construction of these structures, as well as how they will be heated, how electricity will be provided, etc. Clearly, the commercial kitchen and laundry facility will not operate on solar power. Without a clear understanding of these structures, the EIR (and County Supervisors) cannot conclude that there will be no significant impact on wildfire and no need for firefighting infrastructure.

Finally, the FEIR fails to cite to any specific provision of state or local law that would exempt the Project's structures from requirements related to sprinklers, smoke detectors, hydrants, standby water supply and automatic fire alarm system. This is in part because the FEIR does not say what the structures *are* for purposes of compliance with building and fire codes. Without properly categorizing the structures, it is impossible to know what requirements apply.[4] And without knowing what requirements apply, it is impossible to attach the appropriate and necessary development conditions to the Project's approval. This perhaps explains why the Project's "fire-related" Conditions of Approval rely almost entirely on items pulled verbatim from the FEIR's Project description—nearly all of which relate to fire prevention—rather than the detailed *fire system* conditions that are typically added by the Fire Marshall as part of the site development permit process. Moreover, the FEIR fails to address the most obviously applicable code provision, CBC section 310.2, which creates Residential Group R-1, for "occupancies containing sleeping units where the occupants are primarily transient in

[4] The Project's Conditions of Approval require the Project to comply with CBC section 450, which regulates "Organized Camps." This obliquely suggests that the County and proponent believe the Project is an Organized Camp. However, CBC section 450.1.1.1 defines an organized camp as a site providing "an outdoor group living experience…for five days or more" and expressly excludes "motel[s]," "tourist camp[s]," and "resort[s]" from the definition. Therefore, even if the Project does comply with CBC section 450, it is not relieved of the obligation to comply with other applicable building and fire codes.

nature." Both the CBC and the CFC require the installation of automatic sprinkler systems, fire alarm systems, and smoke detectors in R-1 occupancies. *See* CBC §§ 420.4, 420.5; CFC §§ 903.2.8, 907.2.8. The FEIR contains no information or analysis about the applicability of these provisions, nor does it point to any section of the CBC or CFC supporting the position that these requirements apply only to "traditional" or "hard" structures.

Because the FEIR relies on inaccurate, misleading, or vague descriptions of the Project's structures, its analysis of the Project's compliance with state and local building and fire codes and the County General Plan is necessarily insufficient and inadequate. The County must revise the FEIR to clearly describe and categorize the structures, and likewise to identify specific provisions of the County Ordinance Code, the CBC, and the CFC that apply to the Project's structures.

4. The EIR's Description of the Project's Wastewater Treatment System is Inadequate.

The EIR does not sufficiently describe the Project's wastewater treatment system. The EIR indicates that the Project would require two separate wastewater treatment systems, one for domestic wastewater, including a septic tank and leach field, and other for "high strength" wastewater, including a grease interceptor, septic tank, moving bed bio-film reactor, and leach field. DEIR at 2-12; 3.5-20. However, the DEIR does not adequately describe these wastewater treatment systems, as it does not indicate the size of the two leach fields or how they will be lined. The FEIR does not cure this deficiency. Without a complete description of the Project's leach fields, it is impossible to accurately evaluate the Project's impacts on water quality. The EIR must be revised to provide this information.

5. The EIR's Description of the Project's Operational Characteristics is Inadequate.

The FEIR's description of the Project's "Operational Characteristics" states that the Project will employ between 20 and 30 staff members during the operational season, with 10 to 15 personnel working on the site at any given time. DEIR at 2-18. This description is both unsupported and contradicted by evidence in the record, which shows that the Project will in fact require a significantly higher number of employees. The FEIR's description of total employees is also, without explanation, significantly lower than the number contained in the Project's Initial Study. This inaccuracy and inconsistency not only prevents the "intelligent evaluation" of the Project's potential environmental impacts, but appears designed to artificially minimize those impacts.

Because the FEIR relies on an inaccurate description of the Project's staffing requirements, its analysis of the Project's environmental impacts is legally insufficient.

a. The FEIR's Description of the Project's Staffing Requirements is Unsupported and Contradicted by Evidence in the Record.

Although the FEIR repeatedly asserts that the Project will employ between 20 and 30 people, it contains no evidence that supports this conclusion. Nor does it attempt to correlate the size and components of the Project—99 guest tents (each of which can accommodate up to four people), a front desk and office, bathroom facilities, maintenance operations, housekeeping, and a commercial kitchen capable of preparing and serving meals to every guest—with the estimated number of necessary staff. Rather, the FEIR simply notes—in a small footnote to a table that purports to quantify the Project's estimated wastewater disposal—that "maximum occupancy and employee/staff information was supplied by Under Canvas." DEIR at 2-13.

Unsurprisingly, evidence shows that the FEIR's staffing estimate is woefully low. For instance, nearby Evergreen Lodge, which is similar in scale to the Project, employs over 125 staff in peak season. *See* letter from Brian Anderluh to Natalie Rizzi, December 14, 2020, attached as Exhibit A, at 2. Although Evergreen Lodge offers some amenities that the Project will not offer, the owners of Evergreen Lodge estimate that even without those amenities the Lodge would still employ 60-80 people. Indeed, Lee Zimmerman, who has co-owned Evergreen Lodge for twenty years, notes that the FEIR's staff projection is not "close to realistic." *See* FEIR at 2-652, Letter 88 (July 17, 2020 Letter from Lee Zimmerman). Likewise, the Project's Initial Study, completed in February 2019, states that the Project will employee 40 people during the operational season, double the FEIR's low-end estimate of 20. DEIR at A-80. Setting aside that 40 is itself inaccurately low, the FEIR says nothing about how or why the Project changed such that the number of necessary staff was so reduced.

Because an EIR may not be "premised on an improperly curtailed and distorted project description," the FEIR's reliance on an inaccurate and inconsistent description of necessary staff "mandates the conclusion" that the County has not proceeded "in a manner required by law." *San Joaquin Raptor*, 27 Cal.App.4th at 730 (internal quotations omitted).

b. The EIR's Inaccurate Description of Project Staff Renders its Environmental Impact Analysis Inherently Unreliable.

The FEIR's inaccurate description of the Project's staff affects its analysis of nearly all of the Project's potential environmental impacts. For instance, the FEIR concludes that the Project will not "require the construction of new homes" or "displace existing people or housing, necessitating the construction of replacement housing elsewhere." DEIR at 3-17. In reaching these conclusions, the FEIR relies entirely on the finding that there is sufficient vacant housing in Tuolumne County to accommodate 20 to 30 new employees.[5] Even assuming that the Project will employ only 20 to 30 people, this finding is specious for a number of reasons. First, because the vast majority of "vacant" properties in and around Groveland are being used for short-term vacation rentals, there is extremely limited (i.e., near-zero) rental housing available. Therefore, even at 20 to 30 employees, the Project will have a significant impact on housing in the Groveland area, either by requiring the construction of new homes or displacing people from existing homes. Second, the FEIR's reliance on the vacancy rate in Tuolumne County as a whole fails to take into account the sheer size of the County—2,274 square miles in total, and the Project's remote location an hour from the County's housing and population center of Jamestown/Sonora. Because employees cannot be expected to commute from all parts of the County, the overall County vacancy rate is irrelevant. What matters is the availability of housing near Groveland, which, as noted above, is essentially negligible. By way of example, virtually none of the 200 peak-season employees of nearby Rush Creek Lodge commute from the Jamestown/Sonora area. And, if employees do commute from far flung corners of the County because adequate housing is not provided by the Project, it will add significantly to the number of project trips and vehicle miles traveled.

Furthermore, because rental housing in Groveland is so extremely limited, *even a modest increase* in the number of employees—for instance, to the 20-30 employees described in the FEIR —would substantially increase the Project's impact on housing. Certainly, had the FEIR done what CEQA requires, i.e., analyzed the impact using an

[5] The FEIR states that "[e]mployees would be largely drawn from the local community, though some could be recruited from elsewhere." DEIR at 2-18, 3-17. The assertion that employees will be primarily local is yet another inaccuracy in the Project description. There are few potential Project employees in the Groveland area, and therefore it's very likely that the majority of Project staff will be recruited from outside of Tuolumne County. Furthermore, the Project proponent has a strong presence on CoolWorks.com, a remote resort employee recruiting site, and other similar sites. Proponent's CoolWorks profile indicates that they draw most of their staff from other areas, bringing them in to live and work at their remote properties. *See* https://www.coolworks.com/lone-peak-hospitality/profile (last visited December 9, 2020).

accurate number of employees (likely 60 to 80 – roughly double or triple the FEIR's figures), it would have found that the Project will have a significant impact on housing, and that this impact would be avoidable only with mitigation measures—for example, a requirement that Under Canvas provide on-site housing for employees, or develop off-site affordable housing.

In any case, because the FEIR's analysis depends on an inaccurate description of Project staffing, the FEIR necessarily fails to "intelligent[ly] evaluat[e]" the Project's potential impacts to housing in the Groveland area. *See San Joaquin Raptor*, 27 Cal.App.4th at 730. Moreover, because the FEIR relies on the inaccurate project description in its analysis of other potential impacts, this same failure occurs throughout the FEIR, including in its analysis of impacts on air quality (DEIR at 3.3-10-11), water supply (DEIR at 3.5-17-18, 3.5-23), public services and recreation (DEIR at 3.7-5-13), and traffic and Project-generated vehicle miles traveled (3.8-6-10). These failures, both individually and collectively, are fatal to the legal adequacy of the EIR. *Id.* In conclusion, the FEIR's reliance on an inaccurate and inconsistent project description violates CEQA, and therefore prohibits the County from approving the Project or certifying the FEIR.

B. The EIR Lacks Evidence that the Project Would Not Expose People and Structures to Significant Risks Relating to Wildland Fire.

The entirety of the Project site is designated as a Very High Fire Hazard Severity zone. DEIR at 3.9-1. There have been six wildfires in the immediate vicinity of the Project within the last 100 years. *See* Terra Vi Lodge Project DEIR Excerpts Figure 4.17-1, attached as Exhibit B. From 2001 to 2016, twelve fires have occurred in or near Tuolumne County that destroyed over 750 acres, while the 2013 Rim Fire burned a total of 257,314 acres, including the Project site. *See* Exhibit B at 4.9-12 (Terra Vi Lodge Project DEIR Excerpts). According to the Under Canvas EIR, significant quantities of downed wood and standing snags remain on the Under Canvas site, and the site's wildfire risk continues to be high. DEIR at 3.9-1. The Project would be a source of new wildfire ignitions by introducing people, cars, equipment, campfires, and stoves to this hazardous location.

Despite these alarming facts, the EIR does not evaluate the Project's potential to expose people or structures to a significant risk of loss, injury, or death involving wildland fires.[6] Rather than conduct this important analysis, the EIR instead calls for the

[6] Generally, EIRs analyze this impact in their hazard sections consistent with CEQA Guidelines Sample Question Section IX (g) Hazards and Hazardous Materials: "Expose

use of Project design features, suggesting that they would "*prevent ignition* of wildfires at the project site." FEIR at 3-12 (emphasis added). The EIR, however, provides no evidence that these design features – which include, for example, use of fire resistant tent materials and designated smoking areas – would actually prevent ignitions. Indeed, later in the wildfire chapter, the FEIR concedes that wildfires could in fact be ignited on the Project site. *See* FEIR at 3-13 and 3-14, acknowledging the potential for *accidental ignitions* on the Project site and calling for the implementation of procedures for *minimizing potential ignition* during operations (emphasis added).

The EIR's failure to analyze the Project's potential to expose people or structures to a significant risk of harm or loss in the event of a wildfire is an egregious flaw. Determining whether or not a project may result in a significant adverse environmental impact is a key aspect of CEQA. CEQA Guidelines § 15064(a). In evaluating the significance of a project's impacts, an EIR may not "compress[] the analysis of impacts and mitigation measures into a single issue." *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 656. The EIR here did just that, and in so doing, it failed to recognize that the Project's potential to expose people or structures to wildfire risk would be significant. Yet without a significance finding, the DEIR cannot adequately identify mitigation for the impact. As was the case in *Lotus*, the EIR's failure to evaluate the significance of the Project's impacts separately from what is effectively its proposed mitigation (implementation of project design features), does not withstand scrutiny. More specifically, by conflating impacts and mitigation, the EIR fails to consider whether there may be other more effective mitigation options, thereby omitting information that is necessary for the informed decision-making and public participation that CEQA requires. *See id*. at 658; *see also San Franciscans for Reasonable Growth v. City & County of San Francisco* (1984) 151 Cal.App.3d 61, 79 (EIR is inadequate if it fails to identify feasible mitigation measures). Further, a finding of significance triggers the requirement that the Project include enforceable mitigation, as well as a monitoring program, which is lacking with the EIR's reliance on project design features as de facto mitigation. *See Lotus*, 223 Cal.App.4th at 656-57.

Had the EIR actually conducted this necessary impact analysis, it would likely have revealed that there is ample evidence demonstrating that projects such as this one

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people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires." In fact, just by way of example - which should not be taken as an endorsement of that EIR's conclusions- the EIR prepared for the Terra Vi Lodge Project included this impact topic. *See* Exhibit B at 4.9-19 (Terra Vi Lodge Project DEIR Excerpts (Hazards Chapter)).

have the potential to increase the risk of fire ignitions by, at a minimum, bringing people and vehicles to the area.[7] Indeed, the Terra Vi EIR clearly acknowledged this potential:

> Development of the proposed project would result in new paved roads, pedestrian paths, and parking areas. Paved areas create an opportunity for vehicles to create accidental wildfires, since dragging chains, dragging vehicle parts, worn brakes, and exposed wheel rims have the potential to create sparks on the roadway. On-site roadways and pedestrian paths, whether paved or unpaved, could also lead to wildfires as they would provide people access throughout the project site. Human activities are the leading cause of wildfire, with the three most common types of human-caused wildfires being debris burning, arson, and equipment use. *See* Terra Vi DEIR at 4.17-30.

The California Attorney General has also weighed in on the potential risks from development projects in a letter prepared in connection with a project proposed in San Diego County's wildland urban interface. *See* Letter from California Attorney General to San Diego County re: Otay Ranch Resort Village – Village 13, November 12, 2020, attached as Exhibit D. While the Attorney General's letter was prepared in connection with a different project, the issues the Attorney General raises are directly relevant to the Under Canvas Project because the EIRs for both projects fail to acknowledge that new development in Very High Hazard Severity zones increase the risk of fire and, as a result, increase the risk of exposing the projects' occupants, employees, and structures to that enhanced risk.

The Attorney General's letter cites to and includes several studies by leading experts Jon Keeley and Alexandra Syphard documenting the association between population in the wildland-urban interface and increased fire risk. *See*, e.g., Keeley and Syphard et al., *The 2003 and 2007 Wildfires in Southern California in Natural Disasters and Adaptation to Climate Change* (Boulter et al., edits., 2013), p. 44 ["The massive losses of property and lives in recent fires are the result of human population growth and expansion into these fire prone landscapes."] and Keeley and Syphard, *Nexus Between*

[7] The wildfire risks associated with the Under Canvas Project extend far beyond bringing people and vehicles to the area. The Project would allow open campfires, barbeques, and wood burning stoves and propane heaters inside enclosed canvas tents. *See* Photographs of Under Canvas projects, attached as Exhibit C.

Wildfire, Climate Change and Population Growth in California (March 2020) Fremontia, Vol. 47, No. 2, p. 26 ["More people translates into a greater probability of an ignition during a severe wind event, and more development in highly fire pone landscapes inevitably results in greater losses of lives and homes."]. *See* Exhibit D (AG letter). Similar to the San Diego County EIR criticized by the Attorney General, the Under Canvas EIR omits critical detail about the Project's potential to increase wildfire risk.

It is particularly concerning that the proposed Project would include numerous sources of potential ignition, including fire pits, community campfire rings, and wood stoves inside each of the 99 wood-framed canvas tents, yet the Project does not include and the County is not requiring fire suppression systems. The County requires such systems be included with other projects. *See e.g.*, Conditions of Approval for the Terra Vi Lodge Project, attached as Exhibit E. For example, the County is requiring that the Terra Vi Project include minimum fire flow requirements in gallons per minute (Conditions #28-29), fire suppression systems (Condition # 31), and sprinkler systems (Condition #32). In sharp contrast, the Under Canvas EIR makes no mention of meeting any level of fire flow requirements. Nor does it include the requirement for automatic sprinkler systems or a fire suppression system despite acknowledging that the California Fire Code requires such systems in all new development. DEIR at 3.7-4; 3.7-7; 3.7-8.

In its November 18th, 2020 hearing the Planning Commissioners expressed concern about the Project's fire risks, acknowledging the EIR's inadequate analysis. They voted to certify the EIR notwithstanding these deficiencies. Despite recognizing the EIR's flaws, they expressed a desire to avoid modifying the EIR for fear of delaying Project approval, and instead opted to add conditions of approval to address the EIR's inadequacies. Thus, the Commission added several conditions of approval, calling for seasonal limitations on stove use and the addition of an on-site water tank for use in firefighting. Yet these last-minute changes are highly problematic. First, the Planning Commissioners are not experts in wildfire safety and are not qualified to design conditions to reduce wildfire impacts, particularly at the last minute without adequate prior analysis of wildfire risks. For example, one of the Commissioners called for a hundred thousand gallon water tank because "that sounded like a big enough number" and suggested that limiting the use of stoves would reduce the fire risk significantly. In so doing, the Commission failed to ensure adequate mitigation of fire impacts, and it may have created other problems (for example, an impact on water supply). The second problem is that by adopting these conditions during the hearing on the Project, the County circumvented the process for identifying impacts as significant and then considering mitigation. This approach deprives the public of the opportunity for meaningful review.

County staff and counsel informed the Commissioners that they could not add conditions to mitigate the Project's wildfire impacts if they planned to approve the EIR, which incorrectly concludes that the Project would have no significant wildfire impact. To avoid revising the EIR, the Commission therefore mislabeled these additional wildfire-related conditions, misleadingly asserting that they are not intended to mitigate wildfire risk. This contradiction is a result of the Commissioners' decision to approve the Project by certifying a clearly inadequate EIR. The actual fire-risk mitigation intent of the additional conditions is made clear in the Commission Chair's assertion that one of the new conditions will ensure that fire stoves will be operated only when CalFire or the Forest Service deems it's safe, specifically citing the fire risk mitigation benefit of the new condition. *See* Transcript of Tuolumne County Planning Commission's November 18, 2020 hearing on the Yosemite Under Canvas Project at 24, attached as Exhibit F and hereby incorporated by reference.

Wildfire risk in the West has become a problem of staggering proportions. Given the potential for loss of life, it is imperative that EIRs thoroughly examine these risks and identify mitigation measures and or Project alternatives if these risks are determined to be significant. Here, the Project's wildfire impacts go far beyond the fire risk to onsite structures, staff, and guests. A wildfire started on the Project site could easily escape the property, and has the potential to devastate the surrounding forest and Yosemite National Park, to destroy neighboring residences and nearby businesses (both directly and via evacuations and closures), to close Yosemite and more. The impact on property insurance, nearly impossible to get now in high fire danger regions like this one, must also be considered.

For the reasons described above, the EIR fails to meets CEQA's standards. The end result is a document which is so crippled by its approach that decisionmakers and the public are left with no real idea as to the severity and extent of the Project's impacts.

C. The EIR Fails to Adequately Analyze or Mitigate the Project's Impacts on Emergency Access, Evacuation and Emergency Response.

The EIR analyzes emergency access, evacuation, and emergency response in four sections of the EIR: (1) Impact 3.8-4: "Implementation of the project would not result in inadequate emergency access" (DEIR at 3.8-10); (2) Impact 3.9-1: "Implementation of the project would not substantially impair an adopted emergency response plan or emergency evacuation plan" (DEIR at 3.9-7); (3) Impact 3.9-5: "Implementation of the project, in conjunction with other development, would not substantially impair an adopted emergency response plan or emergency evacuation plan" (DEIR at 3.9-12); and (4) Impact 3.7-1: "Implementation of the project would not result in substantial adverse

physical impacts associated with the provision of new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives" (DEIR at 3.7-6). For each impact topic, the EIR provides a cursory analysis before concluding each impact would be less than significant. In each instance, the EIR lacks evidentiary support for these determinations that impacts are less than significant.

1. The EIR Lacks Support For Its Conclusion That the Project Would Not Impair Emergency Evacuation or Emergency Response.

The EIR asserts that there would be no emergency evacuation impacts during a wildfire because vehicles would have suitable access to the Project site via Hardin Flat Road and from a roadway accessed from adjacent federal lands. DEIR at 3-14; 3.9-7. As we explained in our prior letter, the EIR errs in its assertion that it can rely on Forest Service Route 1S09 as a secondary point of access to the Project site for emergency purposes. This issue remains unresolved. Even if the County believes the Forest Service will approve use of the road, such action is not within the jurisdiction of the County. Therefore, the County must find the impact significant and find that the responsibility for mitigating it lies with another agency. Pub. Res. Code § 21081 (a)(2). In addition, in our July 29, 2020 letter on the Terra Vi Lodge EIR, we identified additional reasons why the County could not rely on Forest Service Route 1S09 as an emergency access route. *See* letter from Laurel L. Impett to Quincy Yaley, Terra Vi Lodge DEIR, July 29, 2020 (with exhibits) attached as Exhibit G and incorporated herein by reference.

Moreover, the EIR is not excused from the requirement to analyze the Project's evacuation impacts simply because there are roads in the area. The EIR must analyze whether these roadways are adequate to accommodate motorists attempting to evacuate and emergency responders attempting to access a wildfire. In other words, will the Project's occupants be able to safety evacuate during a wildfire and will emergency responders be able to access the Project site in a timely manner? The EIR does not tell us.

As discussed above, the Project site is located in a Very High Fire Hazard Severity zone. The Project would add hundreds of new occupants and employees to the area and as Neal Liddicoat with Griffin Cove Transportation Consultants ("GCTC") explains, there is a lack of available evacuation routes in the area. *See* Report from GCTC to Laurel. L. Impett re Terra Vi Lodge Project, September 15, 2020, at 2, attached as

Exhibit H.[8] SR 120 is the sole evacuation route in the area. *Id*. As Liddicoat explains, this significant constraint in the Project-area road system reinforces the need to provide a comprehensive evacuation plan, including detailed analysis of the ability of SR 120 to accommodate the surge of traffic that would occur in the event of a wildland fire. *Id*. As with the Terra Vi Lodge EIR, the Under Canvas EIR fails to include an evacuation plan and it does not determine whether safe evacuation of the Project site is feasible in light of cumulative impacts of the two developments and other developments on Hardin Flat Road.

As the last several years have shown, fleeing wildfires can be deadly. In certain instances, there are simply too few escape lanes for too many people. *See* Why California wildfire evacuations are becoming deadly traffic jams, The Sacramento Bee, April 28, 2019, attached as Exhibit I. The EIR must address the feasibility of safely implementing an emergency evacuation, including estimates of the amount of time needed to implement a full evacuation of the Project site and whether the evacuation time is acceptable, based on a reasonable standard of safety. Further, an analysis must be conducted to determine the adequacy of the sole vehicular evacuation route, SR 120. Specific issues that must be addressed include:

- How many Project-related vehicles need to be accommodated during an evacuation?

- How many non-Project vehicles will already be on SR 120 at the time of an evacuation, consuming badly-needed roadway capacity? SR 120 will be the primary evacuation route for areas other than the proposed Project, including (as an obvious example) the residents of the existing homes on Forest Service Road 1S03, as well as the residents of the homes on Hardin Flat Road and any service or delivery persons who might also be present in the area. Also, tourists, employees, vendors, and service people in a substantial portion of Yosemite National Park would depend upon SR 120 as their primary evacuation route. The national park is, of course, busiest

[8] Save Sawmill Mountain retained GCTC to determine whether the Terra Vi Lodge Project EIR adequately analyzed emergency evacuation impacts. GCTC determined that the Terra Vi EIR failed to adequately evaluate these impacts. While the GCTC Report was prepared for the Terra Vi Project, the conclusions in the GCTC Report are directly relevant to the Under Canvas Project because the projects are located directly across SR 120 from one another and therefore rely on the same restricted roadway network.

during the peak fire season of July through October. *See* When is California Fire Season, Source, Frontline Wildfire Defense System, attached as Exhibit J. For example, according to statistics provided on the National Park Service website, in July 2019, the traffic count at the Big Oak Flat entrance on SR 120 at the west entrance to the park totaled 81,448 vehicles. August 2019 traffic counts at that location were a little lower (77,356), but still substantial. *See* Exhibit H (GCTC Report) Attachment B which presents traffic count data for that location from January 1985 through February 2020).

In addition, a number of other projects are proposed in the vicinity of Under Canvas, which would also affect the feasibility of safely evacuating the Project vicinity. Of particular concern is the Terra Vi Lodge Project which would be located across SR 120 from the Under Canvas Project site. The relatively close proximity of these two projects creates the potential for traffic conflicts, particularly during an emergency evacuation when drivers are likely to be distracted and, therefore, careless or otherwise act in unpredictable or erratic ways.

- What is the capacity of SR 120, and how much of that capacity would be available to accommodate evacuating vehicles? This analysis must assess whether the available evacuation route from the Project will be able to accommodate a sudden influx of vehicles associated with an emergency evacuation. This analysis must address the specific characteristics of the evacuation route, in this case SR 120. Those characteristics include various parameters reflecting the horizontal and vertical alignment of the road, including the presence of curves, sight distance restrictions, or significant uphill or downhill sections, such as on Priest Grade west of the Project site.

- How much "mobilization time" will be required in connection with an evacuation? Mobilization represents the pre-evacuation notification and preparation period. It is particularly critical with respect to fires that start in close proximity to the proposed project.

- How long will the evacuation itself take, and what will be the travel time to a safe location?

- What will be the effect of sudden surges in SR 120 traffic that would occur during an evacuation? It is extremely unlikely that traffic would be evenly

distributed over time in the event of an evacuation. Instead, there will be variable pulses in traffic demand, just as there are in everyday traffic flows.

- How will traffic operations on SR 120 be affected by the following factors, which are likely to prevail during an emergency evacuation due to a wildland fire?

  - The possibility that the road will be obscured by smoke or other fire-related factors, such as visible flames or embers.
  - The effects of trucks, recreational vehicles, or vehicles towing trailers in the evacuating traffic stream.
  - The emotional state of the evacuees, who will largely be unfamiliar with the area, which could lead to irrational or unpredictable behavior by drivers.

The EIR must answer the aforementioned questions in order to evaluate the Project's emergency evacuation impacts. It is now common practice for local agencies to require the preparation of evacuation analyses for land use development projects. These analyses identify the time it will take an area to evacuate by dividing the number of vehicles that need to evacuate by total roadway capacity. *See e.g.*, Safari Highlands Ranch and Citywide SOI Update Wildfire Hazard Analysis, attached as Exhibit G to this firm's July 29, 2020 Letter re the Terra Vi Lodge Project, attached here as Exhibit G. These evacuation analyses also routinely take into account the fact that neighboring communities could also be evacuating in a similar time frame. *Id*. They also typically model various scenarios of wildland fire that could occur in a project's vicinity based on various factors to determine whether project residents or visitors would have adequate time to escape, and the ability of emergency services to access the site in a timely manner, consistent with emergency service provider's response time goals.

Notably, the California Attorney General echoes the need for projects that increase wildfire risk to prepare robust evacuation plans to determine whether the project and surrounding residents can be evacuated safely. *See* Exhibit D at 5 (California Attorney General Letter).

2. The EIR Lacks Support For Its Conclusion That the Preparation of an Emergency Operations Plan Would Reduce Impacts to A Less Than Significant Level.

The EIR also relies on the eventual preparation of an Emergency Operations Plan to conclude that impacts relating to emergency evacuation and emergency response

would be less than significant. DEIR at 3.8-11. This Plan will purportedly include annual training for employees, orientation briefing for guests, an emergency alert system, and a site evacuation plan defining routes of ingress and egress. *Id*. As an initial matter, CEQA does not allow agencies to defer development of mitigation measures to some point in the future absent specific performance standards and a clear commitment to mitigate. *See King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 857-58. Here, the County provides no indication as to why it could not prepare the site evacuation plan now, prior to Project approval. Nor does the EIR explain how the simple acts of employee training and guest orientation could begin to substitute for a detailed emergency evacuation plan. Finally, the EIR does not include performance standards to govern future actions implementing the Emergency Operations Plan.

3. The EIR Ignores Wildfire Risks Resulting From Inadequate Fire Protection Services.

The EIR does not evaluate whether emergency responders would be able to access the Project site in timely manner (i.e., whether response times would achieve the County's service response times standards). This analysis is of paramount importance as it appears that emergency responders' access of the Project site would exceed the County's response times and service standard goals. If this is the case, the inability of emergency responders to access the Project site in a timely manner has the potential to expose people and structures to wildfire risks.

The closest staffed County fire station to the Project site is the Tuolumne County Fire Department ("TCFD") is in Groveland. The Groveland fire station is located approximately 17 miles from the Project site. DEIR at 3.7-2. The DEIR does not identify how long it would take emergency responders to arrive at the Project site from the Groveland station. Notably, the DEIR prepared for the Terra Vi Lodge DEIR provides this information, explaining that it would take approximately 22 minutes to access the Project vicinity *with no traffic*.[9] *See* Exhibit B at 4.14-3. (Terra Vi Lodge Project DEIR Excerpts (Public Services, Parks, and Recreation Chapter)). According to the Tuolumne County General Plan, the TCFD response time for rural areas is 14 minutes. DEIR at 3.7-2. The General Plan identifies a service standard goal for the Groveland Station as responding to 90 percent of calls for service within the Groveland station boundaries within 7 minutes. Exhibit B at 4.14-4 (Terra Vi Lodge DEIR Excerpts). According to the Terra Vi Lodge DEIR, given the distance between the Terra Vi Lodge Project site and the

[9] It is our understanding that Bob Asquith of the Tuolumne County Transportation Council, identified a 45 minute response time from the Groveland station.

Groveland station, it will not be possible for emergency responders from TCFD Fire to achieve its service standard when responding to calls to the Project site. Exhibit B at 4.14-4 and 4.4-7 (Terra Vi Lodge DEIR Excerpts). Had the Under Canvas EIR conducted this important impact analysis, it would almost certainly have reached an identical conclusion. Until the DEIR analyzes these impacts, it has no basis to conclude that impacts relating to wildfire risk and emergency response would be less than significant.

Moreover, until the EIR conducts this analysis, it has no basis to determine whether the Under Canvas Project (and cumulative projects) could contribute to the need for a new fire station to meet response time goals. If so, this EIR should evaluate the environmental impacts from this new fire station.

4. The EIR Fails to Analyze Cumulative Emergency Evacuation Impacts.

The EIR devotes one paragraph to cumulative emergency evacuation impacts. It concludes that the Project's cumulative impacts would be less than significant, stating that all development projects in the County would be subject to compliance with state and county requirements. DEIR at 3.9-12. The EIR's approach is flawed for two reasons. First, the EIR fails to actually conduct a cumulative impact analysis as CEQA requires. "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines § 15355(a). Here, the EIR never specifically identifies or evaluates how other projects in the area, together with the proposed Project, would affect emergency evacuation or emergency response.

Second, the EIR relies on regulatory compliance to conclude the Project's impacts would be less than significant. Yet compliance with applicable regulations does not excuse the County from its obligation to analyze the Project's impacts and is not a sufficient basis to conclude that the Project's impacts would be less than significant. *See Californians for Alternatives to Toxics v. Dept. of Food & Agriculture* (2005) 136 Cal.App.4th 1, 15-17 (compliance with environmental regulations cannot displace an agency's separate obligation to consider whether a project's environmental impacts are significant); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108-09 (same). Regulatory compliance does not determine the significance of impacts.

The EIR should be revised to include a thorough examination of the Project's cumulative emergency evacuation and emergency response impacts. If these impacts re

determined to be significant, it must identify mitigation measures and/or project alternatives capable of reducing these impacts.

5. The FEIR Does not Resolve the Deficiencies in the DEIR's Analysis of Wildfire Risk, Emergency Evacuation and Emergency Response.

The FEIR adds a new measure entitled "Fire Prevention Plan" pertaining to the Project's potential to increase wildfire risk and emergency evacuation. FEIR at 3-3 through 3-5. The Fire Prevention Plan calls for several measures that would purportedly reduce the Project's impacts to a less than significant level. However, these measures would not be effective in reducing the Project's impacts because they are vague and otherwise unenforceable:

- "*Implementation of procedures for minimizing potential ignition during operations*." The EIR does not identify the specific procedures to minimize ignitions.

- *"Modifications to operations during Red Flag Warnings and High to Extreme Fire Danger days."* The EIR does not identify how operations would be modified to protect people and structures from a wildland fire.

- *"Implementation of communication and reporting procedures with CAL FIRE, Tuolumne County Fire Department, and Groveland Community Services District*." The EIR does not identify or describe the communication or reporting procedures that would be implemented. Nor does it explain how these procedures would ensure that structures and lives would be protected in the event of a wildland fire.

- "*Use of an annual risk assessment with CAL FIRE, Tuolumne County Fire Department, and Groveland Community Services District."* The EIR does not describe the purpose of this risk assessment nor does it identify the components of the assessment.

- *"Implementation of routine and emergency communications procedures."* The EIR does not identify or describe these communication procedures nor does it explain how these procedures would ensure that structures and lives would be protected in the event of a wildland fire.

- "*Relocation and evacuation procedures, to include staging areas, accountability, routes of ingress/egress, etc.; and."* The EIR does not provide any detail about

> the "relocation and evacuation procedures" nor does it explain how these procedures would ensure that structures and lives would be protected in the event of a wildland fire. The FEIR notes that a yet-to-be prepared Operational Fire Protection Plan would be reviewed by fire protection service providers prior to commencement of operation and that it would define routes of ingress and egress. FEIR at 2-6. As discussed above, this plan must be prepared now, prior to Project approval to determine whether safe evacuation from the site is even feasible. Indeed, it appears obvious that the reason the applicant refuses to conduct the necessary emergency evacuation analysis now is that such an analysis might demonstrate that safe emergency evacuation from the Project site is not feasible. By deferring the preparation of the Operational Fire Protection Plan until after Project approval, the County deprives decisionmakers and the public of the opportunity for meaningful review.

In other instances, the FEIR weakens provisions that could help to reduce wildfire risks. For example, whereas the DEIR called for defensible space, the FEIR modifies the text to call for defensible space, "where necessary." FEIR at 3-12. Use of phrases such as "where necessary" eliminate the enforceability of such measures.

The FEIR now calls for the provision of a stand-by fire-fighting truck. FEIR at 3-15. A fire-fighting truck may help to extinguish small fires (if they are spotted quickly), yet there is no evidence that a truck would be effective in protecting lives or property in a large wind-driven fire. Nor would a fire truck serve any meaningful role in emergency evacuation. During the Planning Committee's November 18 hearing on the Project, the Project's fire expert described their current specifications for the stand-by fire truck as a pick-up truck with a 125,000 -gallon water tank. By comparison, nearby Rush Creek has a 250,000 gallon water tank with fire sprinklers in all structures and onsite hydrants, providing 1500 gallons per minute of water flow. The Berkeley Tuolumne Camp, a campground redevelopment currently under construction nearby which is of similar size to the Project, has a 300,000 gallon water tank and hydrant system.

6. The DEIR Fails to Adequately Analyze the Project's Numerous Inconsistencies with the General Plan's Wildfire and Emergency Evacuation-Related Policies.

If approved, the Project would be clearly inconsistent with a number of goals and policies in the Tuolumne County General Plan, yet the EIR fails to identify these inconsistencies as significant impacts. In other instances, the EIR fails to undertake the analysis clearly required by the General Plan.

As noted, the Project would be located in a Very High Fire Hazard Severity zone and would subject its occupants and nearby communities to a severe risk of exposure to wildfire. The Project is therefore inconsistent with General Plan Goal 17A, which calls for the County to "[a]void the exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury or death involving natural hazards." The Project is also inconsistent with General Plan Policy 17.E.1, which seeks to "[r]educe the exposure to risk from wildland fire to an acceptable level by only allowing development in high or very high fire hazard areas if it can be made safe by planning, construction, or other fire safety measures." The EIR does not demonstrate that any of the proposed Project features or mitigation measures would be sufficient to make the development "safe."

As discussed above, the Project would contribute to traffic congestion during an evacuation, thereby worsening delays by emergency responders. Implementation Program 9.E.b calls for the County to "[r]equire that new development be provided with access roads that allow for safe and efficient response by emergency apparatus and the safe evacuation of residents in the event of structural or wildland fire." To further this goal, General Plan Policy 9.E.1 calls for the County to "evaluate the circulation system to identify areas causing delay of emergency vehicle response and evacuation due to traffic congestion." The EIR fails to undertake the analysis explicitly required by this policy. What little information that has been provided reveals that the Project would interfere with safe evacuation and emergency response, which is in direct violation of this General Plan Implementation Program.

The Project is also blatantly inconsistent with General Plan policies pertaining to fire protection service levels. General Plan Goal 9E calls for the County to "[p]rovide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies." General Plan Policy 9.E.2 calls for the County to "[m]aintain adopted levels of fire protection service," and General Plan Policy 9.G.3 requires the County to "[d]etermine the impact proposed development will have on the provision of fire protection services and maintain the established level of service as outlined in the current Tuolumne County Fire Department Service Level Stabilization Plan." As discussed above, under the best of circumstances, it appears evident that the Project would not come close to achieving the service standard goal for the Groveland Fire Station.

The aforementioned General Plan goals and policies are critically important, as they were adopted specifically to protect public safety in a County with a well-known history of devastating wildfires. The EIR's failure to undertake the analyses required by

these goals and policies and to identify these inconsistencies as significant effects of the Project are fatal flaws requiring that the EIR be revised and recirculated.

D. The EIR Fails to Adequately Analyze or Mitigate the Project's Impacts on Water Quality and Hydrology.

The EIR concludes that the Project's impacts on surface water and groundwater quality would be less than significant. DEIR at 3.5-15 (Impact 3.5-1). However, the EIR fails to provide sufficient evidence in support of this conclusion, and does not fully analyze the Project's potential water quality impacts.

1. The EIR Does Not Adequately Analyze the Project's Impacts on Stormwater Runoff, Erosion, and Surface Water Resources.

The EIR asserts that the Project would have no significant stormwater runoff impacts because Project driveways would be gravel and raised tent platforms would allow surface flow underneath the tents. *Id*. The EIR therefore concludes that "[b]ecause the proposed project creates minimal impervious area, stormwater treatment would not be required." *Id*. However, while gravel driveways may not be impervious, this does not mean that their impacts on water quality would be less than significant, as they may still generate sediment-laden runoff that may degrade water quality. The EIR fails to adequately analyze this impact, and provides no support for the conclusion that gravel driveways have no stormwater runoff impacts. The EIR notes that the Project would include parking spaces for 130 cars, and that ADA-compliant accessible parking spaces would need to be paved. DEIR at 2-10, 2-11. The EIR does not analyze the stormwater runoff impacts of these parking areas, nor does it address potential sources of groundwater contamination from cars parked on permeable surfaces.

The EIR also fails to adequately analyze the water quality impacts of Project development on surface water resources, including at stream crossings. The Project site includes at least two natural drainages as well as a seasonal wetland and seep. DEIR at 3.4-7, 3.4-8 (Fig. 3.4-2), 3.5-2. The EIR states that the site includes "0.728 acre[s] of potentially jurisdictional waters of the U.S. within the project site that are expected to be subject to regulation under Section 404 of the [Clean Water Act]" and "may also be protected under state regulations, including the Porter-Cologne Act and California Fish and Game code." *Id*. The Project driveway would require the construction of at least two road crossings over existing natural drainages on the site. DEIR at 3.4-4 (Fig. 3.4-1). Moreover, Project guest tents and bathroom facilities would be constructed in close proximity to the wetland on the site. *Id*.; *see also* DEIR at 3.4-8 (Fig. 3.4-2), 2-5 (Fig. 3). The EIR does not adequately analyze the water quality impacts of these features,

including potential stormwater runoff into the drainages and wetland. The EIR's water quality analysis notes that "appropriately sized" culverts would be constructed to convey surface flow under Project roadways. DEIR at 3.5-15, 3.5-17, 3.5-19. However, the water quality section completely fails to discuss a two-lane, 25-foot-wide steel bridge with a concrete deck spanning one of the drainages on the site, which is described in the EIR's Project Description. DEIR at 2-10. The EIR must analyze the water quality impacts of this bridge, including construction and operational runoff impacts. Moreover, the EIR fails to discuss the impacts of the Project's bathroom, kitchen, laundry and reception structures on stormwater runoff. The EIR notes that the Project would include "limited concrete pouring for select building pads" (DEIR at 3.6-9), which would introduce additional impervious surfaces to the site, but these concrete pads are not described further and are not addressed in the water quality analysis.

The EIR claims that the Project's operational erosion impacts would be less than significant because the Project would follow an erosion control plan prepared in accordance with County drainage regulations. DEIR at 3.5-17. Similarly, the EIR acknowledges that construction activities would impact surface water quality by generating sediment runoff, but asserts that impacts would be less than significant because a Construction General Permit Storm Water Pollution Prevention Plan would require BMPs to control runoff. DEIR at 3.5-16. However, the EIR cannot rely on asserted regulatory compliance to conclude that the Project's impacts in either of these areas would be less than significant. *See Communities for a Better Environment v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 111-14 (compliance with regulations cannot displace an agency's *separate* obligation to consider whether a project's environmental impacts are significant); *Californians for Alternatives to Toxics v. Department of Food & Agriculture* (2005) 136 Cal.App.4th 1, 15-17 (same); *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1108–09 (environmental effect may be significant despite compliance with regulatory requirements). Regulatory compliance does not determine the significance of impacts nor the effectiveness of mitigation measures.

2. The EIR Fails to Adequately Analyze the Water Quality Impacts of the Project's Wastewater Treatment System.

The EIR's analysis of Project wastewater impacts on water quality is also inadequate. The EIR states that the Project would generate up to 8,280 gallons per day (gpd) of domestic wastewater (including waste from Project bathrooms) and 3,561 gpd of "high strength" wastewater from the Project's food service and laundry facilities. DEIR at 3.5-21. The Project would require two separate wastewater treatment systems, one for

domestic wastewater, including a septic tank and leach field, and other for "high strength" wastewater, including a grease interceptor, septic tank, moving bed bio-film reactor, and leach field. DEIR at 2-12; 3.5-20. The EIR does not adequately describe the size of the two leach fields or how they will be lined. The EIR asserts that the Project's onsite wastewater treatment and disposal system would not have significant impacts on water quality. DEIR at 3.5-17. However, the EIR fails to provide evidence to support this conclusion. Instead of analyzing the wastewater treatment systems impacts, the EIR simply asserts that impacts would be less than significant because the Project would be required to comply with County regulations governing onsite wastewater treatment and disposal systems, and claims that treated wastewater would meet water quality standards and waste discharge requirements. DEIR at 3.5-17; FEIR at 2-11, 2-12, 2-13. As discussed above, asserted compliance with County regulations does not mean the water quality impacts of the Project's wastewater disposal would be less than significant. *See Communities for a Better Environment,* 103 Cal.App.4th at 111-14; *Californians for Alternatives to Toxics,* 136 Cal.App.4th at 15-17; *Protect the Historic Amador Waterways,* 116 Cal.App.4th at 1108–09. The EIR must fully analyze the potential water quality impacts of Project wastewater, including the potential for effluent from the Project leach field to degrade groundwater quality and contaminate drinking water.

3. The EIR Does Not Adequately Analyze the Project's Cumulative Water Quality Impacts.

The EIR also fails to analyze the Project's cumulative impacts on water quality. The EIR notes the existence of nearby projects, including the Terra Vi Lodge project directly across SR-120 from the Project site, the Berkeley Tuolumne Camp restoration, the Mountain Sage Conditional Use Permit, and the Thousand Trails/Yosemite Lakes RV expansion project. DEIR at 3.5-25. The EIR concludes that the Project, together with these other nearby projects, would not have significant water quality impacts. DEIR at 3.5-26 (Impact 3.5-11). However, the EIR provides no analysis in support of this conclusion. It simply assumes that the nearby cumulative projects would have onsite wastewater treatment and disposal systems similar to those of the Project, without providing any evidence for this assumption, and then asserts that because all of these projects would be required to comply with County regulations governing wastewater treatment systems, cumulative impacts would be less than significant. *Id*. This is entirely inadequate. As explained above, the EIR cannot simply rely on asserted regulatory compliance to claim that impacts would be insignificant. The EIR must actually analyze the cumulative water quality impacts of the Project and the other nearby projects.

E. The EIR's Analysis of the Project's Water Supply Impacts is Inadequate.

The EIR concludes that the Project would not substantially decrease groundwater supplies or interfere with groundwater recharge, and that the Project's water supply impacts would therefore be less than significant. DEIR at 3.5-17 (Impact 3.5-2). The EIR fails to provide sufficient evidence in support of this conclusion. The EIR acknowledges that it is difficult to predict the sustainable yield and storage capacity of fractured bedrock aquifers like that underlying the Under Canvas Project site, especially where they are the sole source of water. DEIR App. G-32. In light of this, the EIR should have conducted a comprehensive water supply analysis, but failed to do so.

1. The EIR's Water Supply Analysis Relies on Inadequate Water Well Testing and is Not Supported by Sufficient Evidence.

The EIR does not adequately support its conclusion that the Project's wells would have sufficient water supplies to meet demand. Water supply for the Project would be extracted from onsite groundwater wells. The EIR estimates that the Project's maximum daily water use would be 7,755 gallons per day (gpd). DEIR at 3.5-18. The EIR cites aquifer pump testing at three onsite water wells, and asserts that two of those wells are capable of providing water at a rate of 40 gallons per minute (gpm), while the Project would assertedly require 20 gpm. *Id*. However, the aquifer pump testing at those wells was conducted in October 2019, in a wet year-type occurring within a 4-year period of average to predominantly above-normal precipitation (i.e., a multi-year wet period). *See* CBEC Eco Engineering, Report re: Terra Vi Lodge DEIR, July 27, 2020, attached as Exhibit K. The FEIR acknowledges that "2019 had higher precipitation than average over the preceding nine years." FEIR at 2-7. The testing relied on by the EIR does not accurately measure the available groundwater supply in dry years or multi-year drought periods, and therefore does not demonstrate that the Project wells would be adequate to meet the Project's projected water demand in dry years or multi-year droughts.

The EIR's water supply analysis also suffers from other methodological flaws, as outlined in the comments on the DEIR prepared by professional hydrogeologist Dr. Kenneth Schmidt and submitted by Dan Courtney on July 21, 2020. FEIR at 2-358 (Letter # 32). Dr. Schmidt explains that the aquifer pump tests appear to have been improperly influenced by the discharge and percolation of pumped water, and that the tests were not of sufficient duration to accurately measure groundwater supply in light of the site's geology. *Id.* Dr. Schmidt also notes that the EIR's groundwater recharge analysis fails to correctly account for evapotranspiration, or for the limited groundwater

storage space in hardrock geological formations. *Id*. The FEIR does not cure these deficiencies and fails to adequately respond to Dr. Schmidt's comments. FEIR at 2-375.

In support of its assertion that water supply impacts would be less than significant, the EIR notes that the Project would only operate seven months of the year, claiming this would reduce stress on groundwater supplies. DEIR at 3.5-18. However, the EIR fails to note that those seven months, which the EIR says would run from mid-March to mid-October, include the driest part of the year, when there is little or no precipitation and groundwater demand is greatest due to the busy summer tourist season. The fact that the Project would only operate during that seven-month period does not support the EIR's conclusion that water supply impacts would be less than significant. Moreover, the neighboring Terra Vi project would operate year-round, increasing the potential for cumulative impacts.

2. The EIR Does Not Adequately Consider Project Impacts on Neighboring Water Wells.

The EIR's inadequate water supply testing undermines the basis for its other conclusions about water supply impacts, including impacts to neighboring water wells. The EIR notes the existence of three existing nearby residential water wells, but asserts that pumping from the Project would not significantly impact those wells, relying on the October 2019 pump tests. DEIR at 3.5-18; FEIR at 3-10. Because the water supply testing for the Project does not reflect conditions in dry years, the tests are not a sound basis to conclude that the Project's water use would not impact neighboring residential wells. Moreover, as discussed below, the EIR fails to consider how cumulative water demand from the Project and the adjacent Terra Vi project could impact those nearby residential wells.

3. The EIR Fails to Adequately Analyze the Project's Cumulative Water Supply Impacts.

The EIR's analysis of the Project's cumulative water supply impacts is inadequate. DEIR at 3.5-26 (Impact 3.5-12). The EIR asserts that only the Terra Vi project could have cumulative groundwater supply impacts together with the Project, claiming that other nearby projects including the Berkeley Tuolumne Camp restoration, Mountain Sage Conditional Use Permit, and the Thousand Trails/Yosemite Lakes RV expansion project are too far away to have cumulative impacts on groundwater supply. *Id*. The EIR provides no evidence in support of this assertion. The EIR notes that aquifer pump testing for Under Canvas and Terra Vi project wells was conducted at the same time in

order to measure the projects' combined effects. DEIR at 3.5-27. However, as explained above, the water testing for both projects was conducted in a wet year-type occurring within a multi-year wet period, and therefore does not accurately measure the available groundwater supply in dry years or multi-year dry periods. The October 2019 well testing is not a sound basis to draw conclusions about the Project's cumulative effects during dry years or multi-year dry periods.

The EIR's analysis of cumulative water supply impacts suffers from other flaws in addition to its misplaced reliance on water testing conducted during a multi-year wet period. The EIR acknowledges that the Project site and the Terra Vi site may be hydrologically connected and that water withdrawals from the Terra Vi project may impact groundwater availability at the Project site. DEIR, App.G-6; *see also* App. G-36. The EIR states that during the water pumping tests, the Under Canvas water well closest to the Terra Vi site experienced a water level drawdown of about one foot due to water pumping from the Terra Vi test wells. *Id*. However, the EIR dismisses this drawdown as "negligible" because it would not be enough to expose the pump. The EIR then asserts that the pumping tests indicate that the Project and the Terra Vi project "*would be able to operate simultaneously without adversely affecting each other's operations*" and therefore concludes that the Project's cumulative water supply impacts would be less than significant. Id (emphasis added). But this assertion misleadingly seeks to evade the relevant question for cumulative impact analysis, which is whether "[i]mplementation of the proposed project, in conjunction with other development, would . . . substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin." DEIR at 3.5-26 (emphasis added). The relevant question for cumulative water supply analysis is *not* whether the two projects "would be able to operate simultaneously without adversely affecting each other's operations" as the EIR asserts. DEIR at 3.5-27. The question is whether the two projects' combined water demand would "substantially decrease groundwater supplies" or "impede sustainable groundwater management." DEIR at 3.5-26. The assertion that the two projects could operate at the same time without adversely affecting each other does not support the conclusion that their cumulative impacts on groundwater supply are less than significant.

The EIR must be revised to actually analyze the combined effects of the two projects on groundwater supplies. Moreover, the EIR fails to consider how cumulative water demand from the Project and the adjacent Terra Vi project could impact nearby residential wells. The EIR must analyze cumulative water supply impacts of the Project and the Terra Vi project on these neighboring wells.

The DEIR concludes that "[i]mplementation of the proposed project, in conjunction with other development, would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years," and that this impact would therefore be less than significant. DEIR at 3.5-30 (Impact 3.5-16). However, the EIR provides no analysis at all in support of this conclusion. The EIR simply refers to the document's earlier unsupported conclusion that cumulative water supply impacts of the Project and other nearby projects would be less than significant. *Id*. (citing Impact 3.5-12). But that earlier impact discussion (Impact 3.5-12) also entirely fails to consider the adequacy of water supplies in dry and multiple dry years, as explained above. The EIR's conclusions regarding cumulative water supply impacts are therefore not supported by adequate evidence.

F. The EIR Fails to Adequately Analyze or Mitigate the Project's Noise Impacts.

The EIR concludes that the Project would not generate "a substantial temporary or permanent increase in ambient noise levels in the vicinity of the [P]roject in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies," and that noise impacts would therefore be less than significant. DEIR at 3.6-9 (Impact 3.6-1). However, the EIR fails to provide sufficient evidence in support of this conclusion.

1. The EIR Does Not Adequately Describe the Existing Noise Setting and Nearby Noise Receptors.

As an initial matter, the EIR's description of the existing noise setting is inadequate, because it does not adequately identify all nearby sensitive noise receptors that could be impacted by Project noise. An accurate depiction of existing environmental conditions is critical to a complete assessment of project impacts. "[T]o inform decision makers and the public of any significant adverse effects a project is likely to have on the physical environment . . . , an EIR must delineate environmental conditions prevailing absent the project, defining a baseline against which predicted effects can be described and quantified." *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 447. Investigating and reporting existing conditions are "crucial function[s] of the EIR." *Save Our Peninsula Comm. v. Monterey County* (2001) 87 Cal.App.4th 99, 122. "[W]ithout such a description, analysis of impacts, mitigation measures and project alternatives becomes impossible." *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 953. Decisionmakers must be able to

weigh the project's effects against "real conditions on the ground." *City of Carmel-by-the-Sea v. Bd. of Supervisors* (1986) 183 Cal.App.3d 229, 246.

Here, the EIR fails to meet CEQA's clear requirements because it fails to identify all of the noise-sensitive land uses that would be impacted by the Project's increase in noise. The EIR mentions only two existing noise receptors, stating that "[t]he nearest sensitive receptor to the project is a residence located approximately 1,400 feet southeast and downhill of the nearest proposed project facilities. Another residence is located about the same distance from the northwest corner of the site, across SR-120." DEIR at 3.6-5. However, the EIR's Project Description section states that "[a]djacent land uses include scattered private residences, recreation facilities, and open space" and that "[t]he nearest residence is approximately 1,300 feet southeast of the nearest proposed project facilities," 100 feet closer than the residence mentioned in the noise section. DEIR at 2-2. Other than the two residential receptors mentioned in the noise section, the EIR entirely fails to discuss the noise sensitivity of land uses surrounding the project, including other residences, recreation facilities and open space. The EIR acknowledges that "parks and other outdoor recreation areas generally are more sensitive to noise" than commercial and other land uses. DEIR at 3.6-5. However, the noise analysis does not consider Project noise impacts on public forest lands and outdoor recreational uses adjacent to the Project site.

The EIR must identify the location of all nearby sensitive noise receptors that could be impacted by project noise, including all nearby residences as well as other sensitive land uses. There are at least 15 residences and at least two campgrounds in the Project vicinity. Until the EIR identifies all of the nearby sensitive receptors in the area, it is not possible to identify existing ambient noise levels at each receptor location or to determine the appropriate significance criteria. Moreover, without identifying the location of all sensitive receptors in the area, it is not possible to evaluate how noise from construction and operation of the Project will impact those sensitive receptors. Once the EIR is revised to provide this information, it will then be able to identify appropriate significance thresholds, quantify and analyze the Project's noise impacts on each receptor location, and identify appropriate mitigation for the Project's significant noise impacts.

The EIR's failure to identify the location of sensitive noise receptors also makes it impossible to determine compliance with the Tuolumne County General Plan. The General Plan's Noise Element requires that "the exterior noise level standard[s] shall be applied to the property line of the receiving land uses." However, the EIR does not delineate the receiving land uses' property lines. Until the EIR identifies these property

boundaries, it is not possible to evaluate the Project's noise impacts or determine the Project's consistency with the General Plan.

2. The EIR Fails to Adequately Analyze Noise from Project Construction.

The EIR's analysis of construction noise impacts is inadequate. The EIR states that the project's greatest noise impacts would be during construction, and that "[t]he noisiest construction activity would be expected to range from 77 dBA to 85 dBA at a distance of 50 feet," but that "[t]he nearest sensitive land uses would be more than 1,000 feet from the construction area, and noise levels from each piece of equipment would be reduced to 48 dBA to 55 dBA at this distance." DEIR at 3.6-10. However, the EIR lacks support for this conclusion because it has not adequately described the nature and location of all surrounding sensitive land uses. Until all surrounding noise-sensitive uses are considered, an accurate analysis of the Project's noise impacts is impossible. The EIR also relies on inadequate significance criteria to evaluate the Project's construction noise impacts. The EIR asserts that noise generated by Project construction would be "well below the County's 60 dBA exterior noise exposure standards" in the noise element of the County's General Plan. DEIR at 3.6-10. However, the Project's asserted compliance with General Plan standards does not mean that construction noise impacts would be less than significant. *See Communities for a Better Environment,* 103 Cal.App.4th at 111-14; *Californians for Alternatives to Toxics,* 136 Cal.App.4th at 15-17; *Protect the Historic Amador Waterways,* 116 Cal.App.4th at 1108–09.

3. The EIR Does Not Adequately Analyze the Project's Operational Noise, Including Noise from Special Events.

The EIR's analysis of the Project's operational noise impacts is also inadequate. The EIR finds that Project operations would cause "increases in ambient noise levels in the project vicinity due to activities such as outdoor dining, community campfires, vehicle movement, and occasional use of the backup generator." DEIR at 3.6-11. However, the EIR asserts that '[o]peration of the camp would not include daily activities producing amplified sound or other significant noise producing sources, and as such, would not adversely affect the surrounding environment." The EIR does not provide adequate evidence or analysis in support of its assertion that Project operations would not include any significant noise producing sources and would not cause adverse environmental impacts. Instead, the EIR simply states that "[t]he nearest existing residence is approximately 1,300 feet southeast of the nearest project facilities; at this distance, operation of the camp is not expected to produce noise impacts to this residence." *Id*. While acknowledging that the Project would include a generator, the EIR

entirely fails to analyze the noise caused by the generator or its impact on nearby receptors. Further, the EIR's Project Description notes that the Project would include an "emergency notification public address system" (DEIR at 2-17, 18), but the EIR's noise analysis completely ignores the potential noise impacts of this system.

The EIR states that "[s]pecial events could occur on occasion as part of the project's operation," such as "concerts, weddings, and business group events," and that these events "may involve the temporary use of amplified sound." DEIR at 3.6-11. However, the EIR makes no attempt to analyze the noise impacts of amplified music or other noise generated by these events, asserting that amplified sound equipment "would be specific to an event" and that resulting noise would be intermittent. *Id*. Instead, the EIR simply claims that amplified sound equipment would be operated in compliance with Tuolumne County Code requirements and the County General Plan's stationary noise source standard, and that "[c]ompliance with these standard requirements would avoid a significant effect." *Id*.; *see also* FEIR at 2-27. Again, as explained above, the Project's asserted compliance with County regulations or General Plan standards does not mean that operational noise impacts would be less than significant. The EIR states that "[t]he generation of amplified sound would also be required to terminate by 10:00 p.m." and that "[s]pecial event noise levels would be monitored if complaints are received by the County regarding any potential violations." *Id*. However, these assertions do not demonstrate that the Project's operational noise impacts would be less than significant.

4. The EIR Lacks Evidence that its Proposed Noise Mitigation Measures Would be Effective.

The EIR proposes two mitigation measures to reduce the Project's construction noise, but lacks evidentiary support for its conclusion that these mitigation measures would be effective in reducing noise impacts below a significant level. DEIR at 3.6-12. Mitigation Measure 3.6-1(a) would require that noise levels generated by activities on the project site adhere to General Plan exterior noise limits as measured at the receiving property line. *Id*. However, as discussed above, compliance with General Plan standards does not mean that impacts would be less than significant or that mitigation measures would be effective. Mitigation Measure 3.6-1(b) would limit hours of exterior construction on the project site to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. *Id*. However, the EIR does not explain why this mitigation measure would reduce noise impacts to less than significant: it merely limits the duration of daily construction noise, not the volume of construction noise. An EIR's conclusions regarding the effectiveness of measures to mitigate project impacts must be supported by substantial evidence. To support a conclusion that a project would have less-than-

significant impacts, an EIR "must provide a quantitative or qualitative determination or estimate of the mitigation measures' effect" on project impacts. *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832, 845. Here, the EIR fails to provide substantial evidence that the proposed mitigation measures would be effective and is therefore inadequate.

5. The EIR Does Not Adequately Analyze Cumulative Noise Impacts.

The EIR's analysis of the Project's cumulative noise impacts is also inadequate. As an initial matter, the EIR improperly limits the scope of its cumulative impact analysis, relying on General Plan Implementation Program 5.A.e as justification to exclude from the analysis all projects more than 2,200 feet from the Project site. DEIR at 3.6-14. Implementation program 5.A.e simply states that "where residences or other noise sensitive uses are located within 1,900 feet of construction sites, appropriate measures shall be implemented to limit noise exposure from construction." Implementation program 5.A.e does not provide any basis to limit the scope of the cumulative noise impacts analysis to a 2,200 foot radius, and the EIR provides no evidence in support of that limitation. Relying on this improperly-narrowed scope of analysis, the EIR asserts that the only reasonably foreseeable project that could have cumulative noise impacts together with the Project is the Terra Vi project. *Id*. The EIR's cumulative noise analysis must be revised to consider all nearby projects, not only those within 2,200 feet of the Project site.

The EIR concludes that cumulative noise impacts from the Project and other nearby developments would be less than significant, but fails to provide adequate evidence in support of that conclusion. DEIR p. 3.6-14. The EIR acknowledges that the Terra Vi project could be constructed at the same time as the Project, and notes that there are noise-sensitive residential receptors within 250 feet of the Terra Vi project which could be impacted by Terra Vi construction noise. *Id*. However, the EIR again relies on arbitrary cutoff distances as an excuse to ignore cumulative noise impacts, asserting that because the Under Canvas Project would be approximately 1,300 feet from the nearest sensitive receptor and 1,400 feet from the receptors closest to the Terra Vi project, the Project is too far away from those receptors to make a meaningful contribution to cumulative noise impacts. *Id*. The EIR provides no evidence or analysis in support of this conclusion.

The EIR's conclusions regarding cumulative operational noise impacts are similarly unsupported. The EIR simply asserts that "[b]ecause construction noise would

be greater than any operational stationary sources associated with the Terra Vi Lodge Yosemite project, it is reasonable to consider that operational noise from stationary sources would also be less than cumulatively considerable and cumulative stationary source impacts would be less than significant." DEIR at 3.6-15. The EIR relies on its faulty analysis of construction noise and provides no evidence for its conclusion that cumulative operational noise impacts would be less than significant. The EIR must be revised to fully analyze the cumulative construction and operational noise impacts of the Project together with all other nearby projects.

G. The EIR's Analysis of Traffic Impacts and Roadway Hazards is Inadequate.

We retained transportation engineer Neal Liddicoat with Griffin Cove Transportation Consultants ("GCTC") to review the EIR's transportation analysis. *See* GCTC, Review of Under Canvas FEIR Transportation Analysis, December 14, 2020 ("GCTC Report"), attached as Exhibit L and incorporated by reference into this letter. GCTC identified several glaring deficiencies in the EIR's transportation analysis, including but not limited to the lack of a traffic impact study, a flawed trip generation analysis, a deficient sight distance analysis, and the failure to consider the need for a left-turn lane or acceleration lane on SR-120 westbound at the intersection with Hardin Flat Road. We direct the County to the entire GCTC report for a detailed accounting of the inadequacies in the EIR's transportation analysis.

1. The EIR Does Not Adequately Analyze the Project's Impacts on Roadway Hazards.

The EIR concludes that the Project would not substantially increase roadway hazards, and that impacts would be less than significant. DEIR at 3.8-10 (Impact 3.8-3). However, it fails to provide sufficient evidence or analysis in support of this conclusion. The EIR's cursory, one-paragraph discussion simply asserts that impacts would be less than significant because the Project would not would not involve redesign or reconfiguration of existing roadways, and claims that the Project "would not introduce any new types of vehicles, turning movements, or other features that would differ substantially from that which is already occurring." *Id.*; *see also* FEIR at 2-21. The EIR fails to provide any evidence in support of the latter statement, which is contradicted by other parts of the document. Elsewhere, the EIR estimates that the Project would generate 260 new vehicle trips per day. DEIR at 3.8-7. The Project would require construction of a new access driveway which would connect to Hardin Flat Road, creating a new intersection where none existed previously. DEIR at 2-10. The EIR's Project description states that the Project driveway would intersect Hardin Flat Road "500 feet south from

the intersection of SR-120 and Hardin Flat Road. *Id*. However, the EIR's roadway hazards section asserts that the Project driveway would intersect Hardin Flat Road "800 feet south of Hardin Flat Road's intersection with SR-120." DEIR at 3.8-10. The EIR must be revised to account for this 300-foot discrepancy, and must evaluate potential roadway hazards created by the construction of the new intersection on Hardin Flat Road.

The EIR must also analyze the potential for Project-generated traffic to increase roadway hazards at the intersection of Hardin Flat Road with SR-120. The EIR asserts that "[t]he distance between the project entrance and SR- 120, together with the low traffic volumes generated by the project, would ensure that no backups onto SR-120 would occur." *Id*. However, it fails to provide any evidence in support of this conclusion, and as noted above, the EIR is inconsistent as to the distance between these intersections. The FEIR acknowledges that the corner sight distance along SR-120 east of the intersection with Hardin Flat Road does not meet safety standards, and that achieving acceptable corner sight distance east of the intersection is "not feasible due to the existing raised embankment on the south side of the highway." FEIR at 2-21; *see also* GCTC Report, Exhibit L at 5-6. The FEIR asserts that since the current sight distance deficiency is an existing condition, the Project would not create a new significant impact with respect to sight distance. *Id*. However, this ignores the fact that the Project will cause hundreds of additional vehicles to enter SR-120 at the Hardin Flat Road intersection every day, exacerbating the existing safety hazard. The EIR must fully analyze this potential impact.

Contrary to the EIR's assertion that adequate sight distance will be available at the SR-120/Hardin Flat Road intersection, GCTC's analysis shows that there will be inadequate sight distance for westbound vehicles approaching the intersection on SR-120. GCTC Report, Exhibit L at 7. Westbound drivers on SR-120 will be unable to safely avoid obstructions that might be present in the intersection, as they will be unable to stop before entering the intersection. The result will be additional collisions within the intersection, which will be exacerbated by construction of the Project. This represents a significant Project safety impact that was not disclosed or analyzed in the EIR.

The EIR also completely ignores the potential need for a left-turn lane on westbound SR 120 to serve entering traffic and provide associated safety benefits to Project-generated traffic and other vehicles. The EIR asserts that "roadway operating conditions would remain substantially similar to current conditions and the LOS would not deteriorate. As such, improvements to SR-120, such as widening or provision of turn lanes, would not be necessary." FEIR at 2-19. However, the EIR does not include any analysis or evidence in support of this conclusion. As explained below, the EIR's

conclusions rely on a flawed analysis of Project-generated traffic. *See* GCTC Report, Exhibit L at 8. The EIR should analyze the need for construction of a left-turn lane on westbound SR 120 at Hardin Flat Road as a mitigation measure to address the safety hazards caused by the Project. *Id*.

2. The EIR Does Not Adequately Analyze the Project's Traffic Impacts.

The EIR concludes that the Project's traffic impacts on Level of Service ("LOS") on SR-120 and Hardin Flat Road would be less than significant. DEIR at 3.8-7 (Impact 3.8-1); FEIR at 2-19. The EIR also asserts that the Project would conform to applicable policies in the County's General Plan and would not result in a worsening of LOS performance criteria for SR-120 and other roadways, consistent with General Plan Policies 4.A.1 and 4.A.6. DEIR at 3.8-8. However, the EIR does not provide any evidence to support either of these statements, as no traffic impact analysis was performed to establish the existing or projected levels of service on any roadways. GCTC Report, Exhibit L at 2. The EIR did not include a traffic study for the Project, and did not calculate project-specific trip generation rates. DEIR at 3.8-6; FEIR at 2-18.

The EIR asserts that a traffic study is not necessary because the volume of traffic generated by the Project would fall short of the minimum requirements for such a study set by Caltrans. DEIR at 3.8-6. The Caltrans standard requires traffic studies for facilities that generate 50 to 100 peak-hour trips on state highways operating at LOS C or D, and the EIR asserts that the Project would generate less than that amount. *Id*. However, the EIR's assertion that SR-120 operates at LOS C or D is based on an outdated 2011 document that does not reflect current traffic conditions, and the EIR's conclusion that the Project would generate less than 50 peak-hour trips is based on a deeply flawed trip-generation analysis. GCTC Report at 2-3.

Instead of conducting a traffic study with Project-specific trip generation rates, the EIR assumed trip generation rates based on traffic counts taken at an existing Under Canvas facility in Arizona located near the Grand Canyon. DEIR at 3.8-6; FEIR at 2-18. However, the EIR does not provide adequate evidence to support its assertion that traffic impacts from the Project would be comparable to those of the Arizona facility. *See* GCTC Report, Exhibit L at 3-4. As explained in the GCTC report, insufficient data was collected at the Arizona facility, and the EIR incorrectly interprets the results of that data. *Id*. at 3-5. Without such evidence, there is no support for the conclusion that the Project's traffic impacts would be less than significant.

Setting aside the flaws in the trip-generation data from the Arizona Under Canvas facility, the EIR misapplies that data to reach unsupported conclusions about the Project's traffic impacts. The limited analysis that was completed based on the Arizona facility traffic data chose inappropriate peak-usage assumptions as its basis for projected Project traffic. The EIR's analysis incorrectly used hourly traffic averages during peak periods rather than actual peak hour figures. Averaging peak data to lower true peaks defeats the purpose of the peak flow standard. By employing weighted average trip-generation values, the EIR substantially understates the volume of traffic associated with the Project. *See* GCTC Report, Exhibit L at 4. A correct interpretation and application of trip-generation data shows that the Project would generate 64 weekday peak-hour trips, thereby exceeding the Caltrans threshold requiring a traffic impact study for the Project. *Id*. at 5.

The EIR's unsupported, "largely qualitative" traffic analysis (DEIR at 3.8-6) must be replaced with a traffic study that quantifies Project-specific trip generation as well as cumulative traffic impacts.

The EIR's traffic analysis also suffers from other deficiencies. First, the EIR understates the traffic impacts generated by the Project's staff, because it underestimates the number of staff that will be required for Project operations. As discussed above in Section II.A.5, while the EIR asserts that the Project would require only 20-30 staff, the real number of staff that will be required is likely much higher. The EIR's traffic analysis must account for the traffic impacts generated by the 60 to 80 staff that the Project may require in peak season, many of whom would commute daily from Groveland or from further away (e.g. from Jamestown/Sonora). The EIR also fails to fully account for the multiple daily car trips that Project guests may make during their stay. For example, in addition to driving to Yosemite and other tourist attractions in the area, Project guests may make additional daily car trips to eat meals. Given the Project's limited food service offerings, the EIR cannot assume that all Project guests will opt to eat meals onsite. Instead, some guests may choose to drive offsite for some meals, e.g. at Rush Creek Lodge or at restaurants in Groveland. The EIR must evaluate the traffic impacts of these additional trips. Furthermore, the EIR must consider the likelihood that Project guests may walk across SR-120 to visit the restaurant and market at the Terra Vi development directly across the highway from the Project, and must evaluate the potential roadway hazards and risks to pedestrian safety resulting from this Project-generated pedestrian traffic.

The EIR also fails entirely to analyze traffic impacts resulting from special events held at the Project site, such as weddings, which could generate large volumes of additional traffic beyond normal Project operations. The FEIR dismisses this deficiency,

asserting that special events would not generate significant additional traffic because "participants would likely travel to and stay at the site in much the same manner as any other guest." FEIR at 2-19. However, the EIR provides no evidence in support of this assertion. The EIR does not impose any limits on the frequency or size of special events that could occur at the Project site, and it is likely that the number of event guests may exceed the Project's overnight capacity and that some guests would spend the night elsewhere and travel to the site for the event. The EIR must estimate the amount and frequency of additional traffic generated by to special events, determine whether it would cause traffic roadway safety impacts, and impose appropriate mitigation measures limiting the frequency and size of special events and requiring traffic control measures for large events.

The EIR's traffic impact analysis assumes that some portion of Project guests would use the YARTS transit system instead of driving their personal vehicles, and that "it is reasonable to assume that the number of guests and employees that would do so could be substantial, with a subsequent reduction in daily personal vehicle trips." DEIR at 3.8-8. However, the EIR does not actually provide evidence in support of this assumption and does not attempt to estimate what portion of Project guests might use the YARTS service instead of driving, asserting that this number is too speculative to determine. *Id*. Moreover, the EIR fails to note that YARTS only operates for 5 months out of the year, while the Project would operate for at least 7 months, so YARTS service would not always be available during Project operation. The EIR must actually analyze the potential effect of YARTS transit usage on the Project's traffic impacts, and cannot simply assume it will result in a substantial decrease in Project-generated trips. Moreover, the EIR concludes that the project's contribution to YARTS ridership could result in ridership demand exceeding bus seating capacity, and that this impact would be potentially significant. *Id*. The EIR proposes a mitigation measure calling for Project staff to coordinate with YARTS to "recommend" that Project guests depart at alternative times to avoid overcrowding during periods of high bus ridership. DEIR at 3.8-9 (Mitigation Measure 3.8-1). The EIR asserts that this measure would reduce potential impacts to YARTS service to a less than significant level, but provides no evidence or analysis showing that this measure would be effective.

3. The EIR Does Not Adequately Analyze Cumulative Transportation Impacts.

The EIR's analysis of cumulative transportation impacts is also inadequate. The EIR acknowledges that the cumulative impacts analysis must consider other nearby projects, including the Terra Vi Lodge project directly across SR-120 from the Project

site, the Berkeley Tuolumne Camp restoration, the Mountain Sage Conditional Use Permit, and the Thousand Trails/Yosemite Lakes RV expansion project. DEIR at 3.8-11, 12. Collectively, the Under Canvas Project, Terra Vi project, Berkeley Camp project and Yosemite Lakes project represent the addition of more than 500 new guest rooms proposed within just a few miles of each other on the SR-120 Corridor – a tripling of the existing number of rooms in the Groveland area.

The EIR concludes that "[i]mplementation of the project, in conjunction with other development, would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities." DEIR at 3.8-12 (Impact 3.8-5). However, the EIR does not include any analysis in support of this conclusion. Instead, it simply asserts that cumulative impacts would be less than significant because "[t]he [P]roject and all development projects in Tuolumne County are subject to compliance with applicable Tuolumne County General Plan policies pertaining to transportation" and "would also be subject to payment of TIMF [traffic impact mitigation] fees to offset their impacts to the transportation system." *Id*. This conclusory statement is entirely insufficient. Merely asserting that all projects would be subject to applicable County General Plan policies and would be required to pay mitigation fees does not relieve the County of its legal obligation to actually analyze the cumulative impacts of those projects and show *why* the Project and other nearby development would not conflict with those policies. Moreover, the EIR fails to identify any specific improvements serving the Project that would be funded by the mitigation fee.

H. The EIR's Analysis of Project Alternatives Does Not Comply with CEQA.

The EIR fails to evaluate a reasonable range of alternatives to the Project. The EIR includes three alternatives to the Project: a Reduced Project Alternative, a Basic Services Campground Alternative, and a No Project Alternative. DEIR at 4-6. The Reduced Project Alternative would include 75 tents on the site instead of 99, and its overall footprint would be about one-third smaller than the Project. *Id*. The Basic Services Campground Alternative would be of similar size to the Project, but would not include food service or other amenities. DEIR at 4-7. The No Project Alternative would leave the site in its current condition. DEIR at 4-7, 4-8. The EIR's alternatives analysis does not include any alternate sites for the Project. Public comments suggested that an alternative site location be considered, and proposed an available parcel along SR-120 between Big Oak Flat and Groveland, but the EIR rejects the suggested alternative location as unsuitable, and declines to consider any other alternative locations. DEIR at 4-3, 4-4. The EIR does not provide any rationale for its refusal to consider other alternative locations,

merely asserting that it is not required to consider such alternatives. DEIR at 4-4. In light of the Project site's severe fire vulnerability and distance from fire protection services, the EIR should have included an alternative location in the alternatives analysis, and fails to adequately support its refusal to do so. The EIR must be revised to correct this flaw.

The EIR's comparative analysis of the alternatives' environmental effects is also flawed. The EIR correctly acknowledges that the No Project Alternative is the environmentally superior alternative. DEIR at 4-19. However, the EIR asserts that the No Project Alternative's wildfire impacts would be *worse* than those of the proposed Project, because the Project would remove dead trees and apply fuel reduction measures to existing vegetation on the site, while the No Project Alternative would leave the trees and vegetation as-is. DEIR at 4-18, 4-19. The EIR provides no evidence in support of this conclusion, which ignores the substantial fire ignition risks that the Project would create. While removal of dead trees and fuel reduction measures by themselves could reduce fire risk relative to the status quo, the EIR provides no evidence that these measures would be sufficient to outweigh the increased risk of wildfire ignition caused by construction of Project facilities, including 99 canvas tents with wood-burning stoves, outdoor fire pits, the commercial kitchen, parking areas, and other features. The EIR's flawed analysis of the Project's wildfire risks (discussed above) therefore also skews the document's comparison of the environmental impacts of Project alternatives.

I. The FEIR Fails to Adequately Respond to Public Comments on the DEIR.

In our November 17 letter to the County, we noted that the FEIR failed to respond to public comments on the DEIR submitted by Central Sierra Environmental Resource Center ("CSERC") and the Tuolumne River Trust ("TRT"). As we explained, this failure violated CEQA, which requires the FEIR to include written responses to all comments received on the DEIR. Cal. Pub. Res. Code § 21091(d)(1); Cal. Code Regs. tit. 14, § 15088(a). The County purported to cure that failure by issuing a last-minute addendum to the FEIR, which includes the comment letters received from CSERC and TRT. FEIR Ch. 5 ("Errata"). The addendum purports to respond to CSERC's comments on the DEIR. FEIR at 5-23. However, the last-minute release of the addendum did not allow adequate time for the public to review the EIR's responses to CSERC's comments before the Planning Commission's November 18 hearing on the Project. Moreover, the addendum does not adequately respond to TRT's comment letter, which raised substantive concerns regarding the EIR's analysis of water supply, water quality, and wildfire impacts. FEIR at 5-35. Instead of providing substantive responses to TRT's seven-page letter, the FEIR's one-page response simply refers to the FEIR's master responses section and asserts that

the issues raised in TRT's comments were already evaluated in the EIR. *Id*. This cursory response is insufficient under CEQA, which requires that the agency address *in detail* the environmental issues raised when the agency's position is at variance with the objections raised in public comments, "giving reasons why specific comments and suggestions were not accepted." Cal Code Regs tit. 14, § 15088(c).

III. Approval Of the Project Would Violate the State Planning And Zoning Law.

The State Planning and Zoning Law (Gov't Code § 65000 et seq.) requires that development decisions be consistent with the jurisdiction's general plan. This includes the requirement that zoning must be consistent with the general plan. Gov't Code § 65860. As reiterated by the courts, "[u]nder state law, the propriety of virtually any local decision affecting land use and development depends upon consistency with the applicable general plan and its elements." *Resource Defense Fund v. County of Santa Cruz* (1982) 133 Cal.App.3d 800, 806. Accordingly, "[t]he consistency doctrine [is] the linchpin of California's land use and development laws; it is the principle which infuses the concept of planned growth with the force of law." *Families Unafraid to Uphold Rural El Dorado County v. Bd. of Supervisors* (1998) 62 Cal.App.4th 1332, 1336.

It is an abuse of discretion to approve a project that "frustrate[s] the General Plan's goals and policies." *Napa Citizens for Honest Government v. Napa County Bd. of* Supervisors (2001) 91 Cal.App.4th 342, 379. The project need not present an "outright conflict" with a general plan provision to be considered inconsistent; the determining question is instead whether the project "is compatible with and will not frustrate the General Plan's goals and policies." *Id*. Here, the proposed Project does more than just frustrate the General Plan's goals. For the reasons discussed above (*see* section II.C.6), the Project is directly inconsistent with numerous provisions in the Tuolumne County General Plan, including goals and policies related to wildfire, emergency access, evacuation, and fire protection services. Because of these inconsistencies, approval of this Project would violate State Planning and Zoning Law.

IV. The DEIR failed to include a Mitigation Monitoring and Reporting Program as required by the County code.

The DEIR for the Project failed to include a Mitigation Monitoring and Reporting Program (MMRP) as required by County code section 17.72.220. While the FEIR does include an MMRP in Chapter 4, this is not sufficient to comply with the code. Tuolumne County Code section 17.72.220 provides that "[m]onitoring and/or reporting plans for projects for which an EIR is prepared shall be included in the *draft* EIR. *The plan shall be subject to the same public review and comment afforded to all other portions of the EIR*."

(emphasis added). By failing to include an MMRP in the DEIR, the County violated its own code and deprived the public of a full opportunity to review and comment on the MMRP along with the rest of the DEIR.

V. Conclusion

For all of the foregoing reasons, as well as the reasons presented in our prior letters and other public and expert comments, and in light of the evidence in the record, the Board of Supervisors should uphold the appeal, reverse the Planning Commission's decision, and deny the proposed Project. In any event, the Board cannot lawfully approve this Project without first preparing and recirculating a thorough, accurate, and complete EIR that discloses, analyzes, and provides mitigation for the Project's impacts to this unique environment.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Ellison Folk

Patrick Woolsey

List of Exhibits:

Exhibit A: Letter from Brian Anderluh to Natalie Rizzi re appeal of Under Canvas and Terra Vi projects, December 14, 2020.

Exhibit B: Terra Vi Lodge Project DEIR Excerpts.

Exhibit C: Photographs of Under Canvas projects.

Exhibit D: Letter from California Attorney General to San Diego County re: Otay Ranch Resort Village – Village 13, November 12, 2020.

Exhibit E: Conditions of Approval for the Terra Vi Lodge Project.

Exhibit F: Transcript of Tuolumne County Planning Commission's November 18, 2020 hearing on the Yosemite Under Canvas Project.

Exhibit G: Letter from Laurel L. Impett to Quincy Yaley, Terra Vi Lodge DEIR, July 29, 2020 (with exhibits).

Exhibit H: Griffin Cove Transportation Consultants ("GCTC") Report Re Terra Vi Lodge Project DEIR, September 15, 2020.

Exhibit I: Why California wildfire evacuations are becoming deadly traffic jams, The Sacramento Bee, April 28, 2019.

Exhibit J: When is California Fire Season, Source, Frontline Wildfire Defense System.

Exhibit K: CBEC Eco Engineering, Report re: Terra Vi Lodge DEIR, July 27, 2020.

Exhibit L: Griffin Cove Transportation Consulting, Review of Under Canvas FEIR Transportation Analysis, December 14, 2020.

cc: Mary Beth Campbell, Save Sawmill Mountain

1319151.5

EXHIBIT A

December 14, 2020

Via Electronic Mail

Natalie Rizzi
Tuolumne County Community Development Department
2 South Green Street
Sonora, CA 95370

Re: Appeal of Planning Commission's Approval of the Yosemite Under Canvas Project and Terra Vi Project

Dear Natalie,

My name is Brian Anderluh. I am co-owner of Evergreen Lodge and Rush Creek Lodge, both of which are located in Groveland. I have substantial experience running hospitality businesses in Tuolumne County and I am familiar with the details of such operations. I submit the following statement in support of Save Sawmill Mountain's appeal of the Planning Commission's approval of the Yosemite Under Canvas (YUC) as well as the Terra Vi project and ask that this correspondence be included in the administrative record for these projects.

- YUC estimates in their final EIR that they will need just 20-30 employees to run their 99 unit resort.

- The Initial Study reflected staff counts of "up to 40 seasonal employees."

- The final EIR states "Between 20 and 30 staff members would be employed by the project during the operational season, with 10 to 15 personnel working onsite at any given time."

- Yet page 4 of Appendix I of the Draft EIR states that for Under Canvas' Grand Canyon operation, which has 70 units, "On average, approximately 25 to 30 staff, including administration, maintenance, and housekeeping, are onsite daily" (this does not appear to include food service staff). Given 7-day-a week, multiple shift per day operations, implied total staff member count in Grand Canyon well over 50.

Evergreen Lodge
33160 Evergreen Road
Groveland, CA 95321
EvergreenLodge.com
(209) 379-2606

Rush Creek Lodge
34001 Highway 120
Groveland, CA 95321
RushCreekLodge.com
(209) 379-2373

- Yosemite Under Canvas is larger than Grand Canyon Under Canvas, with 99 dwelling units, not 70, and required staffing in Yosemite would be higher than in the Grand Canyon.

- The Initial Study staffing estimates for YUC were underestimated, and the final EIR estimate, for which there is no reason given for further reducing staff counts from the Initial Study, are completely unrealistic and drive incorrect final EIR impact conclusions.

- Evergreen Lodge, which is similar in size to YUC, employs over 125 people in peak season.

- Based on my experience operating Evergreen Lodge and Rush Creek Lodge, I estimate YUC will require 60-80 employees in peak season.

- Similarly, Terra Vi (TV) estimates that they will need just 40 employees to run their 126 room resort.

- Rush Creek Lodge, which is similar in size to TV, employs over 200 people in peak season.

- Based on my experience, I estimate TV will require between 80-100 employees as a limited service resort and up to 160 if chooses to operate as a full service resort.

- There are few potential employees in the Groveland area, so it's likely that almost all staff for YUC and TV will be recruited from outside of Tuolumne County.

- Out of Evergreen Lodge and Rush Creek Lodge's 325 peak season staff, only 30 are true locals.

- For their other locations, Under Canvas has a strong presence on CoolWorks, a remote resort recruiting site, and other similar sites. Under Canvas clearly draws most of their staff from other areas, bringing them in to live and work at their remote properties. As noted above, this is true of Evergreen Lodge and Rush Creek Lodge as well.

- There is literally no available seasonal rental housing in Groveland. All properties are being used as short term vacation rentals.

- I believe YUC should have to provide seasonal onsite housing for at least 40 staff members. Without this, the EIR's conclusion that staffing will not have a significant

impact on the local community is false. Their current plan is to build no onsite staff housing.

- Similarly, TV should have to provide onsite housing for at least 80 staff members. Their current plan is to build onsite staff housing for 22 employees.

- I know this from first-hand experience with my two lodges.

- At Rush Creek Lodge and Evergreen Lodge, we house 250 of our 325 employees in company-owned housing.

- We were appropriately required to build staff housing as part of our development approval conditions, just as YUC and TV should be.

- YUC and TV will struggle to find local staff and will have to recruit employees from outside Tuolumne County and then will not be able to house those employees.

- This will cause disruption in the local labor and housing markets, driving up costs for local businesses and driving up rental rates for moderate income earners.

- If YUC has 60-80 staff somehow living in local rental housing (which is 18 miles away in downtown Groveland), this will increase daily and peak trip generation to and from the site, furthering the need for a full traffic study for YUC.

- This should result in the need for YUC proponents to make the intersection of Hwy 120 and Hardin Flat Road safe, with the addition of a left turn lane and right turn pocket.

The failure to identify the true staffing needs of YUC means that the EIR does not adequately evaluate impacts on housing and public services, traffic, vehicle miles travelled, traffic safety, and water supply. This failure is amplified by a similar failure with respect to TV. Both EIR's must be revised to provide accurate project descriptions and analysis of the impacts of approving these projects.

Sincerely,

Brian Anderluh

EXHIBIT B

June 2020

Draft EIR | State Clearinghouse Number: 2019110286 **Volume 1: Draft EIR**

TERRA VI LODGE PROJECT

DRAFT ENVIRONMENTAL IMPACT REPORT

for Tuolumne County

PLACEWORKS

4.9 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the regulatory framework and existing conditions on the project site related to hazards and hazardous materials, and an evaluation of the potential environmental consequences associated with the construction and operation of the proposed project that are related to the release of hazardous materials into the environment.

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 REGULATORY FRAMEWORK

Federal Regulations

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Department of Toxic Substances Control (DTSC) is responsible for implementing the Resource Conservation and Recovery Act program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to Tuolumne County Environmental Health for State law regulating hazardous waste producers or generators in the County. A CUPA is a local agency that has been certified by CalEPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by CalEPA to become a CUPA, but is the responsible local agency that would implement the six Unified Programs until they are certified. Currently, there are 83 CUPAs in California.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act, also known as Title III of the Superfund Amendments and Reauthorization Act, was enacted in October 1986. This law requires any infrastructure at the State and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their communities. Emergency Planning Community Right-to-Know Act Sections 301 through 312 are administered by United States Environmental Protection Agency's (EPA) Office of Emergency Management. The EPA's Office of Information Analysis and Access implements the Emergency Planning Community Right-to-Know Act Section 313 program. In California, Superfund Amendments and Reauthorization Act Title III is implemented through California Accidental Release Prevention program.

The State of California has delegated local oversight authority of the California Accidental Release Prevention program to the County of Santa Clara.

Hazardous Materials Transportation Act

The United States Department of Transportation regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations. State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. The California State Fire Marshal's Office has oversight authority for hazardous materials liquid pipelines. The California Public Utilities Commission has oversight authority for natural gas pipelines in California. These agencies also govern permitting for hazardous materials transportation.

Federal Response Plan

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies and other resource providers, including the American Red Cross, that: 1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of State and local governments overwhelmed by a major disaster or emergency; 2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and 3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency. The Federal Response Plan is part of the National Response Framework, which was most recently updated on June 2016.

Robert T. Stafford Disaster Relief and Emergency Assistance Act

The Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 authorizes the federal government to provide assistance in emergencies and disasters when State and local capabilities are exceeded. The Robert T. Stafford Disaster Relief and Emergency Assistance Act constitutes statutory authority for most federal disaster response activities, especially as they pertain to the federal Emergency Management Agency and its programs.

National Response Framework

The 2016 National Response Framework, published by the Department of Homeland Security, is a guide to how the nation responds to all types of disasters and emergencies. The Framework describes specific authorities and best practices for managing incidents that range from serious local to large-scale terrorist attacks or catastrophic natural disasters. In addition, the Framework describes the principles, roles, and responsibilities, and coordinating structures for responding to an incident, and further describes how response efforts integrate with those of the other mission areas.

Occupational Safety and Health Administration

The federal Occupational Safety and Health Act of 1970 authorizes each state (including California) to establish their own safety and health programs with the United States Department of Labor, Occupational Safety and Health Administration's (OSHA) approval. The California Department of Industrial Relations regulates implementation of worker health and safety in California. California OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response regulations.

OSHA Regulation 29 Code of Federal Regulations Standard 1926.62 regulates the demolition, renovation, or construction of buildings involving lead materials. Federal, state, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be abated prior to demolition following all applicable regulations.

Federal Aviation Administration

The Federal Aviation Administration (FAA) provides standards for developing emergency helicopter landing facilities (EHLFs) in Advisory Circular 150/5390-2C. The circular covers general aviation heliports, including private use, transport heliports, hospital heliports, and emergency landing facilities. The FAA recommends guidelines and specifications in the circular for materials and methods used in the construction of EHLFs. The operator must complete FAA Form 7460-1 (Notice of Proposed Construction and Alteration), FAA Form 7480-1 (Notice of Landing Area), and other requirements listed under Part 157 for persons proposing to construction, activate, deactivate, or alter a heliport to give advance notice of their intent to the FAA. The operator must also advise the local Terminal Approach Radar Control or the local Air Traffic Control facility manager in writing of the EHLF.

The proposed emergency helipad is not intended to operate as a helistop or heliport for private use landings and would be considered an EHLF. Therefore, no notice for an airspace evaluation (FAA 7480) needs to be filed with the FAA.

California Department of Transportation, Division of Aeronautics

Under the State Aeronautics Act, the California Department of Transportation (Caltrans) has authority to grant permits for the planning, construction, establishment, maintenance, and operation of airports and air navigation facilities. Sections 3534(b)(1), 3550, 3551, and 3554 provide required details, which include heliport design standards such as the TLOF (Touchdown and Liftoff Area), FATO (Final Approach and Takeoff Area), and Safety Areas, Federal Aviation Regulation Part 77 imaginary surfaces including the Primary, Approach, and Transitional Surfaces, and required marking, lighting, and visual aids.

The Caltrans Division of Aeronautics issues permits for heliports and helipads in the State of California. An EHLF is exempt from Caltrans Division of Aeronautics heliport permitting requirements in accordance with Division of Aeronautics – Caltrans – Title 21 CCR 3533 (b)(8) provided it is not used for any purpose other than as an emergency use facility.

State Regulations

California Building Code

The State of California provided a minimum standard for building design through the California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations. The CBC is based on the 2015 International Building Code, but has been modified for California conditions. The CBC is updated every three years, and the current (2016) CBC went into effect January 1, 2020. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the typical fire safety requirements of the CBC, including the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in Part 9 of Title 24 of the California Code of Regulations. The CFC is revised and published approximately every three years by the California Building Standards Commission, and the current CFC went into effect January 1, 2020.

California Governor's Office of Emergency Services

The California Governor's Office of Emergency Services (Cal OES) began as the State War Council in 1943. With an increasing emphasis on emergency management, it officially became Cal OES in 1970. The California Emergency Management Agency was established as part of the Governor's Office on January 1, 2009—created by Assembly Bill 38 (Nava), which merged the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. The California Emergency Management Agency was responsible for the coordination of overall State agency response to major disasters in support of local government. The agency was also responsible for assuring the State's readiness to respond to and recover from all hazards—natural, manmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. On July 1, 2013, Governor Edmund G. Brown Jr.'s eliminated the California Emergency Management Agency and restored it to the Governor's Office as the Cal OES.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California. The CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, the CAL FIRE produced the *2010 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments.[1]

State Responsibility Areas Fire Safe Regulations

SRA Fire Safe Regulations outline basic wildland fire protection standards and can decrease the risk of wildfire events. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations. The State statute for wildfire protection is PRC Section 4290. Requirements in the PRC include information on:

- Road standards for fire equipment access
- Standards for signs identifying streets, roads, and buildings
- Minimum private water supply reserves for emergency fire use
- Fuel breaks and greenbelts
- Basic emergency access

California Environmental Protection Agency

The CalEPA was created in 1991, unifying California's environmental authority in a single cabinet-level agency and bringing the California Air Resources Board, State Water Resources Control Board, Regional Water Quality Control Boards (RWQCBs), California Department of Resources Recycling and Recovery (formerly the Integrated Waste Management Board), DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies were placed within the CalEPA as the "umbrella" for the protection of human health and the environment and to ensure the coordinated deployment of State resources. Its mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality.

Department of Toxic Substance Control

The DTSC is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California primarily under the authority of the federal Resource Conservation and Recovery Act and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

[1] California Department of Forestry and Fire Protection, 2010, 2010 Strategic Fire Plan for California, https://www.cafsti.org/wp-content/uploads/2010-Strategic-Fire-Plan-for-California.pdf, accessed March 6, 2020.

Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC-listed hazardous waste facilities and sites, Department of Health Services (DHS) lists of contaminated drinking water wells, sites listed by the State Water Resources Control Board as having underground storage tank (UST) leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Regional Water Quality Control Board

The RWQCB is a department of CalEPA that oversees investigation and cleanup of sites including underground storage tanks where wastes have been discharged in order to protect the water quality of the state. The RWQCB regulates wastewater discharges to surface waters and to groundwater. They also regulate storm water discharges from construction, industrial, and municipal activities.

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and California Code of Regulations, Title 19, Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on-site. A business that uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

Regional Regulations

Central Valley Regional Water Quality Control Board

The Porter-Cologne Water Quality Act[2] established the State Water Resources Control Board and divided the state into nine regional basins, each under the jurisdiction of a RWQCB. The Central Valley RWQCB regulates water quality in the project area. The Central Valley RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the state is threatened, and to require remediation actions, if necessary.

Tuolumne County Environmental Health Division

The Tuolumne County Environmental Health Division is the Certified Unified Program Agency (CUPA) for the project site and consolidates, coordinates, and makes consistent the following existing programs:

- Aboveground Storage Tank Spill Prevention, Control Countermeasure Plan (California Health and Safety Code, Chapter 6.6.7)
- Underground Storage Tank Program (UST)
- California Accidental Release Prevention program
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs (California Health and Safety Code, Chapter 6.5) Hazardous Materials Business Plan (HMBP)

[2] California Water Code Sections 13000 et seq.

Tuolumne County Fire Department

The Tuolumne County Fire Department (TCFD) is a cooperative fire department with California Department of Forestry and Fire Protection (CAL FIRE). Within the Tuolumne County Fire Department/CAL FIRE along with eight fire districts provide life and property emergency response. In addition to services traditionally provided by most fire protection agencies nationwide, the county has the responsibility of addressing severe wildland fire protection. Wildland fires constitute the most significant major disaster threat in the county.[3]

Tuolumne County Office of Emergency Services

The County of Tuolumne Office of Emergency Services (OES) provides preparedness before, and coordination direction during, large-scale emergencies and disasters. OES coordinates with partner agencies, special districts, and key private agencies in providing planning, response, recovery, and mitigation activities as a result of disaster related incidents.

The state's Office of Emergency Services coordinates overall state agency response to major disasters in support of local government. The office is responsible for assuring the state's readiness to respond to and recover from both natural and man-made disasters, and for assisting local governments in their emergency preparedness, response, and recovery efforts.[4]

Tuolumne County Code of Ordinances

Chapter 13.25, *Hazardous Materials Management,* of the County's Code of Ordinances establishes administrative procedures for the effective local implementation of hazardous material, hazardous waste, and regulated hazardous substances regulatory requirements, and to bring all hazardous material and hazardous waste regulatory authority of the Unified Program Agency and compliance requirements into one ordinance.

Chapter 15.20, *Fire Safety Standards*, has local fire safe ordinances in place including requirements for adequate setbacks, defensible space, and fuel modification. The chapter also includes requirements for the provision of adequate fire flows.

Tuolumne County Integrated Waste Management Plan

On February 11, 1992, Tuolumne County adopted the Household Hazardous Waste Element of the Tuolumne County Integrated Waste Management Plan to reduce the amount of household hazardous waste generated within Tuolumne County through reuse and recycling, to divert household hazardous waste from landfills, to promote alternatives to toxic household products, and to educate the public regarding household hazardous waste management. As part of compliance with this plan, the County operates recyclable household hazardous waste collection at the CalSierra Transfer Station in East Sonora

[3] Tuolumne County, Fire Department, https://www.tuolumnecounty.ca.gov/717/Fire-Department, accessed November 25, 2019.

[4] Tuolumne County, Office of Emergency Services, https://www.tuolumnecounty.ca.gov/308/Office-of-Emergency-Services, accessed November 25, 2019.

and the Groveland Transfer Station in Groveland and collection events for non-recyclable household hazardous waste, organized by the Solid Waste Division of the Community Resources Agency, to remove household hazardous wastes from the waste stream. The Solid Waste Division also operates a household hazardous waste collection facility at the former Jamestown Mine.[5]

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The goal of the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (HMP) is to arrive at practical, meaningful, attainable and cost-effective mitigation solutions to minimize each jurisdiction's vulnerability to the identified hazards and ultimately reduce both human and financial losses subsequent to a disaster. The MHP addresses risks associated with numerous hazards, including wildfire, earthquake, flooding, sinkholes, and extreme weather. An action plan was developed in 2004, updated in 2013 and updated again in 2017 which entails adopting, implementing, assigning responsibility, monitoring, and reviewing this hazard mitigation plan over time, to ensure the goals and objectives are being achieved and the plan remains a relevant document.[6]

Tuolumne County Emergency Operations Plan

The Tuolumne County Emergency Operations Plan delineates the County's procedures and policies in response to a significant disaster, including extreme weather, flood or dam failure, earthquakes, hazardous materials, terrorism or civil disturbance, transportation accidents, and wildland fires. The Emergency Services Plan assists with emergency response through:

- Establishing emergency response policy;
- Identifying authorities and assigns responsibilities for planning and response activities;
- Identifying the scope of potential hazards;
- Identifying other jurisdictions and organizations to coordinate planning with;
- Determining emergency organization structure;
- Establishing policies for providing emergency information to the public;
- Outlining preplanned response actions, describes the resources available to support response activities;
- Outlining actions to return County operations to normal;
- Guiding area governments through recovery;
- Establishing responsibilities within the County for the maintenance of the overall emergency preparedness program;
- Outlining the process for ordering and rendering mutual aid; and
- Facilitating the continuity of governments.[7]

[5] Ascent Environmental, August 2018, Draft Environmental Impact Report Tuolumne County General Plan Update Project, https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11308/Tuolumne-County-GPU-Recirculated-DEIR-full-report, accessed March 6, 2020.

[6] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, https://www.tuolumnecounty.ca.gov/DocumentCenter/View/8045/TuolumneLHMP2018?bidId=, accessed March 6, 2020.

[7] Ascent Environmental, August 2018, Draft Environmental Impact Report Tuolumne County General Plan Update Project, https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11308/Tuolumne-County-GPU-Recirculated-DEIR-full-report, accessed March 6, 2020.

Tuolumne County Airport Land Use Commission

The Tuolumne County Airport Land Use Commission (TCALUC) promotes compatibility between the airports and heliports in Tuolumne County and the land uses that surround them. The TCALUC reviews compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to landowners in their design of new development. Under TCALUC standards, heliports and helipads are regulated per Caltrans definitions, and EHLFs are therefore exempt from Caltrans Division of Aeronautics heliport permitting requirements.

Tuolumne County General Plan

The Public Safety and Natural Hazards Elements of the Tuolumne County General Plan include several policies and implementation programs, listed in Table 4.9-1, that are aimed at improving public safety from hazards and hazardous materials.

TABLE 4.9-1 TUOLUMNE COUNTY GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS PERTAINING TO HAZARDS AND HAZARDOUS MATERIALS

Goal/Policy/ Implementation Program Number	Goal/Policy/Implementation Program Text
PUBLIC SAFETY ELEMENT	
Goal 9A	*Consult with all affected agencies on fire protection planning within Tuolumne County.*
Policy 9.A.1	Actively involve fire protection agencies within Tuolumne County in land use planning decisions.
Policy 9.A.2	Encourage all fire protection agencies (Federal, State, and local) within the County to maintain communication with each other and with the Office of Emergency Services and the Community Resources Agency to promote an integrated approach to fire protection planning.
Policy 9.A.4	Actively support efforts to maintain and improve Federal and State fire service capabilities.
Policy 9.A.5	Consult with CAL FIRE, the U.S. Forest Service, the National Park Service and local fire agencies on fire prevention programs in order to maximize the distribution of information to the public.
Goal 9B	*Create plans to effectively prepare for, respond to, and recover from the effects of natural or manmade disasters or other emergencies.*
Policy 9.B.1	Maintain an effective Tuolumne County Emergency Operation Plan to direct the response for a natural disaster or other emergency.
Implementation Program 9.B.a	Periodically review and update Chapter 2.40 (Emergency Services) of the Tuolumne County Ordinance Code to evaluate consistency with State and Federal laws and regulations, to assess the current emergency response organization, and to ensure an accurate composition of the Tuolumne County Emergency Services Operational Area Committee.
Implementation Program 9.B.b	Ensure the Emergency Operations Plan for Tuolumne County is consistent with the provisions of Articles 1-8 of Division 2 of Title 19 of the California Code of Regulations regarding the Standardized Emergency Management System (SEMS) and with the National Incident Management System (NIMS). The Emergency Operations Plan for Tuolumne County should be reviewed every two years and updated as necessary, in order to incorporate changes in governmental regulations and operational practices.
Policy 9.B.5	Ensure that current emergency services are adequate to protect public health and safety in the event of natural and manmade hazards, including terrorist incidents and public health pandemics.

TABLE 4.9-1 TUOLUMNE COUNTY GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS PERTAINING TO HAZARDS AND HAZARDOUS MATERIALS

Goal/Policy/ Implementation Program Number	Goal/Policy/Implementation Program Text
Implementation Program 9.B.h	Implement the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan to protect life, safety, and property by reducing the potential for future damages and economic losses that result from natural and manmade hazards.
Goal 9E	*Provide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies.*
Policy 9.E.3	Require new development to be consistent with State and County regulations and policies regarding fire protection.
Goal 9G	*Establish and maintain a codified fire protection risk management strategy which requires new development within Tuolumne County to incorporate or supply fire protection infrastructure and improvements necessary so that such development does not exceed the capabilities of the County's fire protection resources.*
Policy 9.G.1	Maintain County fire protection regulations that are consistent with Section 4290 or the equivalent of the California Public Resources Code and other applicable fire protection regulations.
Policy 9.G.2	Require new residential development to have adequate fire protection, which may include design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire. Periodically update the County's fire protection standards to reflect new information and technology concerning fire prevention in wildland areas.
Policy 9.G.4	Require that residential development provide for defensible space around structures.
Goal 9I	*Minimize the risk of loss of life, injury, illness, property damage and alteration of established land use patterns resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.*
Policy 9.I.1	Ensure that the use, storage, transport, treatment and disposal of hazardous materials and hazardous wastes within Tuolumne County complies with Federal, State, and local regulations and safety standards.
Implementation Program 9.I.a	Implement the Tuolumne County Comprehensive Hazardous Waste Management Plan to protect life, safety, and property by reducing the potential for future damages and economic losses that result from hazardous materials and hazardous waste.
Implementation Program 9.I.d	Provide for the review of applications for discretionary entitlements for projects which would utilize hazardous materials or generate hazardous wastes by the Tuolumne County Environmental Health Division and the Tuolumne County Fire Department for compliance with the latest adopted regulations for safety and environmental protection.
Policy 9.I.2	Protect schools from the risks associated with facilities involved in the handling of hazardous materials or disposal of hazardous waste.
NATURAL HAZARDS ELEMENT	
Goal 17E	*Provide protection to County residents and natural resources from the losses associated with wildland fire.*
Policy 17.E.1	Reduce the exposure to risk from wildland fire to an acceptable level by only allowing development in high or very high fire hazard areas if it can be made safe by planning, construction, or other fire safety measures.
Policy 17.E.2	Require the maintenance of defensible space setbacks in areas proposed for development if wildland fire hazards exist on adjacent properties.
Policy 17.E.3	Require new development to have adequate fire protection and to include, where necessary, design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire.

TABLE 4.9-1 TUOLUMNE COUNTY GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS PERTAINING TO HAZARDS AND HAZARDOUS MATERIALS

Goal/Policy/ Implementation Program Number	Goal/Policy/Implementation Program Text
Policy 17.E.4	Promote public awareness of wildland fire hazards present within the County, as well as proper fire prevention and protection practices.
Policy 17.E.8	Require property owners to maintain wildlands in a fire-resistant manner consistent with Section 4291 of the Public Resources Code. Assist fire protection agencies in their efforts to enforce Section 4291.

Source: Tuolumne County, 2018, Tuolumne County General Plan.

4.9.1.2 EXISTING CONDITIONS

This section describes existing conditions related to hazardous materials, airport hazards, and wildland fires associated with the proposed project.

Hazardous Materials Sites

The 64-acre project site is rural in nature, and no structures exist on-site. The site has never been developed. A search of several hazardous waste databases, including DTSC's EnviroStor,[8] RWQCB's Geotracker,[9] EPA's EJScreen,[10] and EPA's EnviroMapper,[11] showed that the site is not listed as a hazardous waste site. In addition, no properties within a 0.25-mile radius from the project site are listed as hazardous waste sites.

Existing or Proposed Schools

There are no schools within 0.25 miles of the project site. The nearest schools are Greeley Hill Elementary and Coulterville High School approximately 11 miles southwest of the project site, and Tenaya Elementary School approximately 16 miles west of the project site.

Airport Hazards

Two airports are located in Tuolumne County, Columbia Airport and Pine Mountain Lake Airport. The Federal Aviation Administration requires runway protection zones and height limits on structures near airports to reduce risks to the public. In addition, the Tuolumne County Airport Land Use Compatibility

[8] Department of Toxic Substances Control, 2018, EnviroStor, https://www.envirostor.dtsc.ca.gov/public/, accessed March 6, 2020.

[9] State Water Resources Control Board, 2015, GeoTracker, http://geotracker.waterboards.ca.gov/, accessed March 6, 2020.

[10] Environmental Protection Agency, 2018, EJScreen, https://ejscreen.epa.gov/mapper/, accessed March 6, 2020.

[11] Environmental Protection Agency, EnviroMapper, https://www.epa.gov/emefdata/em4ef.home, accessed March 6, 2020.

Plan (ALUCP) designates safety zones for the areas surrounding the two airports.[12] The project site is not located within the safety zone of either airport.

Wildland Fire Hazard

According to the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, Tuolumne County historically experiences wildfires every two to five years. In more recent years with drought conditions, wildfires have occurred every other year. From 2001 to 2016, twelve fires have occurred in or near Tuolumne County that destroyed over 750 acres.[13] The 2013 Rim Fire burned through the project site, burning a total of 257,314 acres.

CAL FIRE evaluates fire hazard severity risks according to areas of responsibility (i.e., federal, State, and local). According to CAL FIRE, the project site is within a CAL FIRE designated State Responsibility Area (SRA), and is surrounded by land designated in a Federal Responsibility Area (FRA). As shown in Figure 4.17-2, the CAL FIRE map for the SRA in Tuolumne County identifies the project site as within a Very High Fire Hazard Severity Zone (VHFHSZ).

Fire protection services for the project site are provided through a multi-jurisdiction effort by the Groveland Community Services District, Tuolumne County Fire Department, CAL FIRE, and the United States Forest Service.

4.9.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in significant hazards and hazardous materials impacts if it would:

1. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
3. Emit hazardous emissions or handle hazardous materials, substances or waste within ¼-mile of an existing or proposed school.
4. Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.

[12] Ascent Environmental, August 2018, Draft Environmental Impact Report Tuolumne County General Plan Update Project, https://www.tuolumnecounty.ca.gov/DocumentCenter/View/5764/49-HydrologyandWaterQuality?bidId=, accessed March 6, 2020.

[13] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, pages 67 to 68.

6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

4.9.3 IMPACT DISCUSSION

HAZ-1	**The project would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.**

Project Operation

Operation of the proposed project would involve the use of small amounts of hazardous materials, such as cleansers, paints, fertilizers, and pesticides for cleaning and maintenance purposes. However, the proposed land use is not associated with uses that use, generate, store, or transport large quantities of hazardous materials; such uses generally include manufacturing, industrial, medical (e.g., hospital), and other similar uses.

The proposed project would also include propane tanks installed in the western portion of the site. The location is a safe distance from any building or property line. Storage volumes would be based on demand and refueling frequencies and is estimated to include multiple tanks in an approximately 900-square-foot area. Propane would be transmitted through pipes underground to the various buildings on-site.

The use, storage, transport, and disposal of hazardous materials would be governed by existing regulations of several agencies, including the EPA, DOT, California Division of Occupational Safety and Health, and the Tuolumne County Environmental Health Division. Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts. Additionally, the Tuolumne County Environmental Health Division, the assigned CUPA for the project site, would conduct inspections of any propane containers of 55 gallons or greater, including aboveground tanks with a total aggregate quantity of at least 10,000 gallons. The proposed project would submit a storage statement to CUPA on an annual basis if it stores an aggregate quantity of at least 1,320 gallons of propane on-site.

Furthermore, the General Plan Update's Public Safety Element contains several policies that would protect County residents and the environment from exposure to hazardous materials. Policy 9.I.1 would ensure that use, storage, treatment, and disposal of hazardous materials complies with federal, state, and local regulations through Implementation Programs 9.I.a and 9.I.d, which also implement the Tuolumne County Comprehensive Hazardous Waste Management Plan and provide for review of applications for discretionary elements of projects that would use or generate hazardous materials by the Tuolumne County Environmental Health Division and the Tuolumne County Fire Department. Policy 9.B.5 and

Implementation Program 9.B.h would protect public health and safety through implementation of the HMP.

Therefore, substantial hazards to the public or the environment arising from the routine use, storage, transport, and disposal of hazardous materials during long-term operation of the proposed project would not occur. Impacts would be *less than significant,* and no mitigation measures are necessary.

Project Construction

Project-related construction activities would involve the use of larger amounts of hazardous materials than would project operation. Construction activities would include the use of materials such as fuels, lubricants, and greases in construction equipment and coatings used in construction. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. These activities would also be short term or one time in nature, and would cease upon completion of the proposed project's construction phase. Project construction workers would also be trained in safe handling and hazardous materials use.

Additionally, as with project operation, the use, storage, transport, and disposal of construction-related hazardous materials would be required to conform to existing laws and regulations. Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts.

Therefore, substantial hazards to the public or the environment arising from the routine use, storage, transport, and disposal of hazardous materials during construction of the proposed project would not occur. Impacts would be *less than significant,* and no mitigation measures are necessary.

Significance without Mitigation: Less than significant.

HAZ-2	**The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.**

The proposed project would be constructed and operated with strict adherence to all emergency response plan requirements set forth by the Tuolumne County Office of Emergency Services, the Tuolumne County Environmental Health Division, and the Tuolumne County Fire Department.

Furthermore, the project site is vacant and void of any buildings, structures, or improvements. As noted above, no records were found in reference to historical usage or handling of any hazardous substances on the project site. None of the site materials to be removed during the construction phase are associated with or contain hazardous materials. Additionally, it is unlikely that the proposed project's operation would cause the release of hazardous materials into the environment. However, while highly unlikely due to the proposed use, in the event of a hazardous materials spill of greater amount or toxicity than on-site personnel could safely contain and clean up, assistance would be requested from the Tuolumne County

Fire Department and the Tuolumne County Environmental Health Division. Therefore, it is unlikely that construction or operation of the proposed project would cause the release of hazardous materials into the environment. Impacts would be *less than significant,* and no mitigation measures are necessary

Significance without Mitigation: Less than significant.

HAZ-3	The project would not emit hazardous emissions or handle hazardous materials, substances or waste within ¼-mile of an existing or proposed school.

As mentioned above, there are no schools within 0.25 miles of the project site. Additionally, the proposed project does not include elements or aspects that would create or otherwise result in hazardous emissions. Furthermore, the transport of any hazardous materials during the proposed project's construction phase would generally occur along Highway 120. The transport of such materials would not occur along or around the streets that surround the school site. Therefore, *no impact* would occur, and no mitigation measures are necessary.

Significance without Mitigation: No impact.

HAZ-4	The project would not be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

California Government Code Section 65962.5 requires the compiling of lists of the following types of hazardous materials sites: hazardous waste facilities subject to corrective action; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. The following databases were reviewed for hazardous material site listings on-site or within 0.25 miles of the project site:

- GeoTracker, State Water Resources Control Board
- EnviroStor, Department of Toxic Substances Control
- EnviroMapper, US Environmental Protection Agency
- EJScreen, US Environmental Protection Agency

No hazardous materials sites were listed on the project site or within 0.25 miles of the project site. Therefore, *no impact* to the public or to the environment would occur as a result of the proposed project and no mitigation measures are necessary.

Significance without Mitigation: No impact.

HAZ-5 The project would not be located within 2 miles of an existing airport land use plan, public airport, or public use airport but the proposed emergency helipad could result in a safety hazard or excessive noise for people residing or working in the project area.

The nearest public-use airport to the project site is the Pine Mountain Lake Airport approximately 12 miles to the northwest. The project site is well outside of the airport's safety zones.[14]

The proposed emergency helipad is intended to provide a clear and level area near the scene of an accident or incident designated by the local emergency response team. Potential noise impacts from helicopters using the emergency helipad are addressed in Chapter 4.12, Noise, and Impact NOI-3.1 (related to noise impacts to existing sensitive users) is considered to be significant and unavoidable. This impact discussion focuses on potential operational safety hazards from use of the emergency helipad.

California Code of Regulations (CCR), Title 21, Sections 3525–3560 provide rules, regulations, and permit requirements related to the proposed emergency helipad that incorporate most of the FAA regulations, including design, lighting, visual, and obstruction standards. All of the standards and regulations contained in CCR, Title 21, Sections 3525–3560 related to the adequacy of emergency helipad design, including marking, lighting, and visual aids, must be met to receive approval from the FAA.

FAA Advisory Circular 150/5390-2C, Heliport Design, provides the standards used to design heliports and other aircraft landing facilities in the United States. This includes defining acceptable approach, landing, takeoff, and safety areas that must be maintained clear of obstructions. The FAA also provides standards for the placement of lighting, wind cones, beacons, and other heliport markings. In addition, the circular describes the appropriate approach and departure transitional surfaces, flight path dimensions, and heliport protection zones.

Federal Aviation Regulations (FAR) Part 157, Notice of Construction, Activation, and Deactivation of Airports, establishes standards and notification requirements for projects that propose to construct, alter, or deactivate an air facility. The notification, which is required 90 days prior to the day work is to begin, allows the FAA to identify potential aeronautical hazards in advance, to prevent and minimize any adverse impacts and provide safe and efficient use of navigable airspace.[15] FAR Part 157 serves as the basis for evaluating the effects of the proposed action on the safe and efficient use of airspace by aircraft and the safety of persons and property on the ground. These effects include but are not limited to evaluating:

- The effects the proposed action would have on existing or proposed traffic patterns of neighboring airports.
- The effects the proposed action would have on the existing airspace structure and projected programs of the FAA.

[14] Tuolumne County, 2003, Tuolumne County Airport Land Use Compatibility Plan, https://www.tuolumnecounty.ca.gov/DocumentCenter/View/1325/Airport-Land-Use-Compatibility-Plan?bidId=, accessed March 6, 2020.

[15] Code of Federal Regulations, Title 14 Aeronautics and Space, Section 157.5 Notice of Intent.

- The effects that existing or proposed objects (on file with the FAA) within the affected area would have on the airport proposal.

The Terra Vi developers would be required per FAR Part 157 to conduct an airspace study to determine whether the proposed emergency helipad would be acceptable from an airspace utilization standpoint and meet all FAA design considerations. The airspace study would be required to show that the FAA does not object to the establishment of the proposed landing area and to provide determinations related to the safe and efficient use of navigable airspace by aircraft with respect to the safety of persons and property on the ground.

FAR Part 77 includes the establishment of imaginary surfaces that allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace. While the Caltrans Division of Aeronautics is the State permitting agency for helipads, an EHLF is exempt from Caltrans Division of Aeronautics heliport permitting requirements in accordance with Division of Aeronautics – Caltrans – Title 21 CCR 3533 (b)(8) provided it is not used for any purpose other than as an emergency use facility. However, design of the ELHF must be in compliance with requirements of the Tuolumne County Building Code and Title 24 of the California Code of Regulations. The FAA is required to make the final determination as to the safety and appropriateness of the location for a helipad and the adequacy of helipad design per the design standards set forth in FAA Advisory Circular 150/5390-2C. The FAA, the Tuolumne County Building Division, and the TCALUC must all be consulted to meet standards.

The FAA's and Tuolumne County Building Division's review and permitting procedures would be conducted as part of implementation of the proposed project. Prior to providing an airspace determination letter from the FAA and a building permit from the Tuolumne County Building Division, all agencies would determine that the proposed emergency helipad location would not adversely affect the safe and efficient use of the navigable airspace by aircraft and would not result in safety effects to persons or property on the ground. An airspace determination letter from the FAA and a permit from the Tuolumne County Building Division would be required prior to operation of the proposed emergency helipad. In addition, the proposed project would be reviewed by the TCALUC and must receive a determination of consistency with the Tuolumne County Airport Land Use Compatibility Plan.[16] Because the proposed emergency helipad has not yet been reviewed by the FAA or County for compliance with applicable standards and permitting requirements, this impact is considered *significant*.

Significance without Mitigation: Significant.

Impact HAZ-5: Operation of an emergency helipad on the proposed project could result in safety hazard impacts to people working or residing within the project area.

> Mitigation Measure HAZ-5: Prior to the start of any helipad operations on the project site, the project shall receive airspace determination approvals from the Federal Aviation Administration, a building

[16] Tuolumne County, January 22, 2003. Tuolumne County Airport Land Use Compatibility Plan. Section 2.1.5 Types of Actions Reviewed, pages 2-5 to 2-6.

permit from the Tuolumne County Building Division, and a Letter of Land Use Consistency from the Tuolumne County Airport Land Use Commission.

Significance with Mitigation: Less than significant.

HAZ-6 The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The proposed project would result in a significant impact if it would involve physical improvements that would impede emergency response to the project site or the immediate vicinity, or if it would otherwise interfere with emergency evacuation plans.

The proposed project would be required to comply with the provisions of the 2016 CFC and the 2016 CBC, which would ensure that building and life safety measures are incorporated into the proposed project and would facilitate implementation of emergency response plans. Future development plans would include fire and emergency access through all phases of construction and operation. During construction, the project would be required to comply with all applicable provisions of the CFC to ensure fire safety during the construction phase.

As discussed in Section 4.9.1.1, the County of Tuolumne has prepared an Emergency Operations Plan that identifies and allocates resources in response to emergencies, from preparation through recovery. The Emergency Operations Plan identifies the County's emergency planning, organizational, and response policies and procedures and how they would be coordinated with emergency responses from other levels of government. The proposed project would not involve physical components that would interfere with the ability of the County, and emergency response service providers, to implement emergency response activities within the project site or vicinity. Furthermore, Tuolumne County maintains an HMP with the goal of implementing mitigation measures to minimize vulnerability to identified hazards and reducing both human and financial losses subsequent to a disaster.

In addition, the General Plan contains strategies that would further ensure that new development would not conflict with emergency operations in the project area. Implementation Program 9.B.h would implement the HMP to protect life, safety, and property by reducing the potential for future damages and economic losses that result from natural and manmade hazards. The Emergency Operations Plan would be maintained and periodically reviewed under Policy 9.B.1 and Implementation Programs 9.B.a and 9.B.b.

Compliance with applicable laws and regulations regarding emergency preparedness, and the General Plan policies, would ensure that the proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-7 The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The project site is located within a Very High Fire Hazard Severity Zone and was previously significantly burned by the 2013 Rim Fire. Project design features incorporated into the proposed project to mitigate wildfire hazards are detailed in Section 3.3.6 of this Draft EIR and would include:

- Wide separations between buildings to prevent structure-to structure ignition, and to provide easy access by emergency responders.
- Exterior building materials that are compliant with the most recent wildland-urban interface building code (Chapter 7A of the California Building Code).
- An early evacuation protocol based on monitoring of both weather conditions and nearby incidents.
- An underground basement that would provide a place for guests and employees to stay for a short period of time during a time of wildfire or other disasters when early evacuation is not possible.
- A Vegetation Management Plan that integrates the needs for wildland fire safety.
- Prohibitions against risky behaviors.
- A construction fire prevention plan that would be implemented to reduce the chance of ignition.
- Fire pits located in public areas and operated and maintained by hotel staff only.
- A communication plan established to ensure receipt and notification of vital incident information.
- Weather stations with protocols for alerts so that personnel on-site would be notified when high fire danger exists.
- Employees trained as first-response emergency responders, with trained staff on duty at all times.
- Direct access to Highway 120 for fire service.
- Construction in compliance with the National Fire Protection Association's fire protection system.
- An emergency helipad located on the western side of Sawmill Mountain Road, within the western project site parcel used for emergency services only and available for use by the entire community.

Implementation of these project design features would reduce the impacts of wildland fires to *less than significant*.

Significance without Mitigation: Less than significant.

4.9.4 CUMULATIVE IMPACTS

HAZ-8 The proposed project would result in less-than-significant cumulative impacts with respect to hazards and hazardous materials.

The area considered for cumulative impacts is Tuolumne County, which is the service area for the Tuolumne County Department of Environmental Health, the affected CUPA. According to the California Department of Finance, Tuolumne County's population as of January 2019 was 54,590. The General Plan EIR estimates that the projected population of Tuolumne County by the year 2040 would rise to 63,243

persons.[17] Other development projects throughout the county would use, store, transport, and dispose of increased amounts of hazardous materials, and thus could pose substantial risks to the public and the environment. However, the use, storage, transport, and disposal of hazardous materials by other projects would be required to conform with regulations of multiple agencies as described in Section 4.9.1.1 above.

The proposed project is not located within 0.25 miles of any schools; therefore, the proposed project would not contribute to a cumulative impact associated with schools.

Furthermore, the proposed project area is not located within 2 miles of a public airport; therefore, the proposed project would not contribute to a cumulative impact associated with a public airport. The proposed project could result in safety hazards associated with the emergency helipad, which would be less-than-significant following mitigation. No other cumulative development would include helipads or other aviation facilities; therefore, the project would not contribute to any cumulative impacts associated with aviation-related hazards. The proposed emergency helipad is included in the project as a public benefit and would only be utilized by emergency responders needing landing access in the upper Highway 120 area of the county; the emergency helipad would therefore be a benefit to cumulative development projects as well.

Cumulative projects have the potential to interfere with an adopted emergency response plan or emergency evacuation plan; however, all development would be required to comply with the provisions of the local, State, and federal regulations, and General Plan policies for emergency response plans and emergency evacuation plans as applicable. Compliance with these regulations would reduce potential cumulative impacts to less than significant.

Cumulative projects have the potential to increase development in areas of high fire susceptibility; however, all development would be required to comply with the provisions of the local and State regulations for wildland fires as applicable. Compliance with these regulations would reduce potential cumulative impacts to less than significant.

Cumulative impacts would be *less than significant* after compliance with regulations, and project impacts would not be cumulatively considerable.

Significance without Mitigation: Less than significant.

[17] Tuolumne County General Plan EIR, August 2018, Project Description, State Clearinghouse No. 2015082027, page 2-6.

4.14 PUBLIC SERVICES, PARKS, AND RECREATION

This chapter describes public services, including fire protection, police, schools, libraries, and park and recreation services provided in the project vicinity, and evaluates the potential impacts to these services that could result from the proposed project. In each section, a summary of the relevant regulatory setting and existing conditions are followed by a discussion of project-specific and cumulative impacts.

This chapter contains separate sections for the following public services:

- Fire Protection
- Police
- Schools
- Libraries
- Parks and Recreation

4.14.1 FIRE PROTECTION SERVICES

4.14.1.1 ENVIRONMENTAL SETTING

This section describes the current regulations, resources, and response time for fire protection services in the Tuolumne County. The information in this section is based in part on the following document:

- BAE Urban Economics, March 27, 2020. Final Memorandum Re: Fire Impact Analysis for Terra Vi Lodging Project. (See Appendix I of this Draft EIR.)

Regulatory Framework

State Regulations

California Building Code

The State of California provides a minimum standard for building design through Title 24 of the California Code of Regulations. The California Building Code (CBC) is located in Part 2 of Title 24. The CBC is updated every three years, and the current 2019 CBC went into effect in January 2020. The County of Tuolumne adopted the CBC into its Code of Ordinances (see below). Commercial and residential buildings are plan-checked by County building officials for compliance with the CBC. Typical fire safety requirements of the CBC include the establishment of fire resistance standards for fire doors, building materials, and particular types of construction, and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

California Fire Code

The 2019 California Fire Code (CFC) adopts by reference the 2018 International Fire Code (ICF) with necessary State amendments. Updated every three years, the CFC contains regulations related to construction, maintenance and use of buildings. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow

requirements, and fire hydrant locations and distribution. The 2016 CFC was adopted by Tuolumne County, into its Code of Ordinances (see section below).

Local Regulations

Tuolumne County General Plan

The Tuolumne County General Plan, adopted in 2019, includes goals, policies, and programs relevant to fire protection services. General Plan goals, policies, and programs related to wildfire are described in more detail in Chapter 4.17, Wildfire. Table 4.12-1 lists the General Plan goals and policies specific to fire protection and applicable to the proposed project.

TABLE 4.14-1 TUOLUMNE COUNTY GENERAL PLAN GOALS AND POLICIES PERTAINING TO FIRE PROTECTION SERVICES

Goal/Policy/ Number	Goal/Policy Text
PUBLIC SAFETY ELEMENT	
Goal 9E	*Provide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies.*
Policy 9.E.1	Evaluate the circulation system to identify areas causing delay of emergency vehicle response and evacuation due to traffic congestion.
Policy 9.E.2	Maintain adopted levels of fire protection service.
Policy 9.E.3	Require new development to be consistent with State and County regulations and policies regarding fire protection.
Goal 9F	*Establish a system for the orderly expansion of fire protection services within Tuolumne County consistent with the needs dictated by County growth and development.*
Policy 9.F.2	Construct new fire protection facilities as needed within the jurisdiction of the Tuolumne County Fire Department/CAL FIRE in order to maintain the desired Insurance Services Office (ISO) ratings.
Goal 9G	*Establish and maintain a codified fire protection risk management strategy which requires new development within Tuolumne County to incorporate or supply fire protection infrastructure and improvements necessary so that such development does not exceed the capabilities of the County's fire protection resources.*
Policy 9.G.3	Determine the impact proposed development will have on the provision of fire protection services and maintain the established level of service as outlined in the current Tuolumne County Fire Department Service Level Stabilization Plan.
Policy 9.G.5	Require that street and structural identification are provided to assist in emergency response.
Goal 9H	*Establish reliable sources of funding for fire protection services in Tuolumne County in order to maintain the services at an acceptable level.*
Policy 9.H.2	Enforce the provisions found in Title 15 of the Tuolumne County Ordinance Code and the California Fire Code for built-in fire suppression equipment in all new development in order to improve fire safety and offset the need for increased fire department staffing and equipment.

Source: Tuolumne County, 2018, Tuolumne County General Plan.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

Tuolumne County updated its Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) in 2018. The MJHMP outlines activities designed to reduce or eliminate losses resulting from natural hazards, including wildfires. The MJHMP describes wildfire risks for the county and establishes goals and objectives to mitigate risks. The MJHMP contains the hazard mitigation actions to help reduce the risk of damage and injury from wildfire under Goal 5: Minimize the level of damage and losses to people, existing and future critical facilities, and infrastructure due to wildland fires.

Tuolumne County Code of Ordinances

The Tuolumne County Code of Ordinances organized by Title, Chapter, and Section, contains all ordinances for the county. Most provisions relating to fire protection services are included in Title 15, Building & Construction, as follows:

- Chapter 15.04, Construction Codes: Chapter 15.04 of the County Code of Ordinances adopts the 2016 California Building Code.
- Chapter 15.20, Fire Safety Standards: This chapter adopts sections of the California Fire Code in its entirety, with amendments to Section 505.2, Street or Road Signs, and Section 505.1, address identification for commercial, industrial, and residential developments. This chapter provides regulations for fire hydrant installation, off-street signing, gate entrances, setbacks, defensible space, and fuel modification.

Existing Conditions

The proposed project is located within a CAL FIRE designated State Responsibility Area (SRA) and is surrounded by land designated in a Federal Responsibility Area (FRA). Within the SRA, the project site is located on land designated by CAL FIRE as a Very High Fire Hazard Severity Zone. Due to the rural nature of the project site, the proposed project is not located within the Wildland Urban Interface. Please also see Chapter 4.17, Wildfire, for additional information pertaining to wildfire background and existing conditions on the project site.

Fire protection services are provided through a multi-jurisdiction effort by the Groveland Community Services District (GCSD), Tuolumne County Fire Department (TCFD), CAL FIRE, and the United States Forest Service (USFS). The closest staffed fire station to the proposed project site is the Groveland Community Services District (CSD) station, located at 18930 Main Street, in Groveland. This station is approximately 17 miles from the proposed project site, which translates to an approximately 22-minute drive time with no traffic.[1] The project site is technically located within the primary response area of the Tuolumne County Fire Department, whose closest station that is staffed full-time is Station 76 at 18249 4th Street in Jamestown, a 40-mile drive to the northeast, which takes approximately 57 minutes. The closest Tuolumne County volunteer fire station is located at 13785 Highway 120 in Chinese Camp, a 34-mile drive to the east, which would take about 47 minutes. The closest CAL FIRE station is located at 11300 Merrell

[1] Volunteer Station 63 (Smith Station) located at 22360 Elmore Road in Groveland is closest; however, no volunteers and no fire equipment are currently assigned there.

Road in Groveland, which primarily responds to fire suppression calls in the SRA. This station is further from the project site than the GCSD, and therefore it is assumed that it would not be the first-in station for most incidents at the project site.[2]

Because GCSD and TCFD operate under a mutual aid agreement, the GCSD would provide the first response for most incidents that could occur at the project site. According to Josh White, Fire Chief for both GCSD and TCFD, the service standard goal for the GCSD is to respond to 90 percent of calls for service within the GCSD boundaries within 7 minutes.[3] Due to the distance between the project site and the GCSD station, it is not be possible for the CSD to achieve this service standard for existing responses to the project site.

Groveland Community Services District

The GCSD headquarters is located at the CSD District Office located at 18966 Ferretti Road, in Groveland. The GCSD is a special district, which is created and funded by its community's residents to provide enhanced local services. The service area covers approximately 15 square miles and is bounded by the Tuolumne River to the north, Stanislaus National Forest to the east, Mariposa County to the south, and the community of Moccasin to the west.[4] The GCSD provides first-in fire protection services to the project site, including fire responder emergency medical response and hazardous materials. Because the project site is outside of the GCSD service area, there is no tax mechanism for payment into the GCSD. The GCSD has mutual aid agreements with TCFD, CAL FIRE, and Mariposa County to provide adequate fire protection services. The Tuolumne Calaveras Unit San Andreas Emergency Command Center provides dispatching services to the GCSD. The station closest to the project site (Station 78 located at 18930 Main Street in Groveland) currently has a staff of one captain and four fire apparatus engineers, staffed at two persons each day. The GCSD has a current ratio of 1 fire fighter per 1,000 population in the service area. Equipment at this station consists of one type 1 engine, one reserve type 1 engine, one type 3 engine, and one pickup truck.[5] This equipment is nearing the end of its service life and the engines are well past the industry standard for replacement.

In 2018, GCSD Station 78 received approximately 490 incident calls, including five vegetation fires, four structure fires, 44 other fires, 359 medical aids, 17 hazardous materials incidents or fire menace standbys, 61 other type incidents.[6] In addition, GCSD receives approximately 50 calls per year outside of the district.[7]

[2] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project.

[3] White, Josh, Fire Chief, Tuolumne County Fire Department, Personal communication with Matt Kowta, BAE Urban Economics, August 26, 2019.

[4] Groveland Community Services District. N.d., Our Services, https://www.gcsd.org/our-services accessed January 14, 2019.

[5] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.

[6] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.

[7] BAE Urban Economics, January 2020, Fire Impact Analysis for Terra Vi Lodging Project. Murphy, Andrew, Assistant Chief, Tuolumne County Fire Department, Personal community with Matt Kowta, BAE Urban Economics, December 22, 2019 and January 6, 2020.

Tuolumne County Fire Department

The TCFD provides fire protection services to the unincorporated areas of the county, including the project site. Fire protection services include search and rescue, first responder emergency medical response, hazardous materials, fire prevention, fire investigation, and plans review. The TCFD headquarters is located at 18440 Striker Court, in Sonora.[8] The TCFD has mutual aid agreements with GCSD, CAL FIRE, and Mariposa County to provide adequate fire protection services. The Tuolumne Calaveras Unit San Andreas Emergency Command Center provides dispatching services to the TCFD.

The closest TCFD fire station to the project site is Station 61, located at 13785 Highway 120, in Chinese Camp, 33.5 miles to the east. However, this is only a volunteer station. The closest fully staffed fire station is Station 76 located at 18249 4th Street, in Jamestown, 40.4 miles to the northeast. Station 76 currently has a staff of one captain and four fire apparatus engineers, staffed at two persons each day. The TCFD has a current ratio of 1 fire fighter per 725 population in the service area, when career and volunteer fire fighters are combined. Equipment at Station 76 consists of one type 1 engine and one reserve type 1 engine. Equipment at Station 61 consists of one type 2 engines and two water tenders. This equipment is nearing the end of its service life and the engines are well past the industry standard for replacement.[9]

In 2018, TCSD responded to 7,421 incidents in the county, including 308 vegetation fires, 222 structure fires, 625 other types of fires, 5,113 medical aids, 233 hazardous materials or fire menace standbys, and 920 other type incidents. Station 76, in Jamestown, responded to 1,603 incidents, consisting of 43 vegetation fires, 39 structure fires, 138 other type fires, 1,085 medical aids, 40 hazardous materials and fire menace standbys, and 258 other type calls. Station 61, in Chinese Camp, responded to 438 incidents, including 81 vegetation fires, 24 structure fires, 104 other type fires, 190 medical aids, 13 hazardous materials and fire menace standby, and 27 other type incidents. While TCFD does not have a formally adopted response time standard, TCFD confirmed that these response times do not provide adequate service to the project site.[10]

Due to ongoing concerns within Tuolumne County regarding the adequacy of fire protection and emergency medical (EMS) the commissioned a countywide First Responder and EMS Study, to review existing services, evaluate current needs, and provide recommendations for service improvements. The study, completed by Matrix Consulting group in February of 2019, identified significant challenges to the ongoing provision of fire and EMS services within the unincorporated areas of Tuolumne County. These include declining participation of volunteer emergency response personnel and a commensurate increase in need for paid emergency response personnel, combined with a constrained ability of the funding mechanisms available to pay for the operational and capital costs of fire and EMS services to keep up with the increased costs to provide these services. The study does not address changes to the current system for provision of fire and EMS services within the upper Highway 120 area. Further, the study found that a review of finances was needed for department and district lacking proper funding.[11]

[8] Groveland Community Services District. N.d., Our Services, https://www.gcsd.org/our-services accessed January 14, 2019.
[9] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.
[10] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.
[11] Matrix Consulting, First Responder and EMS Study, February 2019.

CAL FIRE

CAL FIRE's primary function in Tuolumne County is to respond to fire suppression calls within the SRA.[12] CAL FIRE also provides services such as first responder emergency medical response, and hazardous materials, resource protection. The closest CAL FIRE station to the project site is located at 11700 Merrell Road, in Groveland, approximately 17 miles to the east, or approximately a 24-minute drive. [13] CAL FIRE has a mutual aid agreement with the GCSD, TCFD, and the USFS to provide adequate fire suppression and protection services. The Tuolumne Calaveras Unit San Andreas Emergency Command Center provides dispatching services to CAL FIRE.

The Groveland CAL FIRE station currently has a staff of two captains and three fire apparatus engineers, and 10 firefighters during the spring, summer, and fall seasons. During the winter period, this station is staffed with an operator and three firefighters. Equipment this station consists of two type 3 engines and one pickup truck.[14] There are no existing deficiencies in equipment of staffing that CAL FIRE is facing.

In 2018, the Groveland CAL FIRE station responded to 438 incidents, including 81 vegetation fires, 24 structure fires, 104 other type fires, 190 medical aids, 13 hazardous materials and fire menace standby, and 27 other type incidents. Currently, it would take approximately 28 minutes from the Groveland station to respond to an incident on the project site. CAL FIRE does not have a formally adopted standard response time, except to contain all wildfire fires within 10 acres of less, 95 percent of the time.[15] Due to the distance of the Groveland station to the project site, it would not be possible for CAL FIRE to meet this standard if a major wildfire were to occur on the project site.

4.14.1.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact related to fire protection if it would:

- Result in substantial adverse physical impacts associated with the provision of or need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

[12] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project.
[13] Groveland Community Services District. N.d., Our Services, https://www.gcsd.org/our-services accessed January 14, 2019.
[14] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.
[15] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.

4.14.1.3 IMPACT DISCUSSION

PS-1	**The project would result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

Development of the proposed project would introduce employees and visitors to the project site, as, when operational, it would accommodate an average of 290 hotel guests, with a maximum occupancy of 400 guests, and include approximately 40 employees. The proposed project would also include employee apartments for up to 20 employees, plus two manager's suites in the main lodge. Although the proposed project would not result in new permanent residents on the project site, the proposed project would still exacerbate the existing lack of adequate fire protection services. Applying a rate of 0.79 estimated calls per accommodation, the estimated annual call for fire or emergency medical service to the project site would be approximately 11.[16] This represents an increase in demand on services provided by the GCSD, TCFD, and CAL FIRE, which would increase the deficiencies in service due to the distance from a fire station and existing response times. Calls from the Groveland station to the project site, which is out of the GCSD district, would take an estimated 22 minutes, and could create the potential for delayed response times for emergencies within the GCSD boundary while station personnel are responding to the project site.[17]

However, the proposed project would incorporate a number of features that would help limit the number of incidents on the project site that could generate emergency calls for fire protection or emergency medical services and reduce the extended responses time from the GCSD station. Physical features to reduce the number of incidents include: an overall site layout and design that emphasizes fire prevention and defensible space, including increased building separation, low building heights, and complete perimeter firefighting accessibility; buildings with non-combustible exterior finishes; high performance fire extinguishing and alarm system, on-site water storage, and an emergency helicopter landing facility which would be available for property-generated incidents and as well as incidents generated off-site.[18] The emergency helipad would be beneficial as it would provide an improvement to emergency response access in the region, compared to existing conditions that only allow for vehicle access. Additionally, non-physical features to lessen the number of incidents include staff and guest fire prevention and preparedness program; no cooking will be allowed in guest rooms; no smoking and no littering signs would be posted in throughout the entire project site; the lodge kitchen cooking areas will include quick-response fire extinguishing systems and enhanced fire separation area components; and periodic regular fire safety drills will be performed.[19] Furthermore, the proposed project would also include a communication plan, which would ensure the notification of vital incident information and include protocols for alerts so that personnel would be notified of high fire danger conditions. This plan would

[16] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project, Table 1.
[17] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project.
[18] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project.
[19] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project.

also include emergency communication equipment, such as radios, cell phone towers or boosters, satellite phones, and a weather station.

The proposed project would also include a training program for employees, that would provide emergency fire-response training. Key engineering staff would be trained in certified programs by the California Regional Fire Academy, which would include technical training relating to wildland fires, fire prevention, fire department apparatus, tools and equipment, breathing apparatus, extinguishers, hazardous materials, communication and emergency medical treatment.[20] Trained staff would be on-duty at all times, which would allow the proposed project to avoid calling GCSD to come out for minor emergency medical treatment incidents.

Despite the fire resistant and suppression physical features, non-physical features, and training program, the proposed project would still exacerbate existing fire protection service response time deficiencies in the region due to an increase in visitors and employees on the project site. While the proposed project would provide service improvements to the project site, GCSD and TCFD would still require alteration or expansion of staffing, equipment, and facilities, to maintain acceptable response times. Therefore, the proposed project would have a *significant* impact regarding fire protection services.

Significance without Mitigation: Significant.

Impact PS-1: The proposed project has the potential to increase demand for fire protection services to the project site. The construction or alteration of fire protection facilities to meet the increase in demand could cause significant environmental impacts.

> Mitigation Measure PS-1: Prior to issuance of the certificate of occupancy, the project sponsor shall provide trained and certified emergency staff. The project shall provide enough staff to ensure that two emergency staff are on premises and available to respond to emergencies at all times.
>
> The emergency staff shall be trained to meet Tuolumne County Fire Department volunteer fire service standards. Staffing may be provided by Terra Vi employees who have completed the required training.
>
> The Terra Vi project shall provide personal protection equipment (PPE) and positive communication equipment for all emergency staff. PPE and communication equipment shall be stored in a central, secure location. Communication systems shall permit uninterrupted contact between all firefighters at all times and at all locations on or within the property. In addition, there shall be communication at all times between a fire officer and recognized Emergency Command Center (ECC). All equipment required shall be approved by and become property of Tuolumne County and maintained per manufacturer and National Fire Protection Association (NFPA) standards by the Terra Vi project sponsor.
>
> Significance with Mitigation: Less than significant.

[20] BAE Urban Economics, May 2020, Fire Impact Analysis for Terra Vi Lodging Project.

4.14.1.4 CUMULATIVE IMPACTS

PS-2	**The project, in combination with past, present and reasonably foreseeable projects, would result in cumulative impacts with respect to fire protection services.**

The cumulative setting for fire protection services consists of the current service area boundaries provided for in the mutual aid agreements between GCSD, TCFD, CAL FIRE, and USFS. The proposed project, in combination with other reasonably foreseeable development, would not increase the population of Tuolumne County; however, the increase in visitors to the project site and cumulative projects could contribute to the need for expanded fire protection facilities, equipment, and staff to provide adequate response times in the region. An assessment by the TCFD concluded that the proposed project, in combination with cumulative projects in the area, would create the need to expand existing fire services and hire additional staff to adequately meet the additional service demand.[21] Therefore, the proposed project, in combination with cumulative projects, could result in *significant* cumulative impacts regarding fire protection services.

Significance without Mitigation: Significant.

Impact PS-2: The proposed project, in combination with cumulative projects, has the potential to increase demand for fire protection services in the service area. The construction or alteration of fire protection facilities to meet the increase in demand could cause significant environmental impacts.

Mitigation Measure PS-2: Implement Mitigation Measure PS-1.

Significance with Mitigation: Less than significant.

4.14.2 POLICE SERVICES

4.14.2.1 ENVIRONMENTAL SETTING

This section describes regulations, resources, and response times for police protection and public safety services in Tuolumne County.

Regulatory Framework

There are no federal or State regulations pertaining to law enforcement that apply to the proposed project. Table 4.14-2 lists Tuolumne County General Plan goals, policies, and programs relevant to the environmental factors potentially affected by the proposed project.

[21] White, Josh, Fire Chief, Groveland CSD, Personal communication with Alexis Mena, PlaceWorks, July 31, 2019.

TABLE 4.14-2 TUOLUMNE COUNTY GENERAL PLAN GOALS AND POLICIES PERTAINING TO POLICE SERVICES

Goal/Policy/ Number	Goal/Policy Text
PUBLIC SAFETY ELEMENT	
Goal 9D	*Protect and enhance the quality of life in Tuolumne County by providing a criminal justice system that offers peace of mind to the citizens of Tuolumne County that their lives and personal property will be protected from crime.*
Policy 9.D.2	Provide law enforcement, such as patrol, investigation, supervision, administration, clerical support, dispatch, coroner, crime laboratory, prosecution, probation, and jail services within the unincorporated area of Tuolumne County and assure that the established level of service is maintained and maintain this level.
Policy 9.D.3	Assure that the established level of service in the criminal justice system is maintained prior to approving new development.
Policy 9.D.4	Require new development to be designed so as to discourage criminal activity.
Goal 9E	*Provide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies.*
Policy 9.E.1	Evaluate the circulation system to identify areas causing delay of emergency vehicle response and evacuation due to traffic congestion.

Source: Tuolumne County, 2018, Tuolumne County General Plan.

Existing Conditions

The Tuolumne County Sheriff Department (TCSD) provides law enforcement services in the unincorporated areas of Tuolumne County, including the project site. The TCSD is funding by the General Fund and has a budget of approximately $21 million per year with $1 to $1.5 million in grant funding.[22] The United States Forest Service (USFS) provides law enforcement for federally owned land within the county. The TCSD headquarters is located at 28 North Lower Sunset Drive in Sonora, and the TCSD operates four substations in Sonora, Jamestown, Twain Hart, and Groveland. The substations allow the TCSD to provide police services to multiple regions of the county. The TCSD also provides search and rescue services, which are jointly used by CAL FIRE, Yosemite National Park, and USFS.

Staffing

The Groveland substation, located at 18678 Main Street, is located approximately 15 miles east of the project site. The substation has up to one patrol officer per shift, if available, and two additional volunteer community service officers. Due to a current lack of staffing at the TCSD, the Groveland substation is not permanently staffed with a full-time sworn in officer. This substation includes a small office with an alarm and existing equipment consists of a computer, phone, and one vehicle for volunteers. The Groveland substation does not meet the current demands for police services in the part of the county, which it

[22] Evans, Neil, Undersheriff, Tuolumne County Sheriff Department, Personal communication with Jacqueline Protsman, PlaceWorks, December 27, 2019.

serves, and there are no plans for expansion, hiring additional staff, or purchasing equipment at this time.[23]

Call Volume and Response Times

On average, the Groveland substation handles approximately 27 calls for service per year. When staffing is available for the Groveland substation, service response times are approximately 15 minutes. However, when staffing is not available, officers respond from the Lake Don Pedro area or Sonora, which average 25 to 30 minutes, and 30 to 45 minutes, respectively.[24]

4.14.2.2 STANDARD OF SIGNIFICANCE

The proposed project would result in a significant impact related to police protection if it would:

- Result in substantial adverse physical impacts associated with the provision of or need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

4.14.2.3 IMPACT DISCUSSION

PS-3	**The project would result in the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.**

Development of the proposed project would accommodate an average of 290 hotel guests, with a maximum occupancy of 400 guests, and include approximately 40 employees once the project is operational. The proposed project would include employee apartments for up to 20 employees, plus two manager's suites in the main lodge. Although the proposed project would not create new permanent residents in the county, it could potentially increase demand for sheriff services to the project site. Although the need for additional staffing and facilities would exist with or without the proposed project, the proposed project could exacerbate existing response time and staffing deficiencies. This could result in future construction or expansion of police facilities that could have potentially significant environmental impacts. Therefore, the proposed project would have a potential *significant* impact with respect to the need for new or physically altered police protection facilities.

Significance without Mitigation: Significant

[23] Evans, Neil, Undersheriff, Tuolumne County Sheriff Department, Personal communication with Jacqueline Protsman, PlaceWorks, December 27, 2019.

[24] Evans, Neil, Undersheriff, Tuolumne County Sheriff Department, Personal communication with Jacqueline Protsman, PlaceWorks, December 27, 2019.

Impact PS-3: The proposed project has the potential to increase demand for police services to the project site. The construction or alteration of police facilities to meet the increase in demand could cause significant environmental impacts.

Mitigation Measure PS-3: The Terra Vi Lodge shall include private security personnel on staff (Manager on Duty) to provide security, complaint resolution, and interfaces with law enforcement/emergency personnel in case of an incident, emergency, or evacuation. These personnel shall be on-site 24 hours a day, seven days a week. The security personnel shall make regular rounds of the Terra Vi Lodge and employee housing and report internally any incidences, as well as report to local authorities if the situation warrants it.

Significance with Mitigation: Less than significant.

4.14.2.4 CUMULATIVE IMPACTS

PS-4	**The project, in combination with past, present and reasonably foreseeable projects, would result in cumulative impacts with respect to police services.**

The cumulative setting for sheriff services consists of the current services area boundaries of the Groveland substation. The proposed project, in combination with other reasonably foreseeable development, would not increase the population of Tuolumne County and subsequently the TCSD service area; however, the increase in visitors to the project site and cumulative projects could contribute to the need for expanded police facilities that could cause significant physical impacts to the environment. An assessment by the TCSD concluded that the proposed project, in combination with cumulative projects in the area, would create the need to expand existing sheriff facilities and hire additional officers and staff to adequately meet the additional service demand. This could result in future construction or expansion of police facilities that could have potentially significant environmental impacts. Therefore, the proposed project, in combination with cumulative projects, could result in *significant* cumulative impacts regarding police services.

Significance without Mitigation: Significant.

Impact PS-4: The proposed project, in combination with cumulative projects, has the potential to increase demand for police services in the service area. The construction or alteration of police facilities to meet the increase in demand could cause significant environmental impacts.

Mitigation Measure PS-4: Implement Mitigation Measure PS-3.

Significance with Mitigation: Less than significant.

4.14.3 SCHOOLS

This section describes the existing regulations and conditions with regard to schools serving Tuolumne County, as well as the proposed project's potential impacts to schools.

4.14.3.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section summarizes key State and local regulations related to schools. There are no federal regulations pertaining to schools that apply to the proposed project.

State Regulations

Senate Bill 50

Senate Bill (SB) 50[25] (funded by Proposition 1A, approved in 1998) limits the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding and whether the school district meets certain additional criteria involving bonding capacity, year-round school and the percentage of moveable classrooms in use.

California Government Code, Section 65995(b), and Education Code Section 17620

SB 50 amended California Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess development fees within school district boundaries. Government Code Section 65995(b)(3) requires the maximum square footage assessment for development to be increased every two years, according to inflation adjustments. Per California Government Code Section 65995, the payment of fees is deemed to fully mitigate the impacts of new development on school facilities.

Mitigation Fee Act (California Government Code 66000-66008)

Enacted as Assembly Bill (AB) 1600, the Mitigation Fee Act requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put.[26] The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development plan on which it is to be levied. The Act came into force on January 1, 1989.

Local Regulations

The Tuolumne County General Plan contains the Education and Libraries Element, which includes goals, to encourage school districts to maintain and enhance existing educational opportunities. The following goals are applicable to the proposed project:

[25] SB 50, approved in 1998, is different legislation than SB 50 as currently proposed by the State Legislature.

[26] California Government Code, Sections 66000-66008, https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&sectionNum=66000, accessed November 5, 2019.

- Goal 12A: Provide assistance to the County Superintendent of Schools Office and the school districts within Tuolumne County regarding school facilities planning, land use, growth trends, and potential school sites.
- Goal 12B: Support the availability of higher education programs and facilities offered by Columbia College and other postsecondary institutions in order to serve the needs of the residents of Tuolumne County.

Existing Conditions

Tuolumne County is served by three school districts: Big Oak Flat-Groveland Unified School District, Sonora Union High School District, and Summerville Union High School District. The Big Oak Flat-Groveland Unified School District (School District) currently serves the project site.

The Big Oak Flat-Groveland Unified School District serves the southern portion of Tuolumne County, including Groveland, Moccasin, and surrounding areas. The School District operates four schools, including two high schools, one elementary school, and one day school. Among the four schools, two are located within the community of Groveland. The School District collects development impact fees, which fund improvements and new facilities to mitigate impacts from new development. The School District collects $2.63 per unit of residential and multi-family development, and $0.42 per square foot of commercial development.[27]

4.14.3.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact related to schools if it would:

- Result in substantial adverse physical impacts associated with the provision of or need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

4.14.3.3 IMPACT DISCUSSION

PS-5	**The proposed project would not result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

Development of the proposed project would not include any housing that would generate new students or increase the need for local school facilities. The proposed employee housing would not include employee family housing. Development of the proposed project would require payment of commercial developer impact fees to the school district that serves the project site. The payment of school fees is

[27] Tuolumne County Superintendent of Schools, https://www.tcsos.us/business-services/developerfees/, accessed October 24, 2019.

deemed to fully mitigate the impacts of new development on school facilities, per SB 50. Therefore, there would be *no impact* on the need for school facilities.

Significance without Mitigation: No impact.

4.14.3.4 CUMULATIVE IMPACTS

PS-6	**The proposed project would not result in cumulative impacts with respect to school services.**

The proposed project would not generate any new students and would pay commercial developed impact fees. Therefore, the project would not contribute to cumulative impacts with respect to school services and there would be *no impact*.

Significance without Mitigation: No impact.

4.14.4 LIBRARIES

This section describes the existing regulations and conditions regarding library services in Tuolumne County, as well as the proposed project's potential impacts to libraries.

4.14.4.1 ENVIRONMENTAL SETTING

Regulatory Framework

This section summarizes key State and local regulations related to libraries. There are no federal regulations pertaining to libraries that apply to the proposed project.

State Regulations

The Mello-Roos Community Facilities Act, Government Code Section 53311 *et seq.*, provides an alternative method of financing certain public capital facilities and services through special taxes. This State law empowers local agencies to establish Community Facilities Districts (CFDs) to levy special taxes for facilities such as libraries. Such districts exist within Tuolumne County.

Local Regulations

The Tuolumne County General Plan contains the Education and Libraries Element, which includes goals, to encourage adequate library facilities to serve the residents of the county. The following goal and policy are applicable to the proposed project:

- Goal 12C: Adopt an acceptable level of availability and variety of library services and maintain that level as new development occurs within Tuolumne County.
- Policy 12.C.1: Maintain a goal through the Capital Improvements Program (CIP) for levels of library services throughout Tuolumne County equivalent to 325 square feet of gross floor area of adequately

equipped and staffed library facilities per 1,000 population, exclusive of the Sierra Conservation Center.

Existing Conditions

The Tuolumne County Library governs and administers four community branch libraries, the Sonora Main Library, the Groveland Branch Library, the Tuolumne Branch Library, and the Twain Harte Branch Library, and a 24-7 online library for all library users. The Tuolumne County Library serves all unincorporated communities of Tuolumne County, as well as the City of Sonora. The project site is served by the branch library in Groveland, located at 18990 Main Street, approximately 14 miles east of the project site.

The Tuolumne County Library lends books, media, and digital content to all groups, and provides educational and entertainments programs and events for children, teens, adults, and families. It also offers free internet-enabled public computers and offers access to database and reference and research services for residents. The library provides different learning opportunities and classes, which include, but are not limited to, adult literacy tutoring, Born to Read, children's room, Storytime for children, and Teen Spot.[28]

Library services are primarily funded by County property taxes. Individuals living in the unincorporated areas in Tuolumne County served by the Tuolumne County Library have a portion of their property taxes designated for the Tuolumne County Library.

4.14.4.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact related to libraries if it would:

- Result in substantial adverse physical impacts associated with the provision of or need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

4.14.4.3 IMPACT DISCUSSION

PS-7	**The proposed project would not result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

Development of the proposed project would increase the number of residents and housing in the Tuolumne County Library service area. The proposed project would include five employee apartments that would accommodate up to 20 employees on-site, as well as two manager's suites in the main lodge. It is possible that the 22 employees living on-site and other employees living off-site would use the library

[28] Tuolumne County Library, https://www.tuolumnecounty.ca.gov/416/Library, accessed on November 5, 2019.

and would therefore represent a slight increase in demand on library services provided at the Groveland Branch Library. However, because it is expected that at least some of the future employees of the project would be existing residents of Tuolumne County and surrounding communities, it is not anticipated that all new employees would represent new residents or users of the Tuolumne County Library and its services.

Tuolumne County has one goal and policy pertaining to libraries, as listed in Section 4.14.4.1 above. Goal 12C focuses on providing the community with an acceptable level of availability and variety services, and to maintain that level with new development. This goal is implemented through Policy 12.C.1, which requires the County to maintain an equivalent of 325 square feet of gross floor area of library facilities per 1,000 population (a minimum of 0.325 square feet per person) and is achieved through the County's Capital Improvements Program. The County current meets this goal and has approximately 23,458 square feet of gross floor area of library facilities for a population of approximately 54,590 (approximately 0.43 square feet per person). The proposed project would not substantially increase new residents or users of the of the Tuolumne County Library and the library currently meets the acceptable level of service. Therefore, a *less-than-significant* impact would occur with response to the need for new of physically altered library services.

Significance without Mitigation: Less than significant.

4.14.4.4 CUMULATIVE IMPACTS

PS-8	The proposed project would result in less-than-significant cumulative impacts with respect to the construction of other public facilities.

The methodology used for the cumulative impact analysis is described in Chapter 4.0, Environmental Analysis, of this Draft EIR. This section analyzes potential impacts to library services that could occur from development allowed by the proposed project in combination with reasonably foreseeable growth within the project vicinity. The proposed project, in conjunction with the cumulative projects within the proposed project vicinity, could increase demands on library services. However, these projects would not generate permanent residents and temporary residents use of library facilities and services would not likely be substantial. The Yosemite Under Canvas Project would include temporary residents and generate between 20 and 30 staff members during the operational season, but it is not anticipated that all new employees would represent new residents or users of the Tuolumne County Library and its services. The Thousand Trails Yosemite Lake RV Expansion may also increase temporary residents on-site but details regarding this project have not been developed so this project's potential effects or contribution to cumulative effects cannot yet be determined with specificity. The Berkeley Tuolumne Camp Restoration project would include rebuilding the 13 cabins, one permanent residence, and 77 guest cabins that were on-site prior to the 2013 Rim Fire, which would not increase the temporary or permanent residents beyond what was previously on-site. Finally, the Mountain Sage Conditional Use Permit project would allow for conditional uses on the site including temporary, limited events which would not generate permanent residents. Therefore, the proposed project in conjunction with the cumulative projects would not substantially increase the use of library services or constitute the need for new or physically altered

library facilities. As a result, a *less-than-significant* cumulative impact associated with libraries would occur.

Significance without Mitigation: Less than significant.

4.14.5 PARKS AND RECREATION

4.14.5.1 ENVIRONMENTAL SETTING

This section describes the regulatory framework and existing conditions related to parks and recreation services in Tuolumne County and the potential impacts that would result from development of the proposed project on parks and recreation services.

Regulatory Framework

State Regulations

The Quimby Act of 1975 authorizes Cities and Counties to pass ordinances requiring developers to set aside land, donate conservation easements or pay fees for park improvements. The Quimby Act sets a standard park space to population ratio of up to 3 acres of park space per 1,000 persons. Jurisdictions with a ratio of higher than 3 acres per 1,000 persons can set a standard of up to 5 acres per 1,000 persons for new development.[29] The calculation of a jurisdiction's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for a recreation facility or park land, and the type of development project upon which the fee is imposed.

Local Regulations

Tuolumne County General Plan

The County of Tuolumne General Plan includes goals, policies, and programs relevant to the environmental factors potentially affected by the proposed project. The General Plan's Parks and Recreation Element provides guidance for preservation of the County's open spaces and other natural resources, as well as identify the parks and recreation facilities available to local residents. Table 4.14-3 lists selected goals and policies.

[29] California Government Code Section 66477, California Department of Parks and Recreation website, Quimby Act 101: An Abbreviated Overview, http://www.parks.ca.gov/pages/795/files/quimby101.pdf, accessed on November 4, 2019.

TABLE 4.14-3 TUOLUMNE COUNTY GENERAL PLAN GOALS AND POLICIES PERTAINING TO PARKS AND RECREATION

Goal/Policy Number	Goal/Policy Text
PUBLIC SAFETY ELEMENT	
Goal 11A	*Provide an adequate supply and equitable distribution of recreation facilities for residents based on existing and projected population and the results of community needs surveys.*
Policy 11.A.1	Acquire and develop recreation facilities to fulfill the County's projected unmet need based on a goal of 5 acres of recreational facilities per 1,000 residents.
Goal 11B	*Acquire, develop and manage recreational lands according to principles which protect private property rights, maximize cost efficiency, promote accessibility by all residents, advocate safety, and encourage public participation.*
Policy 11.B.6	Construct trails for bicycle, pedestrian and, where feasible, equestrian use linking the County's major population centers with other local, state and federal recreational facilities, significant open space areas, libraries, schools, neighborhoods, public facilities and other destination points. Acquisition and construction shall be in accordance with the priorities established, the needs identified and within the general locations shown in the Tuolumne County Recreation Master Plan in coordination with the Tuolumne County Regional Transportation Plan Non-motorized Element (RTP) and General Plan Transportation Element.
Goal 11C	*Cooperate with other public agencies and private enterprise to provide park and recreation facilities.*
Policy 11.C.6	Coordinate with and provide incentives to private industry and commercial businesses to help attain maximum use and minimum duplication in the cost of park and recreation facilities.
Goal 11E	*Address the impacts of new development on the County's recreational facilities.*
Policy 11.E.1	Maintain and update, as necessary, the Tuolumne County Ordinance Code sections pertaining to land dedications and/or payment of in-lieu fees for new development's contribution to providing recreational facilities consistent with Government Code Section 66477.

Source: Tuolumne County, 2018, Tuolumne County General Plan.

Tuolumne County Recreation Master Plan

The Tuolumne County Recreation Master Plan, adopted in February 2002, implements the provisions of the Tuolumne County General Plan pertaining to recreation. It establishes standards for providing new park and recreational facilities, provides inventory of existing facilities, identifies recreational needs within the County, proposes locations for potential future facilities and methods of financing, and provides a basis for the Recreation Element of the General Plan to support land use decisions affecting recreational facilities. The Recreation Master Plan lays out potential ways to meet the Recreation Element of the General Plan's goals for constructing at least 35 miles and developing at least 225 acres of recreational facilities, among others.

Existing Conditions

County-Owned Parks and Facilities

The Tuolumne County Parks and Recreation Department owns and operates parks and recreational facilities in Tuolumne County. Park facilities include dog parks, parks and playgrounds, sports fields,

swimming pools, and youth centers.[30] The County has a goal of maintaining a ratio of 5 acres of recreational facilities per 1,000 residents.[31] Currently, the County provides 341.25 acres of parkland for the 54,590 population of the County, with a ratio of 6.25 acres per 1,000 residents, with is 1.25 percent of the standard.[32]

Stanislaus National Forest

In addition to the County's park and recreational facilities, Tuolumne County residents have access to a range of trails and open space within the Stanislaus National Forest. The Stanislaus National Forest encompasses approximately 1,403 square miles and contains over 800 miles of rivers and streams, as well as campgrounds and dozens of hiking, biking, and horseback riding trails. The Forest is split in to four Ranger Districts, including Route 120, Route 108, Stanislaus River, and Route 4. The proposed project is surrounded by the Route 120 Ranger District. This District traverses the southern portion of the Stanislaus National Forest and continues eastward towards Yosemite National Park. The nearest hiking trail is the Little Golden Forest Interpretive Trail near the Groveland Ranger District Office, located approximately, 4 miles west of the project site.

Yosemite National Park

The project site is also within proximity to Yosemite National Park, which is located approximately 5 miles east of the project site. Yosemite National Park encompasses approximately 1,169 square miles, with 1,101 square miles of designated wilderness, 800 miles of hiking trails, and 20 miles of walking and bicycle paths. Recreational activities include hiking, backpacking, ranger and interpretive programs, biking, birdwatching, fishing, horseback riding, rock climbing, winter sports, and water activities.[33]

4.14.5.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant impact related to parks and recreation if it would:

- Result in substantial adverse physical impacts associated with the provision of or need for new or physically altered parks and recreation facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

[30] County of Tuolumne, https://www.tuolumnecounty.ca.gov/675/Find-a-Park-or-Facility, accessed November 6, 2019.
[31] County of Tuolumne, 2018, 2018 Tuolumne County General Plan, Volume I: General Plan Policy Document, p. 11-2.
[32] County of Tuolumne, 2018, 2018 Tuolumne County General Plan, Volume I: General Plan Policy Document, p. 11-2.
[33] National Parks Service, https://www.nps.gov/yose/planyourvisit/things2do.htm, accessed November 6, 2019.

4.14.5.3 IMPACT DISCUSSION

PS-9	**The project would not result in the need for new or physically altered park facilities or other recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.**

As described in Chapter 3, Project Description, of this Draft EIR, development of the proposed project is expected to generate up to 33 FTE employees, the lodge/hotel manager, as well as accommodate an average of 394 hotel guests, with a maximum occupancy of 556 hotel guests. The proposed project would include employee apartments for up to 20 employees, plus two manger's suites in the main lodge, which would constitute a small increase in permanent residents that could increase the demand for the parks and recreational facilities in the region.

The proposed project would have a significant impact if it would result in substantial adverse impacts associated with the provision of new of physically altered parks and recreational activities in order to maintain the County's adopted ratio of 5 acres of parkland per 1,000 residents. As described under Existing Conditions, the County currently has a ratio of 6.25 acres per 1,000 residents, with is 1.25 percent of the standard.[34] The proposed project would increase the numbers of persons and level of activity of the project site; however, the proposed employee housing would not include employee family housing, making it unlikely that a substantial increase in the amount of people assumed to frequently use the existing County parks would be introduced as a result of the proposed hotel lodge. The 22 new residents generated by the development of employee housing may utilize the County park system; however, this would not this would not decrease the park acreage to resident ratio, as it would remain at 6.25 acres per 1,000 residents. A small number of guests may choose to utilize County park and recreational facilities, but this would mostly likely be few people as most guests would travel to the area to use facilities in the Stanislaus National Forest or Yosemite National Park. Therefore, new or physically altered park facilities would not be necessary to meet the acceptable service ratios for County parks and recreational facilities.

The proposed employee housing would not include employee family housing.

The proposed project would generate up to 33 FTE employees that may choose to utilize trails and facilities in Stanislaus National Forest or Yosemite National Park, but this would be a small increase compared to the over 2 million people who visit the Stanislaus National Forest and over 4 million people who visit Yosemite National Park annually.[35,36] The proposed project would also accommodate up to 556 hotel guests, which are most likely attracted to the area due to the close proximity to the National Forest and Yosemite National Park. However, the hotel would accommodate people who were already planning to visit the area and would not increase the use of the National Forest or National Park to the point where new or physically altered park and recreation facilities would be required.

[34] County of Tuolumne, 2018, 2018 Tuolumne County General Plan, Volume I: General Plan Policy Document, p. 11-2.
[35] National Parks Service, https://www.nps.gov/yose/planyourvisit/brochures.htm, accessed November 7, 2019.
[36] United States Forest Service, 2004, National Visitors Use Monitoring Report: Stanislaus National Forest.

Therefore, the proposed project would not generate a need to physically alter or construct new facilities at County parks, the Stanislaus National Forest, or Yosemite National Park, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

PS-10 The project would not increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated.

Development of the proposed project would accommodate up to 22 new permanent residents in on-site employee housing, which would only slightly increase the demand for the parks and recreational facilities in the County. It is possible for all the 556 potential guests of the hotel could utilize regional park facilities owned and operated by the County. However, the hotel guests would most likely have been drawn to the area to visit the Stanislaus National Forest or Yosemite National Park, and only a small number of guests would likely visit County parks. Therefore, the generation of residents and hotel guests on-site would not exceed the park acreage to resident ratio and would not increase the use of existing County park facilities to the point where substantial physical deterioration would occur or be accelerated.

The hotel guests generated by the proposed project would most likely use park facilities in the Stanislaus National Forest and Yosemite National Park. The proposed hotel would accommodate people who are already planning to visit the area, and therefore the guests would not represent a substantial increase in the use of existing park facilities in Stanislaus National Forest or Yosemite National Park, as those recreational areas receive over 2 million and 4 million annual visitors, respectively. Furthermore, the hotel would provide 30 day-use parking spaces on-site to encourage the use of public transportation and ride sharing to reduce the deterioration of roadways in and near Yosemite National Park. Therefore, the proposed project would not cause the substantial or accelerated deterioration of park facilities, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

PS-11 The project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

As described in PS-10, development of the proposed project would include 22 new permanent residents, that would only slightly increase the demand for the parks and recreational facilities in the County. It is possible for all the 556 potential guests of the hotel could utilize regional park facilities owned and operated by the County. While employees or guests of the hotel at the project site could utilize public recreational facilities, including County Parks, Stanislaus National Forest, Yosemite National Park, and other nearby recreational areas and attractions, this number of users is small in comparison to the number of current users of facilities. It is unknown specifically which facilities project guests would visit. Furthermore, the hotel would accommodate people who were already planning to visit the area and its park facilities. Therefore, the increase in potential recreational facility users from the proposed project

would not result in the need for new or physically altered recreational facilities, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

4.14.5.4 CUMULATIVE IMPACTS

PS-12	**The project, in combination with past, present and reasonably foreseeable projects, would result in less than significant cumulative impacts with respect to parks.**

Implementation of the proposed project would have a significant impact if, in combination with other development projects in Tuolumne County, it would result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities in order to maintain the County's adopted ratio of 5 acres of parkland per thousand residents.

While cumulative growth in the employee and visitor population would result in increased use of regional parks and recreational facilities, buildout of the reasonably foreseeable projects in the vicinity of the project site would not result in substantial adverse impacts to parks and recreational facilities in Tuolumne County, Stanislaus National Forest, or Yosemite National Park. The new employees in cumulative projects would most like be seasonal and would not generate new permanent residents that would exceed the 5 acres of parkland to 1,000 resident ratios. Similar to the proposed project, the cumulative projects would accommodate people who are already planning to visit the area. Furthermore, the guests would not represent a substantial increase in the use of existing park facilities in Stanislaus National Forest or Yosemite National Park, as those recreational areas receive over 2 million and 4 million annual visitors, respectively. Therefore, the proposed project, in conjunction with cumulative projects, would not result in a need for new or expanded park facilities or cause the substantial deterioration of existing facilities.

Overall, implementation of the proposed project, in combination with other past, present, and reasonably foreseeable projects, would result in a *less-than-significant* cumulative parks and recreation impact.

Significance without Mitigation: Less than significant.

4.17 WILDFIRE

This chapter describes the potential impacts associated with the implementation of the proposed project related to wildfire. A summary of the relevant regulatory framework and existing conditions is followed by an analysis of the potential for the project to result in wildfire impacts and mitigation measures that would avoid or reduce significant impacts.

4.17.1 ENVIRONMENTAL SETTING

4.17.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, and local regulations and programs related to wildfire that are considered in evaluating the potential for the proposed project to have a significant effect related to wildfire.

Federal Regulations

Healthy Forests Restoration Act

The Healthy Forests Restoration Act (US Code Title 16, Chapter 84, Section 6501) was approved on December 3, 2003 to reduce wildfire risk to communities, municipal water supplies, and other at-risk federal land through planning, prioritizing, and hazardous fuel reduction projects. This act provides regulations for the protection of watersheds, forests, and rangeland, such as the land surrounding the proposed project, from catastrophic wildfires across the landscape. This includes improving systems to detect insect and disease infestations in hardwood forests.

National Cohesive Wildland Fire Management Strategy

In the Federal Land Assistance, Management, and Enhancement Act of 2009 (FLAME Act), Congress mandated the development of a national cohesive wildland fire management strategy for all lands within the United States. The strategy includes a set of guidelines for safe and effective response to wildfires, including structural protections and wildfire prevention to maximize the effectiveness of response efforts. This strategy also provides guidance on vegetation and fuels management, including designing and placing fuel treatments; increasing use of prescribed burns; and expanding the use of all methods to improve the resiliency of forests.

State Regulations

California Building Code

Building Design Standards

The California Building Code (CBC), contained in Part 2 of 24 California Code of Regulations, identifies building design standards, including those for fire safety. The CBC is updated on a three-year cycle and the current 2019 CBC went into effect in January 2020. It is effective statewide, but a local jurisdiction may

adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan-checked by local County building officials for compliance with the CBC and any applicable local edits. Typical fire safety requirements of the CBC include the installation of fire sprinklers in all new residential, high rise, and hazardous materials buildings; the establishment of fire resistance standards for fire doors and walls, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. Tuolumne County regularly adopts each new CBC update under the Tuolumne Code of Ordinances, Chapter 15.04, Construction Codes.

Materials and Construction Methods for Exterior Wildfire Exposure

Chapter 7A of the CBC, Materials and Construction Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in any Fire Hazard Severity Zone or Wildland-Urban Interface Fire Area. Chapter 7A contains requirements for roofing; attic ventilation; exterior coverings; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and accessory structures.

California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is found in California Code of Regulations Title 24, Part 9 and, like the CBC, it is revised and published every three years by the California Building Standards Commission. Also like the CBC, the CFC is effective Statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire and smoke protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. Tuolumne County regularly adopts each new Fire Code update under the Tuolumne Code of Ordinances, Chapter 15.04, Construction Codes.

California Public Resources Code

California Public Resources Code (PRC) Sections 4291 *et seq.* requires that – for buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials – brush, flammable vegetation, or combustible growth within 100 feet of buildings be removed.

California PRC Section 4290 requires the State Board of Forestry and Fire Protection to adopt regulations implementing minimum fire safety standards for defensible space that would be applicable to lands within the State Responsibility Area (SRA) and lands within very high fire hazard severity zones.

California PRC Section 4442 regulates the use of internal combustion engines that use hydrocarbon fuels on forest-covered land, brush-covered land, and grass-covered land. Internal combustion engines, like those used in construction, must be equipped with a spark arrester, which is a device used for removing

and retaining carbon and other flammable particles from the exhaust flow for engines that use hydrocarbon fuels. These engines must be maintained in effective working order or be constructed equipped, and maintained for the prevention of fire.

State Responsibility Areas Fire Safe Regulations

SRA Fire Safe Regulations outline basic wildland fire protection standards and can decrease the risk of wildfire events. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations. The State statute for wildfire protection is PRC Section 4290. Requirements in the PRC include information on:

- Road standards for fire equipment access
- Standards for signs identifying streets, roads, and buildings
- Minimum private water supply reserves for emergency fire use
- Fuel breaks and greenbelts
- Basic emergency access

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The Office of the State Fire Marshal provides for fire prevention by enforcing fire-related laws in State-owned or-operated buildings; investigating arson fires in California; licensing those who inspect and service fire protection systems; approving fireworks for use in California; regulating the use of chemical flame retardants; evaluating building materials against fire safety standards; regulating hazardous liquid pipelines; and tracking incident statistics for local and State government emergency response agencies. The California Fire Plan is the State's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.

California Office of Emergency Services

The California Office of Emergency Services (Cal OES) was established on January 1, 2009 and created by Assembly Bill 38, which merged the duties, powers, purposes, and responsibilities of the former Cal OES with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall State agency response to major disasters in support of local government. Cal OES is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, manmade, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. In 2018, Cal OES completed a State Hazard Mitigation Plan, which designated fire hazard severity zones and wildland-urban interface areas.[1]

[1] California Office of Emergency Management, 2018, California State Hazard Mitigation Plan, https://www.caloes.ca.gov/HazardMitigationSite/Documents/002-2018%20SHMP_FINAL_ENTIRE%20PLAN.pdf, accessed September 26, 2019.

2018 Strategic Fire Plan for California

CAL FIRE produced the 2018 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments.[2] The 2018 Strategic Fire Plan for California focuses on fire prevention and suppression activities to protect lives, property, and ecosystems, in addition to providing natural resource management to maintain State forests as a resilient carbon sink to meet California's climate change goals. This plan provides State Responsibility Fire Safe Regulations, which require that all parcels one acre or larger provide a minimum 30-foot setback for buildings from all property lines and/or the center of the road. A key component of the 2018 Strategic Fire Plan for California is the collaboration between communities to ensure fire suppression and natural resource management are successful.[3]

Public Utilities Commission

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission (CPUC) began considering and adopting regulations to protect the public from fire hazards due to overhead power lines and nearby aerial communication facilities. The CPUC publishes a Fire-Threat Map under Rulemaking 15-05-006, following procedures in Decision 17-01-009, revised by Decision 17-06-024, which adopted a work plan for the development of a utility High Fire-Threat District where enhanced fire safety regulations in Decision 17-12-024 apply.[4]The fire regulations require electric utilities to:[5]

- Prioritize the correction of safety hazards.
- Correct non-immediate fire risks in "Tier 2" (elevated fire threat) areas on the CPUC High Fire-Threat District within 12 months, and in "Tier 3" (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines within the High Fire-Threat District.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the High Fire-Threat District.

[2] California State Board of Forestry and Fire Protection, 2018, 2018 Strategic Fire Plan for California, http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614.pdf, accessed September 26, 2019.

[3] California State Board of Forestry and Fire Protection, 2018, 2018 Strategic Fire Plan for California, http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614.pdf, accessed September 26, 2019.

[4] California Public Utilities Commission, http://www.cpuc.ca.gov/firethreatmaps/, accessed September 26, 2019.

[5] California Public Utilities Commission, press release: CPUC Adopts New Fire-Safety Regulations, http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF, accessed September 26, 2019.

California Code of Regulations Title 14 Section 1250 et seq.: Fire Prevention Standards for Electric Utilities

California Code of Regulations (CCR) Title 14 Section 1250 *et seq.* set forth fire prevention standards for electric utilities. Sections 1254 and 1256 set forth requirements for vegetation clearance from poles, towers, and wires.[6]

Section 1254

The firebreak clearances required by PRC Section 4292 are applicable within an imaginary cylindroidal space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each dead end or corner pole unless such pole or tower is exempt from minimum clearance requirements by provisions of Title 14 CCR Section 1255 or PRC Section 4296. The radius of the cylindroid is 3.1 meters (10 feet). Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

(a) At ground level: remove flammable materials, including, but not limited to, ground litter, duff and dead or desiccated vegetation that will allow fire to spread.

(b) From 0 to 2.4 meters (0 to 8 feet) above ground level: remove flammable trash, debris or other materials, grass, herbaceous, and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 meters (8 feet).

(c) From 2.4 meters (8 feet) to horizontal plane of highest point of conductor attachment: remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased, or dying trees in their entirety.

Section 1256

Minimum clearance required by PRC Section 4293 shall be maintained with the specified distances from conductors. Minimum clearance shall include:

(1) Any position through which the conductor may move, considering, among other things, the size and material of the conductor and its span length.

(2) Any position through which the vegetation may sway, considering, among other things, the climatic conditions, including such things as foreseeable wind velocities and temperature, and location, height and species of the vegetation.

Local Regulations

Emergency Operations Plan for Tuolumne County

The Emergency Operations Plan (EOP) for Tuolumne County, adopted in June 2012, establishes County procedures and policies when responding to significant disasters, including wildland fires. The area covered by this plan encompasses Tuolumne County, private agencies, and businesses within jurisdiction

[6] Wires are referred to as "conductors" in CCR Title 14 Section 1256.

limits of the county. The EOP describes how emergencies will be managed through the Standard Emergency Management System and the Incident Command System, to ensure effective management of emergency operations within Tuolumne County. Emergency operations are split into eight phases:

- Event recognition
- Notification of response personnel
- Mobilization of response personnel
- Activation of emergency response facilities and resources
- Situation Reporting and Assessment
- Public alerting and information
- Protective action determination and implementation
- Re-entry and recovery

Tuolumne County Community Wildfire Protection Plan

The Tuolumne County Community Wildfire Protection Plan, adopted in December 2004, is intended to provide a foundation for and facilitate continued collaboration between multiple agencies providing wildfire protection within Tuolumne County. The overall goal of the Community Wildfire Protection Plan is to reduce total costs and losses from wildland fire in the county by protecting assets at risk through pre-fire management and enhancement of strategic fire defense systems. This goal is followed by five key objectives: 1) identify projects which, when completed, will reduce the risks to citizens and firefighters; 2) assess all wildland areas; 3) identify and analyze key policy issues and develop recommendations for changes in public policy; 4) have a strong fiscal policy focus and monitor the wildland fire protection system in fiscal terms; and 5) translate the analysis into public policies.

Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan

The Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), adopted in December 2017, is a guide to hazard mitigation throughout the county and services as a tool to help decision makers direct hazard mitigation activities and resources. In the context of the MJHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including wildfire. The MJHMP contains the hazard mitigation actions to help reduce the risk of damage and injury from wildfire under Goal 5: Minimize the level of damage and losses to people, existing and future critical facilities, and infrastructure due to wildland fires.

Tuolumne County General Plan

The Public Safety Element and Natural Hazards Element of the County's General Plan include goals, policies, and programs relevant to environmental factors potentially affected by the proposed project. The County's General Plan includes the following goals, policies, and implementation programs specific to wildfire protection and applicable to the proposed project:

TABLE 4.17-1 TUOLUMNE COUNTY GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS PERTAINING TO WILDFIRE

Goal/Policy/ Implementation Program Number	Goal/Policy/Implementation Program Text
PUBLIC SAFETY ELEMENT	
Goal 9A	Consult with all affected agencies on fire protection planning within Tuolumne County.
Implementation Program 9.A.a	Assess the effects of land development applications on fire protection capability during the review of applications. The assessment should incorporate comments from all affected fire protection agencies, not just those with jurisdiction over the project site because wildland fire originating on the site could cross jurisdictional boundaries. Appropriate measures should be formulated and implemented to reduce the safety concerns and fire hazards which could result from approval of the application. Recommendations should specify the source of funding for implementation and maintenance of identified fire protection measures.
Goal 9E	Provide structural fire protection to persons and property within Tuolumne County consistent with the needs dictated by the level of development and in accordance with current Federal, State, and local fire protection agency regulations and policies.
Policy 9.E.1	Evaluate the circulation system to identify areas causing delay of emergency vehicle response and evacuation due to traffic congestion.
Implementation Program 9.E.b	Require that new development be provided with access roads that allow for safe and efficient response by emergency apparatus and the safe evacuation of residents in the event of structural or wildland fire.
Implementation Program 9.E.c	Consider roadways designated as arterials in the Transportation Element as primary evacuation routes on a County-wide basis. Such routes provide the highest vehicle capacity and serve as the primary means of egress from the County. The routes designated as collector routes shall be considered secondary evacuation routes on a Countywide basis. These routes provide egress from local neighborhoods and communities. Require new development to be served by roads which provide safe emergency vehicle response and safe evacuation routes to the nearest arterial or collector route in the event of wildland fire emergency pursuant to Chapter 11.12 of the Tuolumne County Ordinance Code.
Policy 9.E.3	Require new development to be consistent with State and County regulations and policies regarding fire protection.
Implementation Program 9.E.f	Forward applications for new development to the Tuolumne County Fire Department/CAL FIRE for evaluation and identification of necessary fire protection measures for such development based upon contemporary fire prevention measures and protection standards.
Implementation Program 9.E.g	Revise Title 15 of the Tuolumne County Ordinance Code as necessary to require new structures to incorporate all fire protection measures required by the current editions of the California Building Code and the California Fire Code, including Automatic Engineered Fire Sprinkler Systems and Automatic Electronic Fire Alarm Systems, referenced in National Fire Protection Association (NFPA) 13 and 72, where necessary.
Goal 9G	*Establish and maintain a codified fire protection risk management strategy which requires new development within Tuolumne County to incorporate or supply fire protection infrastructure and improvements necessary so that such development does not exceed the capabilities of the County's fire protection resources.*
Policy 9.G.2	Require new residential development to have adequate fire protection, which may include design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire.
Policy 9.G.3	Determine the impact proposed development will have on the provision of fire protection services and maintain the established level of service as outlined in the current Tuolumne County Fire Department Service Level Stabilization Plan.

TABLE 4.17-1 TUOLUMNE COUNTY GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS PERTAINING TO WILDFIRE

Goal/Policy/ Implementation Program Number	Goal/Policy/Implementation Program Text
Goal 9H	*Establish reliable sources of funding for fire protection services in Tuolumne County in order to maintain the services at an acceptable level.*
Policy 9.H.2	Enforce the provisions found in Title 15 of the Tuolumne County Ordinance Code and the California Fire Code for built-in fire suppression equipment in all new development in order to improve fire safety and offset the need for increased fire department staffing and equipment.
NATURAL HAZARDS ELEMENT	
Goal 17A	*Avoid the exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury or death involving natural hazards.*
Policy 17.A.6	Ensure that all new construction is completed in a way most resistant to loss or damage from natural hazards.
Implementation Program 17.A.e	Through the development review process, ensure that projects located in or near areas that may pose public health and safety hazards are designed to minimize potential impacts on people and property.
Goal 17E	*Provide protection to County residents and natural resources from the losses associated with wildland fire.*
Policy 17.E.1	Reduce the exposure to risk from wildland fire to an acceptable level by only allowing development in high or very high fire hazard areas if it can be made safe by planning, construction, or other fire safety measures.
Implementation Program 17.E.a	Utilize the CAL FIRE Forest and Resource Assessment Program "Fire Hazard Severity Zone Map", including revisions thereto, as a basis for determining the significance of fire hazards when reviewing development applications.
Implementation Program 17.E.b	New development in very high fire hazard zones in local or state responsibility areas shall meet California Building and Fire Codes, including Wildland-Urban Interface Building Codes. For new development proposed in very high fire hazard zones, the County will consult with the State fire agency (CAL FIRE) to determine that all feasible wildfire mitigation measures are included and that safe ingress/egress criteria are met.
Policy 17.E.2	Require the maintenance of defensible space setbacks in areas proposed for development if wildland fire hazards exist on adjacent properties.
Policy 17.E.3	Require new development to have adequate fire protection and to include, where necessary, design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire.
Implementation Program 17.E.c	Require new development to mitigate wildland fire hazards in such a manner that it minimizes the chance of wildland fire originating outside the development from entering the development and minimizes the chance of fire originating within the development escaping to adjoining property and adjacent wildland.
Implementation Program 17.E.d	Require developers to incorporate fire protection improvements into project designs where determined necessary by the Tuolumne County Fire Department and require maintenance of these improvements. Fuel breaks, green belts, long-term comprehensive fuel management programs, access to developed water sources, strategic helispots (with water supply), and perimeter road systems can all serve to reduce the fire hazard on project sites as well as adjacent property.
Implementation Program 17.E.e	Require new development in areas subject to wildland fire to provide safe ingress and egress in accordance with Chapter 11.12 of the Tuolumne County Ordinance Code. Encourage new development that complies with Chapter 11.12 to provide multiple access routes, especially in very high fire hazard severity zones or where one access route is susceptible to closure by landslide, loss of a bridge or other cause.

TABLE 4.17-1 TUOLUMNE COUNTY GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS PERTAINING TO WILDFIRE

Goal/Policy/ Implementation Program Number	Goal/Policy/Implementation Program Text
Implementation Program 17.E.f	Support the efforts of the Tuolumne County Fire Department to prevent loss of life, property and resources. Refer land development applications which would permit structures in areas subject to wildland fire to the Tuolumne County Fire Department/CAL FIRE for review and identification of measures necessary to mitigate the fire hazard.
Implementation Program 17.E.g	Consult the U.S. Forest Service, National Park Service and other federal land management agencies regarding applications for development on privately owned lands located adjacent to or within these agencies' boundaries to obtain comments regarding the impact of the project on the wildland fire protection mission of that agency.
Implementation Program 17.E.h	Revise and enforce County fire protection regulations such that new development in areas subject to wildland fire provides for clearing adjacent to access roads in order to reduce radiant heat received by vehicles on the roadway and thereby facilitate safe evacuation of residents and response by emergency vehicles in the event of wildland fire.
Policy 17.E.8	Require property owners to maintain wildlands in a fire resistant manner consistent with Section 4291 of the Public Resources Code. Assist fire protection agencies in their efforts to enforce Section 4291.
Implementation Program 17.E.t	Require property owners to remove trees killed by drought, disease, insects and other pests to utilize the timber value and reduce the wildland fire hazard consistent with Section 4291 of the Public Resources Code unless a tree is determined to have significant wildlife habitat value by a qualified biologist.

Source: Tuolumne County, 2018, Tuolumne County General Plan.

Tuolumne County Code of Ordinances

The Tuolumne County Code of Ordinances includes various directives to minimize adverse impacts associated with wildfires in Tuolumne County. The Code of Ordinance is organized by Title, Chapter, and Section. Most provisions relating to wildfire prevention are included in Title 15, Buildings & Construction, and Title 11, Road Standards, as follows:

- Chapter 15.20, Fire Safety Standards: This chapter adopts sections of the California Fire Code in its entirety, with amendments to Section 505.2, Street or Road Signs, and Section 505.1, address identification for commercial, industrial, and residential developments. This chapter provides regulations for fire hydrant installation, off-street signing, gate entrances, setbacks, defensible space, and fuel modification.
- Chapter 11.12, Basic Road Design and Construction Standards: This chapter provides construction standards for all roadways within the County, including requirements for geometrics and roadbed design, structural design standards, cul-de-sacs, driveways, and street signing.

4.17.1.2 EXISTING CONDITIONS

This section describes the existing conditions relevant to wildfire hazards on and around the project site. Please also see Chapter 4.14, Public Services, Parks, and Recreation, for additional information pertaining to fire protection services in the county.

Wildfire Background

Types of Wildfire

There are three basic types of wildland fires:

- Crown fires burn trees to their tops; these are the most intense and dangerous wildland fires.
- Surface fires burn surface litter (that is, the top layer of the forest, brushland, or grassland floor, containing dead sticks, branches, twigs, leaves, and needles) and duff (that is, the layer of decomposing organic material lying above the soil and below the layer of surface litter). Surface fires are the easiest fires to extinguish and cause the least damage to the forest. Brush and small trees enable surface fires to reach treetops and are thus referred to as "ladder fuels."
- Ground fires occur underground in deep accumulations of dead vegetation. These fires move very slowly but can be difficult to extinguish.[7]

Wildfires burn in many types of vegetation—forest, woodland, scrub (including chaparral, sage scrub, and desert scrub), and grassland.[8] Many species of native California plants are adapted to fire. Chaparral shrubs recover from fire in either of two ways: 1) woody root crowns or burls below the soil surface that survive a fire and re-sprout; and, 2) shrubs (various species of *Manzanita* and *Ceanothus*) that are killed by fire and produce seeds requiring intense heat from a fire to germinate.[9] Many species of conifers have seed cones requiring fire to open.[10] Between 2010 and 2017, wildfires in California burned about 265,000 acres of forest land, 207,000 acres of shrub vegetation, 99,000 acres of grassland, 18,000 acres of desert vegetation, and 14,000 acres of other vegetation types.[11]

Wildfire Causes

Many factors contribute to wildfires, including:[12]

- Fuel. Fuel can include live and dead vegetation on the ground, surface vegetation such as brush and small trees, and above-ground vegetation in tree canopies. Moisture content affects how vegetation burns. Lighter fuels such as grasses, leaves, and needles quick expel moisture and burn rapidly, while heavier fuels such as tree branches, tree trunks, and logs retain moisture and take longer to ignite.
- Weather. Temperature, humidity, wind speed, wind direction, cloud cover, precipitation amount and duration, and atmospheric stability all affect wildfires. A wet spring can cause increased vegetation

[7] Natural Resources Canada, 2018, Fire Behavior, https://www.nrcan.gc.ca/forests/fire-insects-disturbances/fire/13145, accessed October 1, 2019.

[8] California Department of Forestry and Fire Prevention, 1999, Learning to Live with Fire, http://www.fire.ca.gov/communications/downloads/live_w_fire.pdf, accessed October 1, 2019.

[9] Rundel, Philip, and Gustafson, Robert, 2005, Introduction to the Plant Life of Southern California. Berkeley and Los Angeles, California: University of California Press.

[10] California Department of Forestry and Fire Prevention, 1999, Learning to Live with Fire, http://www.fire.ca.gov/communications/downloads/live_w_fire.pdf, accessed October 1, 2019.

[11] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention, 2018, 2018 Strategic Fire Plan for California, http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614.pdf, accessed October 1, 2019.

[12] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, pages 68 to 69.

growth, creating more fuel susceptible to ignition during a dry summer. Strong, dry winds can produce extreme fire conditions.

- Topography. Site and regional topography, including slope and elevation, influence fuel and weather. Terrain affects the amount and moisture of fuel, the effect of weather (such as temperature, precipitation, and wind), potential barriers to fire spread (such as roadways and bodies of water), and landforms. In general, south facing slopes are subject to greater solar radiation, making them drier and therefore creating more intense wildfires. Fire spreads more easily uphill than downhill.

These factors interact with each other in several ways. Climate change also affects these factors, for instance by affecting fuel ecosystems and weather patterns.

Although the term "wildfire" suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires, accounting for 44 percent of acreage burned.[13] Wildfires can be ignited naturally during lightning events, but are most frequently caused by human activity, such as smoking, campfires, equipment use, and arson. The three most common types of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.); arson; and equipment use.[14] Power lines can also ignite wildfires through down lines, vegetation contact, conductors that collide, and equipment failures.[15] CAL FIRE determined that 16 wildfires in northern California in October 2017 were caused by electric power and distribution lines, conductors, and the failure of power poles.[16] Lightning is the major natural cause of wildfire in the United States.[17]

An analysis of United States Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires, and 90 percent of all wildfires, occurred within 0.5 miles of a road; and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within approximately 650 feet of a road. This analysis concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters.[18]

There are three primary methods of wildfire spread, which are listed below:

[13] Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences: Volume 114 No. 11. https://www.pnas.org/content/pnas/114/11/2946.full.pdf, accessed October 2, 2019.

[14] Pacific Biodiversity Institute, 2007, Roads and Wildfires, http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf, accessed October 2, 2019.

[15] Texas Wildfire Mitigation Project, 2018, How Do Power Lines Cause Wildfires? https://wildfiremitigation.tees.tamus.edu/faqs/how-power-lines-cause-wildfires, accessed October 2, 2019.

[16] California Department of Forestry and Fire Prevention, 2018, CAL FIRE Investigators Determine Causes of 12 Wildfires in Mendocino, Humboldt, Butte, Sonoma, Lake, and Napa Counties, https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017_WildfireSiege_Cause.pdf, accessed October 2, 2019.

[17] Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences: Volume 114 No. 11. https://www.pnas.org/content/pnas/114/11/2946.full.pdf, accessed October 2, 2019.

[18] Pacific Biodiversity Institute, 2007, Roads and Wildfires, http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf, accessed October 2, 2019.

- **Embers.** Embers are glowing or burning pieces of vegetation or construction debris that are lofted during the wildfire, which can move up to a mile ahead of a firestorm. They are most prolific cause of home ignition at a rate of two out of every three homes destroyed. These small embers or sparks may fall on the vegetation near a home (on dry leaves, needles, or twigs on the roof) and then subsequently ignite and burn down the home. Ember storms place all structures without fire resistant landscaping and construction within miles of the fire at potential risk.
- **Direct Flame Contact.** Direct flame impingement refers to the transfer of heat by direct flame exposure. Direct contact will heat the building materials of the home. If the time and intensity of exposure is severe enough, windows will break and materials will ignite.
- **Radiant Heat.** A house can catch on fire from the heat that is transferred to it from nearby burning objects, even in the absence of direct flames or embers. Defensible space around homes significantly reduces the risk from radiant heat. A home with 100 feet of clearance from forest or shrubs will usually have minimal impact from radiant heat or direct flame.

Wildfire season in the Western region of the United States, including California, recently has lengthened from a previous average of between five and seven months to a year-round occurrence, and the number of large wildfires (i.e., greater than 1,000 acres) has increased from 140 to 250 per year. This is occurring as average annual temperature in the Western regions of the United States has risen by nearly two degrees Fahrenheit since the 1970s and the winter snowpack has declined.[19]

Secondary Effects

The following sections describe the hazardous conditions created by wildfire effects.

Slope Instability

Post-fire conditions can pose hazards associated with unstable slopes, such as landslides, erosion, and debris flows.[20] Post-fire landslide hazards include fast-moving, highly destructive debris flows that can occur in the period immediately following wildfires in response to high-intensity rainfall events, and flows that are generated over longer time periods that are accompanied by root decay and loss of soil strength. Fires increase the potential for debris flows by increasing the imperviousness of soil so that it repels water and destroys vegetation that would slow and absorb rainfall, and whose roots would help stabilize soil.[21] The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses.[22] Post-fire debris flows are particularly hazardous because they can occur with little warning, can exert great impulsive loads on objects in their paths, can strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows

[19] State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention, 2018, 2018 Strategic Fire Plan for California, http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614.pdf, accessed October 2, 2019.

[20] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, page 73.

[21] US Geological Survey, 2018, New post-wildfire resource guide now available to help communities cope with flood and debris flow danger, https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news_science_products=1#qt-news_science_products, accessed October 2, 2019.

[22] California Geological Survey, 2018, Post-Fire Debris Flow Facts, https://www.conservation.ca.gov/index/Pages/Fact-sheets/Post-Fire-Debris-Flow-Facts.aspx, accessed October 2, 2019.

are composed of larger particles. Post-fire debris flows are most common in the two years after a fire; they are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas.

Air Pollution

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles ($PM_{2.5}$), which are microscopic particles can penetrate the lungs and cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. Some populations are more sensitive than others to smoke: for instance, people with heart or lung diseases; the elderly; children; people with diabetes; and pregnant women.[23]

Vegetation Changes

Frequent wildfires reduce the recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate after fire—and increase the invasion of non-native vegetation, which can convert native forests to non-native scrub or grassland habitat.[24] Non-native grasses are generally more flammable than the forest vegetation that is replaced; thus, such conversion exacerbates wildfire hazards.[25] Loss of vegetation can also lead to downstream flooding.

Wildfire History in the Project Area

According to the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, Tuolumne Cunty historically experiences wildfires every two to five years. In more recent years with drought conditions, wildfires have occurred every other year. From 2001 to 2016, twelve fires have occurred in or near Tuolumne County that have each destroyed at least 750 acres.[26] The 2013 Rim Fire burned a total of 257,314 acres, and burned through the project site. Figure 4.17-1 maps wildfires in the vicinity of the project site that occurred between 1950 and 2017.

Wildfire Hazards in the Project Area

According to the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, geography, weather patterns, and vegetation provide ideal conditions for wildfires, which routinely occur in county. Fire season in the county typically starts in spring, as fuels dry out, and extends until the first rains fall in the winter season. Due to the high elevation and longer winter seasons, the higher elevations of the county have greater and heavier fuels, such as timber. Fires in these vegetation areas can easily become crown fires (that is, a fire that burns the entire length of a tree and spreads from treetop to treetop).

[23] Airnow, 2018, How Smoke from Fires Can Affect Your Health, https://airnow.gov/index.cfm?action=smoke.index, accessed October 2, 2018.

[24] US Geological Survey, 2012, Fire-Driven Alien Plant Invasion in a Fire-Prone Community, http://www.californiachaparral.com/images/Fire_driven_alien_plants_Brief.pdf, accessed April 30, 2019.

[25] See University of California Division of Agriculture and Natural Resources, 2009, Invasive Plants and Wildfires in Southern California, https://anrcatalog.ucanr.edu/pdf/8397.pdf, accessed April 30, 2019.

[26] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, pages 67 to 68.

The project site's location and existing conditions make the site susceptible to wildfire hazards, as described below.

Hazard Zone Mapping

Various entities evaluate potential wildfire risks and publish data and maps showing wildfire risks for locations within California.

CAL FIRE

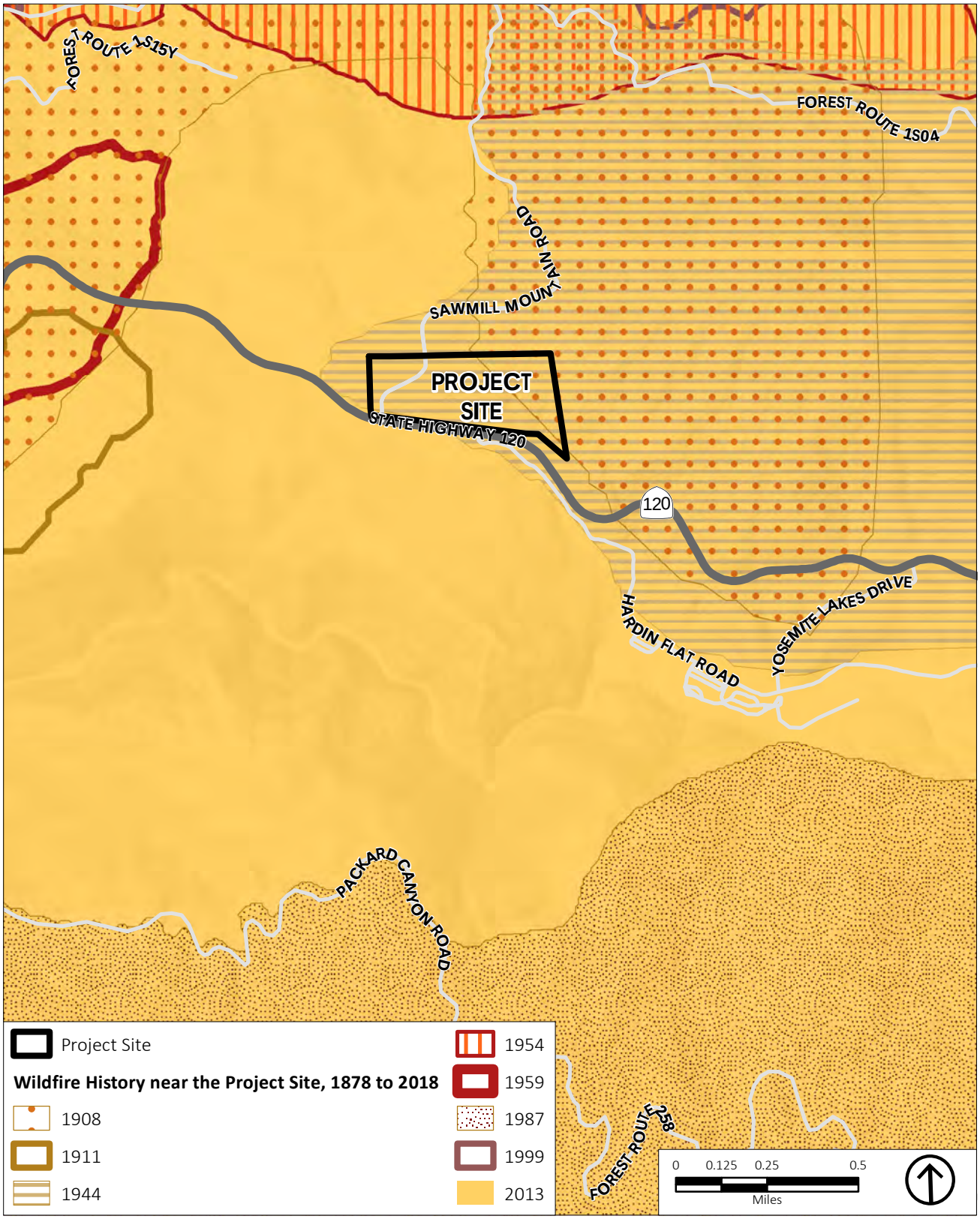
CAL FIRE publishes maps recommending fire hazard severity zones for every California county. The maps identify lands in California as falling within one of the following management areas: Local Responsibility Area (LRA), State Responsibility Area (SRA), and Federal Responsibility Area (FRA). Within each of these areas, a single agency has direct responsibility: in LRAs, local fire departments or fire protection districts are responsible; in SRAs, CAL FIRE is responsible; in FRAs, federal agencies such as the United States Forest Service, National Park Service, Bureau of Land Management, United States Department of Defense, United States Fish and Wildlife Service, and Department of the Interior are responsible.

Within the LRA, CAL FIRE designates lands as being within a Very High Fire Hazard Severity Zone (VHFHSZ) or non-VHFHSZ. The LRA maps also show the VHFHSZ and non-VHFHSZ areas within the SRA and FRA but do not differentiate lands within the SRA and FRA from each other (that is, SRA and FRA areas are mapped together).

Within the SRA, CAL FIRE designates Moderate Fire Hazard Severity Zones, High Fire Hazard Severity Zones, and VHFHSZs. The SRA maps also indicate which lands area within the LRA and which are within the FRA, but do not show the hazard zones within the LRA and FRA.

The project site is within a CAL FIRE designated SRA, and is surrounded by land designated in a FRA. As shown in Figure 4.17-2, the CAL FIRE map for the SRA in Tuolumne County identifies the project site as within a VHFHSZ.

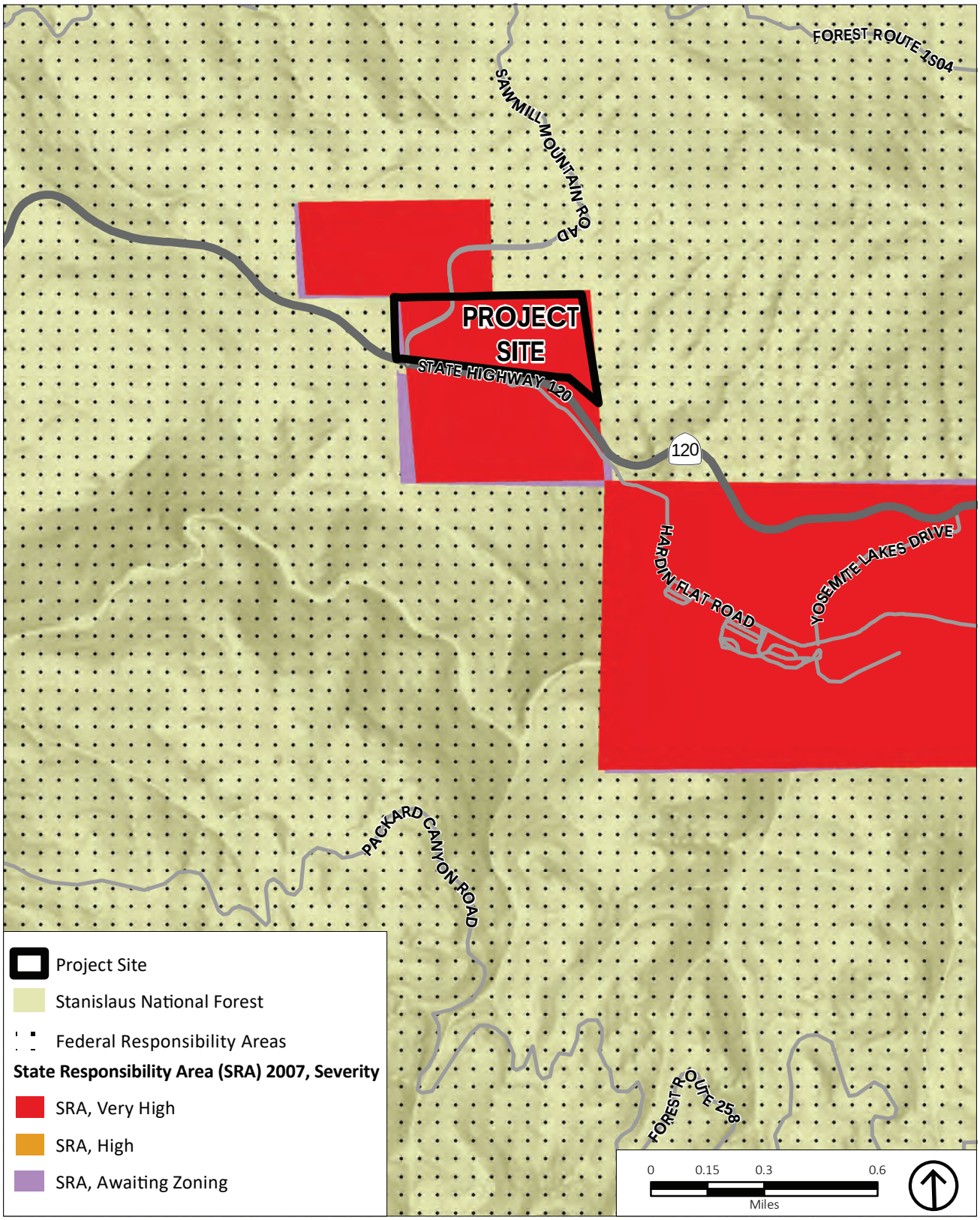
CAL FIRE also publishes mapping data for the wildland–urban interface (WUI). The WUI includes areas susceptible to wildfires where wildland vegetation and urban (or suburban) development occur together. Fires in the WUI result in direct damage to the built environment and harm to residents. The WUI area mapped by CAL FIRE represents the overlap between the following: land uses containing a housing density of one housing unit per 40 acres or denser, and areas within 2,400 meters (approximately 1.5 miles) of those land uses; areas within 2,400 meters of lands calculated to have a "high," "very high," or "extreme" fire threat, based on a combination of fuel rank and fire rotation; and areas designated as "communities at risk," which are areas with a density of one housing unit per 20 acres or denser that are within 2,400 meters of areas with high, very high, or extreme fire threat. As shown on Figure 4.17-3, the project site is not within the WUI.



Source: California Department of Forestry and Fire Protection, 2019; ESRI, 2019; Toulumne County, 2019; PlaceWorks, 2020.

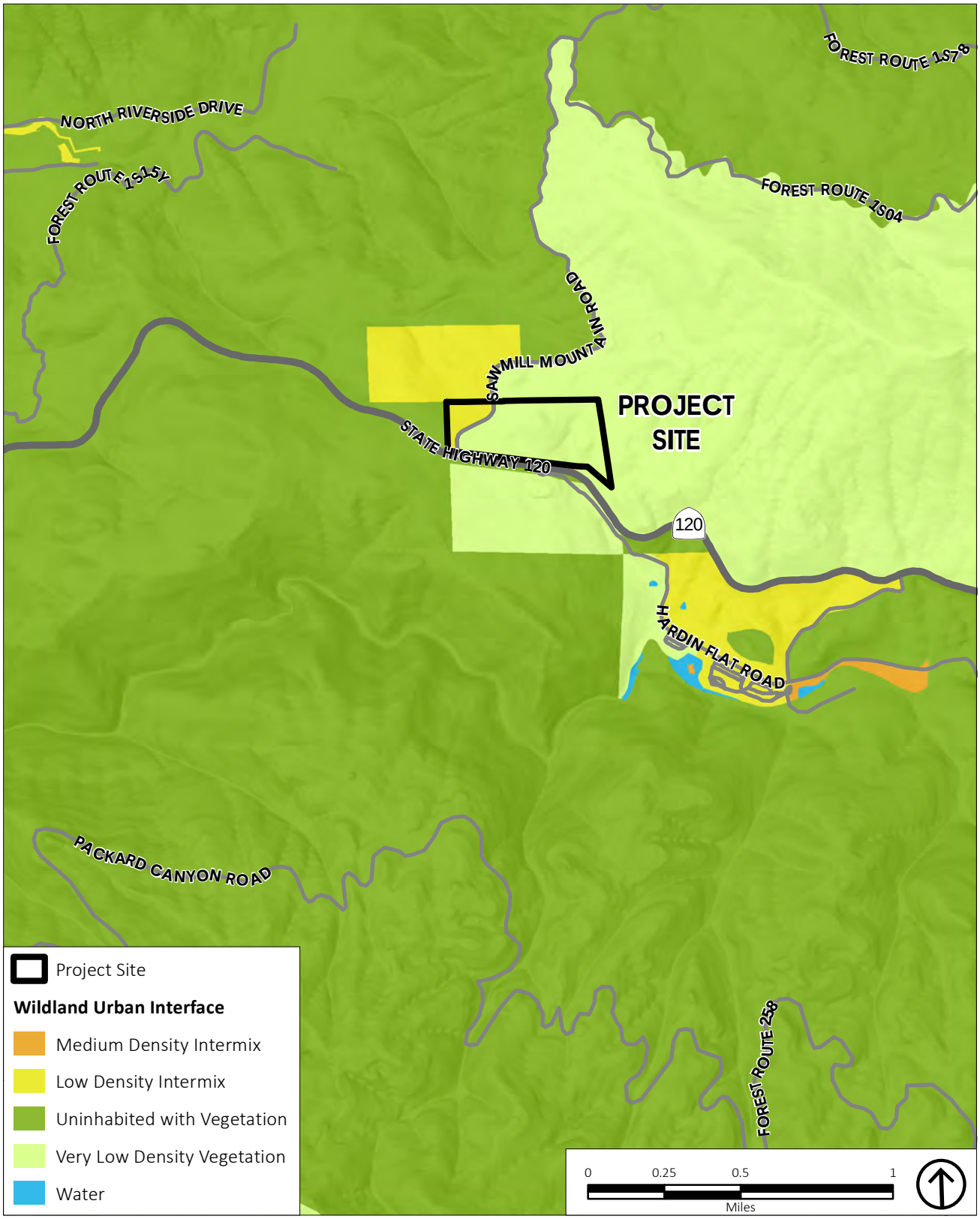
Figure 4.17-1

Wildfire History near the Project Site, 1950 to 2017



Source: California of Forestry and Fire Potection (CAL FIRE) 2019; ESRI, 2019; Toulumne County, 2019; PlaceWorks, 2020.

Figure 4.17-2
CAL FIRE Hazard Severity Zone and Responsibility Area Map



Source: California Department of Forestry and Fire Protection's Fire and Resource Assessment Program, 2019; ESRI, 2019; Toulumne County, 2019; PlaceWorks, 2020.

Figure 4.17-3
Wildland Urban Interface

California Public Utilities Commission

The CPUC's Fire-Threat Map identifies areas considered to be within Tier 2 (elevated fire threat) and Tier 3 (extreme fire threat) where power line fires cause an elevated risk of fires igniting and spreading rapidly. As shown in Figure 4.17-4, the project site is within Tier 2 and is therefore considered to have an elevated risk of fires caused by power lines and aerial communication facilities.

Project Site Characteristics

The project site contains woodland and heavy timber fuel, which has a high to very high fire-hazard ranking.[27] The following sections describe specific project site characteristics related to wildfire.

Vegetation

As described in more detail in Chapter 4.3, Biological Resources, of this Draft EIR, the project site is covered with small, isolated communities of conifers and oaks, which escaped destruction in the 2013 Rim Fire. Newer vegetation that has grown since the fire includes trees (mostly ponderosa pine), shrubs, and grasses. Vegetation communities consist of 65 percent burned mixed hardwood conifer forest and 33 percent unburned mixed hardwood conifer forest.

Terrain

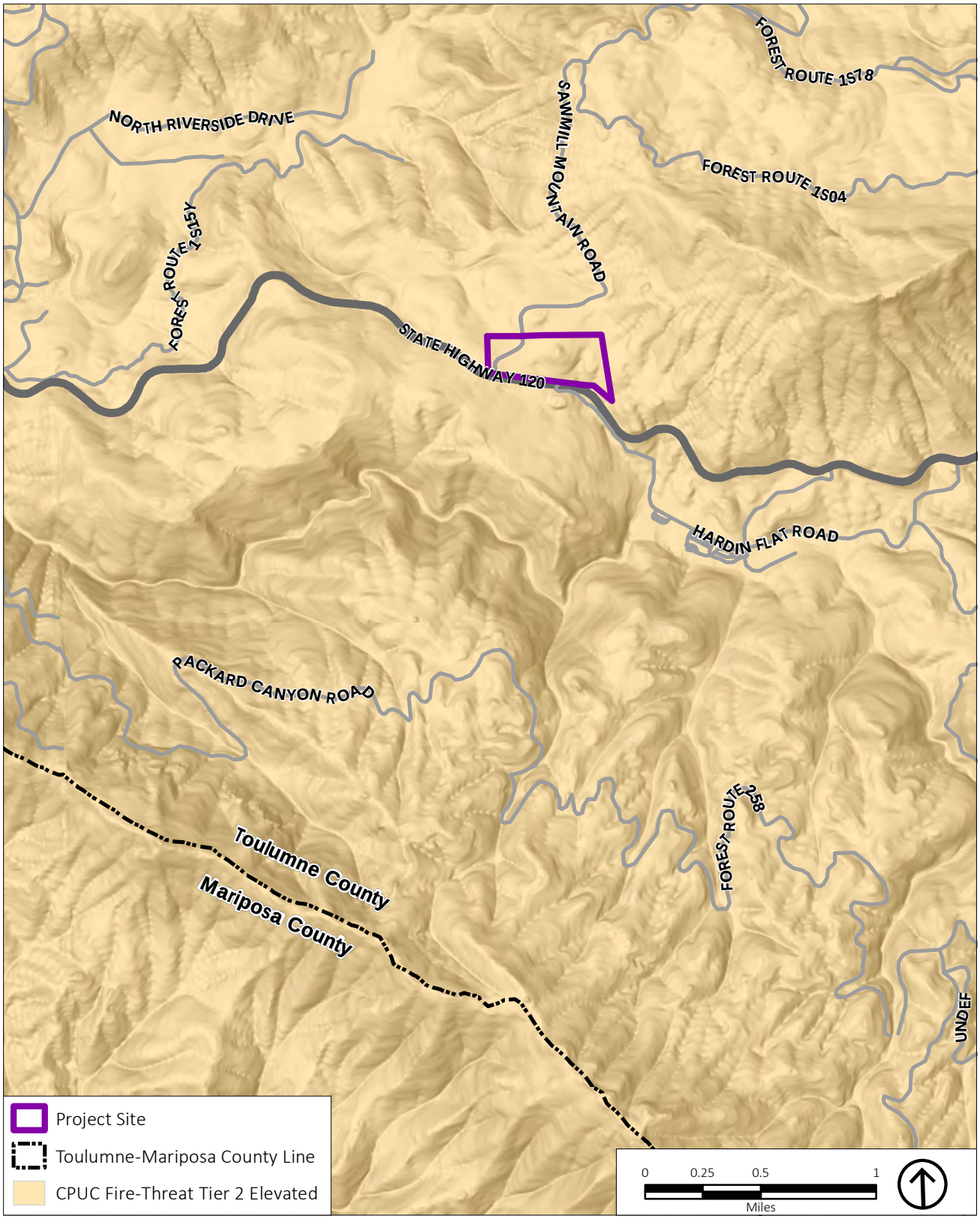
The project site is located at the base of a mountain, at an elevation of approximately 4,000 feet above mean sea level. The highest point on the project site is at 4,045 feet above mean sea level, located just south of the three proposed water tanks. The terrain slopes gently towards Sawmill Mountain Road to the west and Highway 120 to the south. The eastern portion of the site contains a second, smaller hill, with steeper slopes. As discussed in more detail in Chapter 4.7, Geology and Soils, the project site has some potential for slope failure on the steep eastern portion of the site.

Prevailing Winds

The windier part of the year is from November to March, with average wind speeds of 5.3 miles per hour.[28] During this time of year, prevailing winds are from the east until February, then shift and are from the south until March. During the calmer part of the year (March to September), the winds are from the west. Given prevailing wind patterns, the windier part of the year aligns with the months of most precipitation; during this time, prevailing winds are blowing from the east.

[27] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, page 69.

[28] Weather Spark, 2019, https://weatherspark.com/y/1333/Average-Weather-in-Tuolumne-City-California-United-States-Year-Round, accessed October 22, 2019.



Source: California Public Utilities Commission, 2019; ESRI, 2019; Toulumne County, 2019; PlaceWorks, 2019.

Figure 4.17-4
California Public Utilities Commission Fire-Threat Map

Debris Flow Hazards

Debris flows are considered a type of landslide, which is defined as the sliding movement of masses of loosened earth, rock, and a combination of the two down a hillside or slope. Debris flows occur when dense mixtures of water-saturated debris move down-slope, with an appearance and behavior very similar to flowing concrete. Areas with steep slopes are typically within debris flow areas. The terrain of the project site is varied, ranging from gently sloped on the western portion of the site to hilly or steeply sloped on the eastern portion. As discussed in more detail in Chapter 4.7, Geology and Soils, the project site has some potential for debris flow hazards on the steeper eastern portion of the site.

Fire Protection Services

Fire protection services on and near the project site are provided by Tuolumne County Fire Department (TCFD) in coordination with CAL FIRE. Tuolumne County has eight fire districts that work cooperatively with TCFD and CAL FIRE to provide life and property emergency response. The TCFD includes the Fire Prevention Department, which provides inspections, insurance information, and public safety information throughout the county. Other programs managed by the TCFD include the Fire Explorers (a partnership with Boy Scouts of America), Resident Firefighting for college students, and Volunteer Firefighting, where community member volunteers serve the community by responding to emergencies.[29] The proposed project would be subject to review by the Fire Prevention Department of the TCFD for compliance with adopted Fire Safety Standards, the California Fire Code, and Tuolumne County Emergency Operations Plan. A more detailed description of fire protection resources in Tuolumne County is provided in Chapter 4.14, Public Services, Parks, and Recreation, of this Draft EIR.

4.17.2 STANDARDS OF SIGNIFICANCE

If located in or near State Responsibility Areas or lands classified as very high fire hazard severity zones, the proposed project would result in significant wildfire impacts if it would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

[29] Tuolumne County, 2018, Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan, page 69.

4.17.3 IMPACT DISCUSSION

The standards of significance listed in Section 4.17.2 above apply to projects that are within or near lands within the SRA or lands that are within a VHFHSZ. As shown in Figure 4.17-2, the project site is within an SRA and a VHFHSZ. Therefore, the standards of significance in Section 4.17.2 apply to the proposed project.

Table 4.17-2 provides a list of project features that would be implemented to reduce the risk of wildfire ignition, damage from wildfires, and harm to residents and visitors. Table 4.17-2 compares the proposed project features to the existing wildfire regulatory framework.

TABLE 4.17-2 PROJECT WILDFIRE RISK REDUCTION FEATURES

Project Feature	Regulatory Requirements Met	Optional Design Feature
Construction		
Wide separations between buildings to prevent structure to structure ignitions.	PRC Section 4290; General Plan Implementation Program 9.E.g	
Wide separations between buildings to provide easy access by emergency responders.	PRC Section 4290; General Plan Implementation Program 9.E.b	
All exterior building materials are proposed to be constructed to comply with the most recent wildland-urban interface building code. ▪ Ignition-resistant ▪ Non-combustible materials ▪ Non-impregnatable vents ▪ Double-paned windows with one pane of tempered glass	CBC Chapter 7A; General Plan Policy 17.A.6, Policy 17.E.3	
An underground basement designed and constructed to be a refuge place for guests and employees to stay for a short period of time during wildfires or other disasters, when early evacuation is not possible. Enough space, an air filtering system, and positive ventilation to support the people harbored in the project, reducing traffic on possible evacuation routes.	General Plan Goal 9G, Policy 9.G.3, Goal 9H, Policy 9.H.2, Goal 17A	Yes
Vegetation Management		
Incorporation of a Vegetation Management Plan into landscaping documents that integrates the needs for wildland fire safety.	CFC; PRC Section 4290, PRC Section 4291; CCR Title 14 Section 1254; General Plan Policy 9.E.3, Implementation Program 17.A.e, Implementation Program 17.E.c, Policy 17.E.8	
The landscape would be designed and maintained in compliance with the Vegetation Management Plan.	CFC; PCR Section 4290, PRC Section 4291; CCR Title 14 Section 1254; General Plan Policy 9.E.3, Policy 17.E.2, Policy 17.E.3, Policy 17.E.8, Implementation Program 17.E.t	

TABLE 4.17-2 PROJECT WILDFIRE RISK REDUCTION FEATURES

Project Feature	Regulatory Requirements Met	Optional Design Feature
The Vegetation Management Plan would be reviewed and approved by the Tuolumne County Fire Prevention Bureau.	General Plan Implementation Program 9.E.f, Implementation Program 17.E.d, Implementation Program 17.E.f	
Landscaping would be irrigated using the greywater system.	General Plan Policy 17.E.3	Yes
Fire Prevention		
Smoking would be permitted only in a designated smoking area.		Yes
No smoking and no littering signs would be posted in throughout the entire project site.		Yes
Barbecues during times of high fire danger would be prohibited.		Yes
Guests and personnel would be educated on fire-safe behaviors.		Yes
Trash cans would be provided throughout the property to reduce litter, and the ground would be cleaned by staff frequently.		Yes
Fire pits would be located in public areas and would be operated and maintained by hotel staff only.		Yes
During construction a fire prevention plan would be implemented to reduce the chance of ignition. This plan would prescribe the equipment, training and behaviors of the construction team. All equipment with motors would comply with California Public Resources Code (PRC) Section 4442.	CBC; CFC; PRC Section 4442; Tuolumne County MJHMP Goal 5; General Plan Goal 17A, Policy 17.A.6	
Communication and Alerts		
A communication plan would be established to ensure receipt and notification of vital incident information. Equipment necessary to implement the communication plan would be acquired. These are likely to include radios, cell phone towers or boosters, satellite phones, and/or other equipment.	General Plan Policy 9.G.2	Yes
Weather stations would be installed and monitored.	General Plan Policy 17.E.3, Policy 9.G.2	Yes
Protocols for alerts would be established so that personnel on-site would be notified when high fire danger exists.	General Plan Policy 9.G.2	Yes
Training		
Appropriate employees would be trained as first-response emergency responders, with trained staff on duty at all times.		Yes
Key engineering staff would complete certificate programs at the California Regional Fire Academy. The courses would include technical training relating to wildland fires, fire prevention, fire department apparatus, tools and equipment, breathing apparatus, extinguishers, hazardous materials, communication and emergency medical treatment.		Yes
Periodic regular fire safety drills would be performed. These would encompass evacuation and shelter-in-place options.		Yes
The expectation is that the guests and employees would remain on-site in the event that a wildland fire nears the project.	General Plan Goal 9G, Policy 9.G.3, Goal 9H, Policy 9.H.2, Goal 17A	Yes

TABLE 4.17-2 PROJECT WILDFIRE RISK REDUCTION FEATURES

Project Feature	Regulatory Requirements Met	Optional Design Feature
Guests would be educated on the need for and use of emergency alerts in the county and on-site.		Yes
Evacuation		
Based on monitoring of both weather conditions and nearby incidents, guests would be notified to evacuate early to minimize peak traffic on Highway 120 in the event of an incident that requires evacuation.	Tuolumne County EOP; Tuolumne County MJHMP; General Plan Goal 9G	Yes
Pre-fire evacuation plans would identify triggers for evacuation in terms of proximity of wildfires, and winds. Early response is a function of awareness and communication with fire departments. This implies weather, scanners, and monitoring with agreed-upon set trigger points.	Tuolumne County EOP; Tuolumne County MJHMP	Yes
Access		
The project proposes direct access to Highway 120 for fire service.	PRC Section 4290; General Plan Implementation Program 9.E.b, Implementation Program 17.E.e	
Two driveways from Sawmill Mountain Road are proposed, each with different destinations and routes; one an ingress and egress to access the public market, and one an ingress and egress to access the reception area and lodging.	PRC Section 4290; Tuolumne County Ordinance Code Chapter 11.12; General Plan Implementation Program 9.E.b, Implementation Program 17.E.e	
One looped roadway would provide emergency access around the cabin guestroom buildings and throughout the entire site.	PRC Section 4290; General Plan Implementation Program 9.E.b, Implementation Program 17.E.e	
All roadways are designed to comply with California PRC 4290 and Tuolumne County Ordinance Code Chapter 11.12 to allow full access for emergency vehicles, with slopes flatter than 12 percent, a radius larger than 40 feet, and a width no less than 20 feet (without parking).	PRC Section 4290; Tuolumne County Ordinance Code Chapter 11.12; General Plan Implementation Program 9.E.b, Implementation Program 17.E.e	
Implementation and Maintenance		
The proponents of the project would commit implementation and maintenance of the measures in a Wildfire Protection Plan.	Tuolumne County Community Wildfire Protection Plan	Yes

TABLE 4.17-2 PROJECT WILDFIRE RISK REDUCTION FEATURES

Project Feature	Regulatory Requirements Met	Optional Design Feature
Wildfire Response and Support		
The project proposes construction in compliance with the National Fire Protection Association's fire protection system and would include fire sprinkler and standpipe systems.[30]	CBC; CFC; General Plan Policy 9.E.3, Implementation Program 9.E.g, Policy 9.G.2, Policy 9.H.2, Policy 17.E.3, Implementation Program 17.E.d; Tuolumne County Code of Ordinance Title 15	
Suppression systems and site hydrants for fire protection would be provided using a combination of reclaimed, treated greywater, and potable water storage.	CBC; CFC; PRC Section 4290; General Plan Policy 9.E.3, Implementation Program 9.E.g, Policy 9.G.2, Policy 9.H.2, Policy 17.E.3, Implementation Program 17.E.d; Tuolumne County Code of Ordinance Title 15	
Water supply would be provided by a storage system and augmented with wildland fire hoses.	CBC; CFC; PRC Section 4290; General Plan Policy 9.G.2, Policy 9.H.2, Policy 17.E.3, Implementation Program 17.E.d; Tuolumne County Code of Ordinance Title 15	
An emergency helipad would be located on the western side of Sawmill Mountain Road, within the western project site parcel. The helipad would be used for emergency services only and would be available for use to the entire community.	General Plan Policy 17.E.3, Implementation Program 17.E.d	Yes

Notes: CBC = California Building Code; CFC = California Fire Code; CCR = California Code of Regulations; EOP = Emergency Operations Plan; MJHMP = Multi-Jurisdictional Hazard Mitigation Plan; PRC = Public Resources Code
Source: PlaceWorks, 2020.

WF-1 The project would be located in a State Responsibility Area, but it would not substantially impair an adopted emergency response plan or emergency evacuation plan.

The proposed project would create a significant impact if it would substantially impair an emergency response plan or emergency evacuation plan.

[30] National Fire Prevention Association (NFPA) 13 Standard for the Installation Sprinkler Systems (2016 Edition); NFPA 22 Standard for Water Tanks for Private Fire Protection (2013 Edition); NFPA 24 Standard for the Installation of Private Service Mains (2016 Edition).

Impact discussion HAZ-6 in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR evaluates whether the proposed project would impair implementation of or physically interfere with an emergency response plan or emergency evacuation plan. If evacuations are needed, guests would be notified early to minimize peak traffic on Highway 120 in the event of an incident that requires evacuation. The expectation is that the guests and employees would remain on-site in the event of a wildfire or other disaster when early evacuation is not possible. The proposed project would include the installation of weather stations, which would be monitored for both weather conditions and nearby wildfires.

Emergency response issues are addressed by the TCFD in coordination with Tuolumne County Office of Emergency Services and CAL FIRE, which require adequate access roads and building markings to facilitate emergency response.[31,32] The proposed project would use two driveways connected to Sawmill Mountain Road as the primary access road for guests and employees of the lodge. One looped roadway would provide emergency access around the cabins and throughout the entire site, which would be designed to comply with California Public Resource Code 4290 and Tuolumne County Ordinance Code Chapter 11.12, Basic Road Design and Construction Standards. Consistent with the California Fire Code and Tuolumne County Code of Ordinances Title 15, the internal roadway system would allow full access for emergency vehicles, with slopes flatter than 12 percent, a radius larger than 40 feet, and a width no less than 20 feet (without parking).

In addition, the proposed project would create a new access road on the southeast portion of the project site, connecting to Highway 120, specifically dedicated to fire access, as shown on Figure 3-12. Emergency responders with four-wheel drive capacity would be able to utilize the fire access road on the project site. Additionally, pursuant to Implementation Program 9.E.b of the Tuolumne County General Plan, the proposed project would be required to provide access roads that allow for safe and efficient response by emergency apparatuses and the safe evacuation of residents in the event of a fire. Furthermore, the proposed project includes an emergency helicopter landing zone on the northwestern portion of the project site, north of Sawmill Mountain Road, which would serve the project and community for emergency uses. As there are no other helipads in the immediate vicinity of the project, this feature would be beneficial as it would provide improved emergency helicopter access in comparison to existing conditions. Furthermore, construction of the project would not impair implementation of the Tuolumne County Emergency Operations Plan. Construction staging would be located on-site and would not block Highway 120 or Sawmill Mountain Road. As discussed above, and in impact discussion HAZ-6 in Chapter 4.9, Hazards and Hazardous Materials, there would be a *less-than-significant* impact to emergency response or evacuation.

Significance without Mitigation: Less than significant.

[31] Public Resources Code Section 4290.

[32] Tuolumne County, 2018, Tuolumne County General Plan: Volume 1: General Plan Policy Document. https://www.tuolumnecounty.ca.gov/DocumentCenter/View/11752/Vol-I-Goals-Policies-Policies-Final.

WF-2	**The project would be located in a State Responsibility and could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to, pollutant concentrations from, a wildfire or the uncontrolled spread of a wildfire.**

Slope

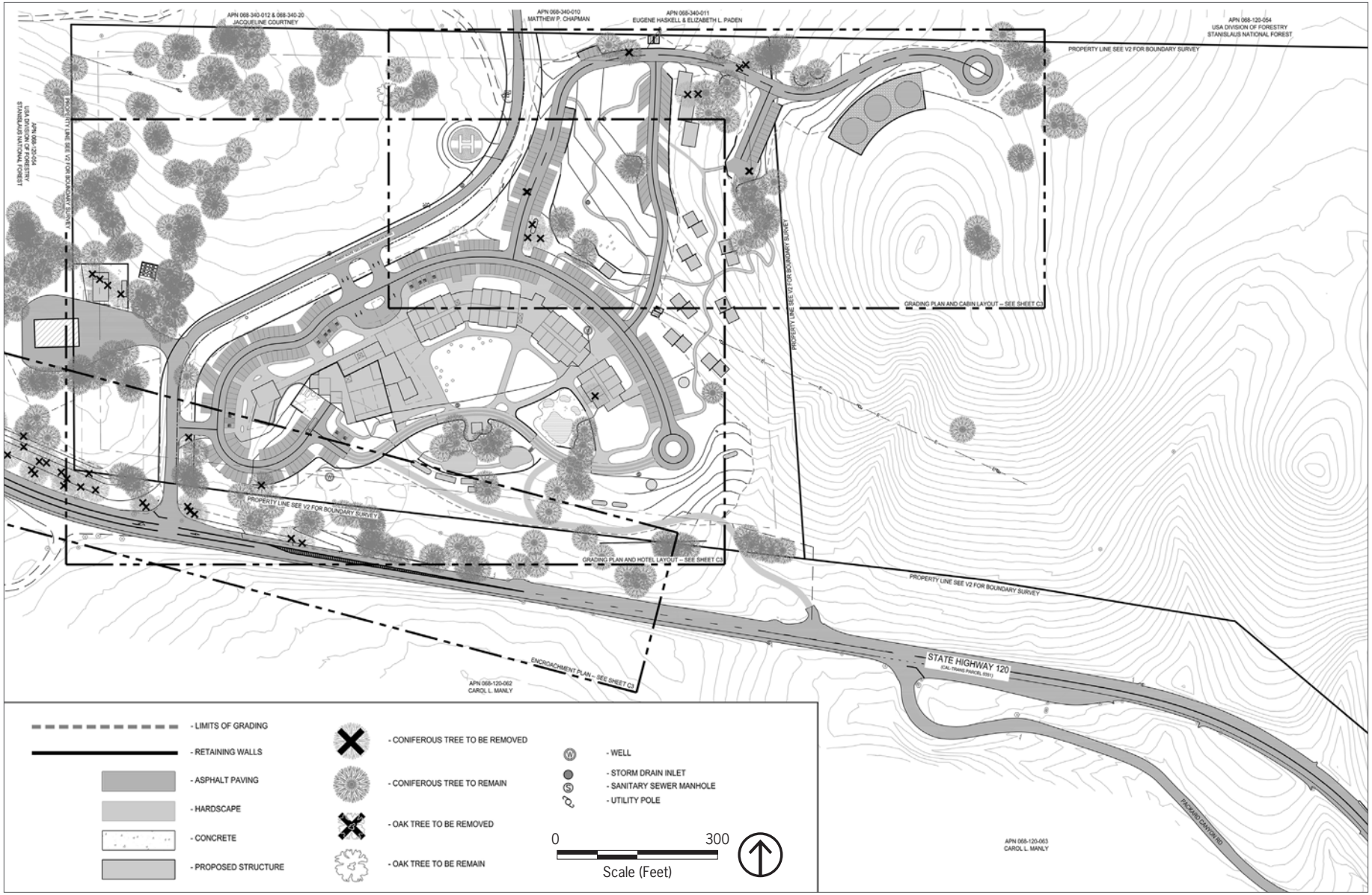
Grading activities would occur during site preparation for the development of the hotel, cabins, employee housing, outdoor recreational facilities, parking areas, and on-site roadways and pedestrian paths. On-site roadways and parking lots would require site grading and site preparation to ensure adequate drainage and compaction for access and parking. Similarly, grading and site preparation would be necessary for the emergency helicopter landing zone, maintenance facility, tank pad, and fire access road. Mass grading for the buildings, roads, and parking would include approximately 11.5 acres (18 percent) of the project site.

The project site is gently to moderately sloped, and the development of project facilities–including parking lots, the hotel, cabins and employee housing, roads, and water tanks–would require grading that would create new slopes within the project site. However, these new slopes would not create hazardous conditions on-site. Grading activities would be primarily located on the western (gently sloped) parcel, with additional grading for the water tanks along the northwestern corner of the eastern (moderately sloped) parcel, as shown in Figure 4.17-5. Additionally, the proposed project would include the installation of retaining walls adjacent to and downslope from grading, to reduce the impact of cut and fill slopes, reduce tree removal, and minimize the grading footprint of the project. As described above, the proposed hotel, cabins, and employee housing is designed and located to minimize the need for extensive grading, as building sites are primarily located on the less hilly slopes of the project site.

Prevailing Winds

As stated above, the proposed project would not change prevailing winds. However, wildfires and fire-related air pollution hazards that could be exacerbated by the proposed project could be spread by prevailing winds. Figure 4.17-2 shows that the project site is within an SRA and designated as being within the VHFHSZ. Of particular concern would be an on-site wildfire that could occur during the dry season and spread due to prevailing winds toward the surrounding forested land.

Section 4.17.1.1 describes plans, policies, regulations, and procedures that address wildfire risks. The Tuolumne County Community Wildfire Protection Plan, MJHMP, Tuolumne County General Plan policies, and Tuolumne County Code of Ordinances would reduce wildfire hazards to structures, wildlife, and/or residents and visitors. The fire regulations, in addition to the construction fire prevention plan and site design of the proposed project, would further reduce the risk of wildfire.



Source: avrp Skyport, 2019. Land & Structure, 2019.

Figure 4.17-5
Grading Plan

Furthermore, recognition of the growing threat that wildfire smoke poses to public health and safety has resulted in a response led by the United States Forest Service and enhanced through partnership with many other agencies, such as the National Park Service. The Wildland Fire Air Quality Response Program was created to directly assess, communicate, and address risks posed by wildfire smoke to the public as well as fire personnel. The program depends on four primary components: specially trained personnel called Air Resource Advisors, air quality monitoring, smoke concentration and dispersion modeling, and coordination and cooperation with agency partners. Air Resource Advisors are technical specialists that are trained to work on smoke issues from wildland fire. They are deployed nationwide during large smoke events. Air Resource Advisors are dispatched to an incident to assist with understanding and predicting smoke impacts on the public and fire personnel. They analyze, summarize, and communicate these impacts to incident teams, air quality regulators, and the public.[33]

Vegetation

The primary vegetation type on the project site is conifer forest, composed of montane hardwood-conifer, ponderosa pine, and sierra mixed conifer. Conifer forest fires are easily ignited during late summer and fall when natural vegetation is extremely flammable due to hot and dry conditions. Wildfire is a serious hazard in undeveloped areas and sites with extensive areas of unirrigated vegetation.

Although the project site is largely composed of conifer forests, the proposed project would introduce management activities on the project site that would reduce wildfire hazards from on-site vegetation characteristics. As discussed in Chapter 3, Project Description, of this Draft EIR, the proposed project would develop a Vegetation Management Plan that would, in part, address irrigated landscaping, a greywater system, and additional defenses against wildland fires. The undeveloped areas of the project site and defensible space zone would be designed and maintained in compliance with the Vegetation Management Plan.

Additionally, the proposed project would be required to comply with vegetation regulations in the California Fire Code, PRC Section 4291, CCR Title 14 Sections 1250 *et seq*., Tuolumne County General Plan policies, and Tuolumne County Code of Ordinances. Furthermore, the Tuolumne County MJHMP includes hazard mitigation strategies to initiate fuel thinning, chipping projects, and collaboration with property owners to utilize prescribed burns to reduce wildfire risks.

Prevailing regulatory requirements and policies, in addition to proposed project design features would minimize the exposure of people to a significant risk of loss, injury, or death due to slope, prevailing winds and vegetation. However, due to the location of the proposed project in a forested area, historic fires in the region, and the fact that the proposed project would bring people and vehicles to a site within a fire-prone area, the proposed project may have the potential to exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. The project's proposed features (listed in Table 4.17-2) would reduce potential wildfire hazards. However, the

[33] US Forest Service, 2018, Wildland Fire Air Quality Response Program, United States Department of Agriculture, https://www.wildlandfiresmoke.net/, accessed October 22, 2019.

planting placement, density, and species on the project's landscaping plans are not consistent with these proposed wildfire hazard reduction features. Therefore, the impact would be *significant*.

Significance without Mitigation: Significant.

Impact WF-2: The project includes several project features that would address and reduce wildfire hazards. However, project landscaping plans are not consistent with these measures. Therefore, the project has the potential to, due to the increase of people and vehicles on the project site, exacerbate wildfire risks and expose project occupants to pollutant concentrations from a wildfire or uncontrolled spread of wildfire.

Mitigation Measure WF-2: Prior to issuance of building permits, the applicant shall submit a Wildland Fire Prevention Plan and Vegetation Management Plan to the Tuolumne County Fire Prevention Bureau for review and approval. The project site plan and landscaping documents shall be revised to conform to the Vegetation Management Plan. These revisions shall include, but are not limited to, the following measures:

- The perimeter of all structures shall be surrounded by a 5-foot non-combustible zone.
- Project landscaping shall be fire resistant, with a planting palette consisting of native hardwoods and other fire-resistant native vegetation.
- Landscape plantings shall be installed in a way that strategically staggers placement and planting heights to provide effective screening of the proposed project from adjacent roadways.
- Areas within 200 feet of all structures shall be managed as defensible space (in compliance with the California Fire Code and Public Resources Code Section 4291, with vegetative fuels that would produce 2-foot or shorter flames.
- The entire project site, including open all undeveloped areas, shall be managed as fire-resistant landscaping that adheres to CAL FIRE's firescaping requirements, with widely spaced trees and shrubs.
- Any new plantings in the undeveloped areas of the site shall include a greater proportion of oaks.
- Undeveloped areas of the project site shall be managed so that they do not grow back in as high a density as existed before the 2013 Rim Fire. Brush and grass in these areas shall be maintained and managed so that continuous groupings do not exceed 120 square feet in area.

Significance with Mitigation: Less than significant.

WF-3	**The project would be located in a State Responsibility Area and would require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) but would not exacerbate fire risk or result in temporary or ongoing impacts to the environment.**

WILDFIRE

The project would result in a significant impact if it would involve the installation or maintenance of infrastructure that has the potential to exacerbate wildfire risks (such as roads, power lines, and gas lines) or if it would involve the installation or maintenance of risk-reduction infrastructure (such as fuel breaks or emergency water sources), that could create an impact to the environment.

Development of the proposed project would result in new paved roads, pedestrian paths, and parking areas. Paved areas create an opportunity for vehicles to create accidental wildfires, since dragging chains, dragging vehicle parts, worn brakes, and exposed wheel rims have the potential to create sparks on the roadway. On-site roadways and pedestrian paths, whether paved or unpaved, could also lead to wildfires as they would provide people access throughout the project site. Human activities are the leading cause of wildfire, with the three most common types of human-caused wildfires being debris burning, arson, and equipment use. During construction, a fire prevention plan would be required and implemented to reduce the risk of fuel ignition. The fire prevention plan would prescribe the equipment, training, and behaviors of the construction team. All equipment with motors would comply with PRC Section 4442, which would be enforced through the implementation of the fire prevention plan during construction, as stated in Table 4.17-2. PRC Section 4442 requires internal combustion engines that use hydrocarbon fuels, like those used in construction, to be equipped with a spark arrester when used on forest-covered land, brush-covered land, and grass-covered land. Additionally, the proposed project would provide a training program for both employees and guests, to prevent wildfires and prepare for emergencies. Employees would be trained as first responders and periodic fire safety drills would be performed for both evacuations and sheltering in place.

On-site landscaping and maintenance activities would involve equipment use that could pose an accidental fire hazard. To reduce wildfire hazards, smoking would be prohibited in all rooms and public areas; smoking would be permitted only in a designated smoking area. Trash cans would be provided throughout the property to reduce litter, and the grounds would be cleaned by staff frequently. Fire pits would be located in public areas and would be operated and maintained by hotel staff only.

Development of the proposed project would also require the installation of new electrical connections. Power lines could ignite wildfires if overhead lines fall down and come into contact with vegetation. However, the proposed project would include undergrounding the existing transmission line that crosses the project site from Sawmill Mountain Road eastward to the property line between the two project parcels. Local distribution lines throughout the project would be located underground. Transformers would be located at appropriate locations based on future PG&E design requirements. Operation and maintenance of overhead powerlines would be required to comply with fire safety regulations pertaining to electric utilities including CCR Title 14 Sections 1250 *et seq*., which provide requirements for vegetation clearance around poles, towers, and wires; and CPUC fire safety regulations, which provide requirements for wire-to-wire clearances, vegetation clearances, inspections of overhead distribution facilities, and preparation of a fire prevention plan.

The proposed project would also include the installation of new propane lines and tanks on-site. The propane tanks would be installed in the vicinity of the workshop and Caltrans storage building directly to the west of the site (accessed through an on-site easement). The location is out of sight and approximately 25 feet away from storage area to the east, and approximately 130 feet away from the Forest Road 1S03, which is considered a safe distance pursuant to California Fire Code Chapter 61 Section

6107, Table 6104.3, Location of LP-Gas Containers. The storage volumes would be based on demand and refueling frequencies, but it is estimated to include multiple tanks in a storage area of approximately 900 square feet. The propane gas transmission line would be located underground and would connect from the storage area to the lodge at the event space and meeting rooms on the southeast portion of the project site. The buildings would use propane gas for heating and indoor cooking facilities. As described in Chapter 4.17, Utilities and Service Systems, of this Draft EIR, propane tanks would be managed by the property owner and refilled by a private propane gas company. The propane tanks would be located between 100 and 200 feet away from any buildings and the placement and operation of the propane tanks would be required to comply with the California Fire Code, Chapter 61, Liquefied Petroleum Gases.

The proposed project would install three potable water tanks on the northeastern portion of the project site, approximately 80 feet above the hotel. Two on-site wells would provide potable water that would be treated and stored in two of the three tanks. Water conveyance pipes would be routed under proposed roads to minimize disturbance of the ground. Fire flow for the buildings would be provided by the potable water storage tanks. The quantity of water storage, pressure of water supply, and maintenance of the storage tanks would be designed to comply with State Responsibility Areas Fire Safe Regulations, California Fire Code, Tuolumne County General Plan policies, and Tuolumne County Code of Ordinances, Chapter 15.20, Fire Safety Standards. Although activities to install water storage tanks could create short-term construction-related environmental effects (e.g., noise, dust, traffic, erosion), the work would be subject to compliance with applicable local and regional regulations and standard conditions for new construction related to water lines.

The undeveloped and landscaped areas of the project site would be designed and maintained in compliance with County-reviewed and-approved Vegetation Management Plan. The proposed project would integrate the needs for wildland fire safety, and the landscape would be irrigated using a greywater system, which would provide an additional defense against wildland fires. Additionally, the proposed project would be required to comply with Tuolumne County General Plan Policy 17.E.8 and Implementation Program 17.E.t, which require property owners to maintain wildlands in a fire resistant manner and remove dead or diseased trees pursuant to California PRC Section 4291. As shown in Figure 3-13, the Landscape Zone will include areas that will be irrigated using the greywater system, which is an additional defense against wildland fire. The potential environmental impacts associated with future construction on the project site, including roadway and trail construction, are evaluated in Chapter 4.3, Air Quality, Chapter 4.8, Greenhouse Gas Emissions, Chapter 4.12, Noise, and Chapter 4.16, Transportation and Traffic, of this Draft EIR.

However, with the implementation of the Vegetation Management Plan and Wildland Fire Protection Plan, in addition to State and local regulations pertaining to fire safety development, the proposed project would not exacerbate wildfire risks and impacts would be *less than significant.*

Significance without Mitigation: Less than significant.

WF-4 The project would be located in a State Responsibility Area and would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

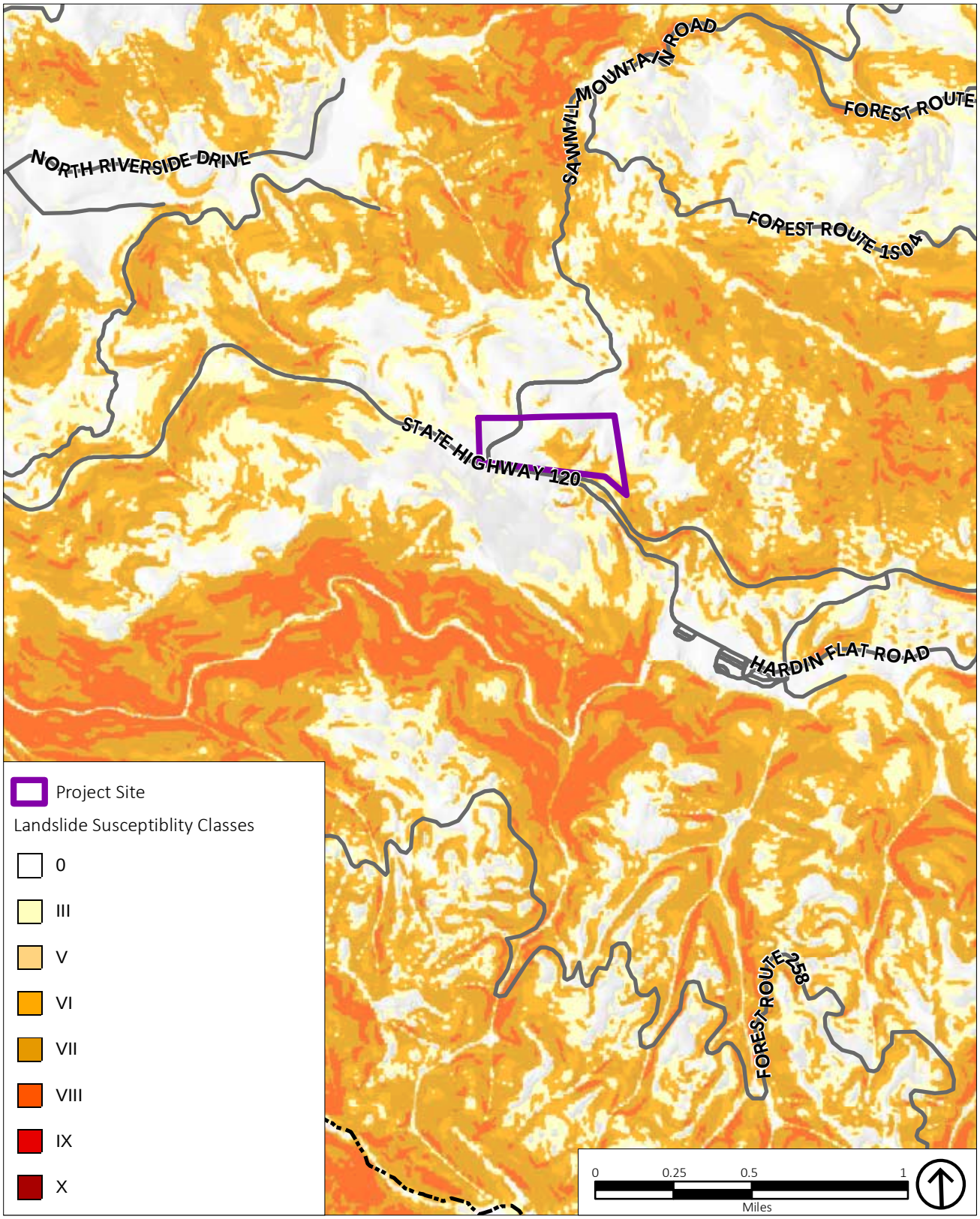
Catastrophic wildfire can create favorable conditions for other hazards, such as flooding and landslides during the rainy season. The proposed project would result in a significant impact if—due to slopes, drainage patterns, or post-fire slope instability—it would expose people or structures to significant risks from landsides, debris flows, or flooding.

As shown in Figure 4.17-6, the project site contains areas susceptible to landslides and debris flows. The project site varies from gently sloped to moderately sloped. Naturally occurring landslides are typically uncommon in Tuolumne County and there have been no significant documented incidents in the recorded past.[34] The 2013 Rim Fire did not result in an increase in landslide hazard areas near or on the project site. As discussed in Chapter 4.7, Geology and Soils, the proposed project would not disturb or develop structures on the eastern (steeper) portion of the site. Any grading permit must have a soil engineering report prepared and submitted to the County according to Section 12.20.160 of the Tuolumne County Grading Ordinance. Therefore, landslide impacts are not expected at the site and would not travel off-site.

As discussed in Chapter 4.10, Hydrology and Water Quality, the project site is not within a 100-year floodplain, is relatively flat, and there are no nearby water bodies or streams or other conditions that would result in flooding at the project site. The topography of the project site and surrounding area causes very little stormwater to run on to the project site. The areas of the project site that drain towards the southern edge of the project boundary would converge at an existing 24-inch culvert that passes under Highway 120. While the proposed project would increase impervious surfaces on-site, the proposed project would also include roof drainage and landscape areas drainage that would direct stormwater to underground detention areas. Additionally, sheet flow from roads and parking areas would be captured in surface drainage swales which would also be directed to detention areas. Drainage swales and detention areas would be landscaped and the proposed project would implement rainwater collection and storage to reduce runoff. The drainage infrastructure would be designed to detain stormwater on-site during storm events and meter the outflow in order to not exceed the capacity of the existing culvert under highway and thereby prevent flooding or slope failures downstream. As concluded in Impact Discussion HYD-3, with the implementation of stormwater control measures, the risk of downslope flooding would be less than significant.

In addition to fire hazard regulations and policies described under impact discussion WF-2, regulations and programs are in place to avoid hazardous conditions from flooding and landslides. Furthermore, the area of development on the project site, as described in impact discussion WF-2, would minimize the creation of new slopes that would exacerbate any potential post-fire slope instability.

[34] County of Tuolumne, 2018, Multi-Jurisdictional Hazard Mitigation Plan for Tuolumne County, page 62.



Source: California Geological Survey Deep Seated Susceptibility, 2019; ESRI, 2019; Toulumne County, 2019; PlaceWorks, 2019.

Figure 4.17-6
Landslide Susceptibility

The purpose of the National Resource Conservation Service's Emergency Watershed Protection program is to undertake emergency measures for runoff retardation and soil erosion prevention to safeguard lives and property from floods and the products of erosion on any watershed whenever a wildfire causes or has caused a sudden impairment of the watershed. Emergency Watershed Protection program funds address erosion-related watershed impairments by supporting activities such as removing debris from stream channels, road culverts, and bridges; reshaping and protecting eroded banks; correcting damaged drainage facilities; repairing levees and structures; and reseeding damaged areas to establish vegetative cover on critically eroding lands.[35]

Furthermore, any structure developed on the project site would be designed and constructed in accordance with the CBC in effect at the time of construction. For example, Section 1803.2 of the current 2016 CBC requires a geotechnical investigation that must assess existing landslide susceptibility on the site. Recommendations of the geotechnical investigation, as they pertain to structural design and construction recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic considerations, must be incorporated into the design and construction of the development.

The primary purpose the wildfire hazard policies, prevailing regulatory requirements, and the National Resource Conservation Service's Emergency Watershed Protection program, is to minimize risks from downslope or downstream flooding or landslides as a result of post-fire slope instability. As such, implementation of these policies and regulatory requirements would ensure impacts from post-fire instability would be *less than significant*.

Significance without Mitigation: Less than significant.

4.17.4 CUMULATIVE IMPACTS

WF-5 The project would not contribute to significant cumulative wildfire impacts.

The areas considered for cumulative impacts related to wildfires are Yosemite Under Canvas located to the south of the project site across Highway 120, Thousand Trails/Yosemite Lakes RV Expansion located approximately 1 mile to the southeast of the project site, Berkeley Tuolumne Camp Restoration project located approximately 2.8 miles to the southeast of the project site, and the Mountain Sage Conditional Use Permit project located approximately 14.5 miles to the west of the project site. These projects could subject people and structures to wildfire hazards. As discussed previously, future development under the proposed project would not interfere with implementation of emergency response plans or result in significant wildfire-related impacts, with the implementation of mitigation measures. Potential impacts from the proposed project associated with wildfires would be reduced through proposed design features stated in Table 4.17-2, through compliance with existing local, regional, State, and federal regulations, and

[35] Natural Resources Conservation Service, Disaster Recovery Assistance, https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?cid=nrcseprd1361073, accessed October 23, 2019.

through the implementation of Mitigation Measure WF-2. Details for the Thousand Trails/Yosemite Lakes RV Expansion project have not been developed so this project's potential effects or contribution to cumulative effects cannot yet be determined with specificity. The Berkeley Tuolumne Camp Restoration project would reconstruct the camp with upgraded facilities reflecting current State code and an updated evacuation plan. The Mountain Sage Conditional Use Permit project would allow for the addition of conditional uses within the site's existing land use designations, and according to the Tuolumne County Planning Commission Agenda Report dated February 19, 2020, has been reviewed by the Tuolumne County Fire Prevention Division for consistency with applicable fire codes, plans, and regulations. As with the proposed project, the Yosemite Under Canvas project would be subject to the same federal, State, and regional regulations, as well as regional safety plans, such as the Tuolumne County Multi-Jurisdictional Hazard Mitigation Plan and Tuolumne County Community Wildfire Protection Plan. Cumulative projects would also be required to comply with the requirements of the CBC Chapter 7A, CFC Chapter 49 and Chapter 61, PRC Sections 4291 et seq and Section 4442, and the SRA Fire Safe regulations for projects in the SRA. Furthermore, overhead powerlines would be required to comply with the CCR Title 14 Sections 1250 *et seq.* and CPUC fire safety regulations.

Compliance with regulatory requirements, proactive fire suppression design features, the inclusion of project components that would reduce wildfire risks to employees and guests (see Table 4.17-2), and the implementation of Mitigation Measure WF-2 would reduce the impacts from the proposed project to less than significant. Accordingly, the proposed project would not contribute to a cumulative increase in wildland fire hazards in the immediate vicinity of the project site or throughout the region and the potential for cumulative impacts associated with wildfire hazards would be *less than significant*.

Significance without Mitigation: Less than significant.

EXHIBIT C

TripAdvisor Guest Photo
Under Canvas Yellowstone

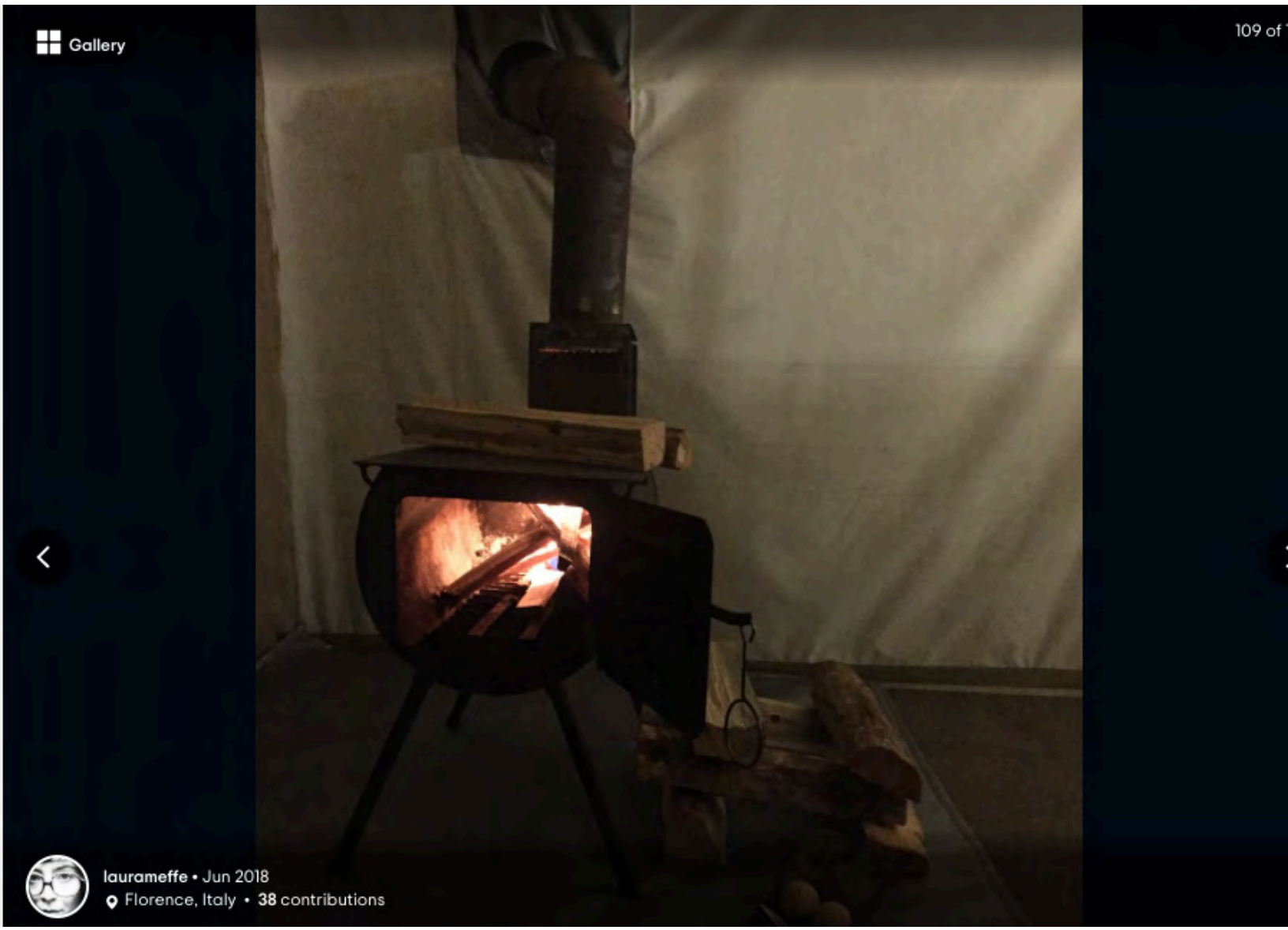
Open stove and flame in guest tent
Note flat stove top for drying wet clothes

TripAdvisor Guest Photo
Under Canvas Great Smoky Mountains

Open stove and flame in guest tent
Note flat stove top for drying wet clothes

TripAdvisor Guest Photo
Under Canvas Yellowstone

Open stove and flame in guest tent
Note wood stored on top and in tent



TripAdvisor Guest Photo
Under Canvas Grand Canyon

Open stove and flame in guest tent
Note flat stove top for drying wet clothes

TripAdvisor Guest Photo
Under Canvas Moab

TripAdvisor Guest Photo
Under Canvas Yellowstone

Open stove and flame in guest tent
Note flat stove top for drying wet clothes

TripAdvisor Guest Photo
Under Canvas Great Smoky Mountains

Open stove and flame in guest tent
Note flat stove top for drying wet clothes

TripAdvisor Guest Photo
Under Canvas Yellowstone

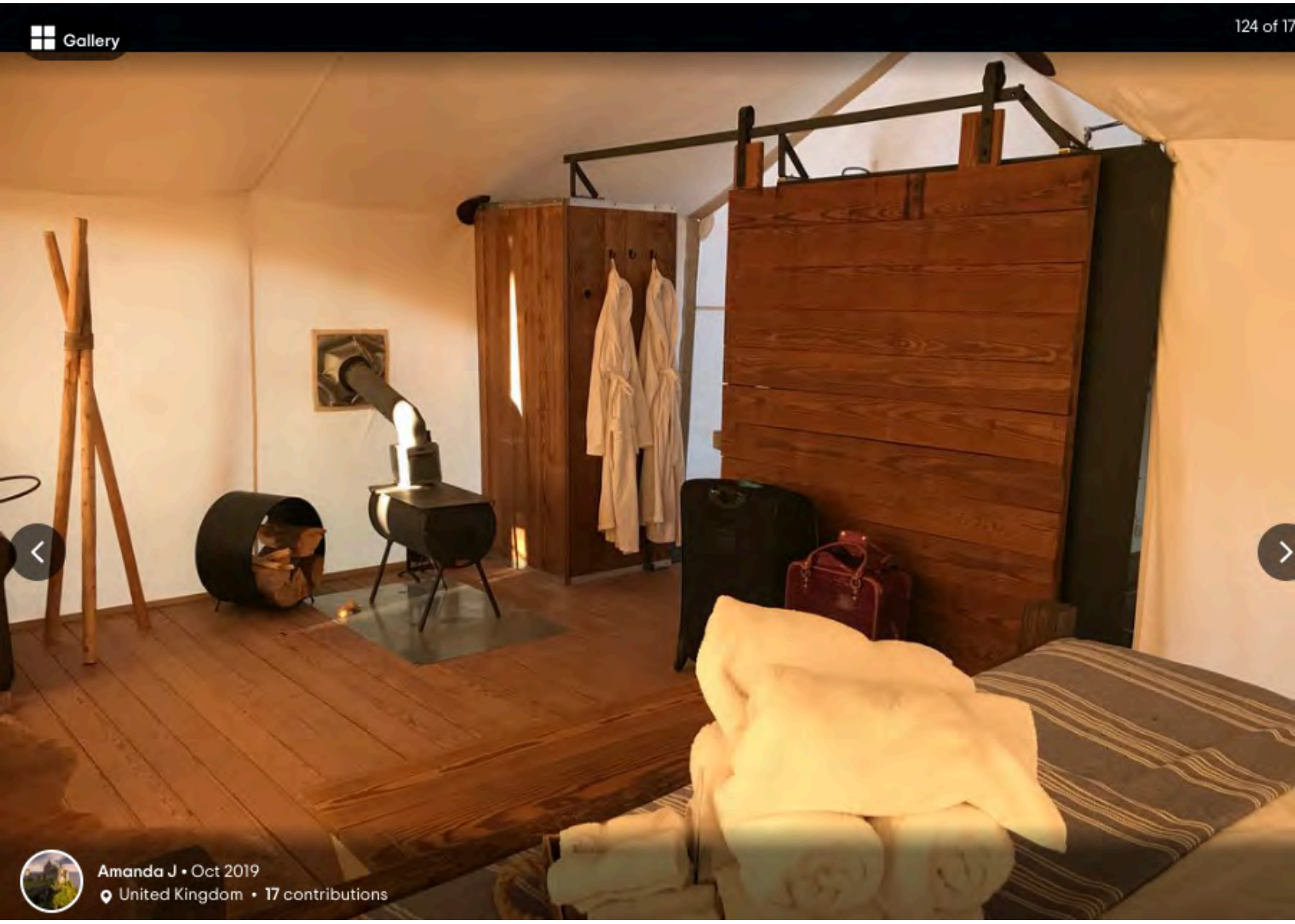
Open stove and flame in guest tent
Hot ash shovel on top

TripAdvisor Guest Photo
Under Canvas Grand Canyon

Guest tent with exposed stove pipe and wood storage

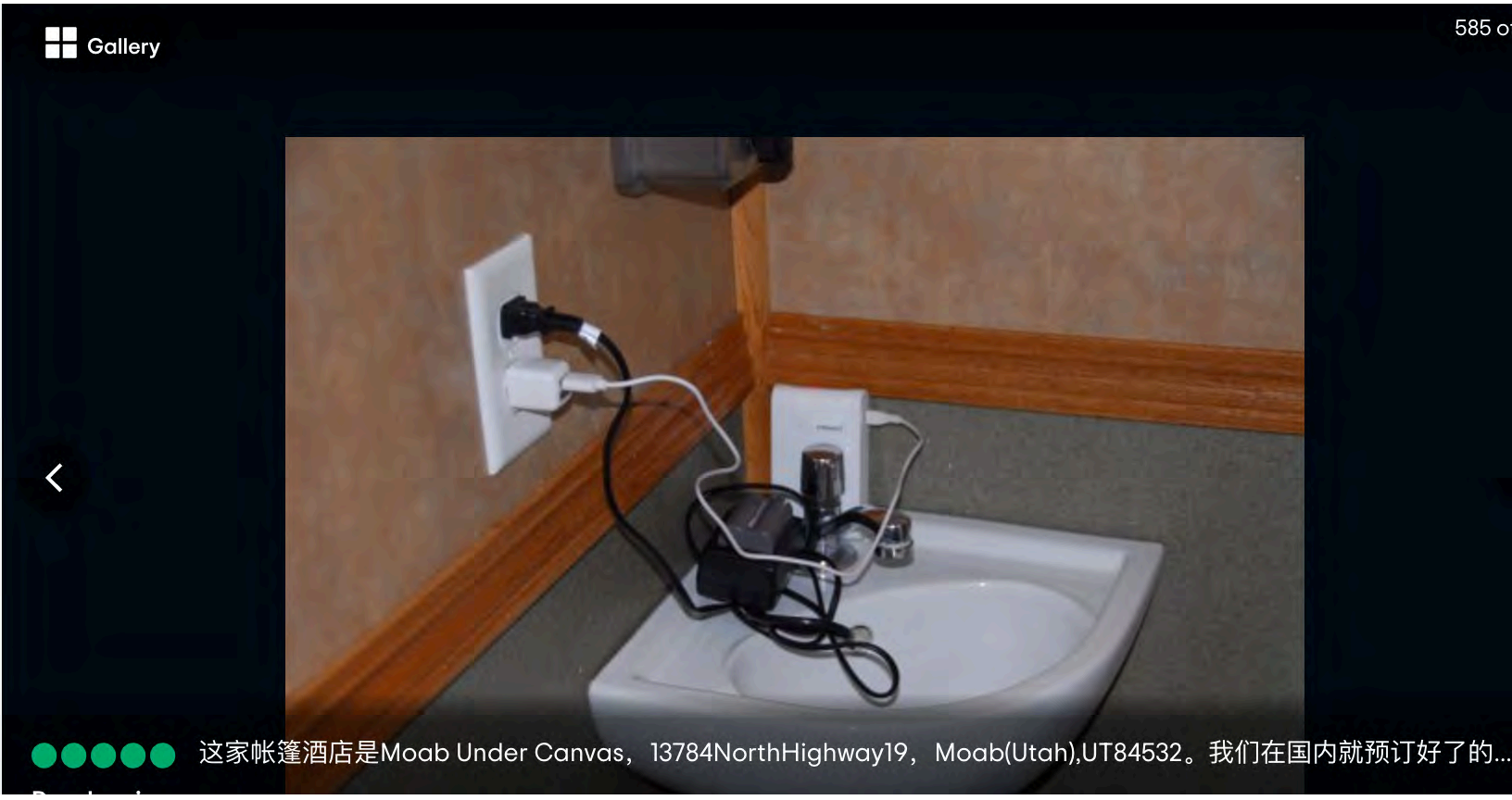
TripAdvisor Guest Photo
Under Canvas Grand Canyon

Guest tent with walls, flammable material, wood storage, wood stove



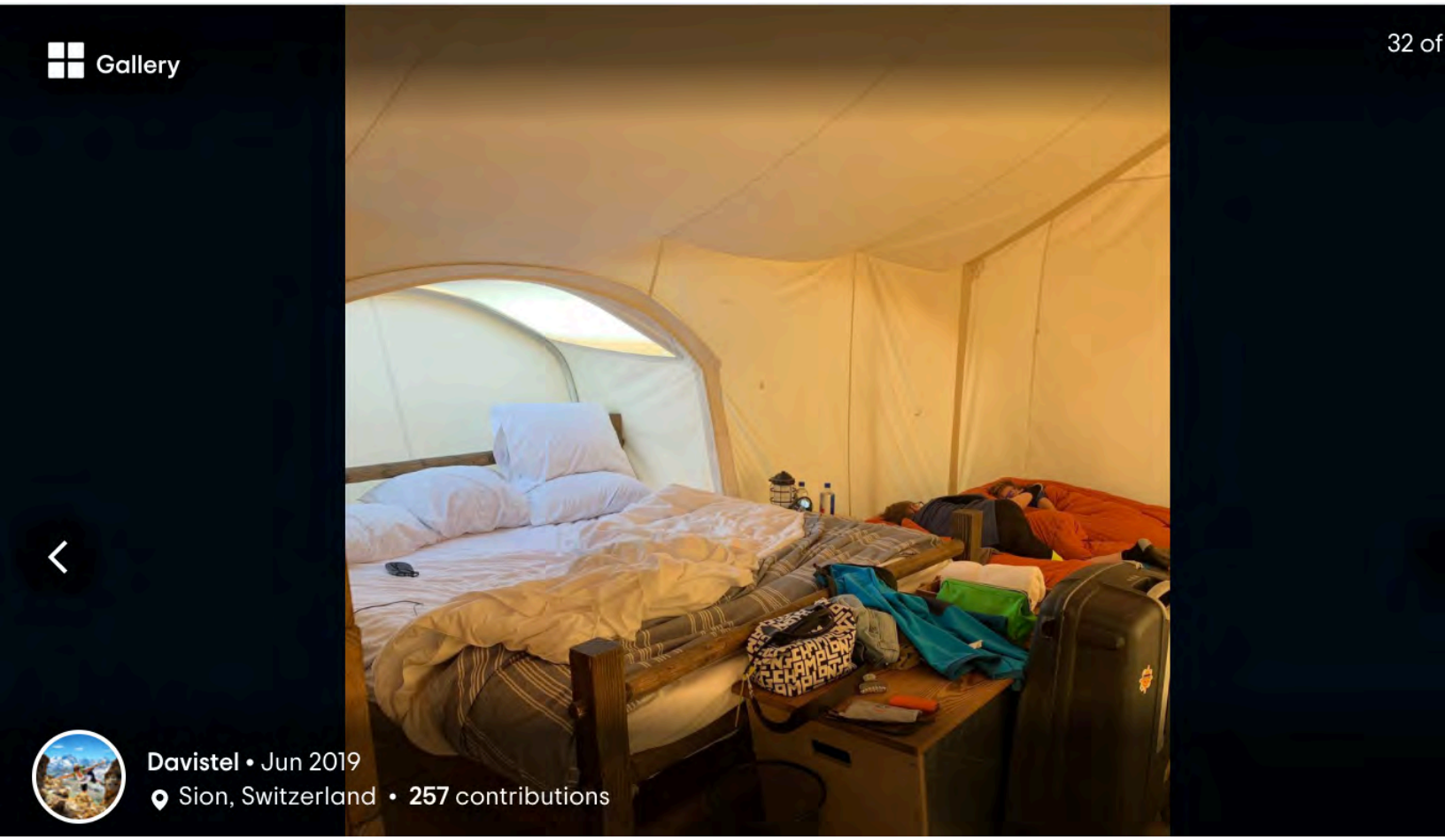
TripAdvisor Guest Photo
Under Canvas Moab

Electrical devices plugged in at guest tent sink



TripAdvisor Guest Photo
Under Canvas Grand Canyon

Flammable guest clutter

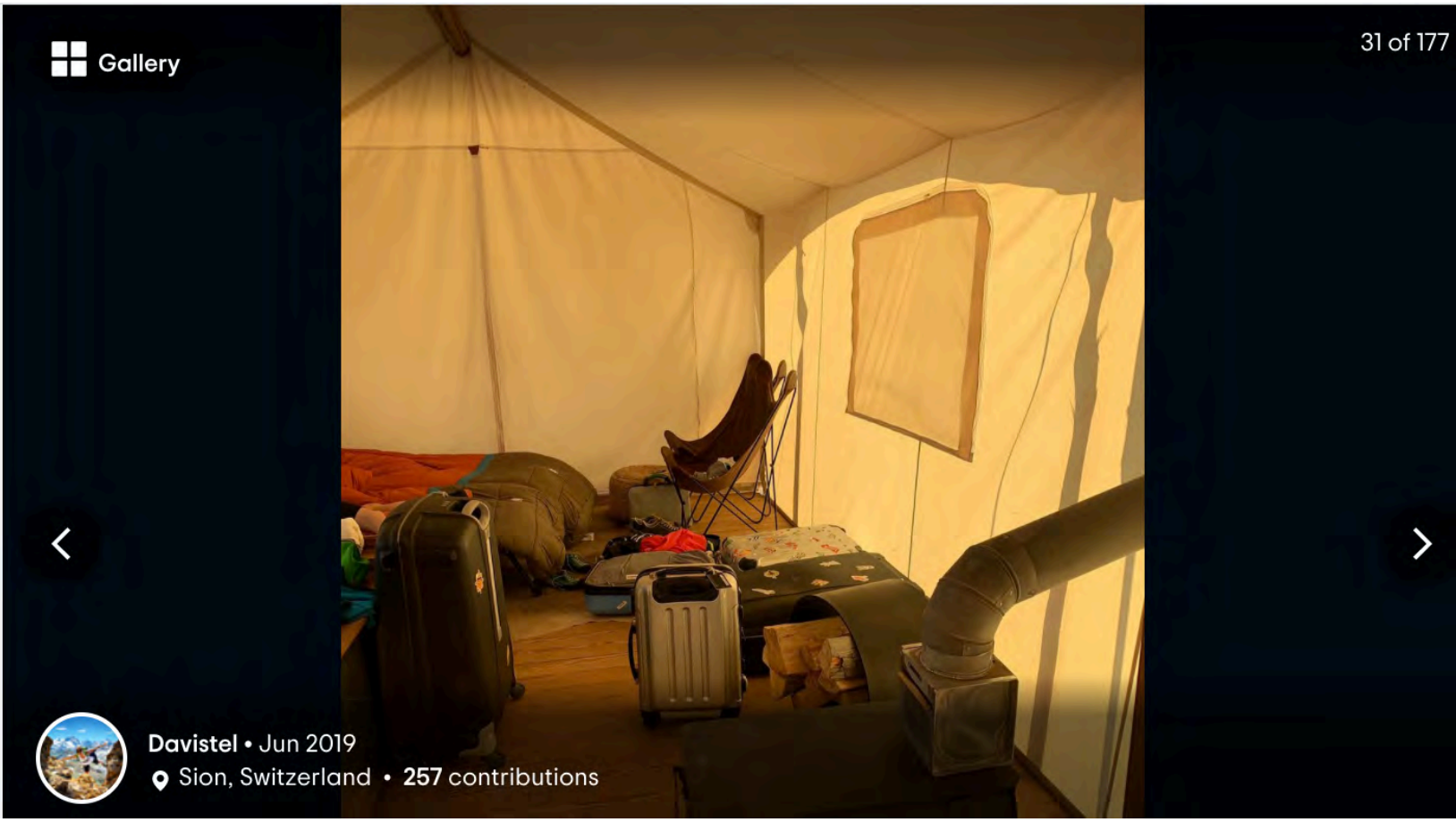


TripAdvisor Guest Photo
Under Canvas Yellowstone

Flammable guest clutter

TripAdvisor Guest Photo
Under Canvas Grand Canyon

Flammable guest clutter



TripAdvisor Guest Photo
Under Canvas Yellowstone

Smoke from 1 of 99 guest tents

TripAdvisor Guest Photo
Under Canvas Grand Canyon

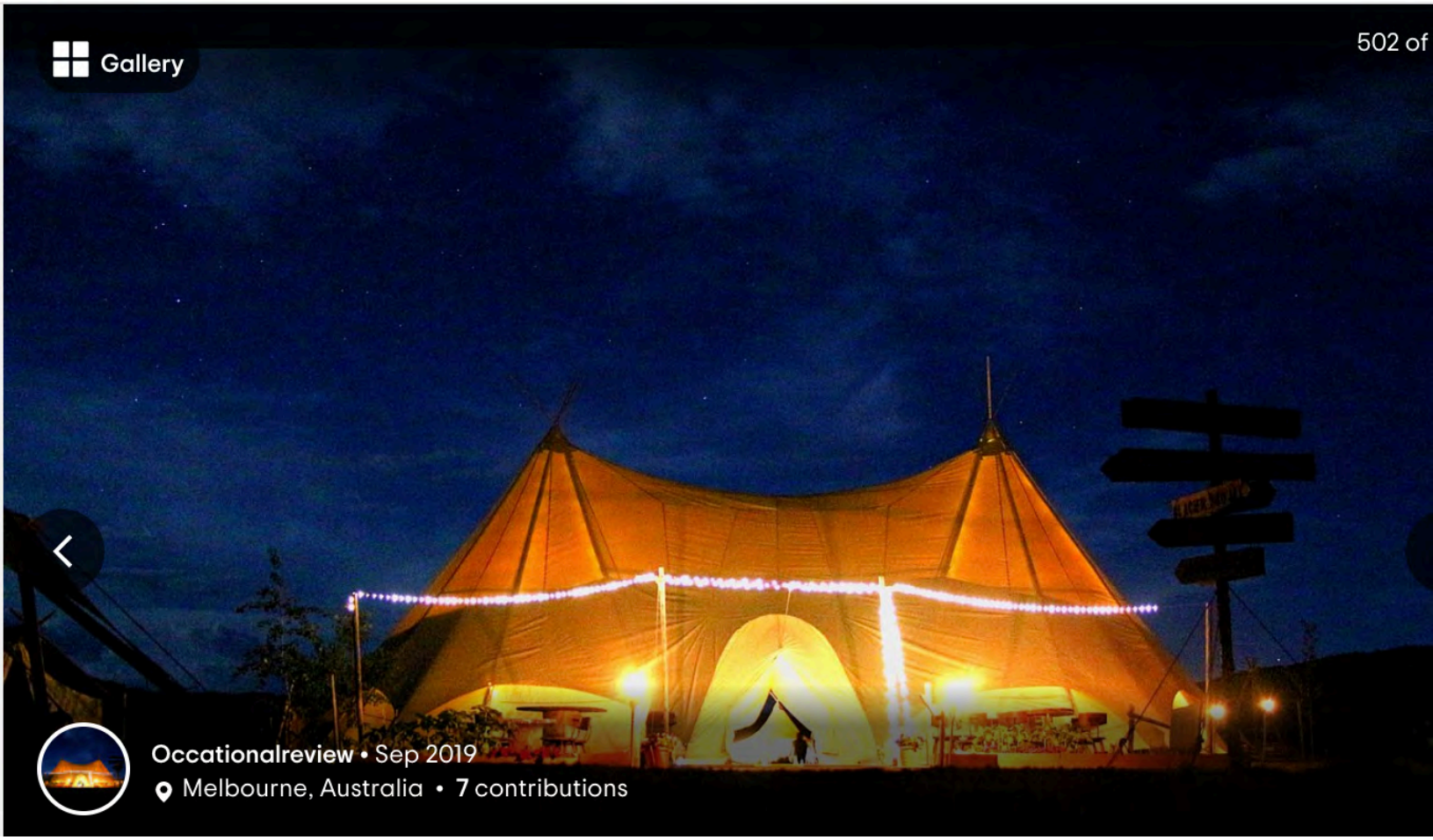
Communal dining tent with electric lights and open flame patio heater inside

TripAdvisor Guest Photo
Under Canvas Moab

Communal dining tent with electric lights and open flame fire pits inside

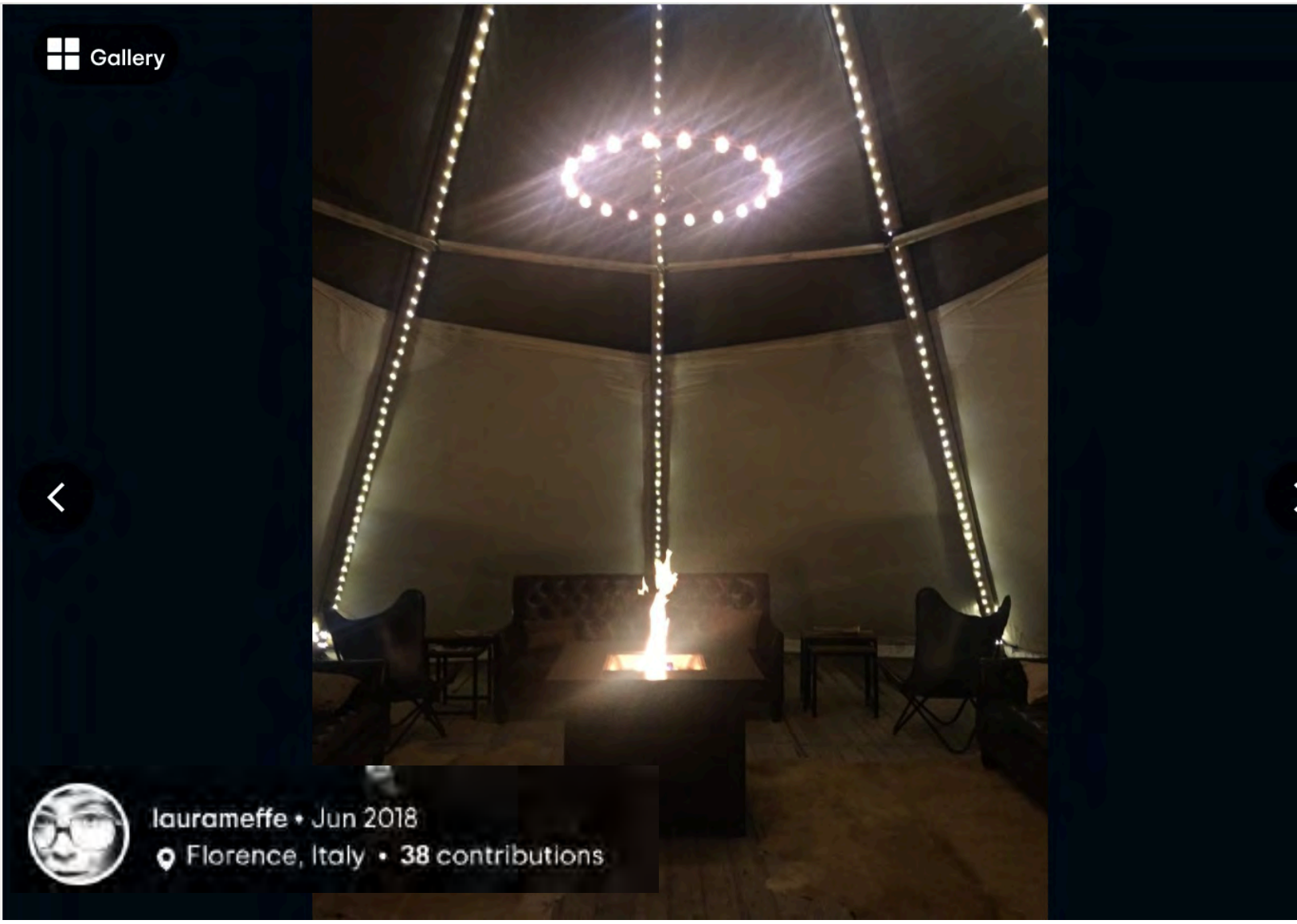
TripAdvisor Guest Photo
Under Canvas Yellowstone

Communal dining tent with electric lights and open flame fire pits inside



TripAdvisor Guest Photo
Under Canvas Yellowstone

Communal dining tent with electric lights and open flame fire pits inside



TripAdvisor Guest Photo
Under Canvas Grand Canyon

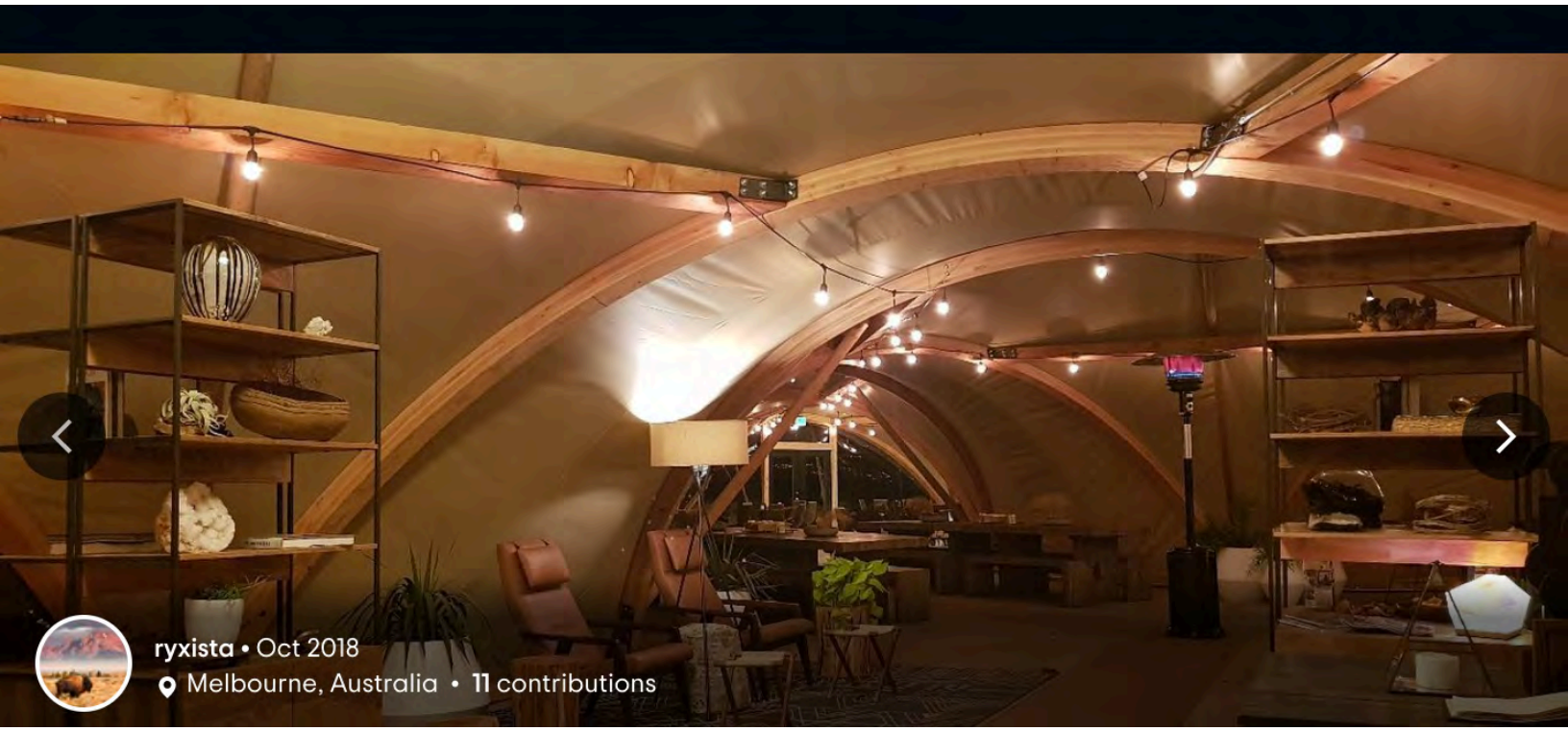
Communal dining tent with electric lights and open flame patio heater inside

TripAdvisor Guest Photo
Under Canvas Great Smoky Mountains

Communal dining tent with electric lights and open flame patio heater inside

TripAdvisor Guest Photo
Under Canvas Grand Canyon

Communal dining tent with electric lights and open flame patio heater inside



TripAdvisor Guest Photo
Under Canvas Moab

Permanent bathhouse structure with no fire protection

EXHIBIT D

XAVIER BECERRA
Attorney General

State of California
DEPARTMENT OF JUSTICE

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November 12, 2020

San Diego County Planning & Development Services
Attn: Mark Wardlaw, Director of Planning & Development Services
5510 Overland Avenue, Suite 310
San Diego, CA 92123
By email: *Mark.Wardlaw@sdcounty.ca.gov*

RE: Otay Ranch Resort Village—Village 13 Final Environmental Impact Report; Otay Ranch Resort Village, Project Nos. GPA04-003, REZ04-009, TM-5361, SP04-002, and ER LOG04-19-005

Dear Mr. Wardlaw:

We appreciate your preparation of a Final Environmental Impact Report (FEIR) responding to public comments on the Draft Environmental Impact Report (DEIR), including the comments we submitted on December 27, 2019, regarding wildfire risks associated with the proposed Otay Ranch Resort Village—Village 13 Development (Project). After reviewing the FEIR, we acknowledge and appreciate that you have provided more information regarding wildfire risks associated with the Project. We believe, however, that the FEIR's discussion of these risks remains inadequate.[1]

I. THE FEIR FAILS TO ADEQUATELY ADDRESS THE INCREASED WILDFIRE RISK THAT WILL RESULT FROM THE PROJECT

In our comment letter, we explained that locating new development in a very high fire hazard severity zone will itself increase the risk of fire and, as a result, increase the risk of exposing residents, employees, and visitors to that enhanced risk. We further explained that the DEIR fails to analyze the increased risk of wildfire that will result from siting the Project within a such a zone.

[1] This letter is not intended, and should not be construed, as an exhaustive discussion of the FEIR's compliance with the California Environmental Quality Act (CEQA) or the Project's compliance with other applicable legal requirements.

The County's response to our letter incorrectly denies that an increased risk exists. According to the County, "there is no evidence that higher density residential development in San Diego County—including development in the wildland-urban interface—has increased fire-ignition frequency. In fact, research suggests the opposite . . . ." (Response RA-5-7; see also *ibid.* ["there is no data available that links increases in wildfires with the development of higher density ignition resistant communities"]; RA-5-8 [denying knowledge of "any study . . . that establishes a causal link between development of higher density, planned communities in wildland areas and increases in fire-ignition"].) This is inaccurate. Indeed, a recent report prepared for the San Diego County Fire Authority regarding this Project reaches the conclusion that the County now rejects. The study, which analyzes wildfire risks associated with the Project, states: "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*." (Rohde & Associates, Fire Services Operational Assessment for Otay Ranch Village Resort, Village 13 (Feb. 1, 2020) ("Rohde Report"), p. 11, emphasis added.)[2]

Notably, the studies documenting the association between population in the wildland-urban interface and increased fire risk include reports by leading experts Jon Keeley and Alexandra Syphard—experts upon whom the County relies heavily in its response to our comment letter (see RA 5-7). (See, e.g., Ex. B, Keeley and Syphard et al., *The 2003 and 2007 Wildfires in Southern California* in Natural Disasters and Adaptation to Climate Change (Boulter et al., edits., 2013), p. 44 ["The massive losses of property and lives in recent fires are the result of human population growth and expansion into these fire prone landscapes."]; Ex. C, Keeley and Syphard, *Nexus Between Wildfire, Climate Change and Population Growth in California* (March 2020) Fremontia, Vol. 47, No. 2, p. 26 ["More people translates into a greater probability of an ignition during a severe wind event, and more development in highly fire pone landscapes inevitably results in greater losses of lives and homes."]; Ex. A, email from A. Syphard dated May 29, 2020, p. 1.) According to Mr. Keeley and Ms. Syphard, the County's response does not accurately describe their work. (See Ex. A, p. 1.) While they are not accusing the County of intentional mischaracterization, they make clear that the County's analysis misses the bigger picture and thus excludes critical detail about wildfire risk.

The County's response seems to rely largely on the notion that the Project is "higher density" and, therefore, not likely to increase the potential for wildfire to occur. That notion, however, obscures the nuanced relationship that exists between housing patterns—including density *and* other variables—and fire risk. (See Ex. A, p. 1.) While Mr. Keeley and Ms. Syphard's work has shown that low- and intermediate-density housing is most at risk, density is not the only relevant factor; location within the larger landscape and within an individual development are also relevant. (See *ibid.*; see also Ex. D, Syphard and Keeley, *Why Are So*

[2] While this is correct, the Rohde Report also contains numerous flaws, as set forth in the November 11, 2020 letter from the Endangered Habitats League (EHL), the July 3, 2020 letter from Griffin Cove Transportation Consulting, PLLC (Ex. S to EHL letter), and the September 11, 2020 letter from Reax Engineering (Ex. P to EHL letter).

Many Structures Burning in California? (March 2020) Fremontia, Vol. 47, No. 2; Ex. E, Syphard and Keeley et al., *Land Use Planning and Wildfire: Development Policies Influence Future Probability of Housing Loss* (Aug. 2013) PLOS ONE, Vol. 8, Issue 8.)

In addition, and perhaps more importantly here, while low-density housing might be most at risk, that does not mean high-density housing is free of risk. Mr. Keeley and Ms. Syphard explain that, contrary to the County's claim, their "research does not support the notion that high density housing is not at high risk . . . ." (Ex. A, p. 1.) This is "particularly" true "if the high density housing is in close proximity to any significant area of undeveloped wildland vegetation." (*Ibid.*) By "focusing on the area **just within the development instead of the development within the larger landscape context**," the County misses the larger picture. (*Ibid.*, emphasis in original.) "If high-density development is located within a matrix of wildland vegetation, that is actually the most dangerous housing pattern you could have!" (*Ibid.*) This combination is "particularly dangerous . . . because there is exposure to fire hazard AND the possibility for structure-to-structure spread." (*Ibid.*) In other words, Mr. Keeley and Ms. Syphard's research supports the *opposite* of what the County claims; if the Project truly is "higher density" development, given its proximity to wildland vegetation it may actually be the most dangerous housing pattern possible.

As this makes clear, density is relevant to loss, but location and housing patterns are also highly relevant. For example, Mr. Keeley and Ms. Syphard published a 2013 paper analyzing the risk associated with three different housing patterns: (1) infill, "characterized by development of vacant land surrounded by existing development, typically in built-up areas"; (2) expansion, which "occurs along the edges of existing development"; and (3) leapfrog growth, meaning development "beyond existing urban areas such that the [development] is surrounded by undeveloped land." (Ex. E, p. 2.) The authors found that leapfrog development presented the greatest risk and infill development the least. (*Id.*, p. 8.) By focusing on density, the County downplays the other attributes of the Project, such as the fact that a significant portion of the Project is bordered by wildlands and that the development sits among more than 1,100 acres of open space (FEIR 4-3), which will contribute to the wildfire risk. The County's analysis of the wildfire risks associated with the Project should account for these other variables.

Mr. Keeley and Ms. Syphard also believe that the County misconstrues their 2015 paper on ignition patterns. (Ex. A, p. 1; see RA-5-7.) Pointing to the paper's finding that equipment caused the most wildfires in San Diego County and accounted for the greatest area burned, the County speculates that such fires are "associated with lower density housing," and thus higher-density housing carries less fire risk. (RA-5-7.) As Mr. Keeley and Ms. Syphard explain, however, "[t]he main point found by our research is that humans cause 95% of fires, and as humans move farther east and into wildlands the likelihood of ignitions moving into those areas also increases. That is how humans alter the spatial pattern of fires, regardless of ignition source." (Ex. A, p. 1.) Further, while some sources, like equipment, may be more numerous, they do not necessarily result in the largest fires. "It is more about the timing and pattern of the ignition relative to wind corridors and during severe fire weather." (*Ibid.*)

The experts also take issue with the County's argument that development in the wildland-urban "*interface*" carries a lower risk than development in the wildland-urban "*intermix*." (RA-5-7.) Mr. Keeley and Ms. Syphard make clear that development in both locations is "very dangerous." (Ex. A, p. 1.)

Finally, Mr. Keeley and Ms. Syphard's work refutes the County's claim that the Project will be adequately protected because its structures and design make it "ignition resistant" (RA-5-7). In their paper entitled "Factors Associated with Structure Loss in the 2013-2018 California Wildfires," Mr. Keeley and Ms. Syphard found that "MANY of the houses destroyed were newly built. Newer construction definitely may help *but is not a panacea by any means*. That also goes for defensible space." (Ex. A, p. 1, emphasis added; see Ex. F, Syphard and Keeley, *Factors Associated with Structure Loss in the 2013-2018 California Wildfires* (Sept. 2019) Fire, 2, 49.) Their work also shows that fuel breaks have a "limited effectiveness at preventing fire spread during severe wind conditions when 99% of the structure loss occurs." (Ex. A, p. 1.) In other words, "[t]hose measures in a new development do not mean those homes are safe from fire." (*Ibid.*)

In sum, the County's assertion that the Project will not exacerbate wildfire risk is over-simplified and relies on sources that, in fact, prove the opposite. These critical flaws in the County's analysis cannot be overlooked. The County must not certify the FEIR and approve the Project until it adequately addresses the increased risk of wildfire that the Project will create. (See CEQA Guidelines, § 15126.2(a) [requiring the evaluation of potentially significant environmental impacts of locating development in areas susceptible to hazardous conditions such as wildfire risk areas, especially as identified in hazard maps and risk assessments].)

II. THE FEIR FAILS TO ADEQUATELY ADDRESS THE CUMULATIVE WILDFIRE RISK POSED BY ALL NEW OTAY RANCH DEVELOPMENT

Our comment letter also states that the Project is one of a number of large new developments in the same area, and that the DEIR fails to adequately assess the cumulative impact on fire risk posed by siting these developments in this very high fire hazard severity zone. For the same reasons the FEIR does not sufficiently address the increased wildfire risk resulting from the Project, it likewise fails to sufficiently address the cumulative risk posed by all new development in Otay Ranch.

III. THE FEIR FAILS TO ADEQUATELY ADDRESS EVACUATION IN THE EVENT OF FIRE

In our comment letter, we state that the DEIR needs to include a robust evacuation plan. This remains true. Because the Project increases the risk of wildfire, it must also contain a plan for safe evacuation. The FEIR neither acknowledges that added risk nor assures that the community can be evacuated safely. It also fails to address the Project's impact on the evacuation of nearby communities that use the same roads, and the impact on firefighters and emergency responders who must access the site and prevent the spread of a wildfire while the Project and neighboring areas are evacuating. The FEIR needs to rectify these failures.

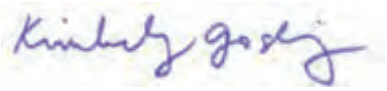
The County essentially responds that a project- or community-specific evacuation plan would be useless for two main reasons: (1) because fire evacuations are managed by law enforcement and fire agencies that rely on their own plans, and (2) because evacuation events are too fluid and variable to allow for pre-emergency planning. (RA-5-12, RA-5-13.) This response misses the point. We are not asking the County to interfere with law enforcement or to prepare for every possible scenario. Rather, we are asking the County to analyze, with adequate detail, whether the Project and its surrounding residents can be evacuated safely. This is not only possible but required to address the increased risk of wildfire that will result from the Project. The County's response and the FEIR, including but not limited to the County's Global Response R5, its "Conceptual Wildland Fire Evacuation Program," and the Rohde Report, fail to provide this critical analysis. The November 11, 2020 letter from EHL, and its attached July 3, 2020 letter from Griffin Cove Transportation Consulting, PLLC (Ex. S to EHL letter), and September 11, 2020 letter from Reax Engineering (Ex. P to EHL letter), explain the shortcomings of this analysis in detail. The County must adequately consider the safe evacuation of residents before certifying the FEIR and approving the Project.

IV. THE FEIR SHOULD PROHIBIT CERTAIN VEGETATION ON PRIVATE LOTS

Our comment letter also states that the DEIR's recommendation "that none of the plant materials listed in the 'Prohibited Plant List' . . . or otherwise known to be especially flammable be planted on private lots" (DEIR, Appx. C-21 p. 28) should be changed to a requirement. While we appreciate the County's response that it would "consider" this request, the FEIR does not make the requested change. For the safety of the Project's residents, the FEIR should change the recommendation regarding prohibited and flammable plants to a requirement.

We appreciate your consideration of our comments and respectfully request that you refrain from certifying the FEIR and approving the Project until the FEIR is revised accordingly. If you have any questions or would like to discuss our comments, please feel free to contact us.

Sincerely,



KIMBERLY R. GOSLING
Deputy Attorney General

For XAVIER BECERRA
Attorney General

Attachments

cc: Greg Mattson, Project Manager (*by email: Gregory.Mattson@sdcounty.ca.gov*)

SA2019102285

Exhibit A

From: Alexandra Syphard
To: Nicole Rinke; Keeley, Jon
Cc: Kimberly Gosling
Subject: Re: Wildfire expertise/question re. ignition risks
Date: Friday, May 29, 2020 1:55 51 PM

Dear Nichole and Kim,

This claim made by SD County mischaracterizes our work We had previously written a letter to Dan Silver saying as much, and the text we wrote to him is copied below Please let me know if this helps

Best,
Alexandra

Dear Dan:

Jon Keeley and I have reviewed the materials you sent and we would like to clarify that our research does not support the notion that high density housing is not at high risk, particularly if the high density housing is in close proximity to any significant area of undeveloped wildland vegetation. t is true that our papers have consistently shown that low-density housing is most at risk when you look at a full gradient of housing density across a region. However, in all of our papers - and those of others as well - we find that the relationship with housing patterns and fire risk are nuanced and include more variables than just density. In particular, we find that the riskiest patterns are small to medium-sized clusters of development within a larger landscape of wildland vegetation, in addition to low-to-intermediate housing density and proximity to the edge of development.

In other words, I would say the materials are only getting part of the picture. That is because they are focusing on the area **just within the development instead of the development within the larger landscape context**. If a high-density development is located within a matrix of wildland vegetation, that is actually the most dangerous housing pattern you could have! That's because at very high densities, the relationship can switch to where houses closer than 50m to each other are more likely to have structure to structure spread (of course, depending on the building materials). In other words, there is significance to the location and size of high density development. This has been explained clearly in additional papers by Alexandre et al. 2015a and b. For example, in the Cedar Fire, we found that high-density structures in smaller clusters of development in Julian were the larger risk factor, and I think that is the same thing going on here in the newly proposed developments. Large wildland surrounding high-density areas is a particularly dangerous combination because there is exposure to fire hazard AND the possibility for structure-to-structure spread.

I also think the discussion about our paper on ignition patterns is a bit misconstrued. The main point found by our research is that humans cause 95% of fires, and as humans move farther east and into wildlands the likelihood of ignitions moving into those areas also increases. That is how humans alter the spatial pattern of fires, regardless of ignition source. Some sources are more numerous than others (like equipment), but those aren't necessarily the ones that result in the largest fires. It is more about the timing and pattern of the ignition relative to wind corridors and during severe fire weather.

In the article I wrote for an upcoming Fremontia issue (attached, Jon has one too), I have synthesized all of our work on structure loss, so some of the references in there may be helpful. Also see the attached paper by Anu Kramer finding interface communities in CA being dangerous, which runs contrary to some of the language in the materials you shared. True, intermix WUI is also very dangerous, but so is the interface.

I might add that in the paper Jon and I published in Fire, Factors Associated with Structure Loss in the 2013–2018 California Wildfires, MANY of the houses destroyed were newly built. Newer construction definitely may help but is not a panacea by any means. That also goes for defensible space. Also recall the work that we have done on fuel breaks and their limited effectiveness at preventing fire spread during severe wind conditions when 99% of the structure loss occurs. Those measures in a new development do not mean those homes are safe from fire. The Australians are a great example of never saying anything is fire-proof. It isn't.

I hope that is helpful. Please let me know if we can clarify anything further.

Alexandra Syphard and Jon Keeley

> On 5/28/2020 6:31:03 PM, Nicole Rinke <nicole rinke@doj ca gov> wrote:
>
> Hello Jon and Alexandra,
>
> My colleague, Kim (cc'd here) and I are with the California Attorney General's office. Our office is reviewing and commenting, as appropriate, on proposed projects in wildland areas throughout the state to make sure that wildfire risks/issues are being adequately disclosed and considered during CEQA review for various land use approval processes at the local level. So far, we have commented on the Paraiso Springs Project in Monterey County and the Otay Village 13 Project in San Diego County.
>
> You are both prolific in your research and writing on topics that relate directly to the work we are doing and we are interested in talking with you. On the Otay Village 13 Project, in particular, San Diego County has cited your work as support for its position that the project does not present a significant fire risk, based in large part on its characterization of the project as "higher density" housing. (See page 4-5 of the pdf response to our comments, https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/OtayRanchVillage13Resort/PrePC/2019Comments/Responses/RA-5_AttorneyGeneral_Response_2.27.2020%20(rrs).pdf; our comment letter can be found here: https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/OtayRanchVillage13Resort/PrePC/2019Comments/Comments/RA-5_AttorneyGeneral.pdf).
>
> We are curious to hear your perspective on the County's response to our comments - would you be open to talking with us? We might

also be interested in working with you more broadly and would like to discuss that with you too.

Thank you for your important work in this area and for your time. We look forward to hearing from you.

Best, Nicole

Nicole Rinke / Deputy Attorney General / (916) 210-7797 / Nicole.Rinke@doj.ca.gov
Office of the Attorney General / Public Rights Division/ Land Law
1300 I Street/ P.O. Box 944255/ Sacramento, CA 94224-2550

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Exhibit B

ResearchGate

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The 2003 and 2007 wildfires in Southern California

Chapter January 2013

DOI: 10.1017/CBO9780511845710.007

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Some of the authors of this publication are also working on these related projects:

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All content following this page was uploaded by Alexandra Syphard on 08 January 2014.

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Edited by Sarah Boulter, Jean Palutikof, David John Karoly and Daniela Guitart
Frontmatter
More information

NATURAL DISASTERS AND ADAPTATION TO CLIMATE CHANGE

Edited by

SARAH BOULTER
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JEAN PALUTIKOF
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University of Melbourne

DANIELA GUITART
National Climate Change Adaptation Research Facility, Griffith University

5

The 2003 and 2007 Wildfires in Southern California

JON E. KEELEY, ALEXANDRA D. SYPHARD AND C. J. FOTHERINGHAM

Although many residents of southern California have long recognised that wildfires in the region are an ongoing, constant risk to lives and property, the enormity of the regional fire hazard caught the world's attention during the southern California firestorms of 2003 (Figure 5.1). Beginning on 21 October, a series of fourteen wildfires broke out across the five-county region under severe Santa Ana winds, and within two weeks, more than 300,000 ha had burned (Keeley et al., 2004). The event was one of the costliest in the state's history, with more than 3,600 homes damaged or destroyed and twenty-four fatalities. Suppression costs for the 12,000 firefighters have been estimated at US$120 million, and the total response and damage cost has been estimated at more than US$3 billion (COES, 2004).

Just four years later, almost to the day, this event was repeated. Beginning on 22 October 2007, thirteen wildfires broke out across the same region, and under similar Santa Ana winds, consuming more than 175,000 ha, destroying more than 3,300 structures and killing seven people (Keeley et al., 2009). The 2003 and the 2007 wildfires were remarkably similar in their causes, impacts and the human responses they elicited. Particularly alarming is the observation that these fire events are not new to the region, as large fire events have occurred historically.

5.1 Prior Condition

Essentially every year, in all counties in the southern California region, there are fires that range in size from 1,000 to 10,000 ha (Keeley et al., 1999). This regional history of wildfires is largely a result of the Mediterranean-type climate, with winter rain growing conditions sufficient to produce dense vegetation and a long summer drought that converts this biomass into highly flammable fuels. Although these conditions occur periodically under other climatic regimes, the Mediterranean-type climate results in such conditions annually. Massive fires more than 50,000 ha, similar to the 2003 and 2007 fires, have occurred nine times since the earliest date for which we have records,

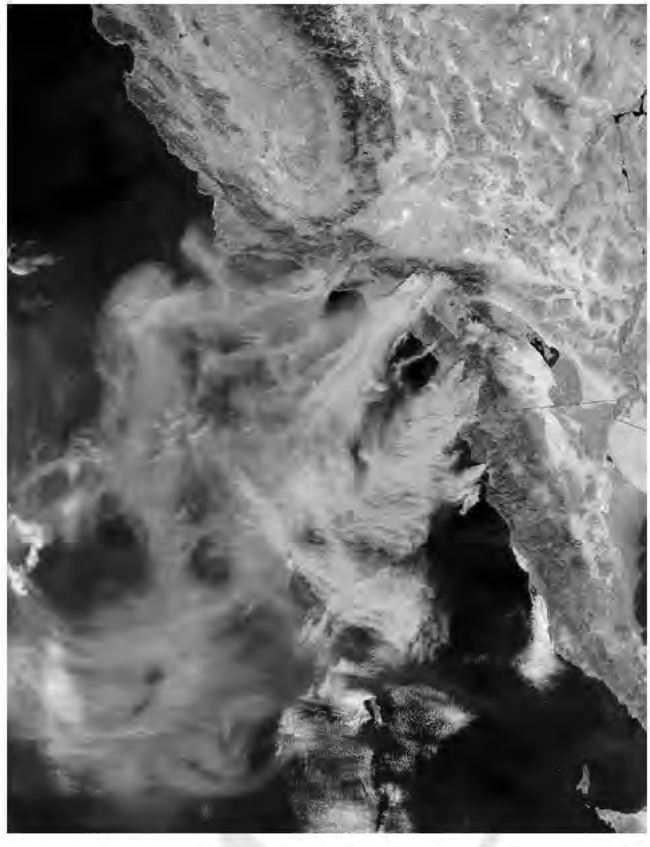

Figure 5.1 Smoke plumes blown by offshore Santa Ana winds during the 2003 firestorm in southern California, 24 October 2003. These winds occur every autumn after the summer drought with gusts >100 km hr^{-1} and relative humidity < 5%. Panel covers an area of ~350 × 600 km; US–Mexico border indicated by thin line about mid-frame (http://earthobservatory.nasa.gov/).

beginning with the 24 to 28 September 1889 Santiago fire (Keeley and Zedler, 2009). These large fire events span the period from before active fire suppression to the present, when active fire suppression is practiced. This illustrates that large wildfires are a natural feature of this landscape and that, despite the best intentions, firefighters are unable to suppress all fires. Although firefighters often contain most fires at much smaller sizes than would be the case in the absence of fire suppression activities, the potential still persists for some fires to escape control, particularly under extreme weather conditions.

Although one major aspect of the prior condition is the regional propensity for large, high-intensity wildfires owing to the Mediterranean-type climate and regular Santa Ana wind conditions, the other major condition that contributed to the impact of the 2003 and 2007 wildfires is the distribution of human settlements relative to fire-prone wildland vegetation. The 1889 Santiago fire is estimated to have been the

largest recorded fire in the region, yet no one died and no homes were destroyed. Since 1889, however, human population and the area of urban development have grown by orders of magnitude. In the last fifty years, the region has, on average, lost 500 homes a year to wildfires (Cal Fire, 2000). The massive losses of property and lives in recent fires are the result of human population growth and expansion into these fire-prone landscapes.

5.2 Vulnerability

In general, urban environments in southern California are particularly vulnerable to wildfires because of the hot Santa Ana winds, which last several days and have gusts exceeding 100 km/h and relative humidity under 5 per cent. These winds blow from the interior toward the coast, and there are one or more such events every year in the autumn (Raphael, 2003), when vegetation is at its driest. Although the 2003 and 2007 fires were driven by Santa Ana winds, these winds were not outside the normal range of variability in duration or intensity (Keeley et al., 2004; 2009), so it is apparent that winds alone cannot account for why these fires were particularly destructive.

One reason the southern California region was especially vulnerable to massive fire events in 2003 and 2007 is the extraordinarily long antecedent droughts. Annually, the region is subject to an intense summer drought of little or no rainfall for four to six months; however, prior to the 2007 fires, there had been seventeen months of drought with an average Palmer Drought Severity Index (PDSI) of –3.62, and prior to the 2003 fires, there were fifty-four months of drought (Keeley and Zedler, 2009).

Although drought typically affects fire behaviour by decreasing fuel moisture, this was not likely the main reason these droughts contributed to the extraordinary size of these fires. Nearly every autumn, there are Santa Ana wind-driven fires, and the fuel moisture of these shrublands is typically at the lowest level of physiological tolerance. At the time of the 2007 fires, live fuel moisture for the most common chaparral shrub, *Adenostoma fasciculatum*, was no different than in other years (Keeley and Zedler, 2009). It is hypothesised that the primary effect of the drought was to produce significant amounts of dieback in the vegetation, and this contributed to fire spread by increasing the incidence of spot-fires ahead of the fire front (Keeley and Zedler, 2009). This resulted in extraordinarily rapid fire spread that in many cases exceeded firefighters' capacity for defending homes.

5.3 Resilience

The resilience of urban communities to the wildfires of 2003 and 2007 was largely a function of their location and spatial arrangement, as well as the specific properties of home construction and landscaping. Santa Ana wind-driven fires follow specific topographic corridors (Moritz et al., 2010), and at a landscape scale, homes that burned

in the 2003 and 2007 fires were distributed in areas that have been historically fire prone and in areas that were located farther inland, closer to the points of fire origin (Syphard et al., 2012). Homes at low to intermediate densities and in smaller, isolated neighbourhoods were also more likely to be burned (Syphard et al., 2012). This could be because of the spatial relationship between homes and wildland vegetation as well as the more limited accessibility of homes to firefighters, as neighbourhoods with fewer roads were also more likely to be burned. Those homes on the interior of developments or on the leeward side (i.e. southern and western perimeters) largely survived untouched (C. J. Fotheringham, US Geological Survey, Western Ecological Research Center, unpublished data).

Homes in the direct path of these fires were the most vulnerable, but housing construction also plays a role. Building ordinances have increased the resilience of homes to burning through structural changes that make homes more resistant to ignition, and as a result, new homes are often more resilient to burning (Quarles et al., 2010). However, another factor is that landscaping age affects the level of plant biomass in close proximity to the homes, and many of these landscaping choices pose significant threats as they age. In a study of 2003 and 2007 fires, the age of homes was significantly correlated with the total tree cover within a 22 m radius of the house ($r^2 = 0.244$, $p < 0.001$, $n = 310$; C. J. Fotheringham, unpublished data), and as discussed below, this may contribute to structural losses. Thus, it will require some work to parse out the relative role of improved construction techniques from increased landscaping fuels.

5.4 Physical Characteristics of the Event

There is evidence that most of the homes lost in these 2003 and 2007 fires ignited from embers blown from the wildland to the urban environment. An in-depth case study of a neighbourhood that experienced substantial home losses in 2007 showed that two out of every three homes were ignited either directly or indirectly from embers, as opposed to uninterrupted fire spread from the wildland to the structure (Maranghides and Mell, 2010). Another reflection of the importance of embers is the observation that for houses on the perimeter of developments, the amount of clearance around homes had no significant effect on whether a home burned (Table 5.1). These patterns fit a widely held generalisation that most homes are not destroyed by direct heating from the fire front but rather from embers that ignite fine fuels in, on or around the house (Cohen, 2000; Koo et al., 2010). Such embers or firebrands are often carried from fuels several kilometres away, and no reasonable amount of clearance around the home can protect against this threat. The extent to which embers create a hazard is a function of them landing on a suitable fine fuel on or adjacent to the home.

Urban landscaping played a significant role in property losses during the 2003 and 2007 fires (Table 5.1). Homes that burned had significantly greater ground surface

Table 5.1. *Comparison of characteristics of burned and unburned houses in a portion of the 2003 and 2007 fires. Clearance is for a subset of homes on the periphery of urban development.* P *values for Mann-Whitney test (C. J Fotheringham and J. E. Keeley, unpublished data)*

	Burned		Unburned		
	Mean (S.E.)	N	Mean (S.E.)	N	*p*-value
Clearance width (m)	9.38 (1.27)	83	12.45 (1.41)	82	0.115
Tree canopy overlap (m)	10.79 (1.01)	150	5.37 (0.81)	160	0.00001
Tree ground surface cover (m^2)	146.74 (13.43)	150	97.75 (9.22)	160	0.021
Patio (m)	4.82 (0.45)	150	3.59 (0.35)	160	0.051
Deck windward side (m)	0.87 (0.20)	150	0.383 (0.10)	160	0.069

cover (GSC) of trees in the yard, and the amount of tree canopy that overlapped the house was greater than for unburned homes. It is hypothesised that tree canopies that shade homes drop highly flammable litter on and around the structure that contributes to ignitions from embers. Burned homes also had more patio and decking than unburned homes, and these too potentially contributed to ignition (Table 5.1).

Other landscaping choices that can affect structure loss are the planting of drought-tolerant species by home owners and landscape specialists. Many of these species come from other fire-prone regions and share characteristics with fire-prone native species, including retention of dead fuels in the canopy and increased flammability. In addition, it is commonly believed that ornamental vegetation is resistant to fire because of regular irrigation; however, no systematic studies have been conducted to determine the effects of the extreme Santa Ana conditions on ornamental plant moisture content.

5.5 Emergency Management

In 2007, roughly a half million residents were evacuated, with major disruptions in personal and professional lives. There are numerous ways to calculate the costs of such an event, and estimates range from hundreds of millions to billions of dollars. There are many indirect economic costs that are more difficult to estimate, for example, the displacement of the San Diego Chargers football game to Arizona because of occupation of their stadium by evacuees. Calculating the net economic impact is made even more complicated by the fact that there were huge offsets in the damage from wildfires by insurance payments that amounted to billions of additional dollars to the California economy (Hartwig, 2007).

The massive evacuation from homes in the path of the 2003 and 2007 fires would seem to have been the prudent thing to do, although, despite stern warnings from the

media, most agencies involved in this evacuation contend that it was not mandatory. After the 2007 fires, it was advocated that one of the communities that suffered major home losses consider encouraging residents during the next fire to stay with their homes in order to assist firefighters (Paveglio et al., 2010). In southern California, this is referred to as 'shelter-in-place' and is fashioned after a program in Australia known as the 'go early or stay and defend' policy (Mutch et al., 2010). Key to this idea is that it requires pre-planning and decision making long before a fire incident occurs (see further discussion of this policy in Chapter 8).

5.6 Post–Event Adaptation

Understandably, after the enormous impact of the 2003 and 2007 fires, there has been strong public sentiment to try to prevent such losses from occurring again. For example, there was renewed interest in promoting community involvement in fire protection. The federal government has made large sums of money available to community groups such as Fire Safe Councils, whose objectives are to promote fire-safety education for homeowners and to encourage pre-fire management. One of the primary objectives of pre-fire management has been to increase efforts to reduce hazardous fuels. As a result, wildland fuel treatments in southern California U.S. Forest Service (USFS) forests have increased in the years following these 2003 and 2007 fires. In particular, the trend has been to broaden the areal extent of treatments beyond the traditional practice of creating long, linear breaks in vegetation to provide firefighter access for suppression.

Despite these efforts to reduce broad swaths of fuel across the landscape, recent research demonstrates that fuel breaks are most effective where they provide access for fire-fighting activities (Syphard et al., 2011a; 2011b). Therefore, some managers are also starting to recognise that strategically located fuel modification zones around the urban interface are likely to provide better community protection with fewer resource impacts to natural ecosystems (Witter and Taylor, 2005). In addition to strategically located fuel breaks, creating defensible space around homes is now widely embraced in the fire management, policy and scientific communities and strongly promoted in Fire Safe Councils. Defensible space is also likely to be more instrumental in community protection than remotely located fuel breaks.

Despite a legal mandate in California for 30 m clearance around homes, there has been increasing sentiment after the 2003 and 2007 fires that more clearance is always better (e.g. Figure 5.2). Therefore, in many communities, home owners are now requested to clear up to 90 m by the local fire department. In some cases, insurance companies require 120 m. It is increasingly evident from field inspections as well as from aerial imagery that many homeowners at the wildland-urban interface are clearing in excess of 30 m, and some in excess of 90 m.

Figure 5.2 Clearance around a rural home in San Diego County, California, that exceeds state requirements (photo by J. E. Keeley).

A common misunderstanding regarding defensible space is that the words 'vegetation clearance' confuse people into thinking that they need to clear all fuel within the safety zone, that is, to bare ground (e.g. Figure 5.2), instead of simply reducing concentrated fuel around the home. Complete removal of fuel may actually create more problems than it solves; it encourages growth of highly combustible grasses, with a substantially longer fire season; it is aesthetically less pleasing (e.g. Figure 5.2); it degrades the water-holding capacity of the soil, promoting erosion; and it destroys important wildlife habitat essential to birds and small mammals that add to the rural lifestyle (Halsey, 2005).

The current lack of a clear science-based system for determining appropriate clearance size potentially has huge impacts on the landscape. In other words, although the mandate is to create 30 m of defensible space, empirical evidence is still lacking on whether more area will provide more protection. We conducted a rough experiment to estimate approximately how much vegetation removal would occur if defensible space guidelines were strictly adhered to, at both 30 m or increased to 90 m, by residential property owners in San Diego County that owned sufficient land to comply with these guidelines. Using a parcel boundary map and a digitised map of residential structures, we calculated the number of properties that were large enough to accommodate defensible space clearing requirements and multiplied these by the area of the

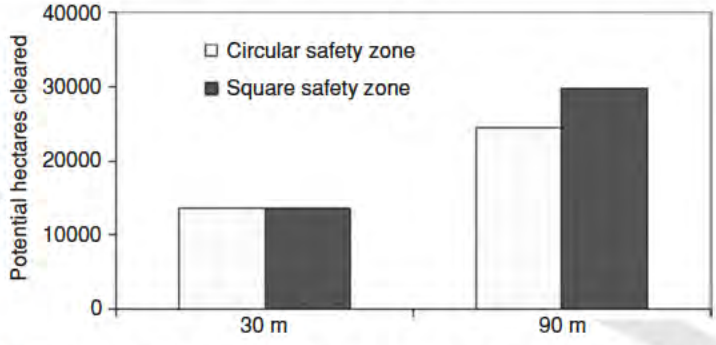

Figure 5.3 Potential area of vegetation clearance that would occur if San Diego County, California, property owners with large-enough properties adhered to 30 m vs. 90 m defensible space requirements. Circular and square safety zones refer to the shape of the clearance around all sides of an occupied structure.

circle that would account for defensible space around all sides of a house located in the centre of the property.

If all property owners on sufficiently sized parcels cleared a 30 m radius around their property, 13,722 ha of vegetation would be removed (Figure 5.3). If those property owners with parcels large enough, that is, a subset of the 30 m parcels, extended clearance to a 90 m radius, this would potentially bring the total vegetation loss to a figure equalling two-thirds the size of the region's largest habitat conservation area, the San Diego Multiple Species Conservation Plan. Of course, many of these parcels already have thinned the vegetation on their property, and not all properties are compliant or will be required to clear the full 90 m around their property. But the numbers do provide a perspective on the importance of understanding the benefits of increasing clearance from 30 to 90 m, which would represent a major loss of natural resources.

5.7 Climate Change Impacts on Southern California Fire Regimes

Southern California is recognised as one of the most fire-prone environments on earth because of its location, climate and vegetation. There is widespread concern that global warming will result in more frequent and more intense fires (Running, 2006). While some landscapes may experience more frequent fires and others more intense fires, it is of course unlikely both will occur in the same ecosystem since they are generally inversely related – that is, intensity is heavily dependent on duration of fuel accumulation.

It is our view that most of the published forecasts of climate change impacts on fire regimes are rather speculative at this point. Predictions are largely based on increasing temperatures affecting fire activity by reducing fuel moisture, which often is tied to increased probability of ignitions and fire spread. There are several considerations that

need to be looked at before accepting this causal relationship. (1) Global warming is driven by increased partial pressure of CO_2, and there are direct effects of increased CO_2 on plant physiology that will act to produce opposite effects on fuel moisture. In short, as CO_2 goes up, water use efficiency goes up, and for chaparral, this has been estimated to be as much as 35 per cent with a doubling of CO_2 (Chang, 2003). (2) Fire regimes of different vegetation types will not likely respond the same to increased temperatures and increased CO_2, and since fire regime changes have the potential for type conversion of vegetation, predictions of future fire activity cannot be made without serious consideration of vegetation changes. (3) Climate change is only one of a multitude of global changes. In southern California, models predict a 3 to 5 per cent increase in temperature but more than a 50 per cent increase in population by 2040. Since humans are responsible for more than 95 per cent of all fire ignitions, and expansion of urban development into wildlands sets the stage for catastrophic wildfire outcomes, predictions about future fire impacts that fail to include human demographic changes are of questionable value for this region.

Changes in winds have the potential for substantial changes in future fire regimes, but we have even less certainty as to what to expect with winds. Some models of future changes in Santa Ana winds suggest a shift to later in the autumn, and Miller and Schlegel (2006) predict that this will result in increased area burned in coastal California. However, one could predict the opposite effect because later winds will increase the probability of Santa Ana winds being preceded by autumn rains, and historically, when winds have been preceded by precipitation, it has had a negative effect on area burned (Keeley, 2004). In a different modelling framework, Hughes, Hall and Kim (2009) predicted a dramatic drop in Santa Ana winds in the coming years, which of course would suggest we have a rosy future in terms of reduced fire hazard. In short, the models we have for predicting the future are often contradictory, which is to be expected because they are in a rudimentary stage of development. However, as a consequence, they are not presently useful for most of the decision making required to deal with future fire hazards in the region.

5.8 What Are the Lessons Learned?

The 2003 and 2007 wildfires remind us that large fire events are an inevitable and inescapable part of living in southern California. Despite decades of fuel break construction, improvements in fire-safe codes and building regulations and thousands of firefighters, homes continue to be lost nearly every year. The predominant viewpoint has been that government is responsible for protecting homes during fires; but as scattered patterns of development continue to extend into the most flammable parts of the landscape, it becomes more and more difficult for firefighters to defend every home. Thus, many victims blame government officials for not having cleared more fuel, or they accuse firefighters of not protecting their homes (Kumagai et al., 2004).

Perhaps because most fire management has been focused on wildlands, there has been relatively little effort towards learning from other hazard sciences. For example, flood hazard science has made great strides in reducing losses through better land planning (Abt et al., 1989). The potential is immense for fire scientists and emergency mangers to learn from these hazard sciences, as altered land planning is very likely one of the more important avenues for reducing losses from wildfires as well. This is because the location and pattern of housing significantly influence where fires occur and, in turn, where fires are most likely to result in losses.

Earthquake science has never taken the approach of trying to eliminate the hazard but rather alters human infrastructure to make living in this environment much safer. Fire scientists are gradually coming around to the idea of infrastructure hardening, but most information on the types of construction and landscaping necessary to fire-proof a house are of an anecdotal nature, and there is an urgent need for science-based approaches. We suggest a change in perspective that acknowledges fire risk as an inevitable component of the landscape and that we prepare as we would for other hazards.

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Exhibit C

NEXUS BETWEEN WILDFIRE, CLIMATE CHANGE AND POPULATION GROWTH IN CALIFORNIA

Jon E. Keeley and Alexandra D. Syphard

Since the year 2000 California has experienced a remarkable upsurge in wildfires. Over five million hectares have burned in the last 20 years, which is double the area burned in the previous two decades. Much of this increase has been driven by large fires of more than 50,000 hectares that cause catastrophic losses of lives and property (Keeley and Syphard 2019). This increased fire activity has been correlated with an increase in average temperature over this same period, leading many observers to assert that global climate change must be playing a major role. Climate models forecast continued warming and thus some have suggested these catastrophic fires are the "new normal" or the "new *ab*normal," (Birnbaum 2018). In contrast, others have declared that these fires are the result of "forest mismanagement" (Cranley 2018) and this has stimulated renewed interest in fuel reduction (Office of Governor 2019). It's almost as though these opinions aren't even in reference to the same fires, and as described below, there is some validity to this assertion.

Sorting out the factors driving this rise in fire activity requires an appreciation for the diversity of landscapes and fire regimes in the state. After all, California has the largest latitudinal range of any western state, comparable to that from southern New Mexico to Wyoming, and the largest altitudinal range (containing both the lowest and highest points in the lower 48 states). California also is the most populous state in the union: One out of eight Americans live here. And most live within dense metropolitan areas juxtaposed with fire-prone wildlands, while a great many more live widely dispersed in rural settings.

A key to sorting out the factors behind increased fire activity is understanding that we are looking at two very different types of fires: fuel-dominated vs wind-dominated fires. And each of these is controlled by different environmental and historical factors (Table 1). Understanding the differences between these two types of wildfires is helpful for navigating the confusing array of opinions expressed in the media as well as determining the appropriate management responses to reduce future fire impacts.

Above: Aerial retardant drop on a chaparral wildfire in coastal southern California, taken July 5, 2008, in the foothills of the Los Padres National Forest. *[Dan Lindsay]*

FUEL-DOMINATED FIRES

Many of the forest fires of the past two of decades have grown out of control due to anomalous fuel loads resulting from 20th century management practices. In the early 1900s increasing state and federal interest in timber resources led to vigorous suppression of natural fires in forests that historically had burned at decadal frequency (McKelvey and Busse 1996) (Fig. 1). In the moderately productive mid-elevation conifer forests of the Sierra Nevada there is typically a vertical separation between dead branches and other litter on the ground and the living tree canopies above, and thus frequent lightning-ignited fires were commonly restricted to low intensity surface fires (Fig. 2). As a result such fires were relatively easy to extinguish and thus many forests in the western U.S. have experienced over a century of near total fire exclusion.

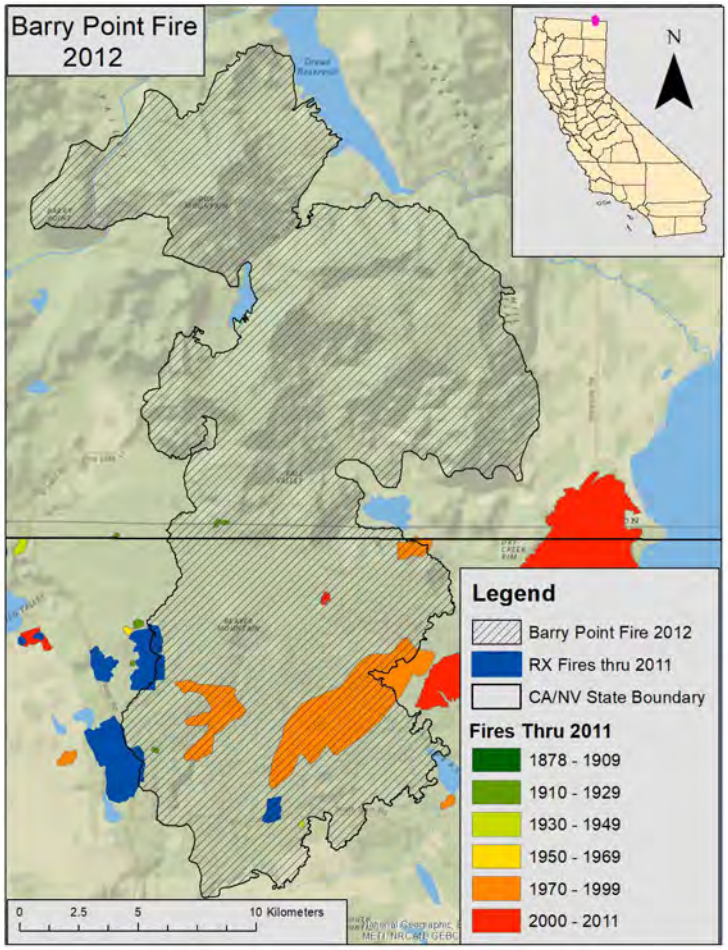
Figure 1. Cross section of ponderosa pine, upper edge is the outer bark, pith is towards the bottom. Dates indicate previous fires and none since active fire suppression in the early 1900s *(section from Bruce Kilgore, photo by Jon Keeley, USGS)*

Figure 2. Low intensity surface fire typical of historical fires in many western forests *(Rim Fire burning in Yosemite National Park, photo by Jon Keeley, USGS)*

Figure 3. Fire perimeter for the 2012 Barry Point Fire, hatched area indicates no previous recorded fire from 1910 to 2012, roughly 90% of area burned in 2012, legend indicates other historical fire dates *(data from the State of California Fire and Resource Assessment Program, FRAP Fire History Database, https://frap.fire.ca.gov/mapping/gis-data/; accessed Jan 2020).*

One consequence is that some of these forests have accumulated understory surface fuels that represent fuel loads an order of magnitude greater than historical levels (Keifer et al. 2006), made even worse by the massive ingrowth of new saplings that not only further increase the fuel load but also act as ladder fuels carrying fire from the surface to the canopy. A century without fire has made these forests susceptible to high intensity crown fires, a fire pattern evident in many recent Sierra Nevada fires (Fig. 3). These types of fires are best described as fuel-dominated fires (Table 1).

To be sure, some fuel-dominated fires can produce their own extreme winds (e.g., the 2010 Station Fire in Los Angeles County or the 2018 Carr Fire in Shasta County), resulting from the high intensity burning of heavy fuel loads. The extreme heat produces pyrocumulonimbus clouds and are often described as plume-driven fires that can collapse, producing extreme wind events (Clements et al. 2018). However, such winds are internally generated, a phenomenon that could be altered by undertaking fuel treatments prior to fire events.



WIND-DOMINATED FIRES

On the other hand, wind-dominated fires are those controlled by external weather events. This is an important distinction, as we have no ability to alter such weather-driven wind events. Our most catastrophic fires of the past few decades have been just such wind-dominated fires. They typically occur in the western portions of California and burn over non-forested landscapes of shrubs, grasses, and woodlands. These fires grow rapidly due to extreme wind events and, as a result, pose severe challenges to fire suppression efforts. Readers will be familiar with several of these recent "firestorms," including the 2017 Napa-Sonoma "Wine Country" fires and the 2018 Camp Fire driven by North winds in northern California. (Historically this is the appropriate term; however, such winds are sometimes referred to as Diablo winds, a term spawned by a newspaper reporter who noted that the 1991 Oakland Hills Tunnel Fire was driven by winds coming from the direction of Mount Diablo, thus the term is less appropriate for wind-driven fires throughout the region.) Other such "firestorms" include the 2017 Thomas Fire and the 2018 Woolsey Fire driven by Santa Ana winds in southern California. While these winds may occur in both the spring and autumn (Fig.5a) they are most problematic in the autumn, following the three to six months of drought typical of our Mediterranean climate (Fig. 5b), leaving natural vegetation at its lowest moisture level. It is these autumn Santa Ana wind and North wind fires that account for the most catastrophic fires in the state (Table 1).

Figure 4. Offshore dispersion of smoke from a) North Wind driven fires in northern California, 2017, and b) Santa Ana Wind driven fires in southern California, 2003.

TABLE 1. Selected fires representing fuel-dominated and wind-dominated fires.

Year	Fire	County	Mon. (days)*	Hectares	Cause	Lives	Structures
Fuel-Dominated Fires:							
2007	Marble C	Monterey	July -	71,980	Lightning	0	0
2012	Barry Point	Modoc	Aug -	37,630	Lightning	0	3
2012	Rush	Lassen	Aug -	110,080	Lightning	0	1
2013	Rim	Stanislaus	Aug -	104,220	Campfire	0	112
2014	King	El Dorado	Sept -	39,260	Arson	0	80
2015	Rough	Fresno	July -	61,360	Lightning	0	4
Wind-Dominated Fires:							
1889	Santiago	Orange	Sept (3)	125,000	Campfire	0	0
1970	Laguna	San Diego	Sept (3)	70,500	Powerline	5	382
2003	Cedar	San Diego	Oct (3)	109,500	Flares	15	2,820
2007	Witch	San Diego	Oct (2)	80,200	Powerline	2	1,265
2017	Tubbs	Sonoma	Oct (2)	14,900	Powerline	22	5,643
2017	Thomas	Ventura	Dec (10)	114,080	Powerline	2	1,063
2018	Camp	Butte	Nov (2)	62,060	Powerline	88	18,804
2018	Woolsey	Ventura	Nov (3)	39,335	Powerline	3	1,643
2019	Kincade	Sonoma	Nov (5)	31,470	Powerline	0	374

***indicates days of Santa Ana or North winds** *[data from the State of California Fire and Resource Assessment Program, FRAP Fire History Database, https://frap.fire.ca.gov/mapping/gis-data/; accessed Jan 2020].*

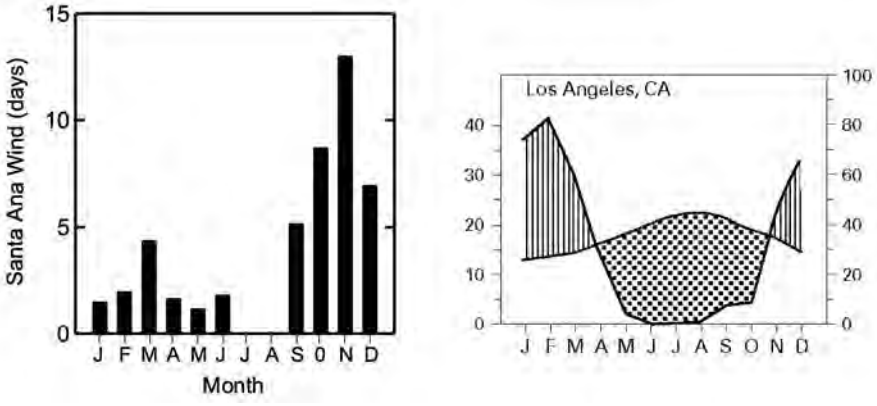


Figure 5. a) Days of Santa Ana winds and b) temperature and precipitation in Los Angeles illustrating typical Mediterranean climate of winter rains and summer droughts *(from Keeley et al. 2012).*

Historically these landscapes have not experienced the fire exclusion seen in many Sierra Nevada landscapes, despite being managed by the same fire suppression policy (Fig. 6). This is due to the fact that essentially all are caused by human ignitions, which are relatively common due to the high population density in the western portion of California (Keeley and Syphard 2018). As a consequence, there has not been any lack of fire and most large fire events burn across landscapes with an extensive fire history and no anomalous fuel accumulation. Indeed, some of these large fires—e.g., the Thomas Fire (Keeley and Syphard 2019)—have burned across areas where extensive prescription burning had occurred in recent years, pointing to the conclusion that prior fuel treatments are having limited effect on the spread of these fires. Even landscapes not experiencing high fire frequencies, such as the San Francisco Bay Area, are not outside their range of natural fire frequencies and so fuels have not accumulated due to fire suppression (Keeley 2005). To be sure, some communities in this region have dangerous fuels but these are often the result of urban plantings of *Acacia, Eucalyptus* and *Pinus* and not so much due to accumulation of wildland fuels from elimination of natural fires.

Every year there are many Santa Ana wind events but most years we don't see major wind-driven fires because they are entirely dependent on a human ignition happening during an extreme wind event. Indeed, only about five percent of the Santa Ana wind days are accompanied by a large fire event (Rolinski et al. 2019). Some have suggested that these Santa Ana winds are increasing in frequency, duration, and intensity, but records do not show a change in the character of these winds since the mid-1900s (Williams et al. 2019). Rolinksi et al. (2016) found that fires during extreme weather events are larger than ones in less extreme Santa Ana conditions, and some have interpreted this to mean that fires are becoming worse because Santa Ana winds are becoming more extreme. However, this study only considered Santa Ana winds after an ignition had occurred, thus ignition sources are critically important. It's important to recognize that Rolinksi's Santa Ana Wind Threat Index is not an indication of when an extreme fire will occur but only how bad the fire will be once ignited. What determines an extreme fire year is the untimely human ignition during an extreme wind event. This is illustrated by the fact that the frequency of these wind events is not correlated with area burned (Keeley and Syphard 2018) and our largest fire years occur in high as well as low Santa Ana wind intensity years

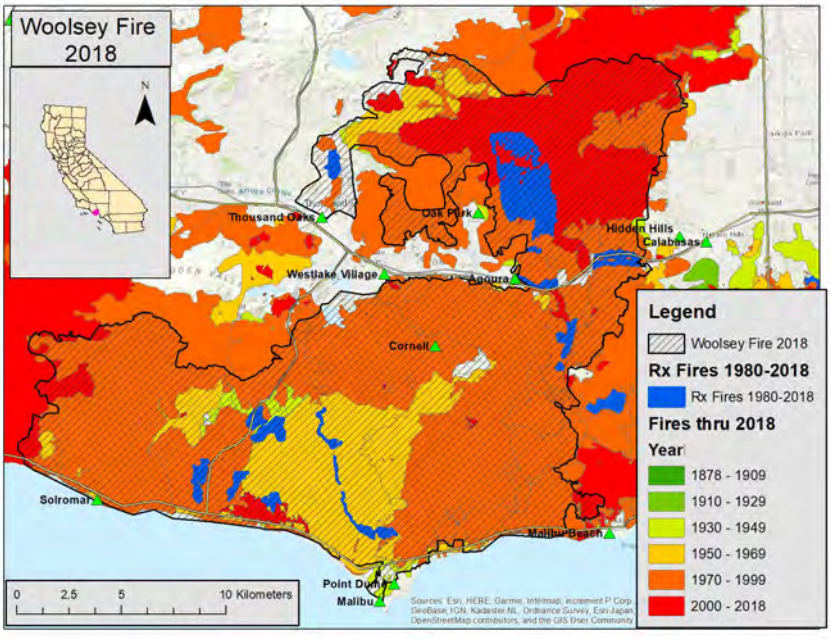


Figure 6. Fire history within the perimeter of the 2018 Woolsey Fire. Hatched area indicates less than 1% of the area unburned prior to 2018, legend indicates other fire dates *(data from the State of California Fire and Resource Assessment Program, FRAP Fire History Database, https://frap.fire.ca.gov/mapping/gis-data/; accessed Jan 2020).*

(Fig. 7). Ultimately it is all determined by an untimely human ignition event. Of course climate is peripherally related as it has been found that these fires are less likely to occur when relative humidity is high (Jin et al. 2014) and this most certainly is tied to decreased probability of such fires after early autumn precipitation (Keeley and Syphard 2017).

Indeed, Santa Ana wind events occur multiple times every year, yet during most such wind events there is no human ignition and thus no fire (Keeley and Syphard 2017). There is little evidence that the increase in the number of catastrophic fires is the result of increased intensity of Santa Ana wind events. For example Guzman-et al (2016) mapped the annual intensity of Santa Ana wind events (Fig. 7) yet when we overlaid extreme fire years of over 100,000 hectares burned in southern California (Fig. 7), we find that such extreme fire years are associated with low as well as high intensity Santa Ana wind years; e.g., the catastrophic 2003 Cedar Fire (Table 1) occurred during a year with low intensity Santa Ana winds.

CHANGING IGNITION SOURCES

Lightning is a common ignition source in forests of the Sierra Nevada and northeastern California and thus accounts for many fuel-dominated fires (Table 1). However, lightning is relatively uncommon in coastal regions (Keeley and Syphard 2018) and does not occur under the synoptic conditions that create extreme Santa Ana and North wind events. Thus, these wind-dominated fires are ~ 100% human-ignited fires (either from intentional causes, such as arson, or accidental causes, such as sparks from equipment).

In the last decade, the majority of these large fires—including some of the biggest fires in 2017, 2018, and 2019—have been ignited by powerline failures during extreme wind events. Indeed, since the year 2000 over half a million acres have burned due to powerline failures, which is five times more than in the prior two decades (Keeley unpublished data). The increased impact of powerline-ignited fires is not the result of increased frequency or intensity of extreme wind events. There are two likely explanations for this increase in powerline-ignited fires: 1) expansion of the electrical grid due to increased development, which provides more opportunities for powerline ignited fires, and/or 2) deteriorating powerline equipment resulting from age and inadequate maintenance (one California regulator contends that electrical grid equipment is being run to the point of failure (Penn et al. 2019)).

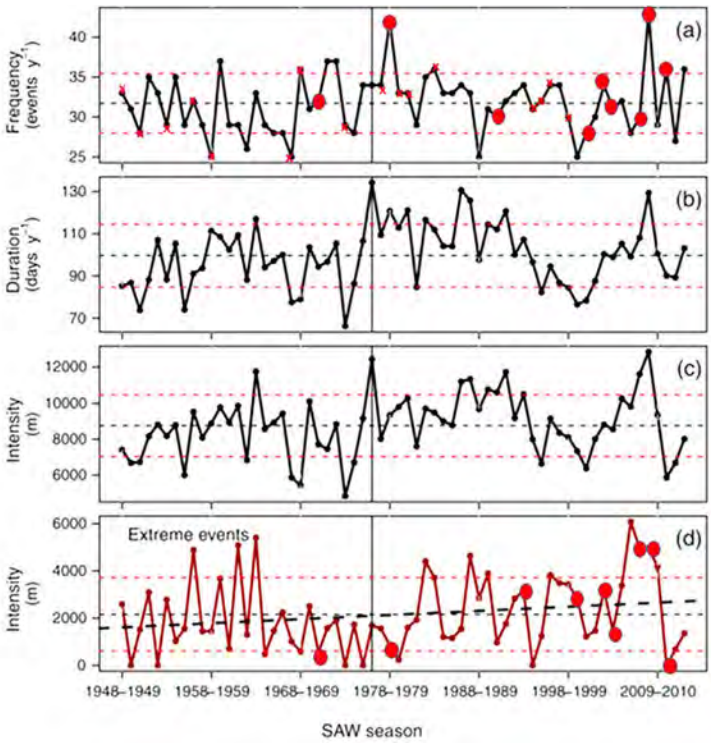


Figure 7. Pattern of Santa Ana Wind (SAW) characteristics from Guzman-Morales et al. 2017 and with red dots indicating very high fire years exceeding a hundred thousand hectares burned *(from Keeley and Syphard 2017)*. Correlation analysis between frequency of Santa Ana Wind events or the intensity of extreme Santa Ana Wind events with area burned there is no significant relationship in southern California (R2=0.01 and R2=0.00, respectively).

GLOBAL CLIMATE CHANGE

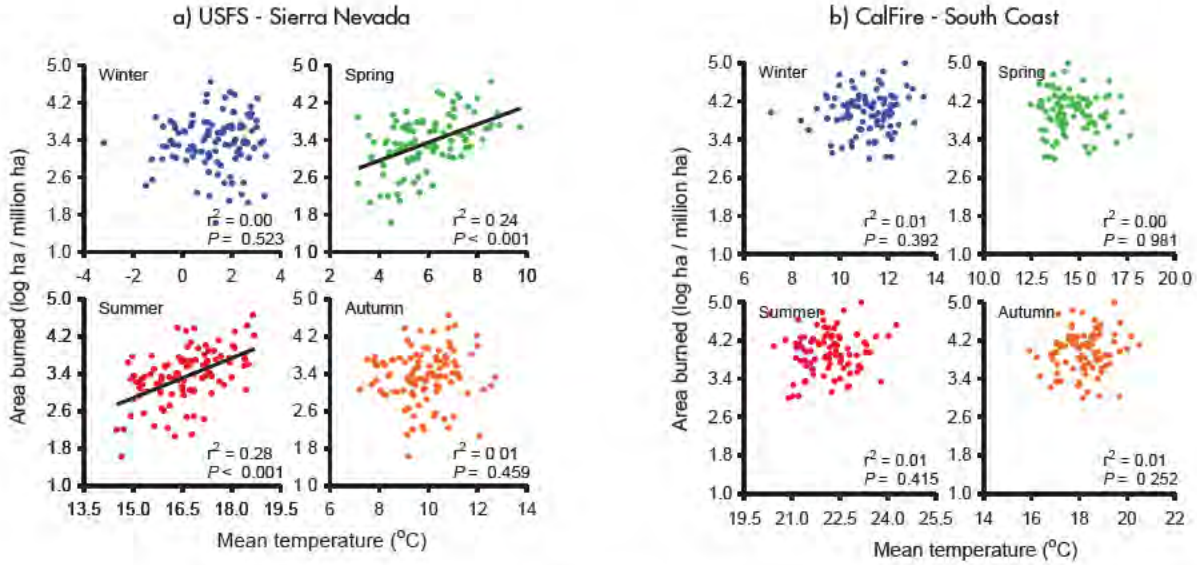
Some forecasts of future fire regimes based on different climate change simulations predict huge increases in California wildfires (Westerling 2018). These models need to be viewed in light of the fact that they are driven by untested assumptions, they don't adequately account for the complexity of fire driven changes in vegetation (Syphard et al. 2018b), and they don't consider changes in fire-climate relationships over time, as well as changes in human-ignition patterns.

An alternative approach to future modeling is retrospective studies. Confucius stated "If one wants to define the future, they must study the past" (Castro 2012). We recently conducted a study that took an empirical approach and asked how seasonal variation in temperature and precipitation has correlated with area burned, year to year, in the past. This investigation, which differs from those using algorithms of future fire-climate relationships, covered much of the last 100 years and separated out the effect of different seasonal temperatures (Keeley and Syphard 2017).

One interesting finding is that in no region of the state did winter temperature play a role in determining subsequent fire activity. This may be important since some climate models predict the greatest global warming to occur in the winter in the northern hemisphere. So perhaps this type of warming might not translate into changes in fire severity and frequency in California.

We can summarize our findings by contrasting U.S. Forest Service lands in the Sierra Nevada (Fig. 8a) with the lower elevation California Department of Forestry and Fire Protection responsibility lands in southern California (Fig. 8b). In Sierra Nevada forests there is a significant relationship between higher spring and summer temperatures and area burned; indeed, in the last 50 years, the combination of these two climate variables (spring and summer temperature) could explain over 50% of the year-to-year variation in area burned (Keeley and Syphard 2017). This is consistent with claims that global warming has played a role in increased burning in western forests in recent decades (Abatzoglou and Williams 2016).

In contrast, on non-forested landscapes in southern California we found little correlation between seasonal temperatures and area burned (Fig. 8b), a pattern consistent with other recent studies (Williams et al. 2019). We surmise that this is likely due to the fact that in southern California it is hot and dry enough every year to support large fires. (Note that maximum summer temperatures in the Sierra Nevada, when fires are most extensive, are similar to the lowest temperatures observed in southern California in the summer, Fig. 8a&b). The lack of a strong annual climate relationship with fires in southern California is due to climate being overridden by other factors, such as extreme wind events, increasing human ignitions during severe wind events, and long-term drought. Interestingly, while there has been an effect in the last 50 years of prior year precipitation on fires in southern California, this effect is well known in grasslands and savannas throughout the southwest and is tied to elevated grass fuel loads following high rainfall years (Keeley and Syphard 2017). We believe the reason this relationship showed up for southern California in the last half of the long-term record (Fig. 8b) is due to the well-documented increase in type conversion from shrublands to grasslands in the region (Syphard et al. 2018a).



Akaike IC regression models

Sierra Nevada (USFS)	r2	
1910 - 2013	0.39	Temp spr+Temp sum-Ppt spr
1910 – 1959	0.42	- Ppt spr - Ppt win
1960 - 2013	0.52	Temp spr + Temp sum

South Coast (CalFire)	r2	
1919 - 2013	0.00	
1919 - 1959	0.00	
1960 - 2013	0.25	Prior ppt-Ppt aut -Ppt sum

Figure 8. a) annual area burned from 1910 – 2013 for USFS lands in the Sierra Nevada plotted against winter, spring, summer, autumn temperatures and multiple regression models using all temperature and precipitation data for these four seasons, and b) annual area burned from 1919 – 2013 on CalFire lands in southern California and multiple regression analysis *(from Keeley and Syphard 2017).*

One climate factor not considered when investigating annual climates is the impact of long-term droughts; i.e., those that last for multiple years. Recently California experienced an intense drought that began in 2012 and lasted for three years in the Sierra Nevada and eight years in southern California (Jacobsen and Pratt 2018). It was accompanied by an immense dieback of trees in the Sierra Nevada (Stephens et al. 2018) and of shrublands in southern California (Keeley and Syphard 2019). This creation of massive dead fuel loads represents a legacy on the landscape that may persist through subsequent years of higher rainfall. If drought-induced dieback proves to have been a critical factor in making the 2017 and 2018 fire years so extreme it raises doubts as to whether these fire years represent a new normal for California, since although droughts are expected to be more severe under climate change, there is no evidence that such extreme droughts will be a normal feature going forward.

What can we conclude about how climate change may impact these coastal wind-driven fires? Global warming may reduce grass growth leading to reduced fire frequency in these grass-dominated landscapes. On the other hand, higher temperatures have the potential for increasing the intensity of plant stress during droughts, perhaps elevating dieback of woody plants that would exacerbate fire spread and intensity; a study by Williams et al. (2015) concluded that the last severe drought in the Sierra Nevada increased the stress by ~10-15 percent. A further impact of global warming is that it will likely alter postfire recovery of shrublands by changing the competitive balance to favor alien grasses, increasing type conversion to highly flammable herbaceous fuels, leading perhaps to increased fire frequency (Syphard et al. 2018a, 2019, Park et al. 2018).

In summary, there is good reason to conclude that global warming is affecting Sierra Nevada forest fires. In montane forests with fuel-dominated fires, summer temperatures—although fluctuating greatly from year to year—have been on an upward trajectory for many decades and it is reasonable to assume a causal relationship between increased fire activity and global warming. However, over this same period there has been a steady increase in understory fuels. This raises an interesting question: Would the strength of the observed climate impact (Fig. 8a) have been as strong in the absence of this anomalous fuel accumulation due to fire suppression? In contrast, in the coastal regions there is limited evidence that climate change is impacting wind-dominated fires (Fig. 8b). However, global warming has the potential for a number of indirect impacts on vegetation that may alter fire regimes.

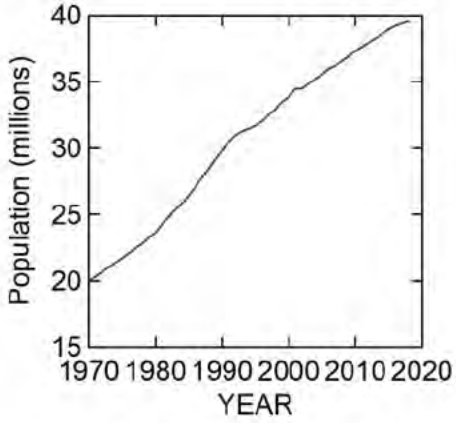


Figure 9. California population from Census Bureau *(https://www.census.gov/data; accessed June 2019)*

POPULATION GROWTH

Roger Kennedy, a former National Park Service director, was one of the first to bring attention to the role of population growth in raising the threat of wildfire (Kennedy 2006). It is true that since 2000 California has experienced a highly variable and subtle rise in temperature. However, less noticed is that there has also been a steep rise in population, adding about six million people (Fig. 9) over the last two decades. Since ~100% of the wind-dominated fires are ignited by humans or human infrastructure, there is likely a causal relationship between this population growth and the increased incidence of catastrophic wind-dominated wildfires.

Although local, state, and federal agencies have made significant progress in reducing the overall number of fires in the state over the last several decades (Keeley and Syphard 2018), there has been an increase in ignitions during extreme wind events. Thus, the real driver of wind-dominated fires is not the extreme wind events per se, but rather untimely human ignitions during such extreme wind events. And, of course, the addition of 300,000 more people every year in the state increases the probability of such an ignition event; moreover, urban sprawl into wildland areas increases the probability of losses of lives and property. An illustration of this is the 2017 Tubbs Fire that roared through sections of Santa Rosa, Sonoma County (Fig. 10b) causing the deaths of 22 people and destroying more than 5500 structures. Fifty years earlier the Hanly Fire had burned through

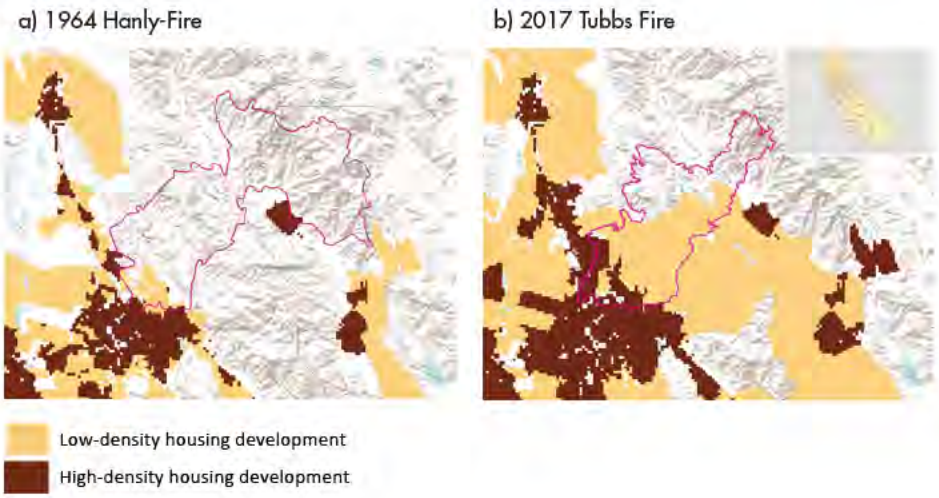


Figure 10. a) 1964 Hanly Fire perimeter in pink, and b) 2017 Tubbs Fire perimeter in pink, with changes in low density and high density housing *(from Keeley and Syphard 2019).*

much of the same landscape during a North wind event (Fig. 10a), yet no one died and only about 100 structures were lost. Some researchers have discounted this comparison because the Hanly Fire burned over a longer period of time and therefore it is assumed it was not driven by severe winds. However, that fire burned for a longer duration because it was was nearly three times the size of the Tubbs Fire and when it made its run towards Santa Rosa (overlapping with the perimeter of the much later Tubbs Fire) it was driven by extreme dry winds (*The Press Democrat*, September 26, 1964, front page), suggesting fire behavior similar to the 2017 Tubbs Fire. The difference in impact of these two fires is likely due to the fact that during this 50-year period Santa Rosa's population grew from 30,000 to 170,000 people and the urban footprint had expanded such that in 2017 development had expanded so that two thirds of the area burned by the Tubbs Fire was low density housing (Fig. 10b). This urban expansion was accompanied by expansion of the electric power grid, increasing the chances of a powerline failure during North wind events that drove both the Hanly and Tubbs fires.

MANAGEMENT CONSIDERATIONS

Fuel-dominated and wind-dominated fires exhibit important differences (Table 1) that inform how to manage these events. First, the fuel-dominated fires are largely forest fires in lightly populated regions such as the Sierra Nevada. In contrast, most wind-dominated fires occur in non-forested ecosystems in the western half of the state, though they may also occasionally occur in more interior sites, such as the 2018 Camp Fire that burned in Paradise. Wind-dominated fires occur in densely populated landscapes and these fires are responsible for the greatest loss of lives and property.

MANAGEMENT CONSIDERATIONS—FUEL-DOMINATED FIRES

Montane forests have an anomalous accumulation of fuels due to more than a century of fire suppression and logging and therefore require concerted efforts at reducing the present fuel load (North et al. 2012). In the late 1960s, staff at Sequoia National Park began prescription (Rx) burning and soon after the other national parks in the Sierra Nevada followed suit (Keeley and Syphard 2019). Over time these parks greatly exceeded the area burned by adjacent forests. In recent years the USFS lands have accelerated the amount of Rx burning. However, all Sierra Nevada lands are a long way from burning at a rate sufficient to restore natural historical fire frequencies. There are many limitations, including funding, air quality restrictions, diversion of personnel from Rx burns due to wildfires, among others.

MANAGEMENT CONSIDERATIONS—WIND-DOMINATED FIRES: THE 5 P'S

The distinction between fuel-dominated and wind-dominated fires is similar to the dichotomy between katabatic and non-katabatic wind-driven fires made by Kolden and Abatzoglou (2018). They point out that in southern California there are summer "fuel-dominated fires" and autumn "wind-dominated fires." While both types of fires occur in the region, it is the latter type that account for the vast amount of acreage burned, loss of lives and destruction of property. While management needs to be cognizant of both types of fire, it needs to be appreciated that summer fires are the least threatening fires and we should put our greatest effort toward autumn wind-dominated fires. Although all fires are a threat if fuels around homes have not been reduced,

there are five points to consider with respect to the catastrophic wind-dominated fires:

1) ***People:*** On these landscapes, fire is more of a people problem than a fuel problem. More people translates into a greater probability of an ignition during a severe wind event, and more development in highly fire prone landscapes inevitably results in greater losses of lives and homes.

2) ***Prevention:*** Rather than focusing on fuel treatments the scientific evidence clearly points to a need for a much greater emphasis on fire prevention. Although progress has been made in reducing the number of fires, the area burned has increased (Keeley and Syphard 2018). Powerline failures are a major cause of large fires and solutions to this increasing threat remain elusive. As widely reported in the media, three major utility companies in the state have implemented plans to monitor winds and shut down the power grid during extreme wind events. Such so-called Public Safety Power Shutdowns (PSPS) have the potential to decrease fire starts and limit damage (and, as a by-product, raise public awareness of fire threats). But there are many accompanying problems, as became evident during the recent Kincade Fire (Table 1) in October 2019, which was started by an electric failure, despite widespread power outages at the time. Such shutdowns impacted a multitude of vital services, including medical equipment, water pumps, traffic signals, communication equipment etc. One solution might be undergrounding the power lines in areas known to be corridors for extreme winds (Keeley et al. 2009). However, this would be much more expensive for the utilities to install and maintain. In addition, in areas where sensitive natural resources are present, overhead power lines may be less destructive. Nonetheless, San Diego Gas & Electric, which has led the way with responding to powerline-ignited wildfires, reports that 60% of its distribution lines are currently underground (Joe Vaccaro, Fire Mitigation & Climate Adaptation Manager, San Diego Gas & Electric Company, personal communication, 5 Dec 2019).

3) ***Planning:*** Community planning needs to devote similar attention and resources to fire as to other hazards. Since we have limited ability to control earthquakes and floods, some urban planners have utilized zoning restrictions to reduce impacts of these hazards. Yet, zoning restrictions are largely lacking when it comes to fire hazards, in large part because fires have been perceived as controllable. However it is increasingly obvious that this is not always the case and many communities are currently very vulnerable. Fire-zoning (Kennedy 2006) needs to be given more consideration as well as urban planning that insures adequate ingress for fire fighters and egress for residents during extreme fire events. Perhaps replacing community planning with a more regional approach might contribute to these efforts.

4) ***Protection:*** High intensity fires generally do not directly ignite homes when separated from vegetation by 30 meters (Cohen 2000). Home ignitions are usually the result of embers blown onto the structure and this is particularly true under extreme wind conditions. Ember cast firebrands often travel over a distance of half a mile or more. Embers ignite only under specific circumstances and this is most likely when they land on dead fuels (Zhou et al. 2019). Homeowners can diminish the probability of damage by addressing those factors that affect embers igniting their home, such as reducing plant litter on roofs and gutters, enclosing eves so that vent orientation is less susceptible to ember entry, closing open eves, placing fine mesh screens on vents, and installing double-pane windows and appropriate siding (Syphard and Keeley 2019). Well-watered trees with significant foliage can provide protection from ember cast onto a home (Keeley and Syphard 2019). In fact, watered trees with green foliage may not be susceptible to ignitions by embers, but rather could serve to extinguish them and deprive them of dry fuels. While the notion of trees as "ember catchers" is appealing it is a largely untested idea.

Roof top sprinklers may provide an added measure of protection and may be justified by the observation that trees adjacent to destroyed homes often survive because their foliage is moist, whereas combustible materials in homes represent dead fuels that are likely at equilibrium with ambient relative humidity of 10 percent or less. However, such sprinklers would need to address a number of issues. For example, metropolitan water lines and water supplies are sometimes compromised during fire events and thus there would need to be a stand-alone water tank. Also, shutting down the power grid is happening more often and thus solar or other alternative power would need to be available to pump water. In addition, there is the need for further research on how to engineer such a system in order to prevent the water spray from being dissipated to the atmosphere due to the high winds. Incorporating a system like this would likely be a significant expenditure that may not be possible for many home owners.

Fuel treatment around homes is critical but needs to be focused on the 'house out', i.e., putting the greatest effort into the area nearest the home and less as one moves further into the wildlands. Reducing fuels within 30 meters of the house is generally sufficient and further clearance beyond that is of doubtful value (Syphard et al. 2012).

5) ***Prediction:*** There is an urgent need for improved meteorological and fire behavior models that can provide real time prediction of wind patterns and fire spread during these extreme events, coupled with improvements in communication systems for providing that information to agencies and homeowners.

Acknowledgments

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Exhibit D

WHY ARE SO MANY STRUCTURES BURNING IN CALIFORNIA?

Alexandra D. Syphard and Jon E. Keeley

California has earned a reputation for wildfires that inflict serious damage on human infrastructure, dating back to images of Richard Nixon hosing down the roof of his house in the 1961 Bel-Air fire, and of the famous "fireproof" home of grocery store entrepreneur Fred Roberts burning to the ground in 1982. In recent years, this notoriety has been transformed into public alarm, reflected in the apocalyptic headlines of recent newspaper articles suggesting the "end of California" (*New York Times*, 30 October 2019) and that "California is becoming unlivable" (*The Atlantic,* 30 October 2019). Now the phrase "the new normal" has worked its way into the lexicon, sustained by record-breaking structure loss numbers in 2017 and 2018 despite significantly lower structure losses in 2019.

It remains to be seen whether or not those two recent years were back-to-back one-in-a-hundred-year events, or if the trend has crossed some kind of tipping point, but data do show a long-term trend of significant increase in structures lost to wildfires since the beginning of the 20th century (Fig. 1). What was an average of ~500 homes lost per year in Southern California from about 1950–2000 (CalFire 2000) has recently climbed to ~2700 structures per year statewide from 2000–2018 (Syphard and Keeley 2019). California is not alone in the U.S., or in the world, in suffering increasing impacts from wildfires (e.g., Blanchi et al. 2012, Haynes 2015, Viegas 2018). Impacts so far in the current Australian bushfire season have been record-breaking, with several thousand structures lost, more than 25 fatalities, and unthinkable losses to wildlife. The question that follows, then, is why?

Although trends vary from region to region, one clear reason for increasing wildfire-related losses is the overall

Above: A home burned by the Thomas Fire in 2017. *U.S. Air Force Photo, Master Sgt. Brian Ferguson]*

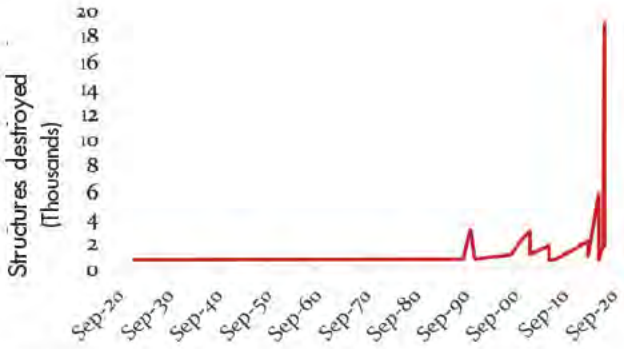

Figure 1. Annual number of structures destroyed in wildfires in California from 1920 to 2018. Source: California Department of Forestry & Fire Protection

increase in wildfire activity. Although, counter to intuition, the number of wildfires has declined in the last several decades, area burned has either remained constant or increased, with substantially higher frequency of large wildfires (Keeley and Syphard 2018), and as discussed further in Keeley and Syphard (this issue). Perhaps an even stronger explanation for increased wildfire-related structure loss is the rapid development of the wildland-urban interface (WUI), which not only exposes more structures to wildland fire, but also increases the likelihood for more human-ignited fires (Radeloff et al. 2018). Despite these trends, however, not all fires result in structure loss, and not all structures are impacted by wildfires they are exposed to. Thus, it is essential to study the factors that are most strongly related to structure exposure and resilience to wildfire, which could then lead to better adaptation and coexistence with wildfire in this era of the "new normal."

In response to this need, a growing number of scientists are conducting empirical research studies to answer the question of why some structures are lost in wildfires and others aren't. Results so far show that the answer to that question is complicated. That is, structure loss results from the confluence of multiple interacting factors across different temporal and spatial scales, which all vary by ecosystem. Given this complexity, misunderstandings and disagreements have arisen over the cause and direction of trends in wildfire activity (Doerr and Santín 2016), fire risk and structure loss (Mccaffrey et al. 2019), and thus, the most effective approach for prioritizing fire management decisions (Moritz et al. 2014). In fact, management techniques appropriate for one region are commonly applied inappropriately to other regions (Noss et al. 2006).

One way that this conflict over priorities can be reduced is through better information and understanding of the similarities and differences that contribute to structure loss among wildfire ecoregions. As data accumulate about the range of conditions under which losses occur, it will be increasingly possible to sort out which risk management techniques are most appropriate for different regions. Wildfire structure losses in the last several decades have already provided a wealth of data for studies comparing factors associated with structures that survived or were destroyed. Most of this work has been done in California (Maranghides and Mell 2009, Syphard et al. 2012a, 2014, 2017, 2019c, Miner 2014, Alexandre et al. 2015, Kramer et al. 2019, Syphard and Keeley 2019) and Australia (Leonard 2009, Blanchi et al. 2010, 2012, Gibbons et al. 2012, 2018, Price and Bradstock 2013, Penman et al. 2019); but some work has also been done in other parts of the continental United States (Alexandre et al. 2016, Kramer et al. 2019).

Combined, the results of this research show clear roles for both local, house-level factors (e.g., structural characteristics of a particular house and property-level landscaping) and broader, landscape-level factors (e.g., housing pattern and location, topography, fuel, and fire characteristics) in explaining why some structures survive wildfires and others don't. This is consistent with the natural hazards literature that theoretically places vulnerability within the intersection of "exposure," that is, potential contact with a hazard; and "sensitivity," or the degree to which the hazard can cause harm (Birkmann 2006). Vulnerability to wildfire is a combination of exposure and sensitivity such that vulnerability results in loss when sensitive characteristics of structures are exposed to hazard events (e.g., the wildfire) (Cutter 1996, Schumann et al. 2019). Thus, exposure is the part of vulnerability related to characteristics of a location, and sensitivity is the risk of loss due to intrinsic physical or social characteristics.

EXPOSURE

Coincidence of fires and houses

A structure's wildfire hazard exposure ultimately lies at the spatial intersection of a wildfire event and the location of the property. The probability of structure loss thus depends on the relative likelihood that a fire ignition results in a fire within the geographical range of structures in the wildland-urban interface (WUI). In turn, this depends on the location and timing of a fire ignition, which varies depending on cause and biophysical characteristics (Syphard and Keeley 2015) relative to other determinants of fire size, including

Caption here. *[Rick Halsey]*

topographic conditions; fuel amount, moisture, and spatial continuity; and weather (Faivre et al. 2016). Large fires tend to be either primarily fuel-dominated or wind-dominated (Keeley and Syphard 2019), with most damage and economic loss occurring from wind-driven fire events (Jin et al. 2015, Keeley and Syphard this issue).

Large fire probability increases with the co-occurrence of human-caused ignitions and severe wind conditions (Abatzoglou et al. 2018). This means that, as population increases and development further encroaches into wildland vegetation, there is an increased risk that a human-caused ignition will coincide in place and time with hot, dry weather; flammable vegetation; and severe wind conditions. Data show that fires tend to be most frequent at low to intermediate housing and population densities (Syphard et al. 2009, Bistinas et al. 2013). Thus, the rapid increase in the spread of exurban development like that occuring now in California (Radeloff et al. 2018), has the potential to both increase the number of ignitions and decrease the overall distance between wildlands and housing.

As the distance between wildland vegetation and housing development decreases across a landscape, the overall exposure of houses to wildfire increases. This helps to explain research that shows the arrangement and location of housing development to be a top-ranked predictor of whether a structure survives or is destroyed by wildfire (e.g., Syphard et al. 2012b, Alexandre et al. 2016, Kramer et al. 2019). In terms of arrangement, data consistently show that loss to wildfire is highest at relatively low housing density (Kramer et al. 2018, Syphard et al. 2019c) and at the interface between wildlands and development (Kramer et al. 2019), regardless of the geographic region in which a structure is located.

Other housing patterns, such as the way housing is dispersed, or the size of housing clusters, are also influential, although their relative importance in explaining structure loss varies from region to region (Alexandre et al. 2015, 2016). Topography is an additional exposure-related factor significantly related to structure loss, as fire tends to spread quickly upslope, meaning that houses on ridgetops are particularly vulnerable. An important caveat to the relationship between low structure density and structure loss is that, once a fire reaches a development, structure-to-structure spread is possible if adjacent houses are highly flammable and spaced within at least 50 meters of one another (Price and Bradstock (2013). In these circumstances, high housing density can be a significant risk factor (Maranghides and Mell 2009).

Fire patterns, altered fire regimes, and vegetation management

In addition to housing arrangement, housing location affects the potential exposure of a structure to wildfire because some areas are inherently more fire-prone than others (Syphard et al. 2012b). Certain parts of the landscape tend to burn repeatedly while others do not, and this reflects the wide variation in fire regimes across California (Syphard and Keeley in press). During the last century, fire regimes in California have been altered due to a range of factors including climate change, land use change, and legacies of fire management. However, the cause of fire regime changes, and their relative effects, have been nearly opposite in the northern and southern-coastal parts of the state (Safford and Water 2014). As described in Keeley and Syphard (this issue), a history of successful fire exclusion in dry, mixed-conifer forests contributed to an alteration of what had been a low-intensity surface fire

regime that typically burned back the understory plants without reaching into the canopy and burning the large trees. The subsequent increase in the density of surface litter and the unchecked ingrowth of young trees that serve as ladder fuels now facilitate uncharacteristically severe crown fires. In contrast, in the native shrublands of southern and central coastal California, increased human-caused ignitions have resulted in unnaturally high fire frequency, with increases in wildfire further promoted by ongoing conversion of shrublands to more flammable invasive grasses (Fusco et al. 2019, Syphard et al. 2019b, 2019a).

These differences in the two fire regimes, and how they have been altered, have led to substantial controversy regarding wildfire exposure and the effects and effectiveness of vegetation management (Keeley et al. 2009, Halsey and Syphard 2015). In both northern and southern California, changes in fire regimes could lead to more dangerous or frequent wildfires, thereby increasing structure exposure to hazard. Mechanical treatments and prescribed fire in dry, mixed-conifer forests that reduce the understory and decrease small diameter tree density may help return these forests to a more resilient condition, and thereby potentially reduce exposure of structures to high fire hazard (Knapp et al. 2017).

On the other hand, in the non-forested landscapes that dominate the coastal central and southern parts of the state, vegetation management is primarily focused on reducing the extent of woody vegetation. That is, mechanical treatments are typically designed to remove and reduce the cover of native shrublands and increase the cover of herbaceous vegetation. Prescribed fire in this region *increases* the amount of uncharacteristically frequent fire, putting additional stress on native chaparral and shrublands. Therefore, in non-forested ecosystems vegetation management is inconsistent with ecological integrity and, in addition, has minimal efficacy in the wind-driven fires that result in the most structure loss (Keeley and Syphard this issue).

Access as a risk factor

While vegetation management may control fire behavior by slowing wildfire spread, wildfires during extreme wind conditions typically generate embers and burning debris that can fly kilometers ahead of the fire front. Therefore, fuels management in remote landscapes, even if it does alter fire behavior, has little possibility of preventing wind-driven fires from spreading and expanding if there are no firefighters present to control the fire. This is the likely explanation for why Penman et al. (2014) found that fire size and exposure of property to wildfire in Southern California are primarily controlled by fire weather and characteristics of the built environment, with fuel treatments or fuel load management having minimal influence. Fuel load is less likely to be limiting during wind-driven wildfires and reduction of fuel load in remote areas is unlikely to affect fire outcomes (Keeley et al. 2004, Schoennagel et al. 2004).

On the other hand, strategic placement of fuel breaks near communities may be more effective at reducing exposure because firefighters can use these for safe access to perform suppression activities (Syphard et al. 2011). In addition to strategically placed fuel breaks near communities, the road network surrounding a structure is also important for minimizing exposure from an access perspective. Wide roads and multiple access points can facilitate the transport of firefighting resources to properties within a community; in addition, a good road network provides faster and more efficient evacuation alternatives (Mangan 2000).

SENSITIVITY

Community sensitivity to wildfire, and the capacity to recover from wildfire losses, is related to the social and demographic characteristics of a region (Schumann et al. 2019). In terms of the physical nature of structure loss, however, the primary determinants of sensitivity include defensible space and home structure characteristics as well as firefighter accessibility.

Defensible space

There is certainly a degree of confusion regarding defensible space. A common sentiment is that the larger the defensible space, the better protected the home. Thus, clearance far in excess of legal requirements is

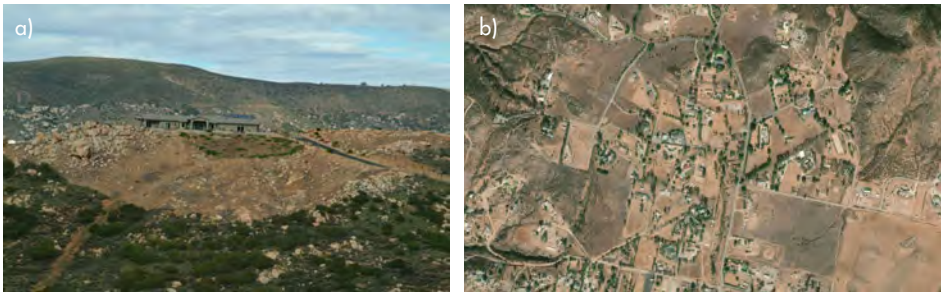

Figure 3. Local (a) and landscape-scale (b) examples of defensible space being performed beyond legal requirements or scientific evidence for protection

increasingly being carried out (Fig. 3a), sometimes at a broad scale (Fig 3b). This is not necessarily helpful or effective. At the same time, many homeowners fail to create sufficient defensible space to improve structure survival.

What does the evidence show about the effectiveness of defensible space? The state of California requires homeowners in state-defined hazardous areas to provide 30 meters (100 feet) of defensible space around their home, which involves the maintenance of specific horizontal and vertical distances of spacing between patches of woody vegetation. Empirical studies in two Southern California areas found that defensible space of approximately 5-20 meters (16-66 feet) provided significant protection, with additional distance providing little or no significant benefit, even on steep slopes (Miner 2014, Syphard et al. 2014). Empirical research looking at structure loss in Australia also found that vegetation reduction and defensible space were most effective at close proximity to the structure (Gibbons et al. 2012, Penman et al. 2019), and that regular irrigation and proper spacing could be as just as effective as clearing woody vegetation (Gibbons et al. 2018).

The largest empirical study of home survival published to date, which included more than 40,000 structures subjected to wildfires over a five year period (Syphard and Keeley 2019), showed that defensible space distance explained little or none of the variance in structure survival. Instead, characteristics of the structure itself were far more significant (Fig. 4). These results should not be interpreted to mean defensible space is not important. But they do suggest that the most important component of defensible space may

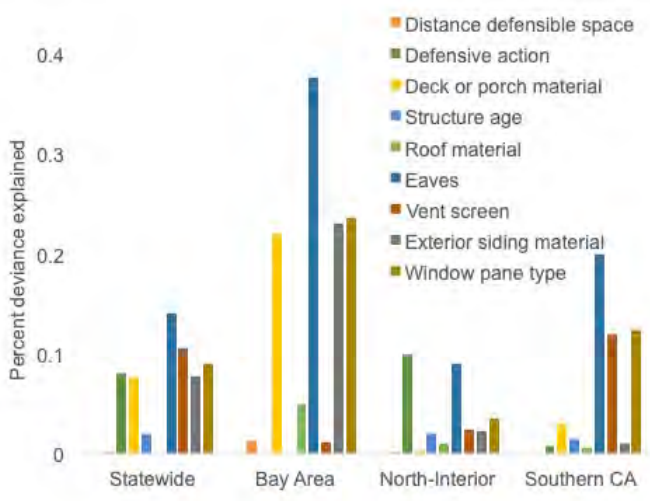

Figure 4. Relative importance (percent deviance explained) of defensible space distance and structural characteristics explaining structure loss to California wildfires from 2013–2018 for the entire state and broken into three broad regions. *Figure modified from Syphard and Keeley (2019).*

Figure 5. Image of flammable debris on a roof that could ignite from wind-blown embers, reflecting how vegetation near or overhanging structures could increase the likelihood of structure loss.

be the characteristics of vegetation closest to the house. For example, vegetation touching the structure and trees overhanging the roof were highly significant in the two empirical examples from Southern California.

Ember cast

It needs to be appreciated that, particularly during extreme wind-driven fires, most homes do not burn from direct flame contact, but rather from embers blown from the fire front, even from a kilometer or more away. Thus, the material that embers land on, be it vegetation or the structure itself, is key to whether the structure ignites or not. In some cases, the effect of overhanging trees or nearby vegetation is mostly related to the dead plant material or debris that is close to the structure (Fig.5). Likewise, many of the structural characteristics found to be most important in this recent study (Syphard and Keeley 2019) were related to the prevention of ember penetration, such as vent screens and eaves. Open eaves (Fig. 6a) are much more vulnerable to fires than closed eves (Fig. 6b). Open eaves have vents that are arranged perpendicular to the ground and thus in direct line of oncoming wind-driven ember cast. Closed eaves have vents facing down towards the ground and perhaps less prone to embers entering the vents.

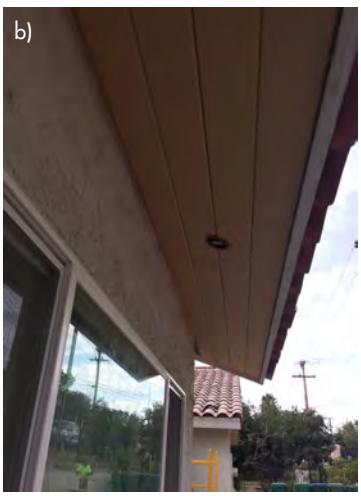

Figure 6. Images of a) open eave design that may allow ember penetration into the structure more readily than b) closed eave design that has been significantly associated with structure survival in California wildfires.

CONCLUSION

The studies described above illustrate that some structures are destroyed in wildfires and others are not because of multiple, often interacting, factors that variably influence the exposure and sensitivity of a property to wildfire. In an ideal world, strategies to increase community resilience to wildfire would be ranked and prioritized according to their relative potential for success in preventing structure loss in any given ecosystem. Of course, an ideal world would also not have to account for factors such as cost, effort, and feasibility, which add to the complexity of decision-making in the real world.

While most empirical research on structure loss has so far focused on either exposure or sensitivity factors independently, an integrated analysis in Southern California provided a comparison of the relative importance of different exposure-related and sensitivity-related variables (Syphard et al. 2017, Fig. 7) in distinguishing destroyed from surviving structures. Study results suggested that exposure (when measured by structure density) was the most important factor overall that distinguished destroyed from surviving structures. The relative importance of different sensitivity variables (e.g., structure age or landscaping characteristics) varied depending upon whether the structure was highly exposed (i.e., at low housing density) or less exposed (i.e., at high housing density) (Fig. 7).

These results suggest that, in an ideal world, the most effective strategy at reducing future structure loss would focus on reducing the extent of low-density housing via careful land planning decisions. This conclusion is rather obvious given that reducing exposure reduces the chance that a wildfire could reach a structure in the first place. In the real world, regardless of land use planning decisions for future development, there is extensive existing development that may be exposed to future wildfires. Therefore, strategies like ignition prevention and strategic vegetation management could potentially reduce the exposure of these houses by focusing on the initiation or spread of the wildfire.

Once a fire reaches a property, structure sensitivity then becomes the key determinant for survival. In many areas, effective efforts to minimize sensitivity to wildfire include education and increased awareness of appropriate defensible space practices, development of Firewise Communities (Jakes et al. 2007), and improvement in building codes. Nonetheless, some communities underinvest in defensible space (Taylor et al. 2019), while in others, homeowners create excessive clearance (Fig. 3) that may increase the extent of invasive grass on the property. Conversion of native woody vegetation into grass in the non-forested landscapes of Southern California, for example, could increase the flammability of the property (Fusco et al. 2019), particularly if the grass is not irrigated regularly (Gibbons et al. 2018).

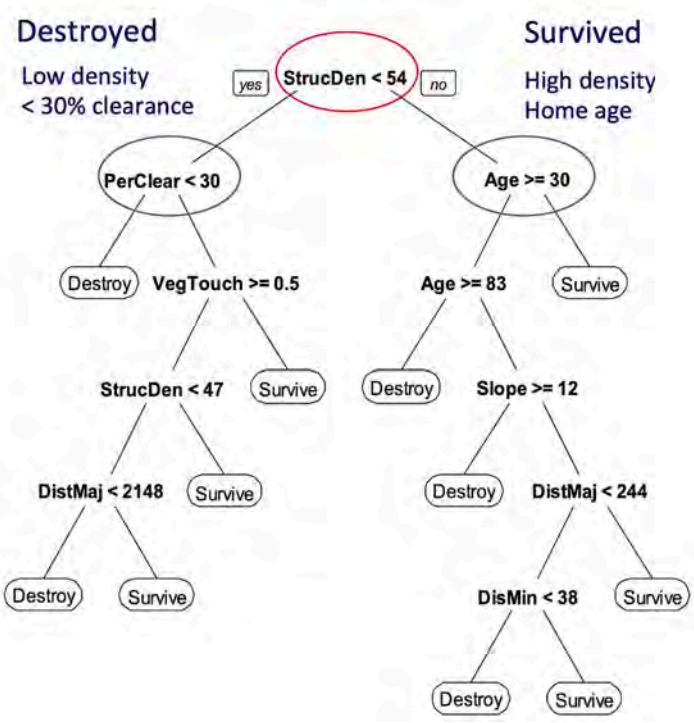

Figure 7. Classification tree showing the hierarchy of factors that best distinguished destroyed from survived structures in Southern California wildfires. Abbreviations are: StrucDen = structure density; PerClear = percentage woody vegetation clearance on property; Age = age of structure; VegTouch = number of sides of structure with vegetation touching; Slope = percentage slope on property; DistMaj = distance in meters to a major road; DisMin = distance in meters to a minor road. *Modified from Syphard et al. 2017.*

Given the importance of structural characteristics in home survival in recent California wildfires (Syphard and Keeley 2019), the improvement of building codes has been a positive development overall. However, there is already extensive existing residential development in fire-prone areas that was built prior to the adoption of new building codes. Reducing the fire sensitivity of these homes generally entails retrofits and modifications, which can be expensive (Quarles and Pohl 2018). However, some of the most effective actions, such as eave coverings and vent screens, are generally less expensive than replacing roofing or exterior siding, although window replacement can also be expensive (Quarles and Pohl 2018).

The 2017 Thomas Fire. *[Stuart Palley, U.S. Forest Service]*

It would appear, given recent improvements in adapting structures to withstand fire, that the increase in the numbers of houses burned in wildfire is not a matter of increased sensitivity. Instead, the answer lies somewhere in the combination of factors that govern exposure, including changes to wildfire behavior and activity, as well as exurban development that places structures in the path of these wildfires. Climate and vegetation change may increase the probability of large wildfires in some regions, such as the northern parts of California (Syphard et al. 2019c); but in other regions, like Southern California, climate change is likely to manifest differently, most likely indirectly, via factors such as long-term drought and vegetation change.

While the effects of climate change on wildfire vary from region to region, housing pattern variables have consistently been the most important factors explaining structure loss across California and elsewhere. This suggests that much of the increase in structure loss in California may be attributable to increases in this type of exposure—and that planning decisions could have broad-scale benefits in the future. Also consistent across regions is the potential for homeowner mitigation measures to provide significant improvement in structure survival probability. Those measures that focus on reduction of ember impact and penetration are most important.

Despite these overall consistencies, there is variation in the nature and strength of relationships in all of these factors. Wildfire frequency and behavior, and fuel characteristics, vary widely by ecosystem; thus, vegetation management efforts differ greatly in effects and effectiveness and should be implemented appropriately. Regardless of regional variations, everyone, from the individual homeowner, to local planning and permitting officials, to state and federal government authorities, will need to be involved in instituting preventive measures. Management appropriately informed by science and data analysis can reduce future structure losses and minimize ecological impacts to assure a more sustainable future. While these efforts may seem expensive in the present, it is much less expensive than paying for losses in the future.

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Exhibit E

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Land Use Planning and Wildfire: Development Policies Influence Future Probability of Housing Loss

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Abstract

Increasing numbers of homes are being destroyed by wildfire in the wildland-urban interface. With projections of climate change and housing growth potentially exacerbating the threat of wildfire to homes and property, effective fire-risk reduction alternatives are needed as part of a comprehensive fire management plan. Land use planning represents a shift in traditional thinking from trying to eliminate wildfires, or even increasing resilience to them, toward avoiding exposure to them through the informed placement of new residential structures. For land use planning to be effective, it needs to be based on solid understanding of where and how to locate and arrange new homes. We simulated three scenarios of future residential development and projected landscape-level wildfire risk to residential structures in a rapidly urbanizing, fire-prone region in southern California. We based all future development on an econometric subdivision model, but we varied the emphasis of subdivision decision-making based on three broad and common growth types: infill, expansion, and leapfrog. Simulation results showed that decision-making based on these growth types, when applied locally for subdivision of individual parcels, produced substantial landscape-level differences in pattern, location, and extent of development. These differences in development, in turn, affected the area and proportion of structures at risk from burning in wildfires. Scenarios with lower housing density and larger numbers of small, isolated clusters of development, i.e., resulting from leapfrog development, were generally predicted to have the highest predicted fire risk to the largest proportion of structures in the study area, and infill development was predicted to have the lowest risk. These results suggest that land use planning should be considered an important component to fire risk management and that consistently applied policies based on residential pattern may provide substantial benefits for future risk reduction.

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Introduction

The recognition that homes are vulnerable to wildfire in the wildland urban interface (WUI) has been established for decades [e.g., 1,2]; but with a recent surge in structures burning, this issue is now receiving widespread attention in policy, the media, and the scientific literature. Single fire events, like those in Greece, Australia, southern California, and Colorado have resulted in scores of lost lives, thousands of structures burned, and billions of dollars in expenditures [3 6]. With the potential for increasingly severe fire conditions under climate change [7] and projections of continued housing development [8], it is becoming clear that more effective fire risk reduction solutions are needed. "Fire risk" here refers to the probability of a structure burning in a wildfire within a given time period.

Traditional fire risk reduction focuses heavily on fire suppres sion and manipulation of wildland vegetation to reduce hazardous fuels [9]. Enormous resources are invested in vegetation manage ment [10], but as increasing numbers of homes burn down despite this massive investment, the "business as usual" approach to fire management is undergoing reevaluation. One issue is that fuel treatments may not be located in the most strategic positions, i.e., in the wildland urban interface [11]. Yet, even if treatments surrounded all communities, scattered development patterns are difficult for firefighters to reach [12 14], and fuel treatments do little to protect homes without firefighter access [15 16]. Fuel treatments may also be ineffective against embers or flaming materials that blow ahead of the fire front [17].

One alternative to traditional fire management that is receiving widespread attention is to prepare communities through the use of fire safe building materials or creating defensible space around structures [17 18]. These actions represent an important shift in emphasis from trying to prevent wildfires in fire prone areas to better anticipating fires that are ultimately inevitable. Neverthe less, the cost of building and retrofitting homes to be fire safe can be prohibitive, and these actions do not guarantee immunity from fire [19].

Land use planning is an alternative that represents a further shift in thinking, beyond the preparation of communities to withstand an inevitable fire, to preventing new residential structures from being exposed to fire in the first place. The reason homes are vulnerable to fires at the wildland urban interface is a function of its very definition: "where homes meet or intermingle with wildland vegetation" [20]. In other words, the location and

pattern of homes influence their fire risk, and past land use decision making has allowed homes to be constructed in highly flammable areas [21]. Land use planning for fire safety is beginning to receive some attention in the literature [22 23], and there is growing recognition of the potential benefits of directing development outside of the most hazardous locations [8,19,24].

Despite recent attention in the literature, land use planning for wildfire has yet to gain traction in practice, particularly in the United States. However, fire history has been used to help define land zoning for fire planning in Italy [22], and bushfire hazard maps are integrated into planning policy in Victoria, Australia [25]. Although some inertia inevitably arises from complications with existing policy and plans, a primary impediment to the design and implementation of fire smart land use planning is lack of guidance about specific locations, patterns of development, or appropriate methodology to direct the placement of new development. Without a solid knowledge base to draw from, planners will be misinformed about which planning decisions may result in the greatest overall reduction of residential landscape risk. Even worse, poor science could result in placement of homes in areas that actually have high fire hazard.

Research on how planning decisions contributed to structures burning in the past provides some guidance about what actions may work in the future. Analysis of hundreds of homes that burned in southern California the last decade showed that housing arrangement and location strongly influence fire risk, particularly through housing density and spacing, location along the perimeter of development, slope, and fire history [26]. Although high density structure to structure loss can occur [27 28], structures in areas with low to intermediate housing density were most likely to burn, potentially due to intermingling with wildland vegetation or difficulty of firefighter access. Fire frequency also tends to be highest at low to intermediate housing density, at least in regions where humans are the primary cause of ignitions [29 30].

These results suggest, for example, that placing new residential development within the boundaries of existing high density developments or in areas of low relief may reduce fire risk. However, it is difficult to know whether broad scale planning policies would actually result in the intended housing arrangement and pattern at the landscape scale, and whether those patterns would result in lower fire risk. Our objective here was to simulate three scenarios of future residential development, and to project wildfire risk, in a rapidly urbanizing and fire prone region where we have studied past structure loss [25]. We based all future development on an econometric subdivision model, but we varied the emphasis of subdivision decision making based on three broad and common growth types.

Although cities vary in extent, fragmentation, and residential density [31 32], urban form typically adheres to a set of common patterns [33 34], and we based our development scenarios on the three primary means by which residential development typically occurs: infill, expansion, or leapfrog [34]. Infill is characterized by development of vacant land surrounded by existing development, typically in built up areas where public facilities already exist. [35 36], and should result in higher structure density rather than increased urban extent. Expansion growth occurs along the edge of existing development, extends the size of the urban patch to which it is adjacent, and may have variable influence on structure density. Leapfrog growth occurs when development occurs beyond existing urban areas such that the new structure is surrounded by undeveloped land. This type of growth would expand the urban extent and initially result in lower structure density; but these areas may eventually become centers of growth from which infill or expansion can occur. We asked:

1) Do residential development policies reflecting broad growth types affect the resulting pattern and footprint of development across the landscape?
2) Do differences in extent, location, and pattern of residential development translate into differences in wildfire risk, based on the current configuration of structures?
3) Which development process, infill, expansion, or leapfrog, results in the lowest projected fire risk across the landscape?

Methods

Study Area

The study area included all land within the South Coast Ecoregion of San Diego County, California, US, encompassing an area of 8312 km^2. The region is topographically diverse with high levels of biodiversity, and urban development has been the primary cause of natural habitat loss and species extinction [37]. Owing to the Mediterranean climate, with mild, wet winters and long summer droughts, the native shrublands dominating the landscape are extremely fire prone. San Diego County was the site of major wildfire losses in 2003 and 2007 [38], although large wildfire events have occurred in the county since record keeping began, and are expected to continue, as fire frequency has steadily increased in recent decades [29,39]. The county is home to more than three million residents, and approximately one million more people are expected by 2030 [40]. Although most residential development has been concentrated along the coast, expansion of housing is expected in the eastern, unincorporated part of the county.

Econometric Subdivision Model

A host of alternative modeling approaches exist to simulate future land use scenarios [41], including a cellular automaton model that we previously applied to the study area [42]. We chose to use an econometric modelling approach for this study because we wanted to capture fine scale, structure level patterns and processes that are correlated with housing loss to wildfire [26]; and econometric models may perform better at the scale of individual parcels [43].

Although we based the three development scenarios on generalized planning policies, we also wanted to ensure that the residential projections were realistic and adhered to current planning regulations. The objective of the econometric modeling was to estimate the likelihood that residential parcels will subdivide in the future. Therefore, we used a probit model to estimate the transition probability of each parcel based on a range of potential explanatory variables typically associated with parcel subdivision and housing development [44 45].

To develop the model of subdivision probability, we acquired GIS data of the county's parcel boundaries in years 2005 and 2009 from the San Diego Association of Governments (SANDAG). The dependent variable was equal to 1 if a parcel subdivided between 2005 and 2009, and zero otherwise. Using these data layers we first determined which parcels were legally able to subdivide given current land use regulations. Minimum lot size restrictions are typically considered the most import restriction for determining future land use. We deemed a parcel eligible for subdivision if the current lot size was greater than twice the minimum legal size given the land class. To determine which parcels subdivided between 2005 and 2009, we queried parcel IDs where the total

area was reduced by at least the minimum lot size between the two time periods. Finally, we were able to generate a suite of variables that determine the likelihood of a parcel developing in the future (Table S1).

We overlaid the parcel boundaries over a range of GIS layers representing our explanatory variables. These data are available to download at (http://www.sandag.org/index.asp?subclassid 100&fuseaction home.subclasshome). Our explanatory variables included: parcel size, parcel size squared, six dummy variables which capture non linear effects of parcel size, distance to the coast, distance to the coast squared; distance to city center and its square, current zoning, slope, land use, roads, if the parcel is in a protected area, if the parcel is in a development area, if the parcel is in the redevelopment area (Table 1).

Spatial Model of Future Development under Planning Alternatives

The outcome of the land use change econometric model is the subdivision probability for each parcel for a five year time step. Based on these probabilities, we developed a GIS spatial simulation model of future land use under three distinct planning scenarios: infill (development in open or low density parcels within already developed areas), expansion (development on the fringe of developed areas), and leapfrog (development in open areas). The model runs in four 5 year time steps from 2010 to 2030, and generates the spatial locations of new housing units in the county.

Although development decisions could feasibly depend on fire risk, we did not model that here. There is no evidence that fire has influenced past regional planning decisions, so it was not used as an explanatory variable in the econometric model. Although we could have evaluated the potential for future development decisions to be based in part on fire risk, this would have required simulation of feedbacks between fires and probability of development. Because our objective in this study was to isolate the effects of the three distinct growth types, we modeled fire risk only as a function of development pattern and not vice versa.

We constructed a complete spatial database of existing residential structures in the study area [26]. These structures and their corresponding parcel boundaries served as the initial conditions for all three scenarios of the spatial simulation model. The current and projected future GIS layers of structures were also subsequently used in the fire risk model (see below). The

Table 1. Variables and results from the probit regression model of parcel subdivision in San Diego County.

Subdivided (1 = yes,0 = no)	Coefficient	Std. Err.	z	P>|z|	[95% Conf. Interval]	
Acres of lot	0.0026342	0.00075	3.51	0	0.001164	0.004105
Acres of lot ^{2}	3.02E 06	1.29E 06	2.34	0.019	5.55E 06	4.93E 07
Distance to ocean	7.42E 06	1.33E 06	5.59	0	0.00001	4.82E 06
Distance to ocean ^{2}	2.33E 11	8.28E 12	2.82	0.005	7.11E 12	3.96E 11
Distance to major road	2.17E 07	2.74E 06	0.08	0.937	5.16E 06	5.59E 06
Distance to major road ^{2}	1.94E 11	1.70E 11	1.14	0.252	5.27E 11	1.38E 11
Distance to nearest city center	0.0000115	1.70E 06	6.76	0	1.5E 05	8.16E 06
Distance to nearest city center ^{2}	2.89E 11	9.70E 12	2.98	0.003	9.91E 12	4.79E 11
Slope between 0–5%	0.6211289	0.211761	2.93	0.003	0.206085	1.036173
Slope between 5–10%	0.3911427	0.210684	1.86	0.063	0.02179	0.804076
Slope between 10–25%	0.0716669	0.212725	0.34	0.736	0.34527	0.4886
Rural Residential	0.3563149	0.071512	4.98	0	0.49648	0.21615
Single Family	0.1361149	0.068678	1.98	0.047	0.001509	0.270721
Multi-Family	0.2505093	0.151486	1.65	0.098	0.54742	0.046397
Road	0.015329	0.086094	0.18	0.859	0.15341	0.184069
Open Space	0.7440933	0.099145	7.51	0	0.93841	0.54977
Orchard/Vineyard	0.5813305	0.097867	5.94	0	0.77315	0.38951
Agriculture	0.9785208	0.132734	7.37	0	1.23867	0.71837
Vacant Land	0.5222501	0.074586	7	0	0.66844	0.37606
Zoned protected	0.253769	0.076881	3.3	0.001	0.103086	0.404452
Area marked for redevelopment	0.2680261	0.14069	1.91	0.057	0.54377	0.007722
Area marked for development	0.5780101	0.064103	9.02	0	0.452371	0.703649
Parcel between 10–20 acres	0.3379532	0.065899	5.13	0	0.46711	0.20879
Parcel between 5–10 acres	0.6119036	0.067012	9.13	0	0.74325	0.48056
Parcel between 2–5 acres	1.16297	0.07062	16.47	0	1.30138	1.02456
Parcel between 1–2 acres	1.563956	0.090286	17.32	0	1.74091	1.387
Parcel between.5–1 acres	1.999939	0.099893	20.02	0	2.19573	1.80415
Parcel between.25–.5 acres	2.178273	0.117101	18.6	0	2.40779	1.94876
Constant	1.397931	0.227467	6.15	0	1.84376	0.9521

Sample size 113 001, LR Chi^2 1535.23, pro>chi 0, pseudo R^2 0.22. Further description of the variables is provided in Table S1.
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dataset of existing housing includes locations of 687,869 structures, of which 4% were located within the perimeter of one of 40 fires that burned since 2001. During these fires, 4315 structures were completely destroyed, and another 935 were damaged.

For future development scenarios, we wanted to allocate an equal number of new structures to the landscape. This was to ensure that any predicted difference in fire risk was a function of the arrangement and location of structures, not the total number of structures. Nevertheless, differences in the total number of structures were simulated with each of the 5 year time steps. We determined the number of housing units to add during the simulations based on projections made by San Diego County [46]. Using factors such as development proposals, general plan densities, and information from jurisdictions, the county estimated that between 331,378 units and 486,336 units could be supported within the developable residential land by 2030. Because the eastern, desert portion of the county was not included in our study area, we used a conservative approach and simulated the addition of 331,378 new dwelling units. We divided this number by four to define the number of new dwelling units to add at each time step, assuming a linear growth rate.

One output of the econometric model was the prediction of the maximum number of new dwelling units that could be added to each parcel. However, dwelling units may consist of apartments as well as single family homes. The mix of single and multifamily units in the region has remained relatively constant over time, and the overall trend has been a mix of roughly 1/3 multifamily and 2/3 single family units. Because the fire risk model is based on points representing structure locations across the landscape, regardless of the number of dwelling units per structure, we needed to generate a conversion factor from dwelling units to structures. We therefore defined a minimum lot size of 0.25 acre on which no more than a single structure could be built, regardless of the number of dwelling units in it (i.e., a single family home or apartment complex). Then, once a parcel was selected for development by the model (see details below), we divided its total area by the maximum number of dwelling units to be added, according to the econometric model. If the result was larger than 0.25, we subdivided parcels according to the result. If not, we quantified how many 0.25 acre parcels fit into the original parcel, and generated the new parcel boundaries accordingly.

Using the initial map of parcels (year 2010), we classified each parcel that was defined as eligible for development (in the previous stage) as suitable for one of the three planning scenarios described above, according to the number of developed parcels in its immediate neighborhood (i.e., those parcels that share a boundary with the focal parcel). We defined 'developed parcels' as ones that had more than one house per 20 acres (8.09 ha). Therefore, according to these density thresholds, we allowed some parcels with nonzero housing density to be considered as 'undeveloped' because these large, rural parcels might contain a single or a handful of houses but they exist within a large open area. In other words, the overall land cover of these parcels was effectively undeveloped, and we therefore assumed that development in adjacent parcels would be akin to development in open areas.

We defined infill parcels as those that were completely surrounded by developed parcels. Expansion parcels had at least one neighboring parcel that was undeveloped; and leapfrog parcels were those with no developed parcels in their immediate surroundings. We reclassified the type of each available parcel in the same manner after each time step, to account for changing dynamics in the development map of the county.

We conducted three simulations, one for each development scenario (infill, expansion, and leapfrog). In each simulation, all parcels were eligible to subdivide, regardless of their class. Therefore, to build a simulation for a specific scenario, we increased the development probability of parcels of the selected scenario by 20%, to favor their development compared to the other types of parcels, without prohibiting development in the other parcel types. This approach was necessary because the projected number of dwelling units was much larger than it would be possible to fit in infill and leapfrog class parcels solely. For example, as the spatial coverage of developed parcel expands, there is less contiguous area that is undevelopable and suitable for leapfrog development. Therefore, the scenarios are not exclusive, but rather a mixture of the three development types. Yet, in each scenario, there is one main type of development, and smaller amounts of development events of the other two types.

Due to the immense computational demand of the simulations, we adopted a deterministic, rather than a stochastic approach to decide on which parcels were subdivided. After enhancing the transition probability according to the corresponding scenario, we ranked and then sorted all parcels according to their probability of subdivision. We then sequentially selected parcels, while simulta neously tallying the number of dwelling units in them, until the development target in that time step (one fourth of the total number of dwelling units to be added: 82,795) was reached. Once the development target was reached, we moved to the next time step. After each time step, the remaining parcels that were still eligible for development were re classified to development types according to the new spatial configuration of the landscape.

Once a parcel was selected for subdivision, and the number of new parcels to develop in it was calculated (as detailed above), an equal area spatial splitting model was employed to split the parent parcel to the predefined number of equal area child parcels. We developed a simple splitting model which is based on iterative splitting of larger parcels into two smaller parcels using a straight line splitting boundary. Once the parcel was fully split into the needed number of sub parcels, we allocated a new structure inside each new parcel by generating a point at its centroid (center of gravity). The point datasets of all structure locations per time step per scenario were passed over to the fire risk model, which is described below.

Fire Risk Modeling and Analysis

To project the distribution of fire risk under alternative scenarios, we used MaxEnt [47 48], a map based modeling software used primarily for species distribution modeling [48], but we have used it successfully for ignition modeling [50] and for projecting current fire risk in the study area [26]. For this study, we slightly modified the model from Syphard et al. [26]. The dependent variable was the location of structures destroyed by fire between 2001 and 2010. Although inclusion of damaged structures in the data set does not significantly affect results [26], we only included completely destroyed structures to avoid the introduction of any uncertainty.

The MaxEnt software uses a machine learning algorithm that iteratively evaluates contrasts among values of predictor values at locations where structures burned versus values distributed across the entire study area. The model assumes that the best approximation of an unknown distribution (i.e., structure destruc tion) is the one with maximum entropy. The output is an exponential function that assigns a probability to every cell of a map. Thus, the resulting continuous maps of fire risk represented the probability of a structure being destroyed by fire. In these output maps, areas of predicted high fire risk that did not have structures on them represented environmental conditions similar to those in which structures have actually burned.

We based the explanatory variables on those that were significantly related to burned structures in Syphard et al. [26], including maps depicting housing arrangement and pattern, housing location, and biophysical factors. Housing pattern variables reflected individual structure locations as well as the arrangement of structures within housing clusters. We calculated housing clusters, defined as groups of structures located within a maximum of 100 m from each other, by creating 100 m buffers around all structures and dissolving the overlapping boundaries [51].

Because burned structures were significantly related to small housing clusters [26], we calculated the area of every cluster as an attribute, and then created raster grids based on that attribute. Low to intermediate housing density and distance to the edge of the cluster were also significant explanatory variables relative to housing pattern and location [26], so we also created raster grids for those. GIS buffer measures at 1 km have been found to explain approximately 90% of the variation in rural residential density [52], so we developed density grids using simple density interpolation based on a 1 km search radius, with area determined through square map units. To create grids representing distance to the edge of clusters, we first collapsed the cluster polygons into vector polyline files, and then created grids of interpolated Euclidean Distance to the edge within each cluster.

Because the MaxEnt model randomly selects background samples in the map to compare with locations of destroyed structures, we used a mask to restrict sampling to the developed environment within cluster boundaries; the distance to the edge of the cluster would represent a different relationship inside a cluster boundary versus outside in the wildland. We also modified the grids to ensure that any random sample located within the 100m buffer zone would receive a value of 100m; thus, all points within the buffer were considered ''the edge of the development''.

After creating the grids representing housing pattern and arrangement of the current configuration of structures, we applied the same algorithms to the maps of simulated future structure locations. We thus generated grids representing future housing pattern and arrangement under alternative development scenar ios. The other explanatory variables, including fire history, slope, fuel type, southwest aspect, and distance to coast [26] remained constant through time for current and future scenarios. Although historic fire frequency and fuel type typically change through time, we did not simulate their dynamics here because we wanted to isolate the effect of planning decisions on housing pattern and arrangement while holding everything else constant.

We conditioned the MaxEnt model on present distributions of housing using ten thousand random background points and destroyed structures located no closer than 500 m to minimize any effect of spatial autocorrelation. We used 80% (260 records) of these data for model training, and 20% [66 records) for testing. We repeated the process using cross validation with five replicates and used the average of these five models for analyses. For smoother functions of the explanatory variables, we used hinge features, linear, and quadratic with an increase in regularization of beta set at 2.5, based on Elith et al. [48]. The smoother response curves minimize over fitting of the model. We conducted jackknife tests of explanatory variable importance.

We first developed the model using mapped explanatory variables derived from the current configuration of structures. To project fire risk under the different time steps of the alternative development scenarios, projected the model conditioned upon current conditions onto maps representing future conditions by substituting the grids representing future housing pattern and arrangement. This is similar to how potential future distributions of species are projected under climate change scenarios [49].

To quantify differences among current and future alternative scenarios, we calculated metrics representing housing density, pattern, and footprint to determine the extent to which the planning policies produced differences in housing pattern and location. We compared the modeled structure fire risk of the scenarios by overlaying all maps of structure locations with their respective mapped output grids from the MaxEnt models and calculating probability of burning for every structure point. We also calculated total area of risk by selecting three threshold criteria [53]. These criteria, at 0.05, 0.25, and 0.5 represented three different degrees of risk, and we calculated the proportion of structures that were located in risk areas for every time step in all scenarios.

Results

The probit econometric model, run on 113 001 observations, showed that larger parcels were most likely to subdivide, although the relationship between parcel size and subdivision probability was non linear (Table 1). Parcels closer to existing roads, the ocean, those with lower slopes, and those designated as fit for development were all most likely to develop. Parcels designated in redevelopment areas were less likely to develop. Overall, the model had a pseudo r squared of 0.22.

The land use simulation model, based on a combination of the econometric subdivision model and three different growth policies, resulted in substantial differences in the extent and pattern of housing of the three scenarios. The total area of housing development, or the housing footprint, was largest for simulations where leapfrog growth dominated, followed by expansion type development, and then infill (Figure 1a). The differences in the housing footprint became larger among the scenarios over time, but the largest difference was between infill and the other two development types. As the housing footprint expanded in the three scenarios, the corresponding housing density declined, so that leapfrog growth resulted in the lowest housing density per 1 km, followed by expansion and then infill (Figure 2b). Despite the near inverse of this relationship, there was generally a larger separation among scenarios with regard to housing density. With larger housing footprints and lower housing density, the number of separate housing clusters increased while their size decreased (Figure 2c).

In the first two time steps of the model (2015 and 2020), the simulated development pattern closely followed the desired pattern in the scenario, although some of the growth in the infill scenario ended up becoming expansion or leapfrog (Table 2). In the last two time steps (2025 and 2030), there were not enough infill parcels left, and thus, the majority of growth in these simulations became expansion, followed by infill, and then leapfrog. In the last time step, there were not enough isolated parcels in the leapfrog scenario and thus, the majority of development became expansion. Thus in general, as more development occurred in the simulations by the year 2030, the majority took the form of expansion.

The area under the curve (AUC) of receiver operating characteristic (ROC) plots, indicating the ability of the MaxEnt model to discriminate between burned and unburned structures, averaged across five cross validated replicate runs was 0.91. The AUC represents the probability that, for a randomly selected set of observations, the model prediction was higher for a burned structure than for an unburned structure [49].The two most important variables in the model according to the internal jackknife tests in MaxEnt [47] were related to housing pattern:

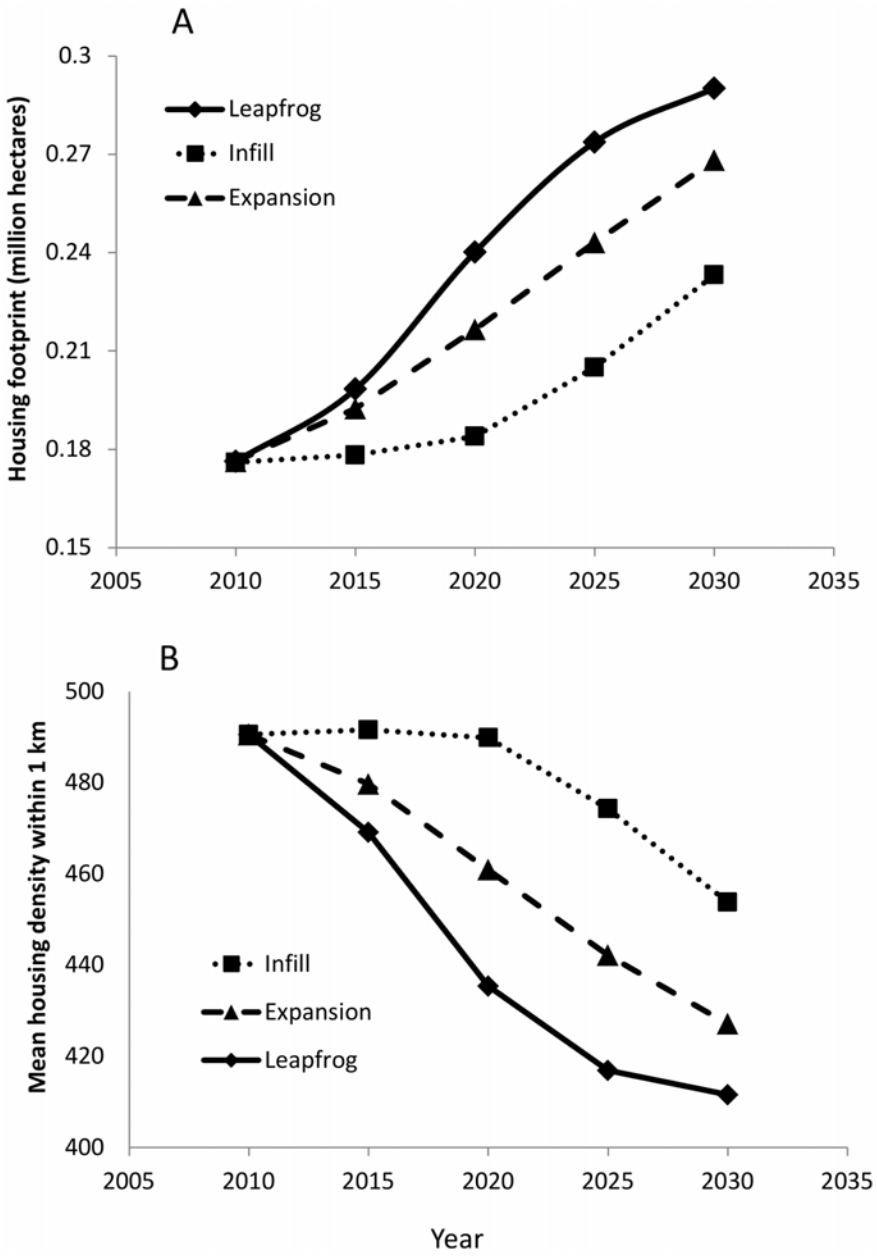

Figure 1. Trends of development extent and pattern for three planning policy simulations from 2010 2030, including A) total housing footprint representing the area of land within all housing clusters, and B) mean housing density averaged across all housing clusters.
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low to intermediate housing density and small cluster size and housing density (Figure 3). The distance to the edge of housing cluster was a less important contribution.

Maps showing the probability of a structure being destroyed in a wildfire, displayed as a gradient from low to high risk, show broad agreement relative to the general areas of the landscape that are riskiest, with correlation coefficients ranging from 0.85 0.91 (Figure 4). Nevertheless, subtle differences are apparent in the three development scenario maps by year 2030, with the highest risk areas in the expansion scenario located farther east than infill, and the highest risk areas in leapfrog occupying a wider extent than either of the other two scenarios.

Differences among current housing and the three development scenarios are clearly illustrated through the mean landscape risk, or total probability of all structures burning (Figure 5). All three development scenarios were predicted to experience an increase in mean landscape risk over the duration of the simulations, except for infill at year 2015. The highest landscape risk to structures was predicted for the leapfrog scenario, followed by expansion, and then infill. The increase in risk over time is more gradual for the infill scenario than the other two scenarios.

The ranking of scenarios varied according to the proportion of structures located within different levels of risk defined through binary thresholding (Figure 6). When the continuous risk maps were thresholded at the lowest number of 0.05, a large proportion

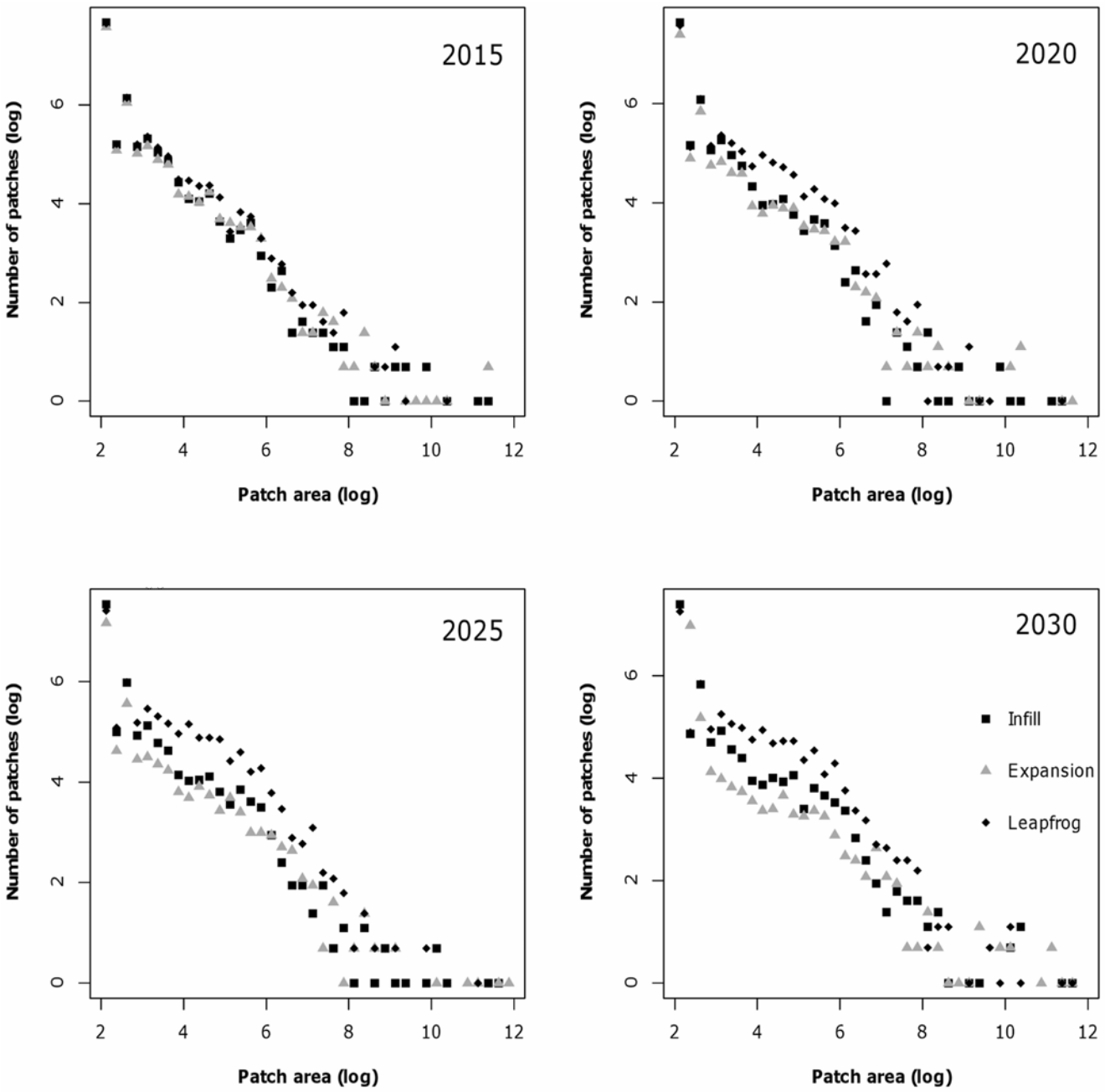

Figure 2. Trends in number of patches and patch area for three planning policy simulations from 2010 2030. Numbers were log transformed for better visual representation of the scenarios.
doi:10.1371/journal.pone.0071708.g002

of structures in all scenarios fell within areas defined as risky according to this criterion. At this threshold, the proportion of structures in high risk areas increased linearly for the expansion and leapfrog development scenarios while the proportion of infill homes increased more gradually. When risk was defined more conservatively at 0.25, temporal trends for the leapfrog and infill scenarios were similar to the 0.05 threshold. However, the proportion of structures at risk in the expansion scenario initially increased to 2020, but this proportion leveled off and declined by 2030. When the threshold was highest at 0.50, a very low proportion of structures in any scenario were located in areas at risk. But in these high risk areas, the expansion scenario switched places with infill to have the lowest proportion of structures at risk in all time steps. Leapfrog had the largest proportion of homes at risk. This proportion of homes located in areas at risk with a threshold at 0.5 declined over time for all three scenarios.

Discussion

Our simulations of residential development showed that planning policies based on different growth types, applied locally for subdivision of individual parcels, will likely produce substantial and cumulative landscape level differences in pattern, location, and extent of development. These differences in development pattern, in turn, will likely affect the area and proportion of

Table 2. Pattern of simulated development under infill, expansion, and leapfrog growth policies.

		Actual development		
Development scenario	**year**	***Infill***	***Expansion***	***Leapfrog***
Infill	2015	9450	18	6
	2020	11787	153	29
	2025	236	624	144
	2030	325	890	179
Expansion	2015	0	772	0
	2020	0	1243	2
	2025	0	1871	1
	2030	0	2662	0
Leapfrog	2015	0	10	408
	2020	0	5	1132
	2025	1	83	3563
	2030	34	917	0

The numbers in the table denote the numbers of patches of a given development type.
doi:10.1371/journal.pone.0071708.t002

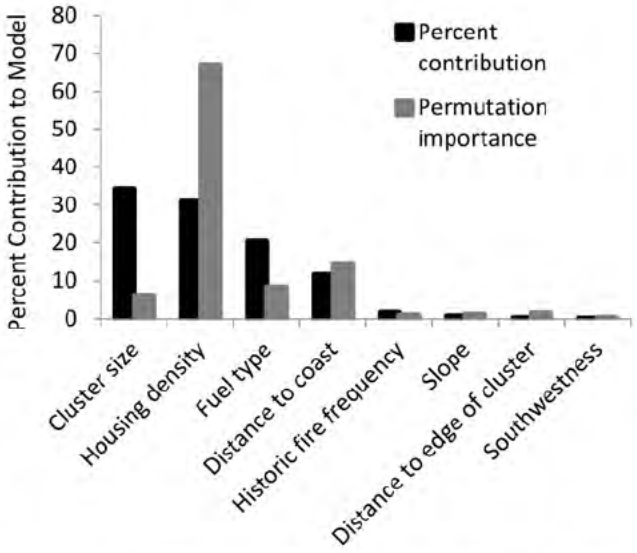

Figure 3. The importance of explanatory variables averaged across five cross validated replications in the MaxEnt fire risk model. Percent contribution is determined as a function of the information gain from each environmental variable throughout the MaxEnt model iterations. Permutation importance reflects the drop in model accuracy that results from random permutations of each environmental variable, normalized to percentages.
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structures at risk from burning in wildfires. In particular, the scenarios with lower housing density and larger numbers of small, isolated clusters of development, i.e., leapfrog followed by expansion and infill, were generally predicted to have the highest predicted fire risk to the largest proportion of structures in the study area. Nevertheless, rankings of scenarios were affected by the definition of risk.

Theoretically, it makes sense that leapfrog development produced fragmented development with larger numbers of small patches, lower housing density, and a larger housing footprint; and that infill resulted in the opposite, with expansion in the middle. By definition, leapfrog development requires open space around all sides of the newly developed parcel, whereas infill requires development on all sides, and expansion requires development on one side and open space on another. Implementing these planning policies on real landscapes, however, can be complex if there are more houses to build than there are parcels that meet the definitions of the three planning rules, and thus not all development conforms strictly to the policy [54]. In our simulations, parcels meeting the definition of each growth type had a higher probability of subdividing; yet, as we were simulating a real landscape, many newly developed parcels did not meet the scenario criteria. That the three scenarios nevertheless produced substantial differences in landscape level development patterns shows that decision making at the individual level can lead to meaningful broad scale effects.

The objective of the econometric model was to provide a baseline probability to predict which parcels were most likely to subdivide; thus, the econometric model itself provides no explanation of how a given policy affects likelihood of subdivision, although it does indicate the correlation between the policy and the outcome. In our setting, which areas are protected, marked for redevelopment, or marked for development may be endogenous to the land owner decision to subdivide. In the case of these variables especially, our results should not be interpreted as causal predictors. Likewise, we use data only from 2005 2009 to predict changes to 2030. If major changes in the land market take place over this time horizon our model will not be able to take this into account.

Although some differences in predicted fire risk among the three scenarios likely stemmed from location of new structures relative to variables such as distance to coast, fuel type, or slope, the most important variables in the fire risk model were housing density and cluster size, with most structure loss historically occurring in areas with low housing density and in small, isolated housing clusters. Thus, leapfrog development was generally the riskiest scenario and infill the least risky. The most surprising result was the variation in predicted risk for the expansion scenario over time and at different thresholds. While leapfrog and infill showed similar trajectories across thresholds, expansion went from being the highest risk scenario at the low threshold to being the lowest risk scenario at the highest threshold. Because the threshold is merely a way to group structures into a binary classification, this means that, while the average risk calculated across all homes shows expansion to rank in the middle of infill and leapfrog throughout the simulation (Figure 5), the other two scenarios have a relatively larger proportion of homes that are modeled to be at a very high risk (i.e., 0.25 or 0.5), particularly by the end of the simulations. Because the total number of structures with a risk greater than 0.25 or 0.5 is relatively low in all scenarios, this difference in distribution of homes at the highest risk is not reflected in the mean. Another reason for the shift in rank of expansion over time is that, as more development occupied the landscape, there were fewer parcels remaining to accomplish infill or leapfrog type growth in the other scenarios. Thus, by the end of the simulations in year 2030, the majority of growth in all scenarios was expansion, and there was some convergence between scenarios. Finally, the change in risk of expansion growth over time may reflect that, despite the relatively low importance of distance to edge of cluster as an explanatory variable, expansion growth is characterized as having an initially fragmented landscape pattern that eventually merges into large patches with low edge.

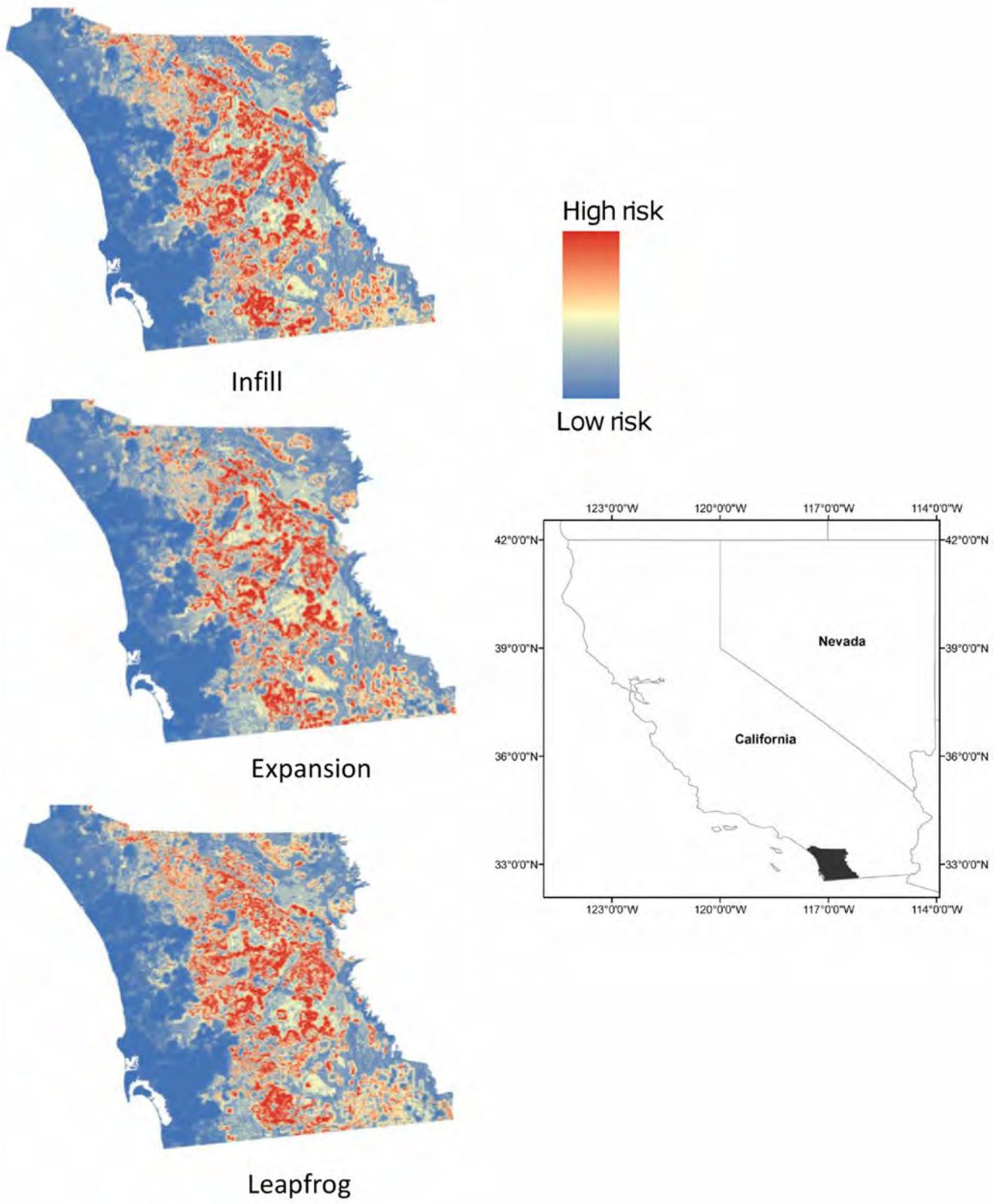

Figure 4. Maps of the study area showing projected wildfire risk at year 2030 for simulations of residential development under policies emphasizing infill, expansion, or leapfrog growth.
doi:10.1371/journal.pone.0071708.g004

Although leapfrog development clearly ranked highest in terms of fire risk, the interpretation of which planning policy is best may depend on fire management objectives and resources, as well as other considerations such as biodiversity or ecological impacts.

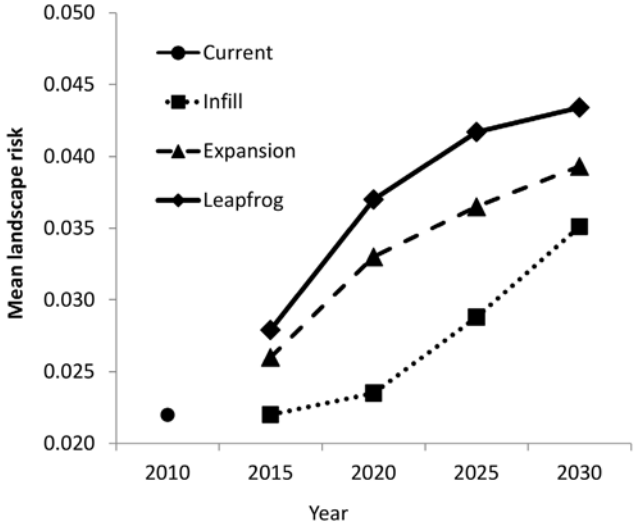

Figure 5. Projected landscape fire risk, reflecting the proba bility of burning in a wildfire averaged across all residential structures on the current landscape and in three development scenarios of infill, expansion, and leapfrog for year 2030.
doi:10.1371/journal.pone.0071708.g005

The spatial pattern of development affects multiple ecological functions and services [55], with potentially varying conservation implications; both leapfrog and expansion development consumed more land than infill, which would likely lead to more ecological degradation [56]; nevertheless, higher density clustered develop ment may be dominated by more invasive species [57]. Trade offs between fire protection and conservation are common, but techniques are available for identifying mutually beneficial solutions [58].

Different perceptions of the fire risk results could also potentially translate into different planning priorities for management. For example, if the priority is to plan for the lowest overall risk to structures, then the mean landscape risk clearly delineates the rankings of options, with infill being the winner. However, if the objective is to reduce the number of structures at the highest risk threshold, i.e., $>$ 0.5, then expansion is the best option, at least by 2030. An important consideration for fire management is the total area that needs to be protected, as well as the length of wildland urban interface [8,13]. Therefore, despite the lower number of structures at the highest risk thresholds, expansion creates more edge than infill and may translate into greater challenges for firefighter protection.

Although we did not create separate scenarios for high or low growth, the results at different time steps can be substituted to envision the potential outcome of developing more or fewer houses. In the short term, the total fire risk is projected to increase proportionately as more land is developed. However, given the inverse relationship between housing density and fire risk, it is possible that this trend could reverse if housing growth eventually resulted in expansive high density development.

Land use planning is one of a range of options available for reducing fire risk, and the best outcome will likely be achieved through a combination of strategies that include homeowner actions, improvements in fire safe building codes, and advanced fire suppression tactics. Although we isolated the effect of land use planning policy in the three development scenarios, the fire risk model nevertheless showed that the pattern and location of structures in this study area were the most important out of a suite of factors influencing structure loss. We used a correlative approach that did not incorporate mechanisms or feedbacks, but our models clearly illustrated differences in the cumulative effects of individual planning decisions. The relationship between spatial pattern of development and fire risk is likely related to the intermixing of development and wildland vegetation [29,59]; thus, these results likely apply to a wide range of fire prone ecosystems with large proportions of human caused ignitions. Nevertheless, because fire risk is highly variable over space and time, and due to a range of human and biophysical variables [60], we recommend planners develop their own models for the best understanding of where the most fire prone areas are in their region [19].

With projections of substantial global change in climate and human development, we recommend that land use planning should be considered as an important component to fire risk management, potentially to become as successful as the prevention of building on flood plains [61]. History has shown us that preventing fires is impossible in areas where large wildfires are a natural ecological process [4,9]. As Roger Kennedy put it, "the

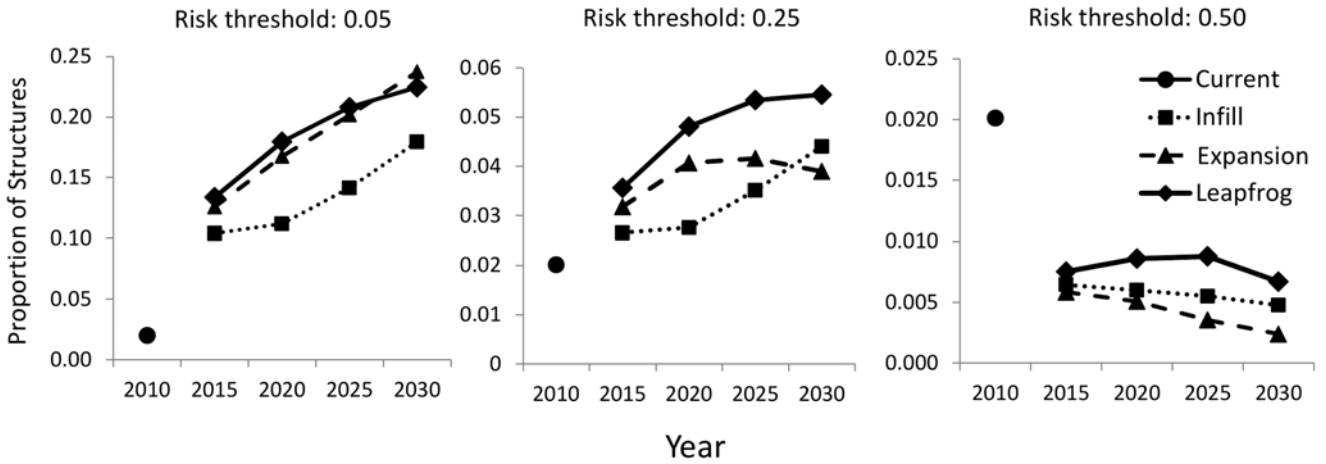

Figure 6. Proportion of residential structures that are located in areas of high fire risk defined using thresholds from the fire risk model of 0.05, 0.25, and 0.5 for current structures and for structures simulated under infill, expansion, and leapfrog growth policies.
doi:10.1371/journal.pone.0071708.g006

problem isn't fires; the problem is people in the wrong places [62]."

Supporting Information

Table S1 Definitions and summary statistics for variables used in the probit model.
(DOCX)

Acknowledgments

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Author Contributions

Conceived and designed the experiments: ADS JEK ABM VB. Performed the experiments: ADS ABM VB. Analyzed the data: ADS ABM VB. Wrote the paper: ADS JEK ABM VB.

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Exhibit F

fire

MDPI

Article

Factors Associated with Structure Loss in the 2013–2018 California Wildfires

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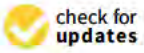

Abstract: Tens of thousands of structures and hundreds of human lives have been lost in recent fire events throughout California. Given the potential for these types of wildfires to continue, the need to understand why and how structures are being destroyed has taken on a new level of urgency. We compiled and analyzed an extensive dataset of building inspectors' reports documenting homeowner mitigation practices for more than 40,000 wildfire-exposed structures from 2013–2018. Comparing homes that survived fires to homes that were destroyed, we investigated the role of defensible space distance, defensive actions, and building structural characteristics, statewide and parsed into three broad regions. Overall, structural characteristics explained more of a difference between survived and destroyed structures than defensible space distance. The most consistently important structural characteristics—having enclosed eaves, vent screens, and multi-pane windows—were those that potentially prevented wind-born ember penetration into structures, although multi-pane windows are also known to protect against radiant heat. In the North-Interior part of the state, active firefighting was the most important reason for structure survival. Overall, the deviance explained for any given variable was relatively low, suggesting that other factors need to be accounted for to understand the full spectrum of structure loss contributors. Furthermore, while destroyed homes were preferentially included in the study, many "fire-safe" structures, having > 30 m defensible space or fire-resistant building materials, were destroyed. Thus, while mitigation may play an important role in structure survival, additional strategies should be considered to reduce future structure loss.

Keywords: defensible space; building construction; homeowner mitigation; firefighting; defensive actions; fire safety

1. Introduction

California has long been recognized for its fire-prone ecosystems and fire-related losses to human lives and property [1]. In the last several years, however, this recognition has turned into bewilderment and terror as tens of thousands of structures and hundreds of human lives have been lost in fire events throughout the state [2]. Deadly and destructive wildfires have been occurring in other regions across the globe as well, such as Portugal [3], Australia [4], and Southern Europe [5]. The increased frequency and magnitude of these fire events have contributed to the recent claim that we are entering a "new normal" phase of wildfires [6]. Most of these catastrophic fires are started by humans, so as populations steadily increase and people are pushed farther into hazardous wildlands, the problem could get even worse. Thus, the need to understand why and how structures are being destroyed during wildfires has taken on a new level of urgency.

Fully understanding why recent California wildfires were so destructive will likely require many years of research focusing on a range of factors at different scales, from fire behavior and climatology to

fire management and land development. Answering questions pertaining to fire behavior will require different data and methodological approaches, compared to answering the questions related to why homes were destroyed, although the actual outcome will be a combination of the two.

In California, there has been a long-standing interest in understanding how local and regional responses are needed to reduce damage from wildfires [7,8]. In terms of understanding why homes are destroyed, there is an emerging literature that includes studies focused on local, property-level factors as well as studies on landscape-scale factors such as vegetation management and fuel characteristics, fire suppression, topography, and housing development patterns (e.g., [9,10]). These studies have significantly advanced our understanding of home safety, but the majority have been conducted through computer simulations and laboratory experiments, and thus, there remains a need for pre- and post-fire empirical data to document and validate what happens under actual wildfire conditions [11]. Recent fire events have generated more data on structure losses, and the number of empirical studies is increasing, particularly relative to understanding spatial patterns of structure loss at a landscape scale [12–15].

In terms of defensible space, the state of California requires fire-exposed homeowners to create a minimum of 30 m (100 ft) of defensible space around structures, and some localities are beginning to require at least 60 m (200 ft) in certain circumstances (e.g., [16]). Of the few studies that have empirically tested the relative benefits of defensible space, the authors demonstrated that up to 30 m (100 ft) of vegetation reduction around a structure can significantly increase the chance of structure survival (e.g., [17–20]). However, in these case studies, the most effective distance of defensible space was much less than regulations require (e.g., [19,21,22]), and other factors, such as housing density, landscape position, proximity of vegetation to the house, irrigation and water bodies, and building construction materials, were equally or more important [20,23,24].

Regarding fire safety in building construction materials, there have been many detailed studies conducted via carefully designed laboratory experiments [25–27]; and recent building codes in California have been designed to reflect these studies. Despite the solid laboratory evidence, few empirical studies have documented building characteristics associated with structure loss in real wildfire situations. In one study, Syphard et al. [23] found several significant relationships among building construction materials and structure loss in San Diego County, CA, USA, with window framing material and number of windowpanes being more protective than roofing or exterior siding material, and year of construction also being a significant proxy for building characteristics. The sample size in this study was somewhat limited, however, and other factors like structure density and vegetation characteristics were found to be equally or more important, depending on the location of the structure.

In addition to knowing whether certain mitigation actions can be statistically significantly associated with structure destruction, it is important to understand how often these homeowner 'best practices' actually translate into structure survival. Statistical significance is not a safety guarantee and does not necessarily translate into probability. While it is important for homeowners to have the best protection available, it is also important for them to understand the extent to which these actions tend to result in a positive outcome. Without large datasets of actual structure losses, it has until now been impossible to know the frequency at which best practices translate into structure survival, and whether those results are generalizable across different landscapes.

As of now, most guidance on homeowner 'best practices' is derived from limited empirical studies and assumptions based on fire behavior, and thus, the relative efficacy of these practices remains largely theoretical. Empirical studies on the effects of local homeowner mitigation practices, including defensible space or building materials, have been mostly in the form of case studies for a selection of wildfires on specific landscapes (e.g., [19,23,28,29]). Although these studies provide insights, we need a broader understanding across multiple fire events, and thus we need a database that captures characteristics of structures exposed to many fires across a variety of ecosystems.

The California Department of Forestry and Fire Protection (Cal Fire) began a statewide building inspection program in the late 1980s that has been continually upgraded and improved over time, and recent large catastrophic wildfires have added enormously to the amount of data available. The Cal Fire Damage INSpection Program (DINS) was founded with the goal to collect data on damaged, destroyed, and unburned structures during and immediately after fire events to assist in the recovery process, to validate defensible space regulations, and to provide local governments and scientists information for analyzing why some structures burned and why some survived [30]. For all fire events in the state that involve the damage or destruction of buildings worth $10,000 or more, a team of trained inspectors visit during and immediately after the wildfire to collect, for all structures exposed to the fire, a range of information including the extent of damage, defensible space before the fire, building characteristics, and other items.

Through a public records request, we acquired DINS data for more than 40,000 structures that survived, were damaged, or were destroyed across all California wildfires from 2013–2018, making this potentially the largest combined dataset of its sort. Our objective was to summarize these data statewide and across three broad California regions (San Francisco Bay Area, Northern Interior forests and foothills, and Southern California) to a develop a more generalized understanding of local-scale factors characterizing and differentiating destroyed or majorly damaged structures ("destroyed") from those that survived or only had minor damage ("survived") during wildfires. Although other studies have shown landscape-scale and other spatial factors such as topography, fuels, and housing arrangement to significantly affect structure loss probability, we focused here exclusively on the homeowner mitigation practices quantified by the building inspectors to answer:

1. How important was the extent of defensible space in distinguishing destroyed and survived structures?
2. What structural characteristics of homes were associated with increased susceptibility to destruction?
3. Did these patterns vary by region?

2. Materials and Methods

2.1. Data and Summary Statistics

The Cal Fire DINS data were collected for all wildfires, of any size, that resulted in structure damage or destruction. Once building inspection teams arrived at a fire, they recorded information on every exposed structure, including damaged, destroyed, and unburned homes, valued at a minimum of $10,000 or greater than 120 square feet (11 square meters), which is the size at which a permit is required for building. The inspection process occurred by dividing active wildfires into geographical zones as the fire was burning, then a designated number of two-person teams of trained inspectors were assigned to the zone and went to the field to record data. Data were collected for surviving structures in addition to damaged and destroyed structures, and the level of structural damage was recorded in different percentage classes.

Given that most recent structure losses in California have occurred in three distinct regions of the state [2], with most losses occurring within single fire events, we divided the dataset into three regions to compare potential regional differences. Thus, we assigned each county with structure loss to either the "Bay Area", which included counties surrounding the San Francisco Bay; the "North-Interior", which included primarily the northern Sierra Nevada but also other northern coastal and interior counties; and "Southern CA", including coastal counties south of San Luis Obispo County (Table 1).

Building inspectors grouped the structures into classes of damage corresponding to unburned; minor (cosmetic or nonstructural damage); moderate (partial to complete failure of structural building elements); and destroyed. The vast majority of structures were in either the minor or destroyed classes (94% in the Bay Area, 99% in the North-Interior, and 95% in Southern CA), so we lumped

unburned with minor and called them "survived," and lumped moderate with destroyed and called those "destroyed."

The types of data collected included features of the property and vegetation, and inspectors also started to use pre-fire ancillary data, such as assessors' parcel information, to add details for badly damaged or destroyed structures. Most data fields were categorical to ensure consistency in recording, and the teams used phone applications and GPS data to enter information in the field. For this study, we summarized data for most categories in the inspection report, including distance of defensible space, roof type, exterior siding, eaves, windowpanes, vent screens, and deck or porch material.

The distance of defensible space around structures was recorded as one of several ordinal categories, including 0; 0–9 m (0–30 ft); 9–18 m (30–60 ft); 9–30 m (30–100 ft); 18–30 m (60–100 ft); and >30 m (100 ft). We therefore labeled defensible space into four classes in which 5 m (15 ft) were added to the lowest number of each class and used as the label. We merged the class 9–30 m (30–100 ft) with the 18–30 m (60–100 ft) class. Therefore, 0 or 0–9 m were labeled as "5 m", 9–18 m was labeled "14 m," 9–30 m or 18–30 m were labeled "22 m," and >30 m was labeled "35 m." We also used these numeric values to calculate average defensible space distances.

In the 2018 fires (including the Camp Fire and Woolsey Fire in the North-Interior and Southern CA regions, respectively), some new variables were added, including defensive action taken and home age. For defensive action, the inspectors recorded whether it was firefighters, civilians, or both who protected the structures during the wildfires, or, they recorded when the information was unknown. For all years, roof type was most frequently recorded as either "combustible" or "resistant" in the Bay Area, but it was broken into different material classes in the other two regions, so for each region we analyzed data according to the most commonly used classification for that variable. Vent screens were also characterized differently for different fires in which the "screened" class was broken into "fine" or "mesh > 1/8" in some cases, and "unscreened" was referred to as "no" or "none" in some cases. We lumped these together into "screened" and "unscreened".

Building data were collected for different occupancy types (e.g., single- and multi-family residences, outbuildings, commercial buildings, and barns), so we conducted an initial sensitivity analysis using the full dataset comparing rankings of proportions using all structures versus single-family residential structures only, and we found similar rankings for most variables. The variables in which the ranking between single-family residential and other buildings was different were those which would likely characterize non-residential structures (e.g., buildings having no windowpanes, vents, or eaves). Therefore, to preserve the integrity of these classes and for a more robust dataset we used all structures for our analyses in the different regions.

For all variables, there were a substantial number of blank fields where no data were recorded, so there are unequal numbers of data points in all data categories (Table S1). Therefore, we summarized and analyzed all data fields based only on the data that were available for those fields. For comparison purposes we calculated two types of proportions for different perspectives. First, we determined the proportion of the category in each burn class (i.e., for both survived and destroyed structures, what proportion belonged to each category of the variable); and second, we determined the proportion of burn class within each category (i.e., for each category in the variable, what proportion survived or were destroyed) (Figures S1–S8).

2.2. Analysis

To assess the relative importance of each variable, we developed simple generalized linear regression models (GLMs) [31] using defensible space or building characteristics as single predictor variables and survived versus destroyed structures as the bivariate dependent variable. For each model, we used a logit link and specified a binomial response, then calculated and compared the deviance explained (D^2), which is analogous to R-squared in linear regression for each variable. For the statewide analyses of defensive action and structure age, we used the combined data for the North-Interior and Southern CA regions only. We did not model roof type statewide (i.e., only ran

models for individual regions) because the classification system varied from region to region. For these regions, we used data from whichever classification was most common in each region (roof type 1 for North-Interior and Southern CA and roof type 2 for the Bay Area, Table 1). Given the large amount of missing data in the different explanatory variables, we did not perform multiple regression, as our objective was to create a relative importance ranking of the variables using only the data available.

Table 1. Number of destroyed and survived structures from 2013–2018 by county and region in California. Dash marks indicate no structure outcomes recorded. The bold totals report the sums of destroyed and survived structures for each region.

Region	County	Number Destroyed	Number Survived
Bay Area	Contra Costa	1	–
	Lake	2588	89
	Mendocino	566	32
	Monterey	88	4
	Napa	1123	587
	Santa Clara	29	700
	Santa Cruz	6	19
	Solano	11	56
	Sonoma	6764	470
	Yolo	24	88
	Total	**11,200**	**2045**
North-Interior	Amador	1	
	Butte	19,061	740
	Calaveras	936	31
	Fresno	10	2
	Humboldt	5	–
	Inyo	2	–
	Lassen	4	1
	Madera	16	4
	Mariposa	142	20
	Mono	58	6
	Nevada	63	4
	Shasta	1889	260
	Siskiyou	339	18
	Tehama	26	4
	Trinity	142	7
	Tuolumne	1	–
	Yuba	274	8
	Total	**22,969**	**1105**
Southern	Kern	398	21
	Kings	1	–
	Los Angeles	1667	339
	Orange	38	43
	Riverside	53	10
	San Diego	246	67
	San Luis Obispo	81	7
	Santa Barbara	110	42
	Ventura	1075	200
	Total	**3669**	**729**

Because defensible space distance classes can be hypothetically considered as progressively protective against harm (i.e., that more defensible space is more protective), we used a calculation common in medical research, the relative risk [32], to compare adjacent pairs of shorter and longer distance classes of defensible space in addition to comparing the protective effect of the shortest versus longest distance classes (0–30 ft vs. >100 ft). Relative risk is a ratio between proportions of classes having a good outcome (here, structure survived wildfire) versus proportions of classes having a bad outcome (here, structure was destroyed) and indicates whether there is either no relationship (a

value of 1) or if the exposed group (structures with shorter distances of defensible space) has either a significantly higher (values >1) or significantly lower (with values <1) risk of surviving the fire given the data available.

We also calculated the relative risk for most of the building inspection variables. For those with more than one independent category, we calculated the relative risk based on the proportion of survived structures in each category relative to the combined proportion of survived structures in all other categories. For variables with binary classes of "combustible" or "resistant", (Table 1), we calculated the relative risk using the combustible class as the exposure group.

3. Results

From 2013 to 2018, building inspectors examined 41,717 structures, with 37,838 (~90%) damaged or destroyed by fires in 36 California counties, with the largest number destroyed in Butte County in the North-Interior Region, followed by the Bay Area, then Southern California (Table 1). Of the total number of structures inspected, 18% (n = 2045) in the Bay Area, 5% (n = 1105) in the North-Interior, and 20% (n = 729) in Southern CA survived the fires.

3.1. Defensible Space and Defensive Actions

The relative importance of defensible space, as quantified by deviance explained in the regression models, was virtually nil statewide, and the only region in which defensible space had a deviance explained of at least 1% was the Bay Area (Figure 1). Statewide, home survival was associated with slightly longer average distances of defensible space, and this distinction was more pronounced for the Bay Area (Figure 2). On the other hand, when averaging mean values of defensible space classes across survived and destroyed homes, there was a slightly higher mean defensible space distance for destroyed structures in the North-Interior, and virtually no difference in Southern CA (Figure 2).

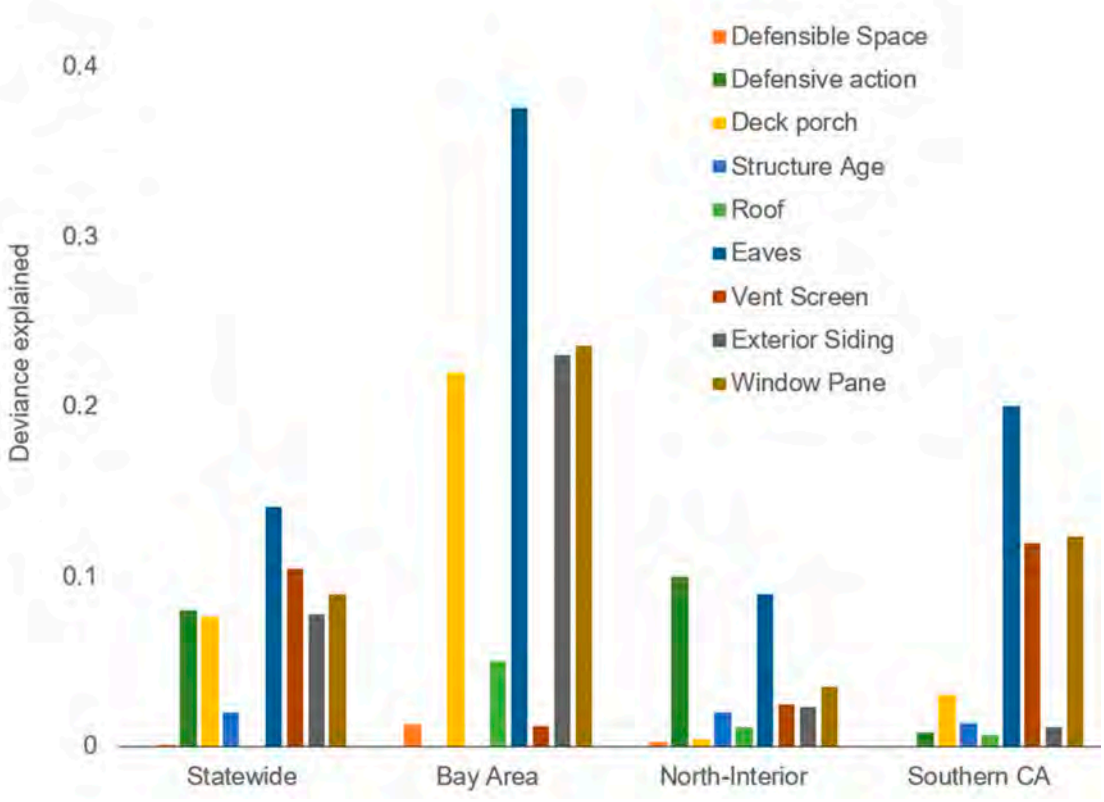

Figure 1. Deviance explained for building inspection variables statewide in three California regions. Defensive action and structure age were only available for North-Interior and Southern CA.

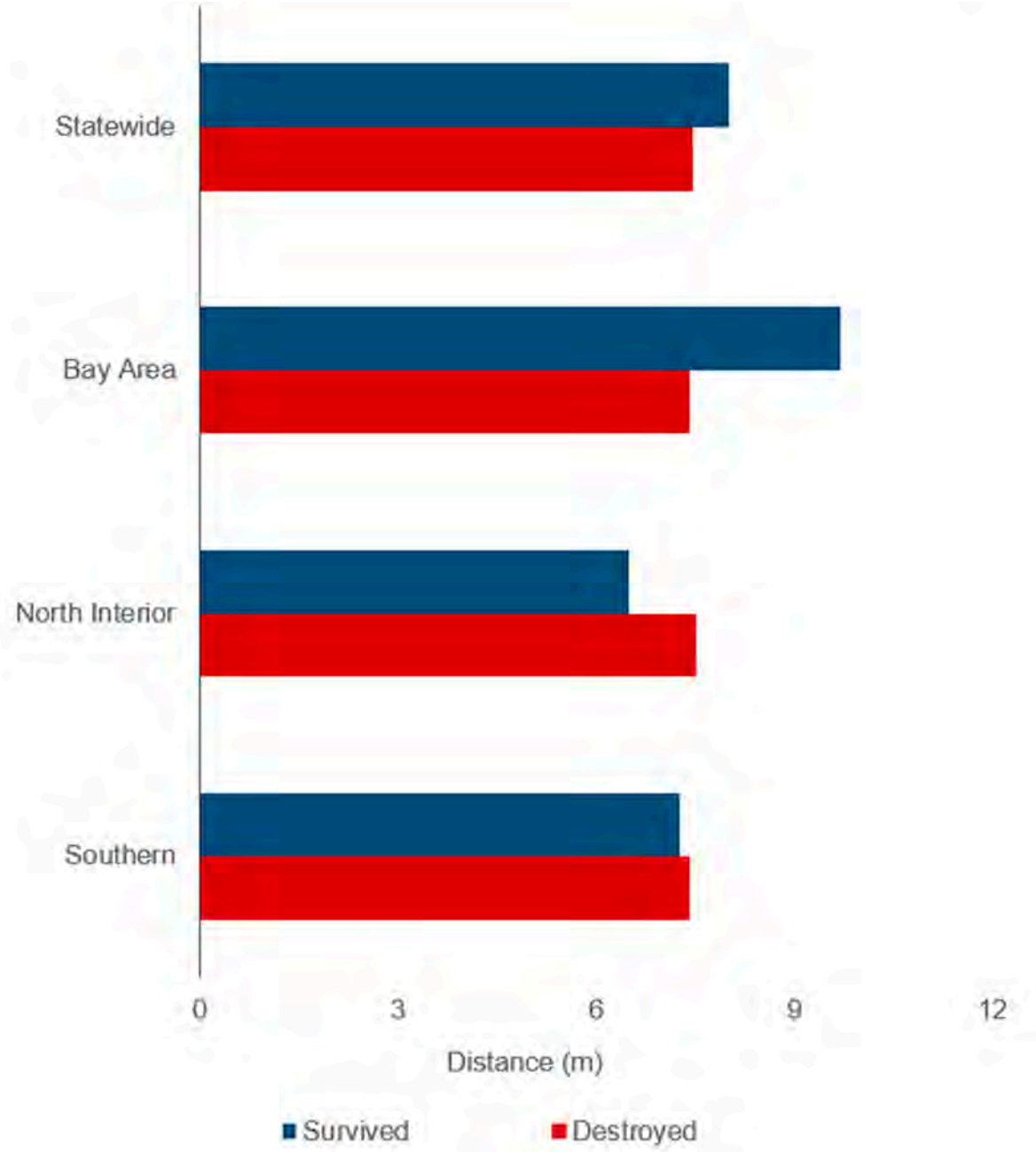

Figure 2. Average distance of defensible space for survived and destroyed structures statewide and in three California regions.

Except for the comparison between 22 m (75 f) vs. 14 m (45 ft) of defensible space statewide, the relative risk ratios for the statewide and Bay Area data showed consistently lower relative risk when comparing classes of longer distance intervals with shorter distance intervals (Table 2). In the North-Interior, there was a higher relative risk of destruction with more defensible space when comparing 22 m (75 f) vs. 14 m (45 ft), but there was a significantly lower relative risk when comparing 35 m (115 ft) vs. 22 m (75 ft) (Table 2). There were no significant differences in relative risk among any defensible space distance classes in Southern California (Table 2).

Although defensive action was only recorded in the 2018 fires in the North-Interior and Southern CA regions, it was more important than any other variable for North-Interior, and it was less important in the Southern California data (Figure 1). Statewide (using these two regions and comparing the importance to other variables), it had a medium-high relative importance (Figure 1). The relative risk

ratios for both regions showed that civilian, fire department, and both types of defensive actions were significantly more protective than unknown action (Table 2). In the North-Interior, the fire department providing defensive action provided better protection than civilian actions, but either both or civilian defensive actions provided a slightly better relative risk ratio for Southern CA.

Table 2. Relative risk (RR) among building inspection variables statewide and for three California regions. A relative risk of 1 indicates no difference between classes; >1 means the relative risk of destruction is higher in the first category listed; <1 means the relative risk of destruction is lower than in the other classes. Dashes indicate where no data were available for certain categories.

Variable	Statewide		Bay Area		North-Interior		Southern	
Defensible Space	**RR**	***p*-Value**	**RR**	***p*-Value**	**RR**	***p*-Value**	**RR**	***p*-Value**
14 m (45 ft) vs. 5 m (15 ft)	0.95	0.0001	0.98	0.06	0.97	0.09	0.97	0.24
22 m (75 ft) vs. 14 m (45 ft)	1.08	0.0001	0.98	0.19	1.07	0.003	1.07	0.06
35 m (15 ft) vs. 22 m (75 ft)	0.88	0.0001	0.79	0.0001	0.95	0.0001	0.98	0.61
35 m (15 ft) vs. 5 m (15 ft)	0.91	0.0001	0.76	0.0001	0.98	0.09	1	0.89
Defensive Action								
Both vs. others	0.95	0.0001	–	–	0.68	0.004	0.69	0.04
Civilian vs. others	1.08	0.0001	–	–	0.81	0.0001	0.68	0.04
Fire Department vs. others	0.88	0.0001	–	–	0.44	0.0001	0.81	0.03
Unknown vs. defensive action	0.91	0.0001	–	–	1.02	0.0001	1.01	0.39
Deck, Porch Material								
Composite vs. others	0.85	0.0001	0.93	0.007	0.92	0.03	0.78	0.04
Masonry vs. others	1.002	0.48	1.17	0.0001	0.99	0.03	1	0.78
Wood vs. others	0.98	0.01	1	0.6	1.01	0.002	0.97	0.27
None	1.01	0.10	0.35	0.0001	1	0.24	1.02	0.25
Roof Type								
Asphalt vs. others	1.05	0.0001	–	–	1.03	0.0001	1.02	0.4
Concrete vs. others	0.89	0.0007	–	–	0.94	0.05	0.82	0.04
Metal vs. others	0.97	0.0001	–	–	0.98	0.001	1.04	0.14
Tile vs. others	0.88	0.0001	–	–	0.89	0.0001	0.97	0.25
Wood vs. others	1	0.84			0.99	0.96	1.06	0.38
Combustible vs. resistant	–	–	1	0.75	–	–	–	–
Eaves								
Enclosed vs. others	0.79	0.0001	0.88	0.0001	0.95	0.0001	0.83	0.0001
None vs. others	1.06	0.0001	0.49	0.0001	1.02	0.004	1.35	0.0001
Unenclosed vs. others	1.04	0.0001	1.15	0.0001	1.5	0.0001	0.99	0.86
Vent Screen								
Screened vs. unscreened	0.94	0.0001	0.76	0.0001	0.97	0.0001	0.95	0.23
Exterior Siding								
Combustible vs. resistant	1.05	0.0001	1.03	0.0002	1.04	0.0001	1.07	0.0001
Window Panes								
Multi vs. others	0.94	0.0001	0.94	0.0001	0.97	0.0001	0.74	0.0001
None vs. others	1.01	0.12	0.25	0.0001	0.98	0.04	1.14	0.01
Unenclosed vs. others	1.06	0.0001	1.05	0.0001	1.02	0.0001	1.12	0.0001

3.2. Building Inspection Characteristics

Home construction materials explained a substantial amount of variation in housing losses statewide and across regions (Figure 1). Overall, eaves consistently explained more than any other structural parameters, and having enclosed eaves versus no eaves or unenclosed eaves had a highly significant protective effect as seen in the relative risk ratios (Table 2). The structural variable with the second highest deviance explained across all regions was windowpanes (Figure 1), although statewide this variable was ranked slightly lower than vent screens, and vent screens were also nearly as important as windowpanes in Southern California (Figure 1). The relative risk of having single pane windows was consistently and significantly higher than having multiple pane windows statewide and across all areas (Table 2). Structures that had no windows were not significantly different in relative risk compared to structures with windows statewide, but they had a lower relative risk than structures with windowpanes in the Bay Area and North-Interior, and this was reversed in Southern CA (Table 2). There was a consistent and significantly lower relative risk for structures with screened versus unscreened vents across the state and regions (Table 2).

Aside from eaves, windowpanes, and vent screens, the importance and relative risk of structural parameters associated with structure survival varied across the state and regions. Statewide and in the Bay Area, fire-resistant exterior siding material and deck or porch material were nearly as important as windowpanes (Figure 1), with consistently lower relative risk ratios for fire-resistant siding material (Table 2). In terms of deck or porch material, the most consistently significant effect was the significantly lower relative risk of having composite decking material versus other materials (Table 2). Although roofing material did not explain substantial variation in any of the regions (Figure 1), for the North-Interior and Southern CA regions, where the material types were broken out, concrete and tile both had lower relative risk ratios, although tile was not significant for Southern CA (Table 2). In the North-Interior, metal roofs also had slightly lower significant relative risk (Table 2).

Although structure age, a proxy for all building construction materials, was only recorded for the North-Interior and Southern CA regions, it did not explain substantial variation in structure survival relative to individual building characteristics (Figure 1). On average, however, older homes were consistently more likely to be destroyed than younger homes (Figure 3).

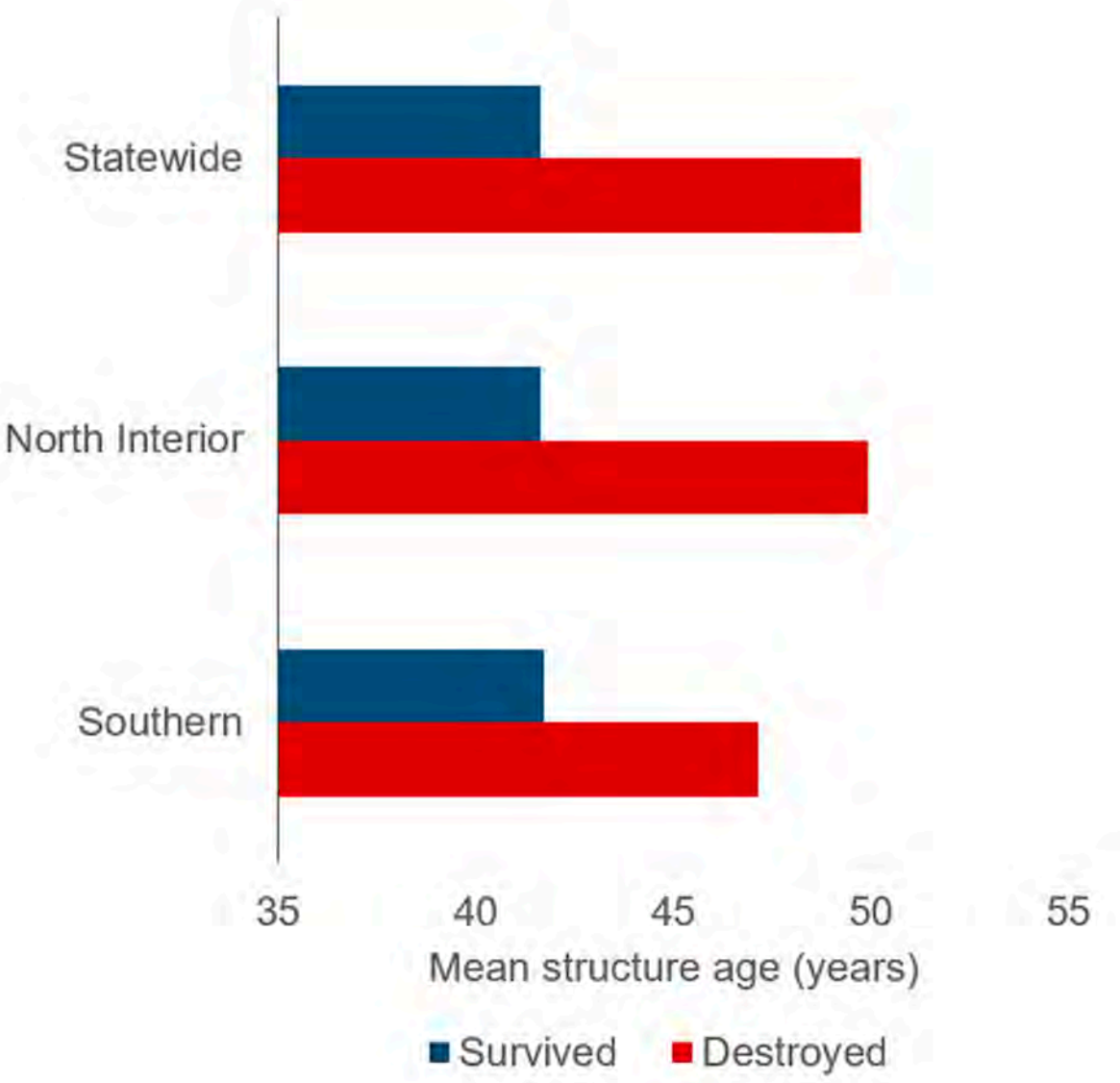

Figure 3. Mean age of structure for survived and destroyed homes in two California regions. The statewide calculations are based on combined totals of both regions (i.e., the Bay Area did not include this variable).

4. Discussion

In terms of mitigation practices for protecting homes against wildfire, perhaps the most widely recognized and regarded action that homeowners can take is to create defensible space around structures [20,33]. In fact, defensible space and "hardening homes" via building construction practices or structure retrofits, collectively referred to as the home ignition zone (HIZ), have often been considered the primary factors that matter in terms of structures surviving wildfire [34,35]. Despite the widespread advocacy of these practices, there has been little empirical study of their effectiveness under actual wildfires, and there is still debate on how much defensible space is critical to home survival despite the regulated distance of 30 m (100 ft).

In this study based on more than 40 k records of structures exposed to wildfires from 2013 to 2018, we found that, overall, defensible space distance explained very little variation in home survival and that structural characteristics were generally more important. Although the relative importance and relative risk ratios of different factors recorded by building inspectors varied slightly from region to region, there were also general similarities, particularly in that structure survival was highest when homes had enclosed or no eaves; multiple-pane windows, and screened vents.

The only region in which defensible space distance explained at least 1% variation in structure survival was the Bay Area, where survived structures had an average of 9.7 m (~32 ft) of defensible space versus 7.4 m (~24 ft) for destroyed structures. Although there were significant differences in relative risk between most pairs of distance classes of defensible space statewide and for the North-Interior, there were some conflicting patterns in the Bay Area and North-Interior, and there was no significant effect of defensible space distance for any comparison in Southern California. The other surprising finding was that, of the structures that did have more than 30 m of defensible space, the vast majority were destroyed in these fires (Figures S1–S8). This of course reflects the large proportion of destroyed structures in the dataset, but it also suggests that structures with greater amounts of defensible space are often still vulnerable.

One potential explanation for the limited importance of defensible space in these data may be that the defensible space distance classes were defined rather broadly, too broad to discern critical details that may have a much bigger impact. Of the few studies quantifying the most effective distance of defensible space for making a significant difference in structure survival probability, Syphard et al. and Miner [19,21] both found the optimum distance to be much shorter than the required 30 m, with the ideal range between 5–22 m. Distances longer than that provided no additional significant protection. Furthermore, these and other studies have shown that more nuanced characteristics of landscaping are most critical for structure protection, including vegetation touching the structure or trees overhanging the roof [36]. The arrangement of vegetation and irrigation are also important factors not accounted for [20]. In fact, despite defensible space traditionally being divided into zones, with the first being from 0–9 m (30 ft) from the structure, newer recommendations are beginning to isolate and focus heavily on the first zone being from 0–1.5 m (5 ft) [37], which may be the most critical zone to account for.

Most structures are lost in wildfires that are burning under severe weather and wind conditions [2], such that burning embers are capable of crossing large, multi-lane freeways and have been reported to blow as far as 1–2 km ahead of a fire front [2,25]. Therefore, one of the primary reasons for the importance of vegetation modification directly adjacent to homes as opposed to longer distances, is that homes are generally not ignited by the fire front but more often by wind-driven embers landing on combustible fuels in or on the house [17,29,38]. Material closest to the house is thus the most likely to cause a proximate spark that can penetrate the structure. To this point, irrigating vegetation and removing dead plant material to reduce ignitability may be as or more important than fuel volume, which is a finding borne out by recent research [24]. While defensible space distances <30 m may be sufficient for increasing structure survival probability, another important reason for requiring 30 m (100 ft) is firefighter safety and providing a zone of protection [39]. Finally, while the inspectors recorded defensible space distances, part of the definition of defensible space in California revolves

around the horizontal and vertical spacing of fuels; thus, if these factors matter as much or more than distance, they could not be accounted for here.

The nature of building loss via ember flow factors such as exterior siding or roof material were much less important than exposed eaves, vents, or windows. This again is likely due to the extreme weather condition characteristics of destructive wildfires. That is, the fire-resistance of materials such as roofs or siding, i.e., preventing them from catching fire, was less important than building characteristics that provided gaps in the structure that could allow penetration of wind-borne burning debris. These results suggest that one of the potentially most effective methods of protecting homes from wildfire destruction would be to perform simple building retrofits, such as placing fine mesh screens over vents and coverings other openings in the structures, such as gaps in roofs, and enclosing structure eaves. Specific recommendations for these types of retrofits are easily found online, e.g., [40], and suggest that improving the fire safety of structures does not necessarily require expensive replacement of construction materials but rather careful attention to structure details.

The previous post-fire study of the role of construction materials in structure survival also found that windows, particularly framing material and panes, were more important than roof or siding material, although the methods and overall suite of variables differed in that study [23]. In the case of windows, they can, like other parts of the structure, provide an easy entry point for firebrands [26]. Additionally, however, they are also vulnerable to radiant heat, and multi-pane windows can withstand much higher levels of thermal exposure than single-pane windows [41]. Although not recorded here, the type of glass used in the window is also important for resistance to cracking [26].

Although individual structural characteristics were highly influential in this study, structure age did not explain a lot by itself, which may mean that, at a broad scale, it does not necessarily serve well as a proxy for the building characteristics most likely to protect homes. On the other hand, Syphard et al. [23] found that structure age did correlate with both building characteristics and structure survival, but that study was only conducted in San Diego County, where building codes had already been updated several times in response to wildfires in the regions. Although the state of California has also recently adopted strict building codes for wildfires [42], those codes only apply to new housing, so the effects may not have been seen yet. Further analysis might be warranted to compare structural characteristics and outcomes as a function of date of code enforcement.

Another consideration is that, despite the importance of structure age in the San Diego study, that study also determined that building location and arrangement were more important in predicting structure loss than structure age, building materials, or defensible space. The effect of structure age was primarily important in higher-density neighborhoods where structure loss was overall less likely. Thus, the role of housing arrangement and location, found to be the most important predictors of structure loss in several California studies [13–15] and nationwide [43] should ultimately be factored into discussions of reducing future fire risk; and this looks to be a challenge given trends of rapid ongoing development in the wildland–urban interface [44].

One of the reasons that housing arrangement and location are such strong predictors of structure loss may be structure accessibility by firefighters, who must divide manpower and resources to reach communities located in dispersed or remote locations [45,46]. The role of defensive actions in determining the extent and location of structure survival has been historically difficult to quantify, mostly because data are sparse, but also because defining suppression effectiveness is an inherently difficult task [47]. In the North-Interior region, defensive action explained more than any other factor in structure survival, although it was less important than building characteristics in Southern California. Even given the high importance of defensive action in the North-Interior, the total number of structures with unknown defensive action was substantial, and the proportion of unknown actions was even larger in Southern California. Thus, while these results suggest that defensive actions may be one of the most important and overlooked factors in structure survival, it remains difficult to make definitive conclusions. Given that building inspectors have just started collecting this information, it is important to recognize this is an on-going process of increasing our knowledge base as more data are collected.

5. Dataset and Limitations

Given the enormous number of structures lost in California in recent years, the dataset compiled for this study may represent the largest existing source of information on homeowner mitigation practices associated with structure loss. Other large databases and studies of house loss have been developed in other countries, however, where wildfires result in substantial losses in structures and human life; much of this work has been conducted in Australia, a country with a long history of destructive wildfires with substantial structure losses [48], and human fatalities [49]. This ongoing data collection process, especially if more exposed but unburned homes are included, will be important for continued understanding of structure loss and identifying the most effective strategies for prevention.

Despite the unprecedented opportunity the DINS data have provided for this broad-scale analysis of structure loss, there are nevertheless uncertainties and limitations within the data, and Cal Fire is working to improve the collection process on an ongoing basis [30].

The primary limitation is, as we discussed previously, that defensible space was presented uni-dimensionally as a function of distance categories and thus excluded other relevant factors such as vegetation spacing, height, type, age, moisture content, or composition. Nevertheless, given the broad scale of the data and similar conclusions for all study areas, these additional vegetation characteristics do not appear to be biased in one direction or the other; thus, our conclusions about distance classes are likely robust.

Another limitation of the dataset is the potential uncertainty inherent in recording building characteristics after a wildfire for homes that have been badly burned with materials largely consumed in the fire. This likely explains the missing data seen throughout the records. Cal Fire is aware of this and is beginning to combine their reports with pre-fire information from county assessors' offices [30]; however, the extent to which pre-fire data may have been incorporated in the reports used for this study is unclear.

Finally, as mentioned previously, this study only focused on the relative importance of the local-scale factors reported by the building inspectors, and full understanding of structure loss will need to include additional factors. Ongoing research will account for a fuller range of landscape-scale factors as well as information on fire behavior and spatial patterns.

6. Conclusions

We have explored the factors correlated with structure loss and survival during a recent five-year period in California. In most regions home structural characteristics are far more important in determining home survival than defensible space. Statewide, the most critical factor was eave construction. Windowpanes were also widely important in the state. Exterior siding was an important structural characteristic in the Bay Area, but vent screens were much more important in southern California. The likely explanation for why structure characteristics play a greater role than defensible space is that most homes burn by embers, which often come from long distances; and the impact of the ember cast is not likely affected by distance of defensible space. Whether or not the embers ignite is largely a function of structure.

Given that the primary role of building inspectors is to assess building damage, most structures in the data were destroyed. As such, one of the striking outcomes of this study is the finding that many of these destroyed structures could be characterized as "fire-safe," such as having >30 m defensible space or fire-resistant building materials. While the number of structures lost in these fire events was unprecedented in California history, structure loss during severe fire-weather and wind conditions similar to some of the fires represented here has occurred for decades in the state [2]. Therefore, it may be safe to assume that these data are broadly representative.

Supplementary Materials: The following are available online at http://www.mdpi.com/2571-6255/2/3/49/s1, Figure S1: Proportion of defensible space distance classes for survived and destroyed structures (a) and proportion of survived and destroyed structures within defensible space distance classes (b) for three California regions, Figure S2: Figure S2: Proportion of defensible action type for survived and destroyed structures (a) and proportion

of survived and destroyed structures within defensive action types (b) for two California regions, Figure S3: Proportion of deck material type for survived and destroyed structures (a) and proportion of survived and destroyed structures within deck material type classes (b) for three California regions, Figure S4: Proportion of roof material type for survived and destroyed structures (a) and proportion of survived and destroyed structures within roof material type classes (b) for two California regions, Figure S5: Proportion of eave type for survived and destroyed structures (a) and proportion of survived and destroyed structures within eave type classes (b) for three California regions, Figure S6: Proportion of Exterior siding classes for survived and destroyed structures (a) and proportion of survived and destroyed structures within exterior siding classes (b) for three California regions, Figure S7: Proportion of vent screen classes for survived and destroyed structures (a) and proportion of survived and destroyed structures within vent screen classes (b) for three California regions, Figure S8: Proportion of windowpane type for survived and destroyed structures (a) and proportion of survived and destroyed structures within windowpane type (b) for three California regions. Table S1: Number or average value of destroyed and survived structures within building inspection classes for three California regions.

Author Contributions: Conceptualization, A.D.S. and J.E.K.; methodology, A.D.S. and J.E.K.; formal analysis, A.D.S.; data curation, A.D.S.; writing—original draft preparation, A.D.S.; writing—review and editing, J.E.K.

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EXHIBIT E

COMMUNITY DEVELOPMENT DEPARTMENT

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AGENDA
TUOLUMNE COUNTY PLANNING COMMISSION
BOARD OF SUPERVISORS CHAMBERS, 4TH FLOOR
2 SOUTH GREEN STREET
December 1, 2020
5:00 PM

PUBLIC PARTICIPATION PROCEDURES

- In order to protect public health and the safety of Tuolumne County citizens, the Tuolumne County Planning Commission Meeting will be physically closed to the public. Public Comment will be opened and closed individually for each agenda item listed below, excluding Reports. To observe or participate in the meeting, follow the instructions below. For detailed Zoom instructions go to the Agenda Packet https://www.tuolumnecounty.ca.gov/AgendaCenter/Tuolumne-County-Planning-Commission-8. if you need swift special assistance during the Planning Commission meeting, please call **209-770-5423**.

1) Use the link to join the webinar: https://us02web.zoom.us/j/89051366681 (Webinar ID: 890 5136 6681)

   Or iPhone one-tap :
   US: +16699006833,,89051366681# or +13462487799,,89051366681#

   Or Telephone:
   Dial(for higher quality, dial a number based on your current location):

   US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 312 626 6799 or +1 929 205 6099 or +1 301 715 8592

2) During the public comment period you will have the option to "*raise your hand*" if you would like to comment on a project or during the public comment portion of the meeting.

If participating by computer:
- After clicking the "*raise your hand*" option, please wait until a staff member unmutes your microphone.
- Once staff has unmuted your microphone you will be asked to provide comments.
- A staff member will notify to you when you have 30 seconds remaining and again when your time is up.
- Once your allotted time is up, a staff member will mute your microphone and "*lower your hand*".

If participating by smartphone:
- If you are participating from your smartphone, you will also have a "*raise your hand*" feature.
- When you are unmuted a prompt will appear to confirm you would like to be unmuted.
- Once you confirm you will able to provide public comment. Staff will assist as described above.

If participating by telephone:
- If you are participating via telephone call, you will need to press *9 (star 9) to "*raise your hand*", and when you are unmuted you will hear "*you are unmuted*" allowing you to provide public comment. Staff will assist as described above.

You also may submit written comments by U.S. mail at 2 South Green Street, Sonora, CA 95370 or email (QYaley@co.tuolumne.ca.us) for retention as part of the administrative record. Comments will not be read during the meeting. Comments must be received by the Community Development Department Director no later than 9:00 AM on the morning of the noticed meeting.

PLANNING COMMISSION BUSINESS: 5:00 p.m.

1. Meeting Procedures
2. Reports
    a. Commissioners and Staff
    b. Board of Supervisors Planning Committee Representative
    c. Agricultural Advisory Committee Representative

PUBLIC COMMENT: 15 minutes

The public may speak on any item not on the printed agenda. No action may be taken by the Commission.

PUBLIC HEARING: 5:00 p.m.

NEW ITEMS:

TERRA VI LODGE,

1. Site Development Permit SDP18-003 to allow a lodging development that includes guest rooms, detached cabins, employee housing, a market, event space, and other support buildings. The project site is 64.04± acres and is zoned C-K (Commercial Recreation) and O (Open Space) by the Tuolumne County Ordinance Code.

2. Resolution to Certify the Final Environmental Impact Report for Site Development Permit SDP18-003, Adopt the CEQA Findings of Fact and Statement of Overriding Considerations, and Adopt the Mitigation Monitoring and Reporting Plan.

The project site is located at 11262 Sawmill Mountain Road, approximately 20 miles east of the community of Groveland. The site is within a portion of Section 26, Township 1 South, Range 18 East, Mount Diablo Baseline and Meridian, and is located within Supervisorial District 4. Assessor's Parcel Numbers 068-120-060 and 068-120-061.

The Minutes, Staff Reports, and environmental documents for the items referenced in this Agenda, or other materials provided by the County to the Planning Commission prior to the meeting are available for review online at www.tuolumnecounty.ca.gov.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Community Development Department at (209) 533-5633. Notification 48 hours prior to the meeting will enable the County to make reasonable arrangements to ensure accessibility to this meeting (28CFR Part 35 ADA Title II).

IMPORTANT PUBLIC NOTICE: Under the Governor's Executive Order N-25-20, this meeting will allow members of the Planning Commissioners to participate by teleconference; and under Order N-29-20, Accessibility Requirements.

COMMUNITY DEVELOPMENT DEPARTMENT

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November 5, 2020

TO: Tuolumne County Committee and Commission Members

FROM: Quincy Yaley, AICP Community Development Department Director

RE: COVID-19 Meeting Procedures

In response to increasing risks of exposure to the coronavirus (COVID-19), all the Committee and Commission meetings will be conducted and participated via Zoom. Video conferencing via Zoom will allow the Commission/Committees and County to adhere to social distancing requirements of the Brown Act and provide a way for the public to provide public comment live during the meeting.

Due to the modified meeting format and tele-conferencing meeting procedures, the Chair may choose to allow public comment on the project in an alternative fashion, rather than calling for those in favor, those in opposition, those neutral, and then any rebuttals or surrebuttals. The Chair may take public comment on the project in any order in lieu of the calling for those in favor, opposition, neutral, rebuttals, and then surrebuttals.

The Committee and Commission may elect to allow the applicant or applicant representative a specific time to speak on the project prior to taking public comments on the item. This opportunity could have a specific time length allotted, such as five or ten minutes.

As a reminder, those who wish to provide information during the public comment are not required to provide their name. County staff will notify the Chair of any individuals who wish to provide testimony and will limit the testimony to the time limit identified by the Chair.

If an item on the agenda is not identified as a “public hearing”, public comment is still required and can be conducted in a similar format to the modified procedures above.

All votes require a roll call with each Committee and Commission member to be named by County Staff prior to stating their vote. The Chair shall also identify by name the commissioner who initiated the motion and the name of the commissioner who seconds the motion. After a second is named, the Chair must allow County staff to complete a roll call vote.

It is possible that a delay may occur from the time the Chair calls for public comment on a project and when County staff can connect them into the zoom meeting. It is recommended that the Chair pause for 60-90 seconds after calling for public comment to allow for any connections to occur. If there are no individuals in the queue for commenting on a specific item, after 90 seconds has elapsed County staff will notify the Chair that there is no further public comment.

Staff may need to respond to emails or phone calls from members of the public during the meeting to provide assistance to the public if they encounter problems using the Zoom platform. Staff requests that the Chair allow additional time as needed to ensure that members of the public can engage in the meeting.

Zoom Instructions

Zoom links can be found in the agenda for each meeting. The public can view the meeting from their smartphone, on their computer browser, or listen on their telephone. Zoom does not require an account to attend the meeting, but if the public wishes to create one, their basic accounts are free.

It is possible that a delay may occur from the time the Chair calls for public comment on a project and when County staff can connect them into the Zoom meeting. The Chair will pause for 60 seconds after calling for public comment to allow for any connections to occur. If there are no individuals in the queue for commenting on a specific item, after 60 seconds has elapsed county staff will notify the Chair that there is no public comment.

Members of the public can also choose to watch the meeting and do not have to comment during the meeting. If a member of the public does not want to provide public comment live, they can provide public comment prior to the meeting via email to the Community Development Department Director at gvaley@co.tuolumne.ca.us. If you would like your comments to be included in the record, please send comments to the above email address by 9:00 a.m. of the day of the noticed meeting.

If anyone is having technical difficulties with Zoom, they can visit Zoom's support page for helpful tips: https://support.zoom.us/hc/en-us/categories/201146643.

Below are step by step instructions on how to join and interact as an attendee via Zoom.

JOINING A WEBINAR BY LINK

- To join the webinar, clink the link that we provided in the agenda.
- If you are signed in, change your name if you do not want your default name to appear.
- If you are not signed in, enter a display name.

MANUALLY JOINING A WEBINAR

- Use the 9-digit meeting ID/webinar ID provided in the agenda.
- Sign in to the Zoom Desktop or Mobile App
- Click or tap **Join a Meeting**
- Enter the 9-digit webinar ID, and click **Join** or tap **Join Meeting**
- If prompted, enter your name and email, then click **Join Webinar** or tap **Join**.
- You may change your name if you do not want your default name to appear, as you are not required to state your name.

WAITING FOR HOST TO START THE WEBINAR

- If the host has not started broadcasting the webinar, you'll receive a message letting you know to "Please wait for the host to start the meeting".

PUBLIC COMMENT

- During the public comment period you will have the option to "raise your hand" if you would like to comment on a proposed project or during the public comment portion of the meeting.
- Once you have clicked the "raise your hand" option, please wait until a staff unmutes your microphone.
- Once staff has unmuted you will have three minutes to speak.
- A staff member will verbally communicate to you and the Commissioners when you have 30 seconds remaining and then when your time is up.

- Once your allotted time is up, a staff member will mute and “lower your hand”.
- If you are participating from your smartphone, you will also have a “raise their hand” feature.
- When you are unmuted a prompt will appear to confirm you would like to be unmuted.
- Once you confirm you will able to provide public comment.
- If you are participating via telephone call, you will need to press *9 (star 9) to “raise their hand”, and when you are unmuted you will hear “you are unmuted” allowing you to provide public comment.

END OF MEETING

- If you would like to leave the meeting before it ends, click **Leave meeting**. If you leave, you can rejoin if the webinar is still in progress, as long as the host has not locked the webinar.

COMMUNITY DEVELOPMENT DEPARTMENT

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November 23, 2020

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TO: Tuolumne County Planning Commission

FROM: Quincy Yaley, AICP, Community Development Department Director

RE: Certification of the Environmental Impact Report and Public Hearing for Site Development Permit SDP18-003

PROJECT DESCRIPTION:

1. Site Development Permit SDP18-003 to allow a lodging development that includes guest rooms, detached cabins, employee housing, a market, event space, and other support buildings. The project site is 64.04± acres and is zoned C-K (Commercial Recreation) and O (Open Space) by the Tuolumne County Ordinance Code.

2. Resolution to Certify the Final Environmental Impact Report for Site Development Permit SDP18-003, Adopt the CEQA Findings and Statement of Overriding Considerations, and Adopt the Mitigation Monitoring and Reporting Plan.

LOCATION: The project site is located at 11262 Sawmill Mountain Road, approximately 20 miles east of the community of Groveland. The site is within a portion of Section 26, Township 1 South, Range 18 East, Mount Diablo Baseline and Meridian, and is located within Supervisorial District 4. Assessor's Parcel Numbers 068-120-060 and 068-120-061.

This memorandum covers the following information:

1. History of the Project
2. Project Description
3. Tuolumne County General Plan
4. Tuolumne County Ordinance Code
5. Public Outreach and Engagement
6. Environmental Analysis
7. Issues to Consider Outside of CEQA
8. SDP and CUP Findings of Approval
9. Planning Commission Action

Due to the length of the environmental documents, they are not included in this Agenda Report. The full project description, DEIR,and Final EIR and other documentation can be found here: https://www.tuolumnecounty.ca.gov/1158/Terra-Vi-Lodge-Yosemite

SECTION 1: HISTORY OF THE PROJECT

An application for Site Development Permit SDP18-003 was submitted on November 21, 2018. Initial project notification letters were mailed on December 10, 2018 and October 7, 2019 to advisory agency groups and property owners within 1,000 feet, as required by Chapter 17.68 of the TCOC. Due to comments received from stakeholders, the County and project applicant decided to move forward with preparation of an Environmental Impact Report (EIR).

A Notice of Preparation (NOP) was circulated on May 2, 2019, which started the 30-day comment period for scoping information for the EIR. A public scoping meeting was held on May 13, 2019. A subsequent NOP was issued on November 15, 2019 due to a clerical error and another 30 day scoping period for the document was held. A Draft EIR was prepared following the end of the scoping period which included concerns raised at the scoping meeting. A DEIR was submitted to the State Clearinghouse on June 15, 2020. The public comment period was 45 days in length and closed on July 30, 2020. All comments received on the DEIR are included in the Final EIR.

SECTION 2: PROJECT DESCRIPTION

Site Development Permit SDP18-003 propose to develop a hotel lodge comprised of various single, two-, and three-story elements. The building design accommodates a setback, maximizing the distance between taller structures and adjacent residential properties to minimize visibility from both public and private views. Elements of the project include a public market, general lodge with 100 guestrooms and multi-purpose uses, indoor and outdoor areas, and 26 cabin guestrooms in seven buildings, as well as 5 employee apartments with four rooms in each unit, for a total of 20 employee rooms. The proposed project would develop 18 percent (11.5 acres) of the project site with buildings, roads, and parking. An additional 1.4 acres would be used for the primary septic system. Additional project plans are provided in Appendix B of Draft EIR.

The project would incorporate design elements into the building program which would include green building materials such as energy-efficient windows, skylights, doors, insulation, roofing, lighting, plumbing, and heating and cooling equipment. The proposed development would create a comprehensive energy-efficient building infrastructure and envelope. Solar panels are proposed to be constructed on the roof of the buildings.

The project site consists of two parcels, assigned Assessor Parcel Numbers (APN) 068-120-060 (28.08 acres in area) and 068-120-061 (35.96 acres in area). The western parcel, APN 068-120-060, is located on the northern side of Highway 120. Most of it is east of Sawmill Mountain Road (also designated as Forest Road 1S03) but a portion of it lies on the west side of Sawmill Mountain Road. Sawmill Mountain Road is located within a 66-foot roadway easement on the project site. A materials storage and roadway easement is also located on the project site to allow the California Department of Transportation (Caltrans) to access a storage building directly to the west of the project site. The eastern parcel, APN 068-120-061, is on the northern side of Highway 120 entirely east of Sawmill Mountain Road.

Water will be provided via on-site wells, which will be developed as a public water system through the State Water Resources Control Board. Wastewater treatment will be provided via on-site sewage treatment and disposal systems. Additional project information can be found in Chapter 3 of the DEIR.

The objectives of the project are:

1. Provide a financially viable, environmentally sensitive lodging option to address the increased demands for eco-sensitive resorts and Yosemite recreation tourism.
2. Develop and operate a lodging facility at a scale sufficient to support a variety of accommodations, amenities and on-site recreation capabilities on an undeveloped property which is zoned for a commercial recreation use and is within 10 miles of the Yosemite National Park, Big Oak Flat entrance.

3. Create a one-of-a-kind place where individuals, families and groups can experience one of nature's most beautiful settings. Incorporate indoor – outdoor relationships throughout the resort; design public spaces which include lobbies, dining, event and special amenity areas to have open connections to nature both visually and physically.
4. Provide diverse recreational and wellness experiences to promote year-round use through education, outdoor recreation activities, wellness and well-being programs. The lodging facility will serve as a portal to the Stanislaus National Forest and U.S. Forest Service lands for hiking, trail running, biking and other outdoor activities.
5. Provide a helicopter landing zone for emergency personnel to provide immediate medical treatment and transportation to regional hospitals for both the project users and the surrounding community.
6. Reduce visual impacts at the project entrance by using low-rise structures that gradually increase in height as the building elements are pushed in an away from the neighboring properties. This design creates a maximum set-back for buildings, incorporates desirable height transitions, and enlarges the open space between the building structures and neighboring properties.
7. Reduce noise to nearby residential properties by locating the activity recreation areas on the opposite side of the property and using the building orientation in a manner that provides substantial sound mitigation.
8. Minimize light spillage by following Dark- Sky influenced design programs and following the California Title 24 Building Energy Efficiency Standards. An example of this is achieved by using downward positioned, fully shielded, high efficiency 3000K (Kelvin) LED (low-emitting diode) fixtures.
9. Design and construct Type I fire resistive structures, fire prevention systems and defensible space areas by providing increased building separation, low building heights, high performance fire extinguishing and alarm systems, surplus water storage, hold-in-place refuge and complete perimeter accessibility to ensure fire-fighting and life-safety capabilities in the event of a wildland fire.
10. Provide a robust parking design that is convenient but planned in such a way so not to dominate the site. Accomplish this by avoiding large expanses of asphalt and incorporating gently curving roads that follow the natural topography of the site. Use berms and landscape elements to screen and visually break up on-site roadways and parking areas.
11. Incorporate a Yosemite Area Regional Transportation System (YARTS) stop area to foster and promote the use of public transportation for lodge guests, visitors and employees.
12. Provide up to 30 day-use parking stalls for the public benefit to encourage the use of the public transportation or ride sharing to ease Yosemite National Park traffic.
13. Develop a site which has a safe, reliable and sustainable source of water.
14. Develop a site for which the geology (native physical structure and substance) is ideal for a septic system, whereby the optimal operating performance and service-life can be maintained.

SECTION 3: GENERAL PLAN CONSISTENCY

The project site has a General Plan land use designation of Parks and Recreation (R/P). The Parks and Recreation General Plan land use designation was created to provide for recreational uses of a commercial nature to serve the tourist industry as well as providing leisure activities for the County's residents. This designation is found primarily along the County's highway corridors and is also interspersed in the Stanislaus National Forest and Yosemite National Park. Typical land uses allowed under the Parks and Recreation designation include parks, camping facilities, recreation vehicle parks, ski and other resort facilities, marinas, and commercial uses in support of such facilities. Table 1.3 in the Technical Background Report for the 2018 Tuolumne County General Plan indicates that the C-K zoning district is compatible with the R/P land use designation and that the O zoning district is compatible with all General Plan designations.

The following Goals, Policies, and Implementation Programs of the 2018 General Plan also pertain to the project. A response to each demonstrates the projects' consistency with the General Plan.

Policy 1.A.3: *Address the impacts associated with new development on cultural resources and conserve such resources where appropriate.*

A cultural resource study was conducted on the site. The results of the records search and on-site survey did identify potentially significant resources, and therefore mitigation was required. Conditions of approval are included to protect resources that may potentially be unearthed during the construction project.

Implementation Program 1.D.c: *Encourage building site designs that cater to transit riders, pedestrians and cyclists, as well as those arriving by car. Examples of transit, pedestrian and bicycle friendly building site design features include, but are not limited to, segregated entrances, pavement markings and warning and directional signage.*

Policy 1.D.5: *Promote the provision of multi-modal access to activity centers such as public facilities, commercial centers and corridors, employment centers, transit stops, schools, parks, recreation areas, and tourist attractions.*

The project will include development of a YARTS (Yosemite Area Regional Transportation System) bus stop at the project entrance from Sawmill Mountain Road. The applicant will work with YARTS to schedule bus stops at the project location. This would support Implementation Program 1.D.c and Policy 1.D.5 of the 2018 General Plan.

Goal 1.F: *Promote the development of commercial uses to meet the present and future needs of Tuolumne County's residents and visitors and maintain economic vitality.*

Policy 1.F.2: *Promote new commercial development in rural communities that provides for the immediate needs of the local residents and services to tourists. The scale and character of such commercial development should be compatible with and complement the surrounding area.*

The development of a facility along Highway 120 would support the commercial and tourism industry in this area of the County, consistent with Goal 1.F and Policy 1.F.2 of the 2018 General Plan.

Implementation Programs 1.F.b: *Provide for commercial facilities in rural areas that have limited public services by maintaining a land use designation for such facilities that has unique development standards.*

The project site is zoned C-K and O. The C-K zoning district encourage well-planned and integrated resort and vacation-oriented commercial complexes in which the developer may incorporate innovative design techniques. The C-K district allows for commercial development without the requirement for public water and sewer. This allows for the development of commercial facilities in rural areas, in support of Implementation Program 1.F.b of the General Plan.

Goal 6.D: *Promote the development of commercial, industrial, agricultural, and recreational facilities and tourism uses to provide jobs for County residents and diversify the local economy.*

Implementation Program 6.D.a: *Encourage and support private sector initiatives to develop recreational and tourist-oriented facilities*.

Policy 6.D.2: *Promote a diverse, countywide tourist industry that relates to the agricultural, historical, cultural, recreational, and natural attractions of the County.*

Policy 6.D.3: *Encourage the expansion of the tourist industry by supporting new development that serves that industry.*

Goal 6.E: *Encourage the retention and expansion of existing businesses, attraction of new business and industry and assist in entrepreneurial programs to generate local employment opportunities, reduce retail leakage out of the county trade area and diversify the local economy, while maintaining its environmental*

and cultural integrity.

Approval of the project would allow for the development of a facility to provide lodging for tourists and visitors in the area. Many tourists utilize State Route 120 to visit Yosemite National Park and other attractions in the County. This type of development supports Goal 6.D, Implementation 6.D.a, Policy 6.D.2, Policy 6.D.3, and Goal 6.E of the 2018 General Plan.

Policy 9.A.1: *Actively involve fire protection agencies within Tuolumne County in land use planning decisions.*

Fire protection agencies within Tuolumne County, including the Tuolumne County Fire Prevention Division, Tuolumne County Fire, Groveland Community Services District, and CalFire have been consulted and involved in discussions with the project applicant and the County throughout the application process.

Policy 9.E.3: *Require new development to be consistent with State and County regulations and policies regarding fire protection.*

The development and operation of the facility will be consistent with all applicable State and County regulations and policies regarding fire protection. The project will be reviewed by the Tuolumne County Fire Prevention Division during development stages to verify consistency with State and County fire regulations.

Implementation Program 16.B.b: *Encourage the preservation of open areas for recreational activities, including provision of an appropriate balance of facilities suitable for intensive use (e.g. playgrounds, sports fields) and low intensity use (e.g., hiking, camping) that meet the needs of residents and visitors. Preservation of open areas that provide cultural, historical and educational opportunities for residents and visitors should also be encouraged.*

The project site contains two parcels, Assessor Parcel Numbers 068-120-060 (28.08 acres in area) and 068-120-061 (35.96 acres in area), totaling 64.04± acres. The proposed project would develop 18 percent (11.5 acres) of the project site with buildings, roads, and parking. An additional 1.4 acres would be used for the primary septic system, leaving the remaining acreage as open areas.

Implementation Program 16.B.i *- Require development that is subject to a discretionary entitlement from the County and to environmental review under the California Environmental Quality Act (CEQA) to evaluate potential impacts to biological resources and mitigate significant impacts for the following or as otherwise required by State or Federal law:*

- *species listed or proposed for listing as threatened, rare, or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA);*
- *species considered as candidates for listing under the ESA or CESA;*
- *wildlife species designated by CDFW as Species of Special Concern;*
- *animals fully protected under the California Fish and Game Code; and*
- *plants considered by CDFW to be "rare, threatened, or endangered in California" (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California and not known to occur elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California, but more common elsewhere and 2B, considered rare or endangered in California but more common elsewhere).*
- *Sensitive natural communities, including wetlands under Federal or State jurisdiction, other aquatic resources, riparian habitats, and valley oak (Quercus lobata) woodland.*

- *Important wildlife movement corridors and breeding sites.*
- *Oak woodlands, as provided in Implementation Program 16.B.j.*

The project was evaluated for impacts to biological resources. Mitigation measures have been incorporated to reduce impacts to biological resources to a less than significant impact. See "Biological Resources" in Section 4.3 of the DEIR for specific mitigation measures which have been incorporated for protection of wildlife, sensitive habitats, and special status species, consistent with Implementation Program 16.B.i of the 2018 General Plan.

Policy 17.E.2: *Require the maintenance of defensible space setbacks in areas proposed for development if wildland fire hazards exist on adjacent properties.*

The applicant will be required to receive approval of a Timber Harvest Plan with the CalFire to remove dead, dying, and unhealthy vegetation on site to improve the overall forest health of the project site and allow for the proposed improvements to be constructed. The removal of dead, dying and unhealthy vegetation will aid in creating defensible space conditions on the project site.

Policy 17.E.3: *Require new development to have adequate fire protection and to include, where necessary, design and maintenance features that contribute to the protection of the County from the losses associated with wildland fire.*

The project has been designed to minimize impacts to wildfire hazards. Project design features will be incorporate during construction, such as use of spark arrestors on equipment, preparation of firebreaks, and keeping areas cleared of dried vegetation or other fuels, as well as the preparation of a Fire Protection and Evacuation plan which will be reviewed and approved by the Tuolumne County Fire Prevention Bureau. See "Wildfire" in Section 4.17 and the "Hazards and Hazardous Materials" in Section 4.9 of the DEIR for the specific measures and conditions which have been incorporated to reduce wildfire risk on site.

SECTION 4: TUOLUMNE COUNTY ORDINANCE CODE

The project site is zoned C-K and O under Title 17 of the Tuolumne County Ordinance Code. The purpose of the C-K district is to encourage well-planned and integrated resort and vacation-oriented commercial complexes in which the developer may incorporate innovative design techniques. The purpose of the O district is to preserve and protect areas of valuable wildlife habitat consistent with the wildlife policies of the general plan or areas with significant cultural resources. Approximately 21 acres of the eastern parcel (APN 068-120- 061) are within the O Zoning District.

Hotels and motels are a permitted use within the C-K zoning district. However, Section 17.68.100 of the TCOC requires a Site Development Permit to be secured prior to construction or expansion of building projects in the C-K district to ensure that certain types of proposed developments will serve to achieve a design which is desirable. The project review associated with a Site Development Permit includes verifying conformance to the latest accepted planning and engineering standards covering the following areas: site layout, structure design, landscaping, water and sewer service and other utilities, surface drainage and erosion control, fire protection, access, traffic circulation and parking. The Site Development Permit is different from the Use Permit in that the review is limited to the physical development of the site. The applicant has applied for Site Development Permit SDP18-003. The EIR prepared for the project have analyzed site layout, structure design, landscaping, water and sewer service and other utilities, surface drainage and erosion control, fire protection, access, traffic circulation and parking.

The project has been conditioned to ensure compliance with applicable sections of the TCOC including Title 11 and Title 15 for road standards, Title 13 for construction and maintenance of on-site wells and sewage disposal systems, and Title 17 for zoning and development standards.

The existing O zoning on site was established under a previous action as mitigation to protect general wildlife habitat.

SECTION 5: PUBLIC OUTREACH AND ENGAGEMENT

Comments were received on the project throughout the process. An initial project notification letter was mailed on July 19, 2018 to property owners within 1000 feet and stakeholder groups. The purpose of this informal review process is to give agencies, adjoining property owners, and interested parties a chance to give their opinion of the project and help identify potential areas of controversy surrounding the project at the start of the application process. Comments received from agencies help determine what studies may be required or what conditions of approval are applicable to the project.

Comments during the public scoping meeting were included directed the analysis in the DEIR. Comments were received from public agencies, private organizations, and individuals and businesses. Concerns raised during the scoping period are summarized in Section 1.5 of the DEIR. At the conclusion of the circulation of the DEIR, a formal Response to Comments was been prepared and included in the Final EIR. A summary of the most common concerns raised regarding the project are included in Section 6 below in this report. If comments are received after the close of the DEIR public review period, they are not included in the FEIR, but are posted on the project website and forwarded to Planning Commissioners.

SECTION 6: ENVIRONMENTAL ANALYSIS

Environmental Documentation

The California Environmental Quality Act (CEQA) requires all local and State governmental agencies to consider the environmental consequences of projects over which they have discretionary authority. Public Resources Code Section 21065 defines a project as “an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.” Therefore, Tuolumne County, as the lead agency, is required to analyze the environmental impacts of Site Development Permit SDP18-003.

Tuolumne County has determined that the size, scale, and potentially significant impacts resulting from the project require the preparation of an Environmental Impact Report (EIR). Consistent with CEQA, the EIR is an informational document which will inform public agency decision-makers and the public about the potential environmental effects of the project, and about mitigation measures and/or alternatives to the project to minimize the project’s significant adverse impacts (CEQA Guidelines Section 15121(a)).

Draft Environmental Impact Report

On May 2, 2019, the County sent a Notice of Preparation (NOP) to responsible, trustee, and Federal agencies, as well as to organizations and individuals interested in the project. The County held a scoping meeting on May 13, 2019 at the Groveland Community Hall. A subsequent NOP was issued on November 15, 2019 due to a clerical error and another 30 day scoping period for the document was held. The NOP requested that agencies and individuals identify the relevant environmental issues that should be addressed in the EIR. The NOP and comments received on the NOP have been included as Appendix B of the EIR. A DEIR was submitted to the State Clearinghouse on June 15, 2020. The public comment period was 45 days in length and closed on July 30, 2020. All comments received on the DEIR are included in the Final EIR.

Section 15129 of the State CEQA Guidelines states that a lead agency need not provide a detailed discussion of environmental effects that would not be significant, and may instead provide a brief statement of dismissal for applicable environmental issues. The following areas were found to not have potentially significant impacts or less than significant impacts:

- Forestry Resources
- Air Quality
- Energy
- Forestry Resources
- Geology, Soils, and Seismicity
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Recreation

The following resource areas were analyzed in the DEIR and found to have potentially significant impacts, but the impacts would be reduced to a level of less than significant with the implementation of mitigation measures:

- Aesthetics
- Biological Resources
- Cultural and Tribal Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Public Services
- Transportation
- Utilities and Service Systems
- Wildfire

The following resource areas were analyzed in the DEIR and found to have significant and unavoidable impacts:

- Greenhouse Gas Emission
- Noise

The DEIR found that there would be no significant and unavoidable impacts as a result of this project. Project impacts and mitigation measures are discussed and presented in Chapter 3 of the EIR. A summary of the impacts of the project and proposed mitigation measures can be found in Table ES-1 of the DEIR and throughout the IS/MND.

Alternatives

As required by Section 15126.6(a) of the State CEQA Guidelines, the DEIR examined a range of reasonable alternatives to project. Alternatives were selected for evaluation that could feasibly accomplish the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects of the project. The alternatives evaluated in the DEIR were a “Reduced Project Alternative”, “Alternative Location Alternative”, and the “No Project/No Development Alternative”.

CEQA requires the identification of an “environmentally superior” alternative among the options studied. The No Project Alternative would be the most environmentally superior alternative with the fewest environmental impacts. However, it would not meet any of the objectives of the project. CEQA requires that a second alternative be identified when the No Project alternative is the environmentally superior alternative. Therefore, the Reduced Project would be the environmentally superior alternative. A detailed analysis of the alternatives is found in Chapter 4 of the DEIR and in the Statement of Findings of Fact.

Public Comment and Responses

A Notice of Availability of the DEIR was published on June 5, 2020. The DEIR was available for public review from June 16, 2020 to July 30, 2020. At the conclusion of the comment period, common themes were found throughout the comments received on the DEIR. Rather than repeat information, the Response to Comments includes seven “Master Responses” on the following topics:

- Wastewater Treatment
- Emergency Helipad
- Emergency Evacuation
- Wildfire
- Public Services
- Alternative Location Alternative
- Duration of the DEIR Public Comment Period

Other areas of concerns were raised during the public review period and the specific responses, in addition to the master responses listed above, are found in the Final EIR.

Certification of the Final Environmental Impact Report

Before approving Site Development Permit SDP18-003, the Planning Commission must certify that the EIR complies with CEQA, reflects the County’s independent judgment and analysis, and was presented to the Planning Commission, which reviewed and considered the information in the EIR before approving the project. Section 15151 of the CEQA Guidelines states in part "an EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible”.

It is the Community Development Department’s recommendation that the EIR meets the intent of Section 15151. The document thoroughly discusses all potentially significant environmental issues, contains all sections required by law, and adheres to all review periods and time requirements. All issues raised during the review of the DEIR are thoroughly discussed in the Final EIR.

Findings of Fact

In approving a project, for each significant impact of the project identified in the EIR, the County must find, based on substantial evidence, that either: (a) the project has been changed to avoid or substantially reduce the magnitude of the impact; (b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or (c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. (CEQA Guidelines Section 15091.) If the County approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the County’s decision and explains why the project’s benefits outweigh the significant environmental effects.

Findings of Fact and Statement of Overriding Considerations

In approving a project, for each significant impact of the project identified in the EIR, the County must find, based on substantial evidence, that either: (a) the project has been changed to avoid or substantially reduce the magnitude of the impact; (b) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or (c) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. (CEQA Guidelines Section 15091.) If the County approves a project with unavoidable significant environmental effects, it must prepare a written Statement of

Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the County's decision and explains why the project's benefits outweigh the significant environmental effects. The draft Findings of Fact and Statement of Overriding Considerations for the General Plan Update project is attached to this report. The draft Mitigation and Monitoring Reporting Program, which will ensure the mitigation measures are implemented, is also attached to this report.

SECTION 7: ISSUES TO CONSIDER OUTSIDE OF CEQA

Illegal Zoning and Land Division

During the project review by County staff, a resident of the Sawmill Mountain area raised concerns about the legality of the C-K zoning on the site and the previous completed land divisions that created the subject parcels. Community Development Department staff researched this issue, including consulting with the County Surveyor, and no illegal land divisions were found to have occurred, nor were violations committed relating to the August 20, 1991 decision to approve the current zoning on the project site. This designation went into effect on August 20, 2001, because the site was being rezoned from Timberland Production, which takes 10 years to remove from a property.

Property Values and Appropriateness of Land Use

Evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment' are beyond the scope of CEQA. However, economic and social impacts can be considered by the Planning Commission within the scope of the stated findings that are necessary to be made if the project were to be approved. Information regarding how the required findings are met is described in Section 8 below.

The Tuolumne County General Plan, most recently updated in 2019, provides a map of approved land uses throughout the County. This land use map serves as a guide for property owners and decision makers when identifying appropriate land uses on specific properties. One of the purposes of the land use map is to guide County staff with evaluating proposed developments, as the map provides the development framework for the County that has been approved by the Board of Supervisors.

The approved land use designation in the General Plan land use map for the project site is Parks and Recreation. The intended specific uses for this land use designation are described in Section 3 of this report. The County Supervisors in approving the land use map with the Parks and Recreation land use on this site, have stated that after undergoing the required environmental analysis, the project site could be developed with land uses such as parks, camping facilities, recreation vehicle parks, ski and other resort facilities, marinas. Therefore, it has been anticipated by the County that there could be a potential for recreational development at some scale on this property.

Funding a Fair Share of the Cost of Emergency Services

CEQA's treatment of Public Services impacts is narrowly defined to include only those impacts that would arise from the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental effects. However, many members of the public, including the Groveland Community Services District, raised concerns regarding the cost of providing emergency services to the Terra Vi project. A discussion of how this issue is analyzed under CEQA can be found in the FEIR. In general, response times, service ratios, and other performance objectives are relevant to a CEQA analysis only within the context of whether or not new or expanded facilities would be required to meet defined objectives related to those service objectives, and what the environmental effects would be of providing those facilities.

As many commenters on the DEIR stated, and as presented in the DEIR, the nearest all-hazard emergency services resources (structural and wildland firefighters and paramedics) are located in Groveland,

approximately 17 road miles west of the project site. Seasonally, wildland-only firefighting resources are nearer, about nine miles to the west at the U.S. Forest Service's (USFS) Groveland ranger station, and eight miles to the east at Hodgdon Meadow on Yosemite National Park, where a cooperative USFS/National Park Service (NPS) facility is located. The amount of time required for any of these resources to arrive at the project site would be dependent upon travel time and availability of the resource. These same constraints also apply to law enforcement and ambulance service in this area of the County.

Based upon the realities imposed by distance and availability of resources, the County has therefore not adopted a specific emergency response time standard for the remote areas of the County. This reality is articulated in both the General Plan and in the operational plans of the relevant service providers. Accordingly, there is no impact to a specified response time or staffing ratio requirement that would be triggered by the project, and the project would not trigger a requirement for the construction of new or expanded public services facilities that could cause a significant environmental effect. Based on the established significance criteria in CEQA, the project's impacts related to public services would be less than significant.

All-hazard emergency response service to the project site and the surrounding area is currently provided by the Groveland Community Services District (GCSD), though resources from other providers (CALFIRE, USFS, NPS) also could be dispatched to the site depending on the type of incident and resource availability.[1] GCSD responds to emergencies within its district, and also to out-of-district areas like the project site and the surrounding area through its mutual aid agreement with the County. GCSD would therefore have primary responsibility for the provision of all-hazard emergency response services.

The extent to which response times to the area are deficient is an existing condition. If the proposed project is approved and becomes operational, this existing condition would not have been caused by the project. To assign responsibility for the current situation to a single project is neither fair nor appropriate.

In 2019, the Board of Supervisors was made aware by the Groveland Community Service District of the challenges involved with affording the cost of providing fire services for GCSD. Recently, the General Manager has stated that within three years GCSD will find themselves in a difficult place to financially afford to fund the CALFIRE contract for fire services that are provided at the CALFIRE station at 11700 Merrill Road in Groveland. Due to the current evaluation of several projects that could utilize GCSD resources, the GCSD Board directed their General Manager to work with the County towards future fire revenues and/or services.

There is a Groveland Amador station at 11700 Merrill Road. The Amador station is a CALFIRE fire station, with CALFIRE staff and equipment. The cost of running the station is borne by the state during fire season. During the winter months, GCSD is charged for providing the service. This contract is currently being considered for a three-year term, for $263,466 a year.

After listening to the issues GCSD is facing and comments that the County does not provide any fire services along the Groveland corridor, on September 22, 2020, the County approved an allocation of $263,466 for the Groveland Amador station to fund the GCSD portion of the CALFIRE contract. This action taken by the Board allows the County to move towards their goal of providing additional first responder services along the Highway 120 corridor as well as providing financial relief to GCSD. A result of Tuolumne County taking over the three-year contract, Groveland Community Services District will have immediate relief of this financial obligation and can direct over $790,000 to other needs within the district, including additional staffing or equipment.

[1] As is the case with all private land parcels in the vicinity, the Terra Vi site is located within a State Responsibility Area (SRA) for wildfire protection responsibility. The surrounding federal lands of the Stanislaus National Forest are designated as a Federal Responsibility Area (FRA). Through an agreement with the U.S. Forest Service (USFS), wildfire protection on SRA lands in the area is provided by the USFS. The role of the USFS is restricted to wildland firefighting only; the USFS does not fight structural fires or provide paramedic service. Those services would fall to another provider such as CALFIRE or GCSD.

However, to assist with the provision of emergency response services to the project site, the project applicant has agreed to financially support emergency response efforts on the Highway 120 corridor. Because the funding of emergency response is outside the scope of the California Environmental Quality Act, this contribution has been made a Condition of Approval for the project. The County is currently in the process of determining an appropriate fair-share fee for the project. The fee would be based on per unit of lodging. Proceeds from the fee would be utilized to offset the cost of providing emergency service to the project, and to assist the County with equipment and staffing needs. The proposed Condition of Approval represents the project's fair-share contribution with respect to providing emergency response service to the project site.

The language of the Condition of Approval reflects the possibility that the future will bring changes to the funding of emergency services. Currently, the County is conducting a study evaluating the potential for a commercial County Services Impact Fee to be adopted, which would collect funds at the time of a Building Permit for a development's fair share draw on County services. Additional efforts by County staff are underway to increase emergency response availability on the Highway 120 corridor. Therefore, at this time, it is not certain how the fair share payment will be made. In the event that at the time of the issuance of the Building Permit for this project, no other fees or assessments have been adopted by the Board of Supervisors to fund the cost of providing emergency response to the project site, the applicant will be required to pay an annual fair share contribution to Tuolumne County for their use of emergency services. This fair share fee will be collected for the life of the project, or until another substantially similar funding mechanism is in place.

SECTION 8: FINDINGS OF APPROVAL

Section 17.68.120 of the Tuolumne County Ordinance Code require that evidence be shown that the proposed project meets the necessary findings for a Site Development Permit. Below are the required findings for the entitlement, and staff's responses to each point. The CEQA findings are separate from the findings below.

A. The proposed project is consistent with the Tuolumne County General Plan.

Consistency with the General Plan is discussed and demonstrated in Section 3 above in this report.

B. Under the circumstances of the particular case, the proposed use will not be substantially detrimental to the health, safety or general welfare of persons residing or working in the neighborhood of such proposed use.

All proposed structures on site will be constructed in accordance with all County and State of California building codes. All on-site roads will be constructed in accordance with all County and State regulations. The on-site public water system and sewage disposal system will be constructed and maintained in accordance with all County and State regulations. The water and sewage disposal systems will be permitted as public water systems and will be approved and maintained by the State Water Resources Control Board. Mitigation Measures have been added to reduce impacts related to wildfire. Therefore, people living or working near the project site will not experience a decrease in their health, safety or welfare and there would be no substantially detrimental or injurious results to property or improvements in the neighborhood.

SECTION 9: PLANNING COMMISSION OPTIONS FOR ACTION

Approval: The Planning Commission may approve the project as proposed or may include any revisions it deems appropriate.

Denial: If the Planning Commission intends to deny the project, the Commission should include its reasons for denial described in the motion.

No Action: If after voting on one or more motions, the Planning Commission cannot make a decision, the

project can be directed back to staff for further review, noting the motion(s) made that failed.

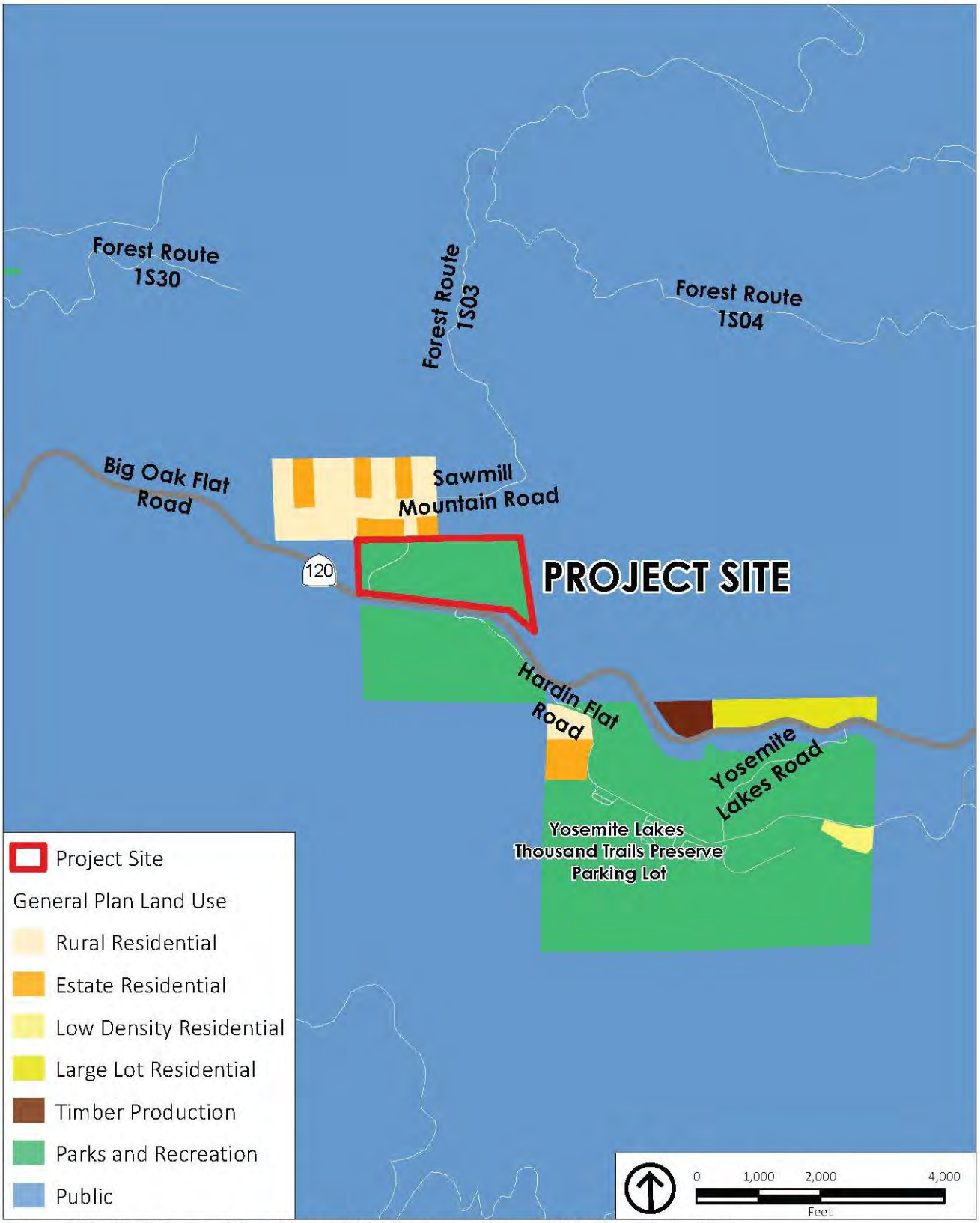
Recommendation

The Community Development Department requests the Planning Commission complete the following:

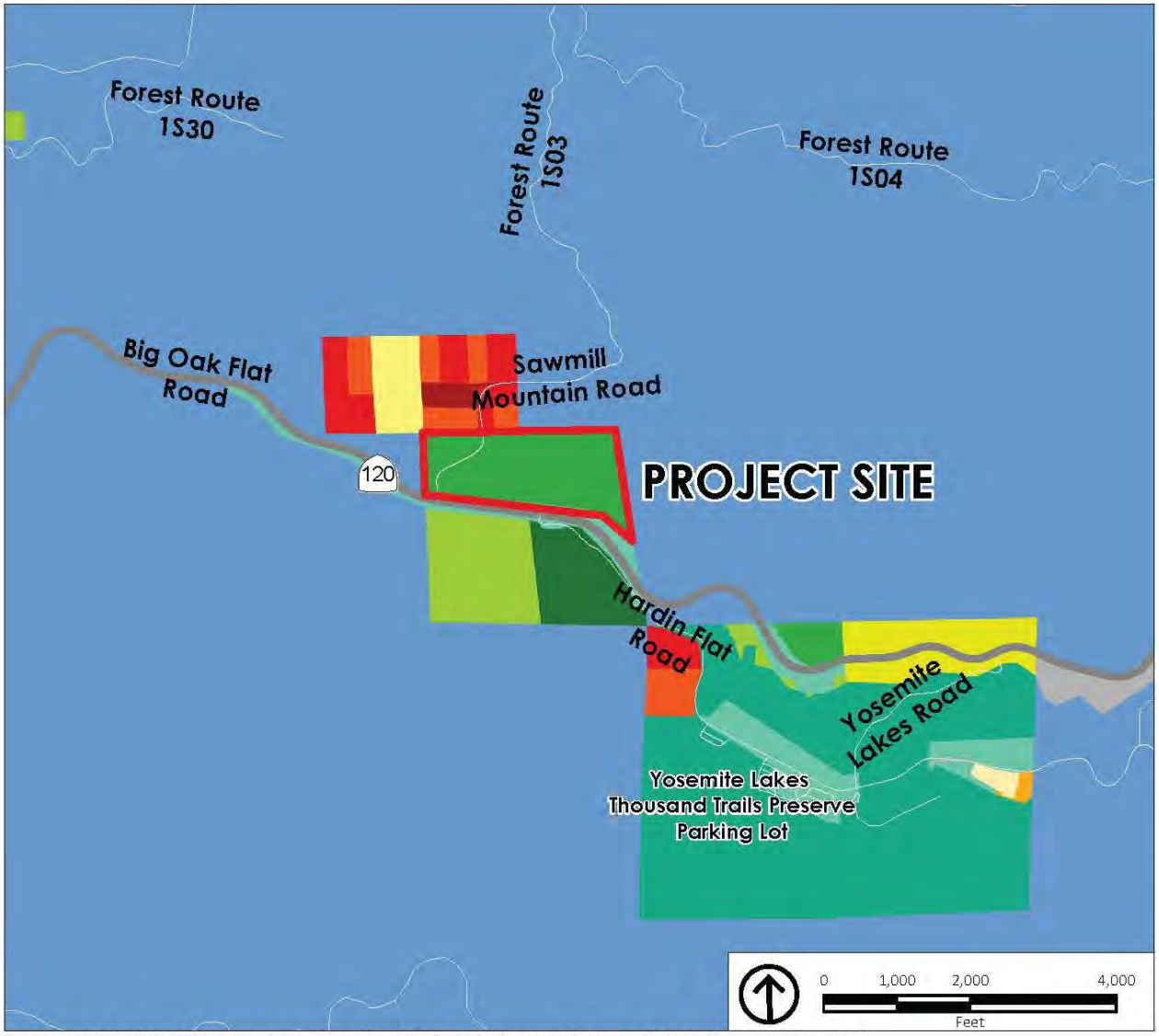
1. Adopt the Resolution to Certify the Environmental Impact Report, Adopt the Findings of Fact and Statement of Overriding Consideration and Mitigation Monitoring and Reporting Plan pursuant to the California Environmental Quality Act.
2. Approve Site Development Permit SDP18-003, based on findings A and B and subject to attached Conditions.

Attachment A: Conditions of Approval/MMRP
Attachment B: Comments received after the publication of the Final EIR

S:\Planning\PROJECTS\Site Development Permit\2018\SDP18-003 Terra VI (Hardin Flat LLC)\Application Review\staff report\Agenda Report Terra Vi final.docx



Source: ESRI, 2019; National Park Service, 2019; Toulumne County, 2019; PlaceWorks, 2019.



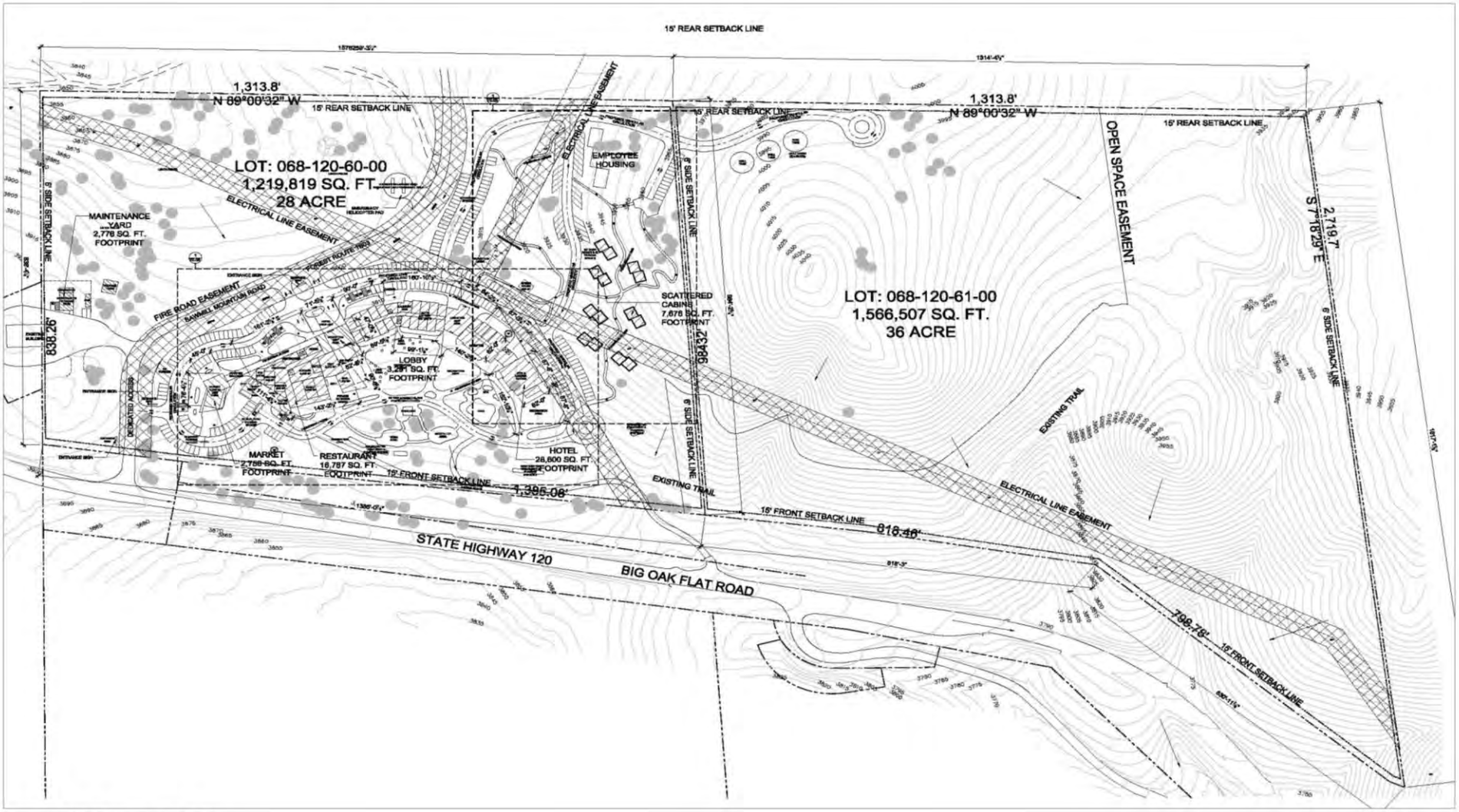
Source: ESRI, 2019; National Park Service, 2019; Toulumne County, 2019; PlaceWorks, 2019.

Project Site

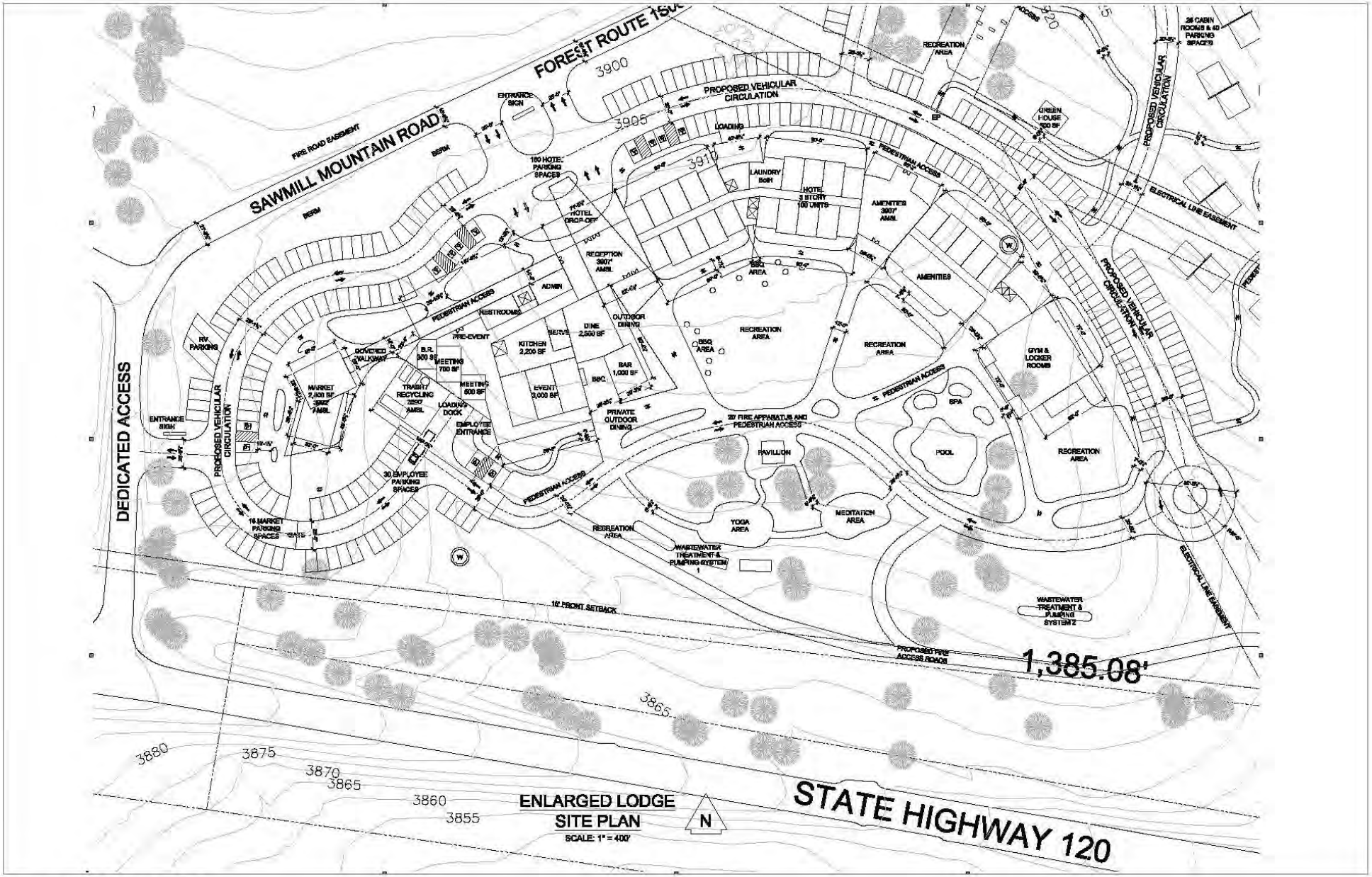
Zoning

- A-10 (General Agricultural 10 ac min)
- A-20 (General Agricultural 20 ac min)
- R-1 (Single Family Residential)
- RE-1 (Residential Estate 1 ac min)
- RE-2 (Residential Estate 2 ac min)
- RE-5 (Residential Estate 5 ac min)
- RE-5:PD (Residential Estate 5 ac min, Planned Development Combining District)
- C-K (Commercial Recreational)
- C-K & O (Commercial Recreational with Open Space)
- C-K & O-1 (Commercial Recreational with Valuable Wildlife Habitat Open Space)
- K (General Recreational)
- K & O & O-1 (General Recreational with Open Space and Valuable Wildlife Habitat Open Space)
- P (Public)
- Zoning Not Found

Figure 3-3
Zoning



Source: AVRP Skyport, 2019.



Source: AVRP Skyport, 2019.

CONCEPTUAL ELEVATIONS

CONDITIONS OF APPROVAL
TERRA VI/HANSJI CORPORATION
SITE DEVELOPMENT PERMIT SDP18-003

General Conditions:

1. LU — As a condition of the grant of approval of this Permit, and as a continuing condition of approval of the Permit, developer/permitee/applicant/property owner/subdivider, and the successor in interest shall defend, indemnify, save and hold harmless the County of Tuolumne, its elected and appointed officials, officers, agents, employees and volunteers from any and all claims, actions, proceedings, or liability of any nature whatsoever (including attorney's fees and costs awards) arising out of, or in connection with the County's review or approval of the application or project on which this condition is imposed, or arising out of or in connection with the acts or omissions of the above described person, and his/her/its agents, employees, or contractors, during any work performed in connection with the application or project. With respect to review or approval, this obligation shall also extend to any effort to attack, set aside, void, or annul the approval of the project including any contention the project approval is defective because a county ordinance, resolution, policy, standard, or plan is not in compliance with local, state or federal law. With respect to acts or omissions of the above described person and his/her/its agents, employees, or contractors, the obligation hereunder shall apply regardless of whether the County prepared, supplied, or approved plans, specifications or both. If the defense right is exercised, the County Counsel shall have the absolute right to approve any and all counsel employed to defend the County. To the extent the County uses any of its resources to respond to such claim, action or proceeding, or to assist the defense, the above described person will reimburse County upon demand. Such resources include, but are not limited to, staff time, court costs, County Counsel's time at its regular rate for non-County agencies, or any other direct or indirect cost associated with responding to, or assisting in defense of, the claim, action, or proceedings. For any breach of this obligation the County may, without notice, rescind its approval of the application or project to which this covenant/condition is attached. (TCOC, Section 17.68.150)

2. LU — All measures identified in the approved Mitigation Monitoring and Reporting Program (SCH# 2019110286) shall be required for this project. (TCOC, Section 17.68.150)

Conditions to be met prior to issuance of a grading permit:

3. ED — Submit an Grading Plan and secure a Grading Permit from the Engineering Division prior to any grading on site. (TCOC, Section 12.20.100 and12.20.050)

4. ED — Secure an Encroachment Permit from the US Forest Service prior to any construction activities within the Sawmill Mountain right of way. (TCOC, Section 17.68.150)

5. ED — Provide proof of primary access to the site to the Engineering Development and the Tuolumne County Fire Department. (TCOC, Section 17.68.150)

6. LU/ED — Secure an Encroachment Permit from the California Department of Transportation (CalTrans) District 10 Permit Office prior to any construction

activities within the State right-of-way along Highway 120. (TCOC, Section 17.68.150)

7. ED — An Encroachment Permit, or appropriate Agreement in lieu of an Encroachment Permit shall be obtained from the US Forest Service for any work that may be proposed within the road right-of-way/easement along Sawmill Mountain Road (aka Forest Route 1S03), a Maintenance Level 3 road. The US Forest Service shall review project plans as they affect Sawmill Mountain Road and provide clearance from the National Environmental Policy Act (NEPA) The US Forest Service may require the formation of a CSA for road maintenance by the developer over the Forest Service segment of the project improvements. After review of project plans, the appropriate FS instrument would be determined and a single authorization of use & maintenance of the road would be issued. (TCOC, Section 12.04, 17.69.150)

8. ED — A Road and Public Utility Easement shall be dedicated (or verified that it has been dedicated) for Sawmill Mountain Road (Forest Road 1S03) as it intersects the project property. (TCOC, Section 17.68.150)

9. ED — On-site roads shall be designed in accordance with Chapter 11.12 of the TCOC. Basic road design and construction standards shall meet Title 11 requirements as they pertain to road widths of a minimum of 12 feet with turnouts and a minimum 4 inches of compacted aggregate base surfacing. (TCOC, Chapter 11.12)

10. ED/LU — A parking area plan shall be submitted to the Roads Division for review and acceptance. Plans shall address internal traffic circulation, parking stall layout and include necessary striping, marking, and signing. All parking areas and traveled ways on the site shall be paved, striped and lined in accordance with approved plans. The parking plan shall be submitted in connection with the site grading and drainage plans. (TCOC, Section 17.60.020 and Section 17.68.150)

11. ED/BD — Parking spaces for the physically handicapped shall be located, constructed, maintained and otherwise meet all requirements set forth in the State Accessibility Standards, Chapter 2-71 of the California Building Standards Code (Title 24 California Code of Regulations) and as may be amended from time to time. (TCOC, Section 17.60.070(G))

12. ED/LU — A Drainage Study shall be submitted to the Engineering Division of the Community Resources Agency and address the entire on-site area and additional storm water runoff and the ability of downstream drainage ditches and culverts to handle the runoff. On-site detention/retention of the additional runoff caused by the site development shall be required (TCOC, Section 11.04.050(E))

13. ED — The Drainage Plan shall be required and address the concerns below:

    1. The project site including the parking lot drainage and other areas where development may contribute to runoff.
    2. The increased runoff and effect to downstream drainages, culverts, and adjacent property.
    3. On-site detention/retention. This feature may be proposed as subsurface under the parking area.

(TCOC, Title 11 and Title 12)

14. ED — Provide proof that slope and drainage easements have been obtained or provided in such locations as necessary to accommodate cut and fill slopes, setbacks, and flow from the site. Also provide a 15-foot wide drainage easement along all existing pipes that are not located in a road and public utility easement. (TCOC, Section 17.68.150)

15. ED — All property corners shall be monumented and clearly visible. Where a clear line of sight between lot corners is not possible, appropriate markers shall be set along the property line to mark the boundaries while construction is in progress. (TCOC, Chapter 12.20)

Conditions to be met prior to issuance of a building permit:

16. FPB — The applicant shall submit a Wildland Fire Prevention Plan and Vegetation Management Plan to the Tuolumne County Fire Prevention Bureau for review and approval. The project site plan and landscaping documents shall be revised to conform to the Vegetation Management Plan. These revisions shall include, but are not limited to, the following measures:

- The perimeter of all structures shall be surrounded by a 5- foot non-combustible zone.
- Project landscaping shall be fire resistant, with a planting palette consisting of native hardwoods and other fire resistant native vegetation.
- Landscape plantings shall be installed in a way that strategically staggers placement and planting heights to provide effective screening of the proposed project from adjacent roadways.
- Areas within 200 feet of all structures shall be managed as defensible space (in compliance with the California Fire Code and Public Resources Code Section 4291, with vegetative fuels that would produce 2-foot or shorter flames.
- The entire project site, including open all undeveloped areas, shall be managed as fire-resistant landscaping that adheres to CAL FIRE's firescaping requirements, with widely spaced trees and shrubs.
- Any new plantings in the undeveloped areas of the site shall include a greater proportion of oaks.
- Undeveloped areas of the project site shall be managed so that they do not grow back in as high a density as existed before the 2013 Rim Fire. Brush and grass in these areas shall be maintained and managed so that continuous groupings do not exceed 120 square feet in area. (CEQA MM WF-2 SCH# 2019110286)

17. LU — Submit a Landscape plan to the Land Use and Natural Resources Division for review and approval. The landscape plan shall be consistent with the plan approved in certified Environmental Impact Report. (TCOC, Chapter 15.28)

18. LU — Submit a lighting plan to the Land Use and Natural Resources Division for review and approval prior to the installation of any exterior lighting. The landscape plan shall be consistent with the plan approved in certified Environmental Impact Report. Lighting shall be provided in the SR120/Sawmill

Mountain Road intersection, in accordance to Caltrans standards for the State Highway (Project Description; TCOC, Section 17.68.150)

19. ED — Prior to the start of any construction activity on-site or in the SR 120/Sawmill Mountain Road intersection, the applicant shall coordinate with the Tuolumne County Public Works Department for an on-site inspection of Sawmill Mountain Road to assess the road surface conditions. Following completion of project construction, but prior to issuance of an occupancy permit, the applicant shall schedule a post-construction inspection to determine if deterioration of the road surface occurred, and if so, the applicant/contractor shall restore the road to pre-construction conditions. (CEQA MM TRANS-1.2b SCH# 2019110286)

20. BD — Building Permits are required for all non-exempt structures being constructed on this project site pursuant to Section 105 of the California Building Code. (TCOC, Section 17.68.150)

21. FPD — Roads shall be constructed to have an unobstructed clearance width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches. The roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities. The configuration of the fire apparatus access roads shall be indicated on the site plan and shall be approved by the Fire Prevention Division. (CFC, Section 503; and TCOC, Title 11)

22. FPD — All construction and plans shall comply with Section 450 of the 2016 California Building Code regarding organized camps. (TCOC, Section 17.68.150)

23. EH — A complete application for a permit to operate a Public Water System shall be submitted to the California State Water Resources Control Board with consultant designed plans. Written approval of the plans and verifications of an adequate and safe source of potable water or written approval for the connection to an approved Public Water System shall be submitted to the Environmental Health Division of the CRA prior to issuance of a Building Permit for the water system. (California Health and Safety Code, Section 116525; California Retail Food Code, Chapter 2, Section 114189; California Code of Regulations, Title 22, Chapter 16)

24. EH — Prior to the issuance of a Building Permit, plans for a commercial on-site sewage treatment and disposal system shall demonstrate compliance with Chapter 13.08 of the TCOC and shall be approved by the Environmental Health Division. Plans and construction of the on-site sewage treatment and disposal system facilities shall be approved and overseen by the California State Water Resources Control Board if the quantity of wastewater to be treated by the on-site sewage treatment and disposal system facilities exceeds 10,000 gallons per day. All waste discharge permits shall be obtained from the California State Water Resources Control Board prior to operation. (TCOC, Chapter 13.08)

25. EH — An application with complete plans for each proposed food facility shall be submitted to the Environment Health Division. The plans shall demonstrate compliance with the California Retail Food Code. The plans shall be approved by the Environmental Health Division prior to the issuance of a building permit for a food facility. (TCOC, Section 17.68.150)

26. EH — Details for refuse storage facilities shall be included on the food facility plans and shall demonstrate compliance with Article 4 of the California Retail Food Code. (TCOC, Section 17.68.150)

27. ED/SUR — Any necessary easements on the parcel(s) for underground dry utilities, wet utilities, or sewer leach field areas should be recorded in accordance with the requirements dictated by the County Surveyor and/or Environmental Health Division. (TCOC, Section 17.68.150)

28. FPB — The required fire flow for the proposed 54,000 square foot building is 6,250 gpm at 20-psi for 4 hours with Type V –B construction. Fire flow is determined by the square footage of the largest building on site including all horizontal projections. A reduction of up to 75%, as approved, is allowed when the building is provided with an approved automatic sprinkler system. The resulting fire-flow shall not be less than 1,500 gallons per minute. (CFC Section 507.3)

29. FPB — The required fire flow shall be on site, tested and approved by Tuolumne County Fire Prevention prior to the issuance of any building permits. (TCOC Chapter 15.20.010)

30. FPB — County Standard Dry Barrel Hydrant shall be available within 300 feet of the furthest portion of all proposed buildings measured by way of drivable access. Tuolumne County Fire Prevention shall approve all hydrant plans, locations and installations. (TCOC Chapter 15.20)

31. FPB — All commercial occupancy fire suppressions systems will be based on building size and type of occupancy. Submit plans and calculations for the Automatic Engineered Fire Sprinkler System to Tuolumne County Fire Prevention for review and approval prior to the issuance of a building permit or the installation of any portion of the system. Plan check fees are assessed upon completion of review. (TCOC Section 15.20.10)

32. FPB — Sprinkler systems and the buildings shall be protected by an approved automatic electronic fire alarm system. The fire alarm system shall meet all the requirements of NFPA 72 for such systems, and shall monitor water flow, main valve tamper, manual fire alarm boxes, strobes and horns. The fire alarm system shall be monitored at an approved central station as specified in NFPA 72. Plans and specifications and listing numbers shall be submitted to Tuolumne County Fire Prevention for review and approval prior to installation of any portion of the fire alarm system. Plan check fees shall be assessed upon completion of review. (CFC Section 903.4)

33. FPB — Roads shall be provided within 150 feet of all portions of the exterior walls of the proposed buildings. The roads shall be constructed to have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 15 feet. The roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities. The configuration of the fire apparatus access roads shall be indicated on the site plan and shall be approved by Fire Prevention. (CFC Sections 503, TCOC Title 11)

34. FPB For dead-end fire apparatus access roads in excess of 150 feet in length, an area for turning fire apparatus around shall be provided as approved by Tuolumne County Fire Prevention. (CFC Section 503)

35. FPB Permits shall be required for any above ground fuel storage tanks. Tuolumne County Fire Prevention shall inspect each tank. A permit constitutes permission to maintain, store, use or handle materials, or to conduct a process that will produce conditions hazardous to life or property. Such permission shall not be construed as authority to violate, cancel or set aside any of the provisions of the California Fire Code. The issuance of permits will occur at the time of the inspection with the payment of permit/inspection fee. This permit is active for a period of one year from the date issuance, and shall be renewed at that time, or the tanks must be remove. (CFC Sections 3801.2 and 105)

Conditions to be met during the construction phase:

36. LU If a cultural resource is discovered during the activities authorized by this Permit, the person in possession of the parcel for which the permit was issued and all persons conducting any activity authorized by this permit shall comply with the following provisions:

A. The person discovering the cultural resource shall notify the Community Development Department by telephone within 4 hours of the discovery or the next working day if the department is closed.

B. When the cultural resource is located outside the area of disturbance, the Community Development Department shall be allowed to photodocument and record the resource and construction activities may continue during this process. On parcels of two or more gross acres, the area of disturbance includes building pads, septic areas, driveways or utility lines, grading and vegetation removal, plus 300 feet. On parcels of less than 2 gross acres, the area of disturbance equals the boundaries of the parcel.

C. When the cultural resource is located within the area of disturbance, all activities that may impact the resource shall cease immediately upon discovery of the resource. All activity that does not affect the cultural resource as determined by the Community Development Department may continue. A qualified professional, as defined in Section 17.04.657 of the Tuolumne County Ordinance Code, such as an archaeologist or an historian, shall be allowed to conduct an evaluative survey to evaluate the significance of the cultural resource.

D. When the cultural resource is determined to not be significant, the qualified professional or Community Development Department shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the Community Development Department.

E. When a resource is determined to be significant, the resource shall be avoided with said resource having boundaries established around its perimeter by a qualified professional archaeologist or historian or a cultural resource management plan shall be prepared by a qualified

professional to establish measures formulated and implemented in accordance with Sections 21083.2 and 21084.1 of the California Environmental Quality Act (CEQA) to address the effects of construction on the resource. The qualified professional shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the Community Development Department. All further activity authorized by this permit shall comply with the cultural resources management plan.

A cultural resource is any building, structure, object, site, district, or other item of cultural, social, religious, economic, political, scientific, agricultural, educational, military, engineering or architectural significance to the citizens of Tuolumne County, the State of California, or the nation which is 50 years of age or older or has been listed on the National Register of Historic Places, the California Register of Cultural Resources, or the Tuolumne County Register of Cultural Resources. (TCOC, Section 14.10.150)

37. ED The applicant shall submit an erosion control plan for any construction to take place between October 15 and May 15 of any year. In the absence of such approved and implemented plan, all construction shall cease on or before October 15 (TCOC, Title 12).

38. ED Drainage improvements shall be installed in accordance with approved drainage plans. (TCOC Title 11, 12, and General Plan)

39. ED All soils disturbed by grading shall be reseeded or hydro-mulched or otherwise stabilized as soon as possible and before October 15 of the construction year and emergency erosion control measures shall be utilized as requested by County officials (TCOC, Title 12).

40. ED The implemented parking area control plan, referenced in Condition 10, shall provide commercial driveways shall be a minimum of twenty-foot wide to meet the requirements of Title 11. The onsite roads shall be paved and extended to within 150 feet of all portions of all buildings. The looped road(s) shall provide a minimum outside radius of 50 feet for the turning of interstate trucks and fire apparatus as approved by the Fire Prevention Bureau. (TCOC, Title 11.16.020)

41. ED Road improvements to Sawmill Mountain Road along the project frontage shall include a minimum of a 10 foot wide northbound lane, 10 foot wide southbound lane, a 4 foot wide paved shoulder on the east side of the roadway, and a 2 foot wide paved shoulder on the west side of the roadway. The road shall be improved with a design section capable of supporting a Traffic Index of no less than 6.5 along the project frontage, between SR120 and just past the proposed main entrance to the site, and to a Traffic Index of no less than 5.0 from just beyond the main site entrance to the northerly property line. (TCOC 11.12.007).

42. ED All Title 11 standard roads shall meet the following requirements:

a. The Engineering Division shall be notified prior to commencement of road improvements. Quality control personnel will establish schedules for periodic inspections at the time the construction staking is inspected. Roads constructed without proper periodic inspections or not in conformance with approved plans are subject to rejection.

b. The applicant shall provide adequate traffic striping, marking and signs during and after construction.

c. The developer shall give reasonable advance notice of commencement of construction and keep the CRA Engineering Division informed of all changes in the construction schedule. After completion of the work, the applicant shall submit as-built plans.

d. Plan check and inspection fees, as required by Ordinance, shall be submitted to the CRA Engineering Division prior to approval of improvements plans.

e. The developer shall remedy any defect in the improvements on any county, State, or Forest Service road arising from any faulty or defective materials or workmanship occurring within 12 months of the Department's acceptance of the work or formal acceptance by the Board of Supervisors. A maintenance warranty agreement shall be enacted when applicable (TCOC, Title 11).

43. ED — The property owner shall improve the shoulders of Sawmill Mountain Road (Forest Route 1S03) through the project frontage to facilitate pedestrian access. (Tuolumne County General Plan Trails)

44. ED — All soils disturbed by grading shall be reseeded or hydro-mulched or otherwise stabilized as soon as possible and before October 15 of the construction year. Emergency erosion control measures shall be utilized as requested by County officials. (TCOC, Title 12)

45. BD/ED — The contractor shall be responsible for dust abatement during construction and development operations. A water truck or other watering device shall be on the construction site on all working days when natural precipitation does not provide adequate moisture for complete dust control. Said watering device shall be used to spray water on the site at the end of each day and at all other intervals, as need dictates, to control dust. (TCOC, Section 12.20.370)

46. ED/APCD — Exposed serpentine gravel is prohibited on the project site, unless exempted pursuant to the Tuolumne County Air Pollution Control District Rules and Regulations, Regulation IX, Rule 904 Section (F) or Rule 908 Section (C) or (D)(3). No person shall use, apply, sell, supply, or offer for sale or supply any restricted material (as defined in subsection (I)(20) of Rule 904) for surfacing, unless it has been tested and determined to have an asbestos content that is less than 0.25 percent. Any roadway including road shoulders or any surface that is subject to vehicular travel or pedestrian access must be completely covered with non-restricted material. (Health and Safety Code, Sections 93105 and 93106)

47. AG — All hay, straw, hay bales, straw bales, seed, mulch or other material used for erosion control or landscaping on the project site shall be free of noxious weed seeds and propagules. Noxious weeds are defined in Title 3, Division 4, Chapter 6, Section 4500 of the California Code of Regulations and the California Quarantine Policy – Weeds. (Food and Agriculture Code, Sections 6305, 6341 and 6461)

48. AG — All equipment brought to the project site for construction shall be thoroughly cleaned of all dirt and vegetation prior to entering the site, in order to prevent importing noxious weeds. (Food and Agriculture Code, Section 5401)

49. AG — All material brought to the site, including rock, gravel, road base, sand, and top soil, shall be free of noxious weed seeds and propagules. Noxious weeds are defined in Title 3, Division 4, Chapter 6, Section 4500 of the California Code of Regulations and the California Quarantine Policy – Weeds. (Food and Agriculture Code, Sections 6305, 6341 and 6461)

50. AG — The property owner shall maintain and implement an effective program for the monitoring and control of noxious weeds. Noxious weeds are defined in Title 3, Division 4, Chapter 6, Section 4500 of the California Code of Regulations and the California Quarantine Policy – Weeds. (Food and Agriculture Code, Sections 5401 and 5402)

Conditions to be met prior to the issuance of a Certificate of Occupancy:

51. LU — The final project shall meet all requirements mandated by federal, state or local law. Federal or state law may require additional obligations beyond those required by these conditions or local requirements, including additional analysis of environmental or other issues, over which the County has no control. (TCOC, Section 17.68.150)

52. LU/BD — All construction on the site shall adhere to the site plan approved by Tuolumne County. Any significant deviation from the plans shall require approval of supplemental plans submitted by the property owner. (TCOC, Section 17.68.150)

53. LU/BD/ED — All parking on the site shall adhere to the site plan approved by the Engineering Division. Any significant deviation from the plan shall require approval of supplemental plans submitted by the property owner. (TCOC, Chapter 17.60)

54. LU/BD — The applicable Traffic Impact Mitigation Fee shall be paid to Tuolumne County prior to issuance of a Certificate of Occupancy by the Building and Safety Division. (TCOC, Chapter 3.54)

55. ED — Drainage improvements shall be installed in accordance with approved drainage plans. Any significant deviation from the plan shall require approval of supplemental plans submitted by the property owner. (TCOC, Title 12)

56. LU — Prior to issuance of a final certificate of occupancy, the project contractor shall implement the following: To prevent trapping, injuring, or impeding deer movement, barbed wire fencing is prohibited. Non-barb-wired fencing immediately surrounding structures (e.g., storage facilities, swimming pools) where deer are less likely to travel is permitted. Additional Fencing design shall be subject to review and approval by the project biologist following one of the recommended designs found in a Landowner's Guide to Wildlife Friendly Fences: How to Build a Fence with Wildlife in Mind. 2nd edition, 2012 (or as may be updated) by the Montana Dpt. of Fish Wildlife and Parks. Alternative fencing shall be approved by CDFW prior to installation. (CEQA MM BIO-4.2a SCH# 2019110286)

57. LU — The Applicant, at the time of the issuance of the first building permit for the Project ("Anniversary Date"), shall pay an annual fee per rental unit (prorated equivalent to the operational season of the Project) to the Tuolumne County ("Annual Fee"). The payment of the Annual Fee shall represent the Project's fair share of costs associated with the provision of emergency services, including fire and medical response services to the Project. The payment of the Annual Fee shall continue until such time as the County develops its own alternative fee or tax program for fire and emergency services or until the County develops an alternative fee program for the area, inclusive of the Project site, at which time the Annual Fee shall cease and the Applicant shall pay the County's alternative fee or participate in the County's tax program for fire and emergency services. Payment of the Annual Fee shall be deemed due and payable on the Anniversary Date each year until an alternative program is instituted by the County. (TCOC, Section 17.68.150)

On-Going conditions:

58. ED — Commercial driveways, meeting the requirements of Title 11 for onsite roads must be extended to within 150 feet of all portions of all buildings. (TCOC, Title 11)

59. EH — A permit to operate a public water system shall be obtained from the California State Water Resources Control Board prior to operation of any public water system. (California Health and Safety Code, Section 116525)

60. EH — All storage and removal of refuse, rubbish, and recyclables shall be in compliance with the requirements specified in TCOC, Chapter 8.05 and CCR Title 14 and Title 27. (TCOC, Chapter 8.05)

61. SW — Excepting disruptions in normal refuse collection schedules, refuse shall not be allowed to remain on the premises for more than seven days unless it is satisfactorily composted, used as animal food, used as soil amendments, or some other beneficial use provided such use does not create a nuisance. (TCOC, Section 8.05.035)

62. SW — Persons hauling solid waste from their residence or solid waste produced in the course of their own business (including building contractors) are required to deliver solid waste only to facilities identified and authorized by the Tuolumne County Board of Supervisors by Resolution, including the Cal Sierra Transfer Station, the Pinecrest Transfer Station, or the Groveland Transfer Station. (TCOC, Section 7.12.050)

63. SW — If a business located on the project site generates more than four (4) cubic yards of solid waste per week, recycling is required, even if this quantity of generation happens only occasionally. Recycling can include subscribing to recycling service provided by the franchise hauler of the collection area, self-hauling recyclables to a recycling center, or donating recyclables to a charitable cause. Space shall be included on the project site for recycling and garbage receptacles. (Natural Resources, Division 7, Chapter 9.1, Sections 18835-18837)

64. SW — Space shall be provided on the project site for organics recycling to comply with AB 1826. (TCOC, Section 17.68.150)

65. SW — Trash shall be stored in an animal-resistant enclosure, or bear shed throughout the life of the project. Trash enclosure design shall be approved by the project biologist prior to installation. The project proponents are encouraged to visit http://www.waste101.com/bear-aware/ or contact the Tahoe Truckee Sierra Disposal or similar entity, for appropriate designs. (CEQA MM BIO-1.15 SCH# 2019110286)

66. EH — The handling, use or storage of hazardous materials on-site shall be in compliance with Chapter 13.24 of the Tuolumne County Ordinance Code, Chapter 6.95 of the California Health and Safety Code, and Title 19 of the California Code of Regulations. The handling, storage or use of hazardous materials, above threshold quantities, shall be permitted by the Tuolumne County Environmental Health Division, Certified Unified Program Agency (CUPA). (TCOC, Chapter 13.24; CHSC, Chapter 6.95; and CCR, Title 19)

67. LU — To satisfy applicable Tuolumne County General Plan noise level increase criteria at the nearest existing sensitive use to the project, the project shall limit on-site truck deliveries to daytime hours only (7:00 a.m. to 10:00 p.m.) and limit refuse collection activities to daytime hours only (7:00 a.m. to 10:00 p.m.). (CEQA MM NOI-1.2a SCH# 2019110286)

68. APCD — Prior to the burning of any vegetation on the project site, or burning associated with the project, obtain a burn permit from the Tuolumne County Air Pollution Control District (APCD), the United States Forest Service, and/or the California Department of Forestry. Only clean dry vegetation shall be burned on the site on a California Air Resources Board declared permissive burn day. Applicant shall comply with all open burning regulations pursuant to APCD Regulation III – *Open Burning*, including but not limited to prohibiting the use of fires to dispose of construction/demolition debris, and garbage. (California Health and Safety Code; California Public Resources Code Sections 41800 & 41802; General Plan, Implementation Program 12.D.d; TCAPCD Rules and Regulations, Regulation III)

69. LU — Prior to the cutting or removal of commercial tree species, a harvesting plan and application for conversion of timberland shall be submitted to the California Department of Forestry and Fire Protection (CalFire) for review and approval in accordance with Public Resources Code Sections 4581 and 4621(a). If the area of timber operations is less than three acres in size, a Less Than Three Acre Conversion Exemption may be used. (TCOC, Section 17.68.150)

70. LU — All lighting for the proposed project shall be designed to direct the lighting downward to the area to be illuminated, install shields to direct light and reduce glare, utilize low rise light standards, and utilize low or high pressure sodium lamps instead of halogen type lights. Exterior lighting fixtures shall have the International Dark Sky Fixture seal of approval. (Project Description; TCOC Section 17.68.150)

71. LU — All deliveries would occur at the designated loading dock during normal delivery hours (8:00 am to 5:00 pm). (Project Description)

72. LU The helipad at the project site would be for emergency uses only. The pad shall be made for any emergency use by a public or private entity and community and shall be used for emergencies only. (Project Description)

73. EH A valid permit to operate shall be issued by the Environmental Health Division of the CRA prior to operation of any food facility. (CHSC Part 7, Section 114381)

74. FPD For dead-end fire apparatus access roads in excess of 150 feet in length, an area for turning fire apparatus around shall be provided as approved by the Tuolumne County Fire Prevention Division. (CFC, Section 503)

75. EH All buildings and plumbing fixtures must have adequate means for the disposal of human wastes, either by connection to an approved on-site wastewater treatment and disposal system or where permitted, an approved graywater system. (TCOC, Sections 13.08.170 and 13.08.231)

76. EH All special design and commercial on-site sewage treatment and disposal systems shall comply with an operation, maintenance, and monitoring program (TCOC, Section 13.08.220)

77. LU Any proposed directional signs along State Highway 120 shall be installed outside of the State right of way and in accordance with the State Outdoor Advertising Program regulation and Federal Laws. (TCOC, Section 17.68.150)

78. LU The project sponsor shall implement the following: Dogs shall be kept on leash or otherwise prohibited from running free outdoors. Signs shall be posted along all project trails stating that dogs shall be kept on leash. The project website, booking site, and/or brochures shall advise visitors of this requirement. (CEQA MM BIO-4.1b SCH# 2019110286)

79. LU The Applicant shall on the project Anniversary Date (described in Condition 57), pay an annual fee per rental unit (prorated equivalent to the operational season of the Project) to the Tuolumne County. (TCOC, Section 17.68.150)

A Notice of Action shall be recorded for Conditions 1 through 55 to notify all owners of this parcel of the conditions of this entitlement and these responsibilities. Any violations observed by the Community Development Department during regular site inspections or in response to complaints shall be referred to the agency having jurisdiction over the condition for resolution or referred to the Code Compliance Officer for enforcement. (TCOC, Section 17.68.150)

COMMUNITY DEVELOPMENT DEPARTMENT CONTACT PERSON: Quincy Yaley

LU = Land Use & Natural Resources Division
ED = Engineering Development Division
BD = Building & Safety Division
SUR = Surveying Division
FPD = Fire Prevention Division
APCD = Air Pollution Control District
EH = Environmental Health Division
SW = Solid Waste
AG = Agricultural Commissioner

Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Terra Vi Lodge Project, herein referred to as the "proposed project" or "project." The purpose of the MMRP is to ensure the implementation of mitigation measures identified as part of the environmental review for the proposed project. The MMRP includes the following information:

- The full text of the mitigation measures;
- The party responsible for implementing the mitigation measures;
- The timing for implementation of the mitigation measures;
- The agency responsible for monitoring the implementation; and
- The monitoring action and frequency.

Tuolumne County must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
AESTHETICS					
AES-4: Proposed photovoltaic panels shall be designed to ensure the following: • The angle at which panels are installed precludes, or minimizes to the maximum extent practicable, glare observed by viewers on the ground. • The reflectivity of materials used shall not be greater than the reflectivity of standard materials used in residential and commercial developments. • Panels shall be sited to minimize their visibility from Highway 120.	Project Sponsor and Construction Contractor	Prior to Installation of Solar Panels	Tuolumne County Community Development Department Building and Safety Division	Review Construction Plans and Specifications/ Conduct Site Inspections	Prior to Installation/ During Regularly Scheduled Construction Site Inspections
BIOLOGICAL RESOURCES					
BIO-1.1a: Preconstruction Bee Surveys. Prior to issuance of grading permits for any staging, construction, or ground disturbing activities between February 1 and November 30th of the construction year, a qualified biologist shall survey the project boundaries for active Crotch bumble bee nests. If identified, CDFW shall be consulted for guidance on buffer distances to avoid colony disturbance (e.g., buffer surrounding the nest itself, entry/exits, and avoiding direct disturbance). If full avoidance cannot be achieved through buffers, no construction shall occur until the nest is no longer occupied. No pesticides or herbicides shall be used so long as the species occupies the site. This measure shall be incorporated into the project bid package and contract. The measure is the responsibility of the qualified biologist under contract to either the County or construction contractor.	Consulting Biologist	Prior to Issuance of Grading Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Survey/ Confirm CDFW Consultation	Once for Survey/ Ongoing if Active Crotch Bumble Bee Nests are Identified

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Mitigation Measure and Monitoring Report – Conditions of Approval
Terra Vi Site Development Permit SDP18-003

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
BIO -1.1b: Environmental Awareness Training. All contractors involved in site development, applicable County department staff, and environmental specialists (e.g., biologist) shall attend a mandatory Environmental Awareness Training prior to any site disturbances. The program shall address proper implementation of mitigation measures contained herein. This measure shall be incorporated into the project bid package and contract and implemented throughout project construction. The project biologist shall have the authority to stop work or remove any construction worker on-site that has not completed training. The measure is the responsibility of the qualified biologist under contract to either the County or construction contractor.	Consulting Biologist/ Construction Contractor or County	Prior to Issuance of Grading Permits/ Throughout Project Construction	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Training	Ongoing
BIO-1.2a: Implement Mitigation Measure BIO -1.1b.			*See Mitigation Measure BIO-1.1b.*		
BIO -1.2b: Avoid Inadvertent Animal Trapping During Construction. To avoid inadvertently trapping special-status or common animal species during construction, all excavated steep-walled holes or trenches more than two feet deep shall be covered at the end of each working day with plywood or similar material, or provided with one or more escape ramps constructed of earth fill or wooden planks, or equivalent, at each end of the trench. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped animal is discovered, the contractor shall place an escape ramp or other appropriate structure to allow the animal to escape. Alternatively, the contractor shall contact the project biologist or California Department of Fish and Wildlife for assistance. Similarly, stored pipes or other materials providing potential cover for animals shall be inspected prior to installation or use to ensure that they are unoccupied.	Construction Contractor/ Consulting Biologist	During Construction	Tuolumne County Community Development Department Building and Safety Division	Confirm Presence of Covers for Holes and Trenches	During Regularly Scheduled Construction Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
BIO -1.2c: Food and Trash Disposal. All food and food-related trash shall be enclosed in sealed trash containers at the end of each workday and removed completely from the construction site every day to avoid attracting wildlife. This measure shall be implemented throughout project construction. The measure is the responsibility of the construction contractor.	Construction Contractor	During Construction	Tuolumne County Community Development Department Building and Safety Division	Confirm Presence of Trash Cans	During Regularly Scheduled Construction Site Inspections
BIO -1.2d: Construction Hours. Project construction shall be limited to 7:00 a.m. to 7:00 p.m. unless an emergency exists.	Construction Contractor	During Construction	Tuolumne County Community Development Department Building and Safety Division	Confirm Compliance with Construction Hours	Ongoing
BIO-1.3: Implement Mitigation Measure BIO-1.2d.	*See Mitigation Measure BIO-1.2d.*				
BIO-1.4: Implement Mitigation Measure BIO-1.2d.	*See Mitigation Measure BIO-1.2d.*				
BIO-1.5a: Preconstruction Surveys Suitable Bat Roosting (or Nursery) Areas and Provisions for Protection, If Identified. The project sponsor or contractor shall implement the following measures: • 15 days or fewer before commencing ground-disturbing activities between April and September of the construction year, a qualified biologist shall survey snags, trees, rock crevices and other suitable cavities and structures on the site for roosting bats or bat nurseries. • If bats are not found and there is no evidence of bat use, construction may proceed. • If bats are found or evidence of use by bats is present, CDFW shall be consulted for guidance on measures to avoid or minimize disturbance to the colony or nursery. Subject to CDFW approval, measures may include excluding bats from roosts before construction begins. If nurseries are discovered, no work shall occur within buffer areas as established by	Consulting Biologist/ Project Sponsor /Construction Contractor	Prior to Ground-Disturbing Activities	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Survey/ Confirm CDFW Consultation	Once for Survey/ Ongoing If Survey Finds Evidence of Bat Roosting

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
CDFW until all young are self-sufficient and have left the nursery. - This mitigation measure shall be incorporated into the project bid package and contract. Surveys shall occur within 15 days of commencing construction that occurs between April and September.					
BIO-1.5b: Implement Mitigation Measure BIO-1.2d.		*See Mitigation Measure BIO-1.2d.*			
BIO-1.6: Implement Mitigation Measures BIO-1.5a and BIO-1.2b.		*See Mitigation Measures BIO-1.5a and BIO-1.2b.*			
BIO-1.7: Implement Mitigation Measures BIO-1.2d and BIO-1.5a.		*See Mitigation Measures BIO-1.2d and BIO-1.5a.*			
BIO-1.8: Pre-Construction Bird/Raptor Survey. Prior to issuance of grading permits for construction occurring between February 1st and August 30th (e.g., excavation, ground disturbance, or vegetation removal) a preconstruction survey for nesting birds shall be conducted in accordance with the CDFW guidelines and a no-disturbance buffer shall be established, if necessary. If equipment staging, site preparation, vegetation removal, grading, excavation or other project-related construction activities are scheduled during the avian nesting season (generally February 1 through August 30), a focused survey for active nests would be conducted by a qualified biologist within 15 days prior to the beginning of project-related activities. Following initial pre-construction surveys in year one of project construction, bird surveys shall be repeated annually so long as outside construction continues. Surveys shall be repeated within 15 days prior to resuming outdoor construction activities for the first time between February 1st and August 30th whenever outdoor construction activities have ceased for more than one month (e.g., if outdoor construction shuts down for the season due to winter rains in late November, preconstruction	Consulting Biologist/ Construction Contractor	Prior to Issuance of Grading Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Survey	Once for Survey(s)/ Ongoing if Nesting Birds Identified and Until They Have Left the Nest

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
bird surveys would occur again within 15 days prior to recommencing outdoor site work between February 1st and August 30th. If work recommences in January and continues without interruption through August 30th, then no additional preconstruction survey is required). Surveys shall be conducted in all suitable habitat in the BSA. If an active nest is found, the bird shall be identified to species and the approximate distance from the closest work site to the nest estimated. No additional measures need be implemented if active nests are more than the following distances from the nearest work site: (a) 300± feet for raptors unless otherwise specified; (b) 345 feet for spotted owls; or (c) 75± feet for other non-special-status bird species. Disturbance of active nests shall be avoided to the extent possible until it is determined that nesting is complete and the young have fledged. For species protected under the California Fish and Game Code (CFGC), if active nests are closer than those distances to the nearest work site and there is the potential for bird disturbance, CDFW shall be contacted for approval to work within 300± feet of raptors, or 75± feet of other non-special-status bird species. This measure shall be incorporated into the project bid package and contract. Surveys shall occur within 15 days of commencing construction that occurs between February 1st and August 30th.					
BIO-1.9: Implement Mitigation Measure BIO-1.8.		*See Mitigation Measure BIO-1.8.*			
BIO-1.10: Implement Mitigation Measure BIO-1.8.		*See Mitigation Measure BIO-1.8.*			
BIO-1.11: Implement Mitigation Measure BIO-1.8.		*See Mitigation Measure BIO-1.8.*			
BIO-1.12: Implement Mitigation Measures BIO -1.2b, BIO -1.2c, and BIO -1.2d.		*See Mitigation Measures BIO-1.2b, BIO-1.2c, and BIO-1.2d.*			

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
BIO-1.13: Pre-Construction Botanical Survey. Surveys shall occur during the bloom season prior to issuance of grading permits during the bloom period for *Clarkia australis* (May through August) and *Erythranthe filicaulis* (April through August). If found, the location of special-status plant populations shall be clearly identified in the field by staking, flagging, or fencing prior to the commencement of activities that may cause disturbance. A buffer surrounding the populations shall be established by a qualified botanist based on the plant species, its habitat, and the nature of the proposed project activity. No activity shall occur within the buffer area. If sensitive plant species cannot be avoided, transplanting (perennial species), seed collection and dispersal (annual species) may be undertaken by a qualified botanist. If transplanting or seed collection/dispersal is employed, ongoing monitoring for 5 years shall be conducted to assess the effectiveness of mitigation. The performance standard for mitigation is no net reduction in the size or viability of the local plant population. Prior to salvaging plants, written permission shall be obtained from the landowner and CDFW shall be notified 10 days prior to salvage activities or, for emergency situations, CDFW shall be notified within 14 days following salvage activities consistent with the provisions of the California Native Plant Protection Act (California Fish and Game Code Sections 1912 and 1913) and California Penal Code Section 384a. Salvage shall be in accordance with California Fish and Game Code Sections 1912 and 1913(c) including CDFW notification. The performance standard for this mitigation measure is no net reduction in the size or viability of local sensitive plant populations. This measure shall be incorporated into the project bid package and contract. Surveys shall occur during the bloom season prior to commencing construction during the bloom period for *Clarkia australis* (May through August) and *Erythranthe filicaulis* (April through August).	Consulting Biologist/ Construction Contractor	Prior to Issuance of Grading Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Survey	Once for Survey/ Ongoing if Survey Finds Evidence of the *Clarkia australis* or *Erythranthe filicaulis* Species

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
BIO-1.14: Implement Mitigation Measure BIO-1.13.			*See Mitigation Measure BIO-1.13.*		
BIO -1.15: Food and Trash Enclosures. Trash shall be stored in an animal-resistant enclosure, or bear shed throughout the life of the project. Trash enclosure design shall be approved by the project biologist prior to installation. The project proponents are encouraged to visit http://www.waste101.com/bear-aware/ or contact the Tahoe Truckee Sierra Disposal or similar entity, for appropriate designs. This measure shall be implemented prior to issuance of an occupancy permit. The measure is the responsibility of the construction contractor. A Notice of Action shall be filed with the County Clerk on the project parcels including the project conditions specifying that this measure shall be continued throughout the life of the project.	Project Sponsor	Prior to issuance of Occupancy Permit	Tuolumne County Community Development Department Building and Safety Division	Inspect Trash Enclosures On-site/ Confirm Filing of Notice of Action with County Clerk	Once
BIO-2: Minimize the spread of invasive plant species through the following: • The project landscaping planting palette shall be revised to ensure that all plantings are non-invasive species. • All hay, straw, hay bales, straw bales, seed, mulch or other material used for erosion control on the project site shall be free of noxious weed seeds and propagules (Food and Agriculture Code Sections 6305, 6341 and 6461). • All equipment brought to the project site shall be thoroughly cleaned of all dirt and vegetation prior to entering the site to prevent importing noxious weeds and shall be cleaned of all dirt and vegetation prior to exiting the site to prevent exporting noxious weeds. (Food and Agriculture Code Section 5401). • All material brought to the site, including rock, gravel, road base, sand, and topsoil, shall be free of noxious weeds and propagules. (Food and Agriculture Code Sections 6305, 6341 and 6461).	Project Sponsor/ Consulting Landscape Architect/ Construction Contractor	Prior to Approval of Landscaping Plan/ During Construction	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review Revised Landscaping Palette/ Inspect Construction Equipment and Materials	Once/ During Regularly Scheduled Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
BIO-3.1: Install Temporary Environmentally Sensitive Area (ESA) Fencing to Protect Sensitive Drainages during Construction Activities that Disturb Soils. Prior to issuance of grading permits, the project contractor shall implement the following: • Install high-visibility/ESA fencing (e.g., orange construction safety fencing) a minimum of 50 feet from the centerline of both sides of Ephemeral Channel-1 (Northwest corner of the project site) during any time when disturbing soils within 50 feet of the drainage channel (fencing is not required when soil disturbances are not occurring so long as erosion control from any prior soil disturbances within 50 feet has been installed). Fencing shall be of flexible material that allows for deer passage. Install silt fencing, fiber rolls, or equivalent erosion and sediment control devices on the project side of the ESA fencing to prevent disturbances and erosion into the adjacent drainage. Silt fencing or other materials, as required, shall be installed consistent with the applicable water quality requirements specified in the project's Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Plan (WPCP). Fencing or other erosion control materials or devices shall be shown on the final construction documents. • No construction-related materials, equipment, trash or other related debris shall be allowed, stored or staged within the fenced area. ESA Fencing shall remain in place until soil disturbances within 50 feet have been completed and erosion control measures have been installed in accordance with approved plans. Fallen fencing shall immediately be repaired as necessary to remain visible during all construction activities. • Fenced areas shall be avoided throughout project construction (i.e., active soil disturbing activities) and shall be monitored by the project manager throughout construction. • This measure shall be incorporated into the project bid package and contract.	Construction Contractor	Prior to issuance of Grading Permits	Tuolumne County Community Development Department Building and Safety Division	Inspect Temporary Environmentally Sensitive Area Fencing	During Regularly Scheduled Construction Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ All ESA Fencing shall be removed from the site after construction activities are completed.					
BIO-3.2: Comply with Section 404 of the federal Clean Water Act. Within the Caltrans right-of-way, the applicant shall secure an encroachment permit from Caltrans and comply with all conditions of the Caltrans encroachment permit including the following as it applies to Ephemeral Channel-2: ▪ Prior to issuance of grading permits, comply with Section 404 and Section 401 of the Clean Water Act and comply with all current regulations (i.e., at the time of disturbance) pertaining to fill of Ephemeral Channel-2 (0.001 acre). ▪ If regulations in place at the time of site disturbance require permits from the USACE for filling an ephemeral drainage; the acreage, location, and method(s) for compensation for fill shall be determined during the permitting process in accordance with USACE standards. The project shall adhere to a "no net loss" standard for waters of the U.S. and waters of the State. Suitable habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods approved by the USACE and Central Valley Regional Water Quality Control Board, as jurisdictionally appropriate. The replacement of waters will be equivalent to the nature of the habitat lost and will be provided at a suitable ratio to ensure that, at a minimum, there is no net loss of habitat acreage or value. The replacement habitat will be set aside in perpetuity for habitat use. ▪ Compensation may also include purchasing credits from a Corps and/or state or federally approved mitigation bank at a ratio prescribed in the applicable Section 404 Permit as necessary to achieve no net loss of waters of the U.S. For waters of the state, compensation may be through the National Fish and Wildlife Foundation Sacramento District California In-Lieu Fee Program.	Project Sponsor / Consulting Biologist Construction Contractor	Prior to Issuance of Grading Permits	Tuolumne County Community Development Department Building and Safety Division	Review Approved Encroachment Permit/ Confirm Compliance with Permit Conditions	Once

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
• Alternatively, if final project plans allow for full avoidance and no fill of Ephemeral Channel 2 pursuant to the determination of the project's wetlands biologist; Mitigation Measures BIO-3.1 and BIO-3.2 may be substituted to ensure avoidance. • This measure shall occur prior to issuance of grading permits. All permit provisions shall be implemented and maintained in accordance with the applicable permits.					
BIO-3.4: Best Management Practices (BMPs) to Protect Water Quality (Including NOI/NPDES/SWPPP). Prior to issuance of grading permits, the project contractor shall implement the following: • Prepare an Erosion Control Plan for implementation for any construction to take place between October 15 and May 15 of any year. In the absence of such an approved plan, all construction shall cease on or before October 15, except that necessary to implement erosion control measures. If necessary, the plan shall be submitted to the County Public Works Department for review and approval. • Submit to the State Water Resources Control Board Storm Water Permitting Unit, a Notice of Intent (NOI) to obtain coverage under the General Construction Activity Storm Water Permit –California's National Pollution Discharge Elimination System (NPDES) general permit for construction related storm water discharges for the disturbance of one acre or more. Disturbances of less than one acre may also require an NOI for coverage under the NPDES General Permit for construction-related storm water discharge and the State Water Resources Control Board Permitting Unit shall be contacted for determination of permit requirements. Commercial and industrial developments may require an NOI even if less than one acre is to be disturbed. Obtain coverage or an exemption from these requirements. [Federal Water Pollution Control Act, Section 401, California Clean Water	Project Contractor	Prior to Issuance of Grading Permits	Tuolumne County Public Works Departments/ Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Approve Erosion Control Plan/ Confirm Attainment of NPDES General Permit for Construction	Once for Each Document

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Act]. The permit may include preparation of a Stormwater Pollution Prevention Plan (SWPPP). • This measure shall be incorporated into the project bid package and contract.					
BIO-4.1a: Enhance Rim Fire Burned Deer Winter Range and/or Data. Prior to issuance of a certificate of occupancy, the project proponents shall contribute $1,100 per acre for approximately 43.4 acres to a non-profit (e.g., Yosemite Stanislaus Solutions) to be used for activities associated with either enhancing deer winter range or providing updated research data to support herd management within the footprint of the Rim Fire.	Project Sponsor	Prior to Issuance of Certificate of Occupancy	Tuolumne County Community Development Department Land Use and Natural Resources Division	Confirm Payment of Mitigation Fee	Once
BIO-4.1b: Keep Dogs Leashed. The project sponsor shall implement the following: • Dogs shall be kept on leash or otherwise prohibited from running free outdoors. Signs shall be posted along all project trails stating that dogs shall be kept on leash. • The project website, booking site, and/or brochures shall advise visitors of this requirement. A Notice of Action shall be filed with the County Clerk on the project parcels including the project conditions specifying that this measure shall be continued throughout the life of the project.	Project Sponsor/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department Land Use and Natural Resources Division	Inspect Signage/ Confirm Project Materials and Notice of Action with County Clerk	Once
BIO-4.1c: Stay on Trails/Education. The project sponsor shall implement the following: • Visitors shall be required to stay on designated trails at the project site when hiking within the project boundaries to minimize wintering deer/human interactions. Signs shall be posted along all project trails stating that visitors shall stay on trails and shall not approach deer (in particular between November 30 and April 30 when deer are expected to be migrating to and from their wintering grounds). In consultation with the project biologist, the project proponents shall prepare an interpretive trail sign/plaque or signs/plaques describing the life history of the Yosemite Deer Herd, the area's importance as wintering deer habitat and as	Project Applicant/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department Land Use and Natural Resources Division	Inspect Signage/ Confirm Project Materials and Notice of Action with County Clerk	Once

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
a migratory corridor, and the necessity to avoid approaching non-resident deer during their winter migrations. • The project website, booking site, and/or brochures shall advise visitors of the requirement to avoid approaching non-resident deer during winter migrations.					
4.2a: Deer-Friendly Fencing. Prior to issuance of a final certificate of occupancy, the project contractor shall implement the following: • To prevent trapping, injuring, or impeding deer movement; barbed wire fencing is prohibited. Non barb-wired fencing immediately surrounding structures (e.g., storage facilities, swimming pools) where deer are less likely to travel is permitted. Additional Fencing design shall be subject to review and approval by the project biologist following one of the recommended designs found in a Landowner's Guide to Wildlife Friendly Fences: How to Build a Fence with Wildlife in Mind. 2nd edition, 2012 (or as may be updated) by the Montana Dpt. of Fish Wildlife and Parks. Alternative fencing designs shall be approved by CDFW prior to installation. • A Notice of Action shall be filed with the County Clerk on the project parcels including the project conditions specifying that this measure shall be continued throughout the life of the project.	Project Sponsor/ Consulting Landscape Architect/ Construction Contractor	Prior to Issuance of a Certificate of Occupancy	Tuolumne County Community Development Department Building and Safety Division	Site Inspection/ Confirmation of CDFW Approval for Alternative Fencing Designs and Filing of Notice of Action with County Clerk	Once
BIO-4.2b: Implement Mitigation Measures BIO-4.1b and BIO-4.1c.	*See Mitigation Measures BIO-4.1b and BIO-4.1c.*				
BIO-5.1a: Implement Mitigation Measure BIO -1.1b.	*See Mitigation Measure BIO-1.1b.*				
BIO-5.1b: Native Oak Tree Protection. Throughout project construction, for native oak trees greater than 5 inches diameter at breast height (DBH), to be retained, to the maximum extent feasible: • Limit ground-disturbing activities to outside the dripline of native oaks and preferably outside 1-1/2 times the dripline.	Construction Contractor	During Construction	Tuolumne County Community Development Department Building and Safety Division	Conduct Site Inspection	During Regularly Scheduled Construction Site Inspections

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
• No storage equipment, supplies, vehicles, debris, construction wastewater, paint, stucco, concrete, or any other clean-up waste, and temporary or permanent structures shall be placed within the driplines. • Avoid cutting oak roots. • Use boring, rather than trenching, within driplines. • Avoid equipment damage to limbs, trunks, and roots of oaks trees. • Do not attach signs, ropes, cables, or other items to trees.					
BIO-5.2: Install ESA Fencing along the existing Open Space Zoning District boundaries where active construction will occur within 50 feet of the boundaries. The project contractor shall install ESA fencing along existing open space boundaries where active construction will occur within 50 feet of existing open space boundaries. Fencing shall be shown on the final construction documents. This measure shall be incorporated into the project bid package and contract and implemented prior to issuance of grading permits.	Construction Contractor	Prior to Issuance of Grading Permits	Tuolumne County Community Development Department Building and Safety Division	Inspect Temporary Environmentally Sensitive Area Fencing	During Regularly Scheduled Construction Site Inspections
BIO-7: Implement Mitigation Measures BIO-4.1a and BIO-4.2a.		*See Mitigation Measures BIO-4.1a and BIO-4.2a.*			
CULTURAL RESOURCES					
CULT-1a: Prior to the issuance of grading permits, the County shall confirm the applicant has required all construction crews to undergo adequate training for the identification of federal- or State-eligible cultural resources, and that the construction crews are aware of the potential for previously undiscovered archaeological or paleontological resources on-site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work. Examples of prehistoric resources	Project Sponsor/ Construction Contractor	Prior to Issuance of Grading Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Training	Once

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
may include: stone tools and manufacturing debris; milling equipment such as bedrock mortars, portable mortars, and pestles; darkened or stained soils (midden) that may contain dietary remains such as shell and bone; as well as human remains. Historic resources may include: burial plots; structural foundations; mining spoils piles and prospecting pits; cabin pads; and trash scatters consisting of cans with soldered seams or tops, bottles, cut (square) nails, and ceramics.					
CULT-1b: In the event that unanticipated discoveries of potentially sensitive cultural resources are encountered during the construction period, all activity should cease within 100 feet of the find until a qualified archaeologist or paleontologist, who meets federal criteria under 36 CFR 61, can determine the significance of the find and determine the appropriate mitigation. If the deposits are determined to be non-significant by a qualified archaeologist or paleontologist, avoidance is not necessary. If the deposits are determined to be potentially significant by the qualified archaeologist or paleontologist, the resources shall be avoided if feasible. If avoidance is not feasible, project impacts shall be mitigated in accordance with the recommendations of the archaeologist and paleontologist, in coordination with the County, local tribes, and the CEQA Guidelines Section 15126.4 (b)(3)(C), which requires implementation of a data recovery plan. The data recovery plan shall include provisions for adequately recovering all scientifically consequential information from and about any discovered archaeological or paleontological materials and include recommendations for the treatment of these resources. In-place preservation of the archaeological or paleontological resources is the preferred manner of mitigating potential impacts, as it maintains the relationship between the resource and the archaeological or paleontological context. In-place preservation also reduces the potential for conflicts with the religious or cultural values of groups associated with the	Construction Contractor/ Qualified Archaeologist or Paleontologist	During Construction	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Recommendations	As Needed if Resources are Discovered and Recommendations are Made

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
resource. Other mitigation options include, but are not limited to, the full or partial removal and duration of the resource. The County shall confirm that the project applicant has retained a qualified archeologist and paleontologist for the preparation and implementation of the data recovery plan. The recovery plan shall be submitted to the project applicant, the County, and the Central California Information Center. A data recovery plan shall not be required for resources that have been deemed by the Central California Information Center as adequately recorded and recovered by studies already completed. Once the recovery plan is reviewed and approved by the County and any appropriate resource recovery completed, project construction activity within the area of the find may resume.					
CULT-2: Implement Mitigation Measures CULT-1a and CULT-1b.		*See Mitigation Measures CULT-1a and CULT-1b.*			
CULT-3: If human remains are encountered during ground-disturbing activities within the project site, the project contractor and/or on-site supervisor shall immediately halt all work within 100 feet of the discovery and the project contractor shall immediately notify the Tuolumne County Coroner (Coroner), and the Tuolumne County Community Development Department. In coordination with the County, the project applicant and contractor shall contact a qualified archaeologist meeting federal criteria under 36 CFR 61 to assess the situation and consult with the appropriate agencies. If the human remains are of Native American origin, the Coroner shall notify the NAHC within 24 hours of this identification. The NAHC will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment or disposition, with proper dignity, of the remains and any associated grave goods. Upon completion of the assessment, the qualified archaeologist shall prepare a report documenting the background to the finds and provide recommendations for the treatment of the human	Construction Contractor/ Qualified Archaeologist	During Construction	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review and Confirm Recommendations	As Needed if Resources are Discovered and Recommendations are Made

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to the project applicant, the County, and the Central California Information Center. Once the report is reviewed and approved by the County, and any appropriate treatment completed, project construction activity within the area of the find may resume.					
CULT-4a: Implement Mitigation Measures CULT-1a and CULT-1b.			*See Mitigation Measures CULT-1a and CULT-1b.*		
CULT-4b: Prior to the initiation of any construction activities, the project applicant shall provide one-time site access to a Tuolumne Band representative(s) to remove native plants for the purpose of transplanting them to the Four Seasons Native Plant Nursery on the Tuolumne Rancheria.	Project Sponsor	Prior to Issuance of Any Construction Permits	Tuolumne County Community Development Department Building and Safety Division	Confirm Invitation to Access Site	Once
CULT-4c: The project site plan shall be amended to identify a 50-foot buffer around the top of the knoll (see Figure 4.4-1 of the Draft EIR) as a Me-Wuk Open Space area. This area will be available for quiet enjoyment for the following uses: guest/visitor recreational activities, guest/visitor assembly, and guest/visitor programs. The project developer shall not construct or otherwise place any permanent structures or improvements within the 50-foot buffer.	Project Sponsor	Prior to Issuance of Any Construction Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review Revised Site Plan	Once
CULT-4d: Prior to the initiation of any construction activities, the project applicant shall provide one-time site access to a Tuolumne Band representative(s) to gather firewood on the project site.	Project Sponsor	Prior to Issuance of Any Construction Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Confirm Invitation to Access Site	Once

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
GREENHOUSE GAS EMISSIONS					
GHG -1.1a: The proposed project shall use electrically powered construction equipment, where feasible.	Construction Contractor	During Construction	Tuolumne County Community Development Department Building and Safety Division	Inspect Construction Equipment	During Regularly Scheduled Construction Site Inspection
GHG-1.1b: The net increase in GHG emissions associated with the Terra Vi Lodge Project could be further reduced by the applicant purchasing carbon credits to offset GHG emissions. Carbon credits, however, are market-based. The availability, amount, and price of carbon credits fluctuate over time. As a result, it is unknown if local carbon credit offsets would be available at the time the project is implemented. Additional carbon credit offsets are available on a statewide or national level. However, even though the impact of GHG emissions is considered to be global in scale, the CEQA legal adequacy of applying statewide or national offsets to individual local projects has been questioned. In addition, while the County considered application of carbon credits to offset GHG emissions due to the proposed project, the County General Plan places a higher priority on implementing local mitigation measures before application of offsets. As a result of the unknown availability of local carbon credits, mitigation measures needed to eliminate any net increase in GHG emissions are considered to be not available, application of this mitigation measure is not considered to reduce the GHG emissions impacts of the project to a less-than-significant level, and this impact is considered to be significant and unavoidable.			*No feasible measures.*		
GHG-1.2a: The proposed project shall use electrically powered landscape equipment during outdoor landscaping and maintenance activities.	Project Sponsor/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department	Inspect Landscaping Maintenance Fleet and Tools	Once

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
			Building and Safety Division		
GHG-1.2b: As noted in the description of Mitigation Measure GHG-1.1b, because of the unknown availability of local carbon credits, mitigation measures needed to eliminate any net increase in GHG emissions are considered to be not available, application of this mitigation measure is not considered to reduce the GHG emissions impacts of the project to a less-than-significant level, and this impact is considered to be significant and unavoidable.			*No feasible measures.*		
HAZARDS AND HAZARDOUS MATERIALS					
HAZ-5: Prior to the start of any helipad operations on the project site, the project shall receive airspace determination approvals from the Federal Aviation Administration, a building permit from the Tuolumne County Building Division, and a Letter of Land Use Consistency from the Tuolumne County Airport Land Use Commission.	Project Sponsor	Prior to Use of Helipad	Tuolumne County Community Development Department Building and Safety Division	Confirm Applicable Approvals	Once
HYDROLOGY AND WATER QUALITY					
HYD-1a: A Drainage Plan for the site shall be prepared prior to issuance of building permits to address the post-construction requirements of the Statewide Construction General Permit. The Drainage Plan shall specify how runoff on the site will be managed in order to protect water quality. The plans will include detailed runoff calculations to appropriately size culverts, bridges, retention ponds/areas, and roadside ditches to meet the drainage requirements of the project site. The purpose of the plan will be to prevent the creation of localized on- or off-site flooding and to prevent any negative water quality effects off-site. If necessary, the plan shall be submitted to the Engineering Development Division of the Tuolumne County Public Works Department for review and approval.	Project Sponsor/ Consulting Civil Engineer	Prior to Issuance of Building Permits	Tuolumne County Community Development Department Public Works Department	Review and Approve Drainage Plan	Once

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
HYD-1b: Detention and/or retention facilities shall be designed to the satisfaction of the Tuolumne County Engineering Development Department staff and shall be included in the drainage report as described in Mitigation Measure HYD-1. These facilities shall capture surface runoff and retain flows such that the rate of surface runoff does not exceed existing flows. Maintenance of retention facilities shall be required by Tuolumne County.	Project Sponsor/ Consulting Civil Engineer	Prior to Issuance of Building Permits	Tuolumne County Engineering Development Department	Review Detention and Retention Facility Design	Once
HYD-3: Implement Mitigation Measures HYD-1a and HYD-1b.		*See Mitigation Measures HYD-1a and HYD-1b.*			
NOISE					
NOI-1.1: In order to satisfy applicable Tuolumne County General Plan daytime and nighttime noise level limits at the nearest existing sensitive use to the project, and subsequently result in maintenance yard noise levels at or below ambient noise conditions at that use, the following noise mitigation measures shall be implemented: • Construct a solid noise barrier measuring 11 feet in height along the north, east and west sides of the maintenance yard boundary, as depicted in Figure 4.12-2. The barrier could be constructed of either masonry or precast concrete panels. A noise barrier constructed of wood (or wood composite) fence material with overlapping slat construction would also be sufficient. The purpose of overlapping slats and using screws rather than nails is to ensure that prolonged exposure to the elements does not result in visible gaps through the slats which would result in reduced noise barrier effectiveness. • Ensure that the generator selected for the maintenance yard have a reference noise level not to exceed 70 dB at a distance of 50 feet. Depending on the power requirements of the equipment, the implementation of a custom engineered generator enclosure may be required in order to achieve an overall equipment noise level of 70 dB at 50 feet.	Project Sponsor/ Consulting Landscape Architect/ Construction Contractor	Prior to Issuance of Building Permits	Tuolumne County Community Development Department Building and Safety Division	Confirm Noise Barrier on Site Plans/ Review Generator Specifications	Once

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
NOI-1.2a: To satisfy applicable Tuolumne County General Plan noise level increase criteria at the nearest existing sensitive use to the project, the project shall limit on-site truck deliveries to daytime hours only (7:00 a.m. to 10:00 p.m.) and limit refuse collection activities to daytime hours only (7:00 a.m. to 10:00 p.m.).	Project Sponsor/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department Land Use and Natural Resources Division	Conduct Site Inspection	As Needed
NOI-1.2b: Implement Mitigation Measure NOI-1.1.	*See Mitigation Measure NOI-1.1.*				
NOI-3.1: As part of the design and approvals process for the proposed helipad, the project sponsor shall relocate the helipad to a location on the project site farther from residential buildings, if another feasible location can be identified.	Project Sponsor/ Consulting Civil Engineer	Prior to Issuance of Any Helipad Permits	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review Revised Site Plan	Once
NOI-3.2a: Window and door assemblies of all lodging within the proposed development should be upgraded to a minimum STC rating of 32.	Project Sponsor/ Consulting Architect	Prior to Issuance of Building Permits	Tuolumne County Community Development Department Building and Safety Division	Review Window Specifications	Once
NOI-3.2b: Disclosure statements should be provided to inform guests of the potential for elevated interior noise levels during emergency operations at the helipad, especially during nighttime hours.	Project Sponsor/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department Land Use and Natural Resources Division	Review Disclosure Materials	Ongoing

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
PUBLIC SERVICES AND RECREATION					
PS-1: Prior to issuance of the certificate of occupancy, the project sponsor shall provide trained and certified emergency staff. The project shall provide enough staff to ensure that two emergency staff are on premises and available to respond to emergencies at all times. The emergency staff shall be trained to meet Tuolumne County Fire Department volunteer fire service standards. Staffing may be provided by Terra Vi employees who have completed the required training. The Terra Vi project shall provide personal protection equipment (PPE) and positive communication equipment for all emergency staff. PPE and communication equipment shall be stored in a central, secure location. Communication systems shall permit uninterrupted contact between all firefighters at all times and at all locations on or within the property. In addition, there shall be communication at all times between a fire officer and recognized Emergency Command Center (ECC). All equipment required shall be approved by and become property of Tuolumne County and maintained per manufacturer and National Fire Protection Association (NFPA) standards by the Terra Vi project sponsor.	Project Sponsor/ Lodge General Manager	Prior to Issuance of Certificate of Occupancy	Tuolumne County Fire Department	Confirm Trained Emergency Staff and Equipment	Once
PS-2: Implement Mitigation Measure PS-1.			*See Mitigation Measure PS-1.*		
PS-3: The Terra Vi Lodge shall include private security personnel on staff (Manager on Duty) to provide security, complaint resolution, and interfaces with law enforcement/emergency personnel in case of an incident, emergency, or evacuation. These personnel shall be on-site 24 hours a day, seven days a week. The security personnel shall make regular rounds of the Terra Vi Lodge and employee housing and report internally any	Project Applicant/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department Land Use and Natural Resources Division	Confirm Trained Emergency Staff	Once

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Mitigation Measure and Monitoring Report – Conditions of Approval
Terra Vi Site Development Permit SDP18-003

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
incidences, as well as report to local authorities if the situation warrants it.					
PS-4: Implement Mitigation Measure PS-3.			*See Mitigation Measure PS-3*		
TRANSPORTATION					
TRANS-1.1: The project applicant shall provide an on-site transit coordinator to coordinate guest transit use to help ensure smooth operations at the project site bus stop. The on-site transit coordinator would also serve as a point of contact between Terra Vi Lodge, YARTS, and the County to assist in identifying and responding to issues related to transit services that may arise at the project site.	Project Sponsor/ Lodge General Manager	During Project Operation	Tuolumne County Community Development Department Land Use and Natural Resources Division	Confirm On-site Transit Coordinator	Once
TRANS-1.2a: The project applicant or contractor shall prepare a Construction Traffic Control Plan as part of the Caltrans encroachment permit application for all work within the state right of way on SR 120.	Project Sponsor/ Construction Contractor	Prior to Construction	Tuolumne County Public Works Department	Review Construction Traffic Control Plan	Once
TRANS-1.2b: Prior to the start of any construction activity on-site or in the SR 120/Sawmill Mountain Road intersection, the applicant shall coordinate with the Tuolumne County Public Works Department for an on-site inspection of Sawmill Mountain Road to assess the road surface conditions. Following completion of project construction, but prior to issuance of an occupancy permit, the applicant shall schedule a post-construction inspection to determine if deterioration of the road surface occurred, and if so, the applicant/contractor shall restore the road to pre-construction conditions.	Project Sponsor/ Construction Contractor	Prior to Construction	Tuolumne County Public Works Department	Conduct Site Inspection	Twice (Once Prior to Construction to Assess Pre-Construction Conditions and Once Following Restoration to Confirm Adequacy of Restoration improvements)
TRANS-3: Construction of the proposed left turn lane from SR 120 to Sawmill Mountain to accommodate project-generated traffic will require cutting the hillside and vegetation removal in conformance with Caltrans standards, which will open the line of sight to an acceptable distance, as determined by Caltrans. The project sponsor shall obtain encroachment permit approval from Caltrans prior to the start of construction on the proposed	Project Applicant/ Consulting Civil Engineer	Prior to Construction	Tuolumne County Public Works Department	Review Approved Encroachment Permit	Once

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
project site and shall complete improvements to SR 120 prior to operation of the proposed project.					
UTILITIES AND SERVICE SYSTEMS					
UTIL-10: Implement Mitigation Measures HYD-1a and HYD-1b.		*See Mitigation Measures HYD-1a and HYD-1b.*			
WILDFIRE					
WF-2: Prior to issuance of building permits, the applicant shall submit a Wildland Fire Prevention Plan and Vegetation Management Plan to the Tuolumne County Fire Prevention Bureau for review and approval. The project site plan and landscaping documents shall be revised to conform to the Vegetation Management Plan. These revisions shall include, but are not limited to, the following measures: • The perimeter of all structures shall be surrounded by a 5-foot non-combustible zone. • Project landscaping shall be fire resistant, with a planting palette consisting of native hardwoods and other fire-resistant native vegetation. • Landscape plantings shall be installed in a way that strategically staggers placement and planting heights to provide effective screening of the proposed project from adjacent roadways. • Areas within 200 feet of all structures shall be managed as defensible space (in compliance with the California Fire Code and Public Resources Code Section 4291, with vegetative fuels that would produce 2-foot or shorter flames. • The entire project site, including open all undeveloped areas, shall be managed as fire-resistant landscaping that adheres to CAL FIRE's firescaping requirements, with widely spaced trees and shrubs. • Any new plantings in the undeveloped areas of the site shall include a greater proportion of oaks.	Project Sponsor/ Consulting Landscape Architect/ Lodge General Manager	Prior to Issuance of Building Permits	Tuolumne County Fire Prevention Bureau	Review and Approve Wildland Fire Prevention Plan and Vegetation Management Plan	Once

TABLE 1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
• Undeveloped areas of the project site shall be managed so that they do not grow back in as high a density as existed before the 2013 Rim Fire. Brush and grass in these areas shall be maintained and managed so that continuous groupings do not exceed 120 square feet in area.					

Quincy Yaley

From: Taryn Vanderpan
Sent: Friday, November 20, 2020 7:25 PM
To: Quincy Yaley
Subject: FW: Terra Vi Lodge Final EIR

FYI

Taryn Vanderpan
Administrative Assistant
Community Development Department
County of Tuolumne
(209) 533-5635
www.tuolumnecounty.ca.gov

From: Tim Hutchins <tim@yosemiteflyfishing.net>
Sent: Friday, November 20, 2020 6:50 PM
To: Taryn Vanderpan <TVanderpan@co.tuolumne.ca.us>
Subject: Re: Terra Vi Lodge Final EIR

Corrupt motherfuckers

Sent from my iPad

On Nov 20, 2020, at 5:49 PM, Taryn Vanderpan <TVanderpan@co.tuolumne.ca.us> wrote:

> Good Evening,
>
> Below is the link to the Terra Vi Lodge webpage.
> The Final EIR is located here.
> I have broken it down into smaller sections to allow for easier reading and downloading capability.
>
> https://www.tuolumnecounty.ca.gov/1158/Terra-Vi-Lodge-Yosemite
>
> Below is the information for the December 1, 2020 TCPC Zoom meeting.
> This information can also be found on the Terra Vi Lodge link above
>
> Please click the link below to join the webinar:
>
> https://us02web.zoom.us/j/89051366681
>
> Or iPhone one-tap :
> US: +16699006833,,89051366681# or +13462487799,,89051366681#
> Or Telephone:
> Dial(for higher quality, dial a number based on your current location):
> US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 312 626 6799 or +1 929 205 6099 or +1 301 715 8592
> Webinar ID: 890 5136 6681

If you have any questions or concerns, please do not hesitate to contact us.
Our offices will be physically closed to the public the week of November 23rd – November 25th, however staff will be working.
The County offices will be closed for holiday on November 26 – 27th.

Taryn Vanderpan
Administrative Assistant
Community Development Department
County of Tuolumne
(209) 533-5635
www.tuolumnecounty.ca.gov

Quincy Yaley

From: Quincy Yaley
Sent: Friday, November 20, 2020 7:33 PM
To: Taryn Vanderpan
Subject: FW: Terra Vi Lodge Final EIR

FYI

From: Eric Erickson <ericrerickson@gmail.com>
Sent: Friday, November 20, 2020 7:20 PM
To: Quincy Yaley <QYaley@co.tuolumne.ca.us>
Subject: Fwd: Terra Vi Lodge Final EIR

Seriously Quincy? My planning collegues shook their head at your unprofessional behavior. You embarrass me as a fellow public servant.

---------- Forwarded message ---------
From: **Taryn Vanderpan** <TVanderpan@co.tuolumne.ca.us>
Date: Fri, Nov 20, 2020, 5:49 PM
Subject: Terra Vi Lodge Final EIR
To:

Good Evening,

Below is the link to the Terra Vi Lodge webpage.

The Final EIR is located here.

I have broken it down into smaller sections to allow for easier reading and downloading capability.

https://www.tuolumnecounty.ca.gov/1158/Terra-Vi-Lodge-Yosemite

Below is the information for the December 1, 2020 TCPC Zoom meeting.

This information can also be found on the Terra Vi Lodge link above

Please click the link below to join the webinar:

https://us02web.zoom.us/j/89051366681

Or iPhone one-tap :

US: +16699006833,,89051366681# or +13462487799,,89051366681#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 669 900 6833 or +1 346 248 7799 or +1 253 215 8782 or +1 312 626 6799 or +1 929 205 6099 or +1 301 715 8592

Webinar ID: 890 5136 6681

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Taryn Vanderpan

Administrative Assistant

Community Development Department

County of Tuolumne

(209) 533-5635

www.tuolumnecounty.ca.gov

Quincy Yaley

From: John Buckley <johnb@cserc.org>
Sent: Monday, November 23, 2020 11:18 AM
To: Quincy Yaley; Taryn Vanderpan
Cc: John Gray; Anaiah Kirk; Sherri Brennan; Karl Rodefer; Ryan Campbell
Subject: Question about upcoming Planning Commission meeting

From John Buckley
CSERC
P.O. Box 396
Twain Harte, CA 95383
(209) 586-7440

Monday, November 23, 2020

To Quincy Yaley
Community Development Department

To Quincy:

The Planning Commission always meets on Wednesdays, but the email that Taryn sent out listed the upcoming Planning Commission consideration of the Terra Vi Lodge EIR and permits as being held on Tuesday, December 1st.

Is that date accurate?

Second, the rushed scheduling of this matter by the Planning Commission appears to be yet another example of the County intentionally rushing through the Under Canvas and Terra Vi Lodge projects unfairly and inappropriately given that the Terra Vi Lodge EIR and Responses to Comments were not even released until AFTER business hours on Friday evening.

So for public agencies that do not work after 5 p.m. on Friday until returning on Monday, there is no way that those agencies received a legal 10-day notice of the Terra Vi Lodge matter before the Commission and the posting of the EIR on the website.

Further, it is obvious that requests for a basic, reasonable amount of time to review the EIR and responses falls on deaf ears when it comes to the County Board of Supervisors, which I respectfully point out is shameful and a disgrace for those who supposedly believe in democratic process and fairness in receiving input from an informed public.

But beyond CSERC's frustration, for legal purposes I ask that you **please accept this email as yet another formal request by CSERC for members of the public to be given additional time to review and consider responses prior to a scheduled public hearing by the Planning Commission of the Terra Vi Lodge matter.**

In this instance, the rushed planning process is tied to the FEIR and Responses to Comments for the Terra Vi Lodge EIR and project. Given that there are four weekend days and two holiday days between the time of the late evening posting of the link to the EIR on the County website, members of the public honestly only have 4 or 5 weekdays prior to the hearing to review and prepare comments for the extremely lengthy EIR and consultant's perspectives about this highly contentious and unpopular proposed project .

CSERC asks for a minimum of 10 (non-holiday) weekdays for time for a reasonable public review prior to a hearing by the Planning Commission.

Back to the original question at the start of this email, if the email from Taryn is correct that the Planning Commissions review of the Terra Vi Lodge project is indeed scheduled for Tuesday, December 1, 2020, for what reason has the Board of Supervisors determined it is appropriate to deviate from the normal scheduled planning commission calendar? **CSERC asks to be informed as to the County's reason for the change in date.**

John Buckley
CSERC
johnb@cserc.org

EXHIBIT F

YOSEMITE UNDER CANVAS
NOVEMBER 18, 2020 PLANNING COMMISSION MEETING
POST PUBLIC COMMENT PERIOD TRANSCRIPTION

(Last 1 ½ hours of meeting)

PART I OF RECORDING

Speaker 1 (00:00):

Um, and that water Tinder, 125 gallons, we figured that's about four bathtub and foals. That's not going to do anything. Um, so please take your time, make the right choice. Thank you very much. Thank you.

Speaker 2 (00:19):

Uh, I don't see anyone else interested in speaking. Okay.

Speaker 3 (00:23):

Okay. We're going to close the public comment at this time and bring it back to the commission for discussion.

Speaker 2 (00:32):

Um, Mr. Chair, before you do that, before you do that, um, we didn't want to have one button, some staff members address some of the, uh, items that were raised during the meeting. It'll be brief. I promise.

Speaker 3 (00:48):

Oh, sure. Well, no, no problem. That was yes, absolutely.

Speaker 2 (00:52):

Okay.

Speaker 4 (01:00):

Uh, Cody Vasper deputy County counsel, I just wanted to address some of the legal issues that were raised. Um, and some of the comments first regarding the cumulative impact cumulative impacts are addressed in the EIR, including a discussion of the anticipated impacts from Cervi. Um, that is something that is important for the commission to consider regarding certification of the EIR. Um, second I wanted to respond to Mr. Schroeder's call or comment, um, from Caltrans, the County did respond to Mr. Schroeder's comment, um, in the final EIR, uh, response, um, is that page 40 of the response to comments? And then finally I wanted to address the comments regarding, uh, the use of the forest service road and federal regulations. The federal regulations do not preclude, um, forest service granting access to that road. The one code section that was cited, um, is with regard to access to commercial recreation facilities on national forest plan, which doesn't apply here. Um, and it's only one of several authorities that the national forest service can use to, um, grant access to, to that road. And I would note any, um, approval and necessarily environment, environmental review of that, um, permission to use that road. It would be up to the forest service. So those are the issues I wanted to address.

Speaker 3 (02:31):

Thank you.

Speaker 2 (02:33):

Um, in addition, I wanted to, uh, ask assistant fire chief Andy Murphy to come back in and comment on some of the issues related to, um, response.

Speaker 3 (02:43):

Oh, hang on a minute. Uh, did the, any of the commissioners have, uh, any, uh, any questions of our last, uh, the County council? Yeah, we do have, so bring bringing back.

Speaker 2 (02:56):

He hasn't gone anywhere. Go ahead, Mark.

Speaker 5 (03:02):

Okay, ahead Mark. Go ahead. Okay. Um, as, as we go through this, I'm looking for obviously the fatal flaws in, in any of the applications here. And we had a couple of people mentioned an illegal lot's split, which I think was addressed by the County surveyor, but I'd like County council to weigh in on that.

Speaker 4 (03:24):

I, you know, I haven't, um, reviewed that as, since it's outside of the scope of the sequence inquiry. Um, Quincy did address that at the outset, um, beyond the purpose of this meeting. Um, but it was reviewed by the County surveyor. I think he might be able to weigh in on, on that question, Mark, that Warren Smith or County surveyor is here. Uh, Warren, do you want to go ahead?

Speaker 5 (03:49):

Well, yes. Uh, what Mr. Chapman didn't include in his package was my response in July of 2018. Uh, we're in a, uh, pointed out that the Manley's did apply for and were granted a certificate of compliance for the Caltrans parcels that were transferred to them. Um, and that was recorded. And then they subsequently applied for the LA line adjustment for their four parcels, uh, into its current configuration, which was also recorded. So the seven substances there's no substance there. Correct. Okay. Mark, does that answer your question? That absolutely does. Thank you very much. Okay. Who else? Somebody else had a question? Um,

Speaker 6 (04:35):

This is Ryan. I had my hand up, but that was the same question I was going to ask.

Speaker 5 (04:39):

Okay. All right. Very good. All right. Okay. Thank you, Mr. Nesbitt.

Speaker 4 (04:45):

Okay. Andy Murphy.

Speaker 6 (04:48):

Hi, good evening again. Uh, just, uh, just a brief, a couple of possible answers here to some of the comments that I wanted to go over quickly. What the difference between automatic aid and mutual aid is a automatic aid. Is that a written agreement to respond outside of a jurisdiction? Uh, and mutual aid is a voluntary agreement that may or may not be written. And it's completely up to the jurisdiction whether to respond or not. Um, Cal fire is a partner with local government and other federal and state agencies around the state and responds daily to all risk incidents during both the summer preparedness period and during the Amador period, uh, throughout the County currently, and throughout the state, as I mentioned, uh, it should grow when our GCSP not respond to a mutual aid request. Other near the project site, Cal fire does now and will continue to respond as a next closest resource. Hope that that clears that up. Okay.

Speaker 7 (05:58):

Thank you. Anybody have any questions for chief? Okay, good. Um, Quincy, any anyone else you wish to bring up or, and I had a question, should we allow the, um, uh, applicants to address anything or at this point,

Speaker 2 (06:14):

I, I think that, um, at your, at your questioning is typically what we do, uh, is that if the commission has questions for an applicant, they can, I request what we do.

Speaker 7 (06:27):

Okay. So we'll, we will definitely bring it back to the, uh, commission for discussion at this point. Um, does the, any commissioners have questions for any of the staff or, or the, uh, the applicant? Uh, Ryan? Yeah. I just had one other question. Uh, there were quite a few comments about the timing of this project, and I would just like County, uh, staff or council to speak to whether or not we'd have met all of the necessary requirements for the timing on this project.

Speaker 4 (06:59):

Sure. I can address that. Um, there were, there were several comments about lack of adequate, um, opportunities to review the final EIR. Um, there are no statutory requirements or public review of the final EIR. The secret guidelines do allow, um, do allow for agencies to provide that public opportunity to review, but it's a permissive guideline. Um, the 10 day, um, that there is a requirement to give agencies 10 days to review the responses to agency comments, but that, that requirement does not exist for the public. So I believe that all the kind of requirements happen.

Speaker 7 (07:46):

Okay. Brian, are you okay with that? Uh, yes. Thank you, Mr. Nasper. Okay. Any, any other questions from anyone else, Matt? Um, I assume there's going to be an opportunity before this thing is actually constructed for a review of the offsite approvals that might be required. There was a lot of discussion about the, um, like the traffic facilities that are available, um, that that's not totally dealt with tonight in this environment. And in fact, there will be a subsequent review to deal with, um, offsite, provement requirements. I presume somebody just confirmed that.

Speaker 2 (08:27):

Sure. So, um, we, the, any offsite improvements that the project may trigger into in terms of the title of that improve their, the relationship of that improvement to the project and any environmental impacts

from that improvement are included in this, um, environmental impact report, the specific, uh, technical information to support those plans, those detailed plans and drawings, or what we would call a code analysis is at the time of either the grading permit or the new improvement permit or the building permit of something like that.

Speaker 3 (09:05):

Okay. Okay. Larry then Charlotte,

Speaker 8 (09:12):

I'm not sure who the, I guess the Quincy, uh, to address this, but the condition 57, which is this, uh, feed to be determined later, I've never seen something quite so open-ended as this before as an actual cost to a project. Um, I mean, sounds like from what Tracy rig said, they're still working on what the speeds will be and how much it'll cost and what I mean. So what's the timing of this, because I think I understand that this project launched to actually do construction this coming summer. Correct. So how long does it going to take before they know how much it's going to cost?

Speaker 2 (09:58):

Thanks Larry, for the questions. So I'll go ahead and answer that. Um, and, uh, basically the, the fee is going to be required to be paid, um, you know, prior to their occupancy yet or not. I don't, it's something of that nature. And then it's an annual fee after that part of the building permit. Larry, um, I don't know the condition of it in front of me right now, but they'll have to pay the fee if you retire to them. So right now we have a draft, um, a sketched fee, um, program. It was actually done for the terror B. Um, so every project, yada GCs D is included in some of their material. So we have a rough idea of what that fee could be, but because the County is considering some other fee structures at this point, like a commercial potential commercial, now your fee, or other than that, we wanted to make sure that there wasn't something that was going to be adopted on a broader County wide basis. If there is nothing at the time when they, this fee is required to be paid, then we will do a fair share, um, assessment at that time.

Speaker 8 (11:05):

Okay. Okay. So, so you already have an idea how much it's going to cost. You're just not disclosing it.

Speaker 2 (11:13):

Oh, it's been, there's been some drafts done, but it's not, it's definitely not final. Um, because the it's, uh, analysis that needs to be done in, in further detail. So, but there is some drafts that were included in the terror EIR and some GCs board meeting materials about what a fair share could look like. Um, but if we don't believe that it was a broad enough to, um, at this point to really capture all of the, what Tracy's really excited, we did two fair share of what we want to make sure that it doesn't just deal with, um, fire response, that it also includes, um, sheriff response, other emergency responders. So there isn't a number at this point because, um, those are the draw on those resources. Uh, it needs some further fleshing out.

Speaker 8 (12:04):

So, so what will this? So we don't know exactly what the is going to actually do. It will, it include ambulance and, and a sheriff patrol vehicle being in, uh, you know, more proximity than what it is today.

Speaker 2 (12:23):

It includes first responders, Larry, uh, and, uh, how that is going to be allocated, um, will be towards emergency response. It won't just be towards fire.

Speaker 8 (12:36):

Okay. So, um, is this, I want to determine retroactive, but there's, you know, this is, this is a cumulative problem, right? You, you start with historical things like camp may there and the Berkeley camp, then you start adding on, uh, evergreen lodge and rush Creek. And at some point will, will all those entities also be paying into this fee? Is that how it's going to be structured because there'll be taken some advantage of it.

Speaker 2 (13:05):

Um, I'm gonna, uh, give Tracy offensive to talk about emergency services on the one 20 corridor in a broader sense, but it's not a fee. Those projects have already been entitled or are in operation. And so it's not a fee that from a condition of approval perspective that can be added to them. And that's, you hit the nail on the head that there are a lot of other projects that, um, you know, are drawing on services and dark paint, any sort of be above and beyond. So this is one of the first times that the County has done this. We've done this for traffic. Uh, you know, there's been other times we've done this for traffic and like a zone of benefit, but it hasn't been done for emergency response. And so, um, this is, uh, a bit novel and, uh, I'm going to go ahead and turn it over to Tracy and see if there's anything she wants to add in terms of the vision of the County for emergency response on the one 24 door.

Speaker 9 (14:05):

Hi, Larry. So thank you for the questions. So, um, we're starting out fairly new on this as, um, the, the questions from JCSD board and some of the comments that came up with this as kind of pushed us to move a little bit quicker and more I'm going with that is if we're going to look at the first responder costs in general. And really what we need to look at is, is what would we need? So I'm working with a sheriff as to what that model would look like, the law enforcement for CHP, for ambulance and for fire. And we're working on that. Now we have a fire strategic plan. That's in a draft form that I've received from Nick and Andy, which will help us set that. What does that standard look like? So we can start getting to where you're going, what is the, what we don't have the what yet, meaning how much, and then that fair share.

Speaker 9 (14:59):

So if you have 2000 rooms and someone has 10% of those rooms, then they would, they're saying, they're happy to pay 10% of that cost, but we don't know what the cost is yet. So we're working on that and we don't have it yet. I can't give you a timeline where we're, I think we're definitely farther along than we've ever been, but when it started coming up about some of the community, Felix facilities, districts, and some of this other is, um, you know, Quincy and I felt very strongly that if, if we're going to have this conversation, we shouldn't be having this conversation County wide. And not just because of, you know, one or two potential developments. And so we will be having a much broader conversation with the board in the near future when we do, we'll be bringing up, what would that standard baseline cost for? I spoke, spoke to it earlier, if we want to get fire and, and, or a deputy to any home within the County. And if that standard that we want to meet is 15 minutes, then where would we have to place those resources in order to get to certain locations within 15 minutes? And so that's, there's a lot of

detail, and that's what we're looking at right now. So I can't give you an exact timeline, but we are hoping to get it done sooner than later for the board to begin considering.

Larry Beil (16:23):

I mean, the issue that we're having here is that this project was applied for like a year and a half ago. So to be honest with you, we should be way past the, what we should be in the house now. So it's kind of disappointing that it hasn't, this hasn't moved faster than it has, because we've had two major projects in this particular area that have been moving along and they, and th the applications have been moving along and they they've been funding the EIRs and doing all the work, and the county's not ready to even know how much it's going to cost. And I think that's disappointing, but I, it sounds what you're kind of doing is you're kind of, you're, you're brought into scope so big that you, at some point become what's the term, uh, paralysis by analysis. What we really care about is, you know, in the, in the Groveland big, old flat area, South to Yosemite, we've got, you know, during peak season thousands and thousands of people that are paying 400, $500 a night that expect a certain amount of safety, and they're probably not getting it. And, and it's, it's, you know, it's, it's kind of an issue. I think that we're, we're continuing to incrementally approve these projects without even knowing what those real costs are. It's kind of, it's, it's putting the cart before the horse where the horse should have been figured out at some point already. So that's kinda what my disappointment there,

Speaker 9 (17:41):

If I may, what I w only response to that Larry would be that they would not begin paying these fees in a community facilities district until they open. So with all due respect, you know, this is, I can't, I can't tell you why this wasn't started years ago, we're starting it now. And always some conversation. And the thought process is always better than not having it at all. So we're starting that, but even if we said, they're going to pay a fee, they won't start paying it. If it isn't to say the CFD model until they open, which may not be, you know, I don't know when, when they're, um, they're hoping to open, but it may not be for some time. And I think that we can meet that timeline.

Speaker 5 (18:26):

Okay. Thank you. Um, Charlotte,

Charlotte Frazier (18:30):

Well, um, part of me agrees with Larry. I, I I'm, I'm looking for a comfort level and it's absent. Um, I think the project is wonderful, but we have lots of hanging out. The fee will be going to the County. We don't know what it is. We don't know how it will be allocated, how it will be spent, and we have safety issues and, and, um, it just feels to me, like we have fire safety issues, um, that need to be determined so that we can be somewhat comfortable or at least positive. Um, I would like to see negotiations with GCs D uh, um, it feels like it's hanging out. And, um, it just seems to me that it would be worth letting our staff contemplate some of these things and bring this back to us a little more complete than what I'm feeling.

Speaker 5 (19:42):

W was that a question for Tracy Riggs or for Quincy?

Speaker 5 (19:47):

Okay. Okay. Okay. That's a statement. Okay. All right. Thank you, Mark. Okay. A couple of things. Um, first in the, in that, that vet fee structure that Larry was talking about and Tracy was answering about,

uh, whatever happens. The only portion of that that's going to be recouped by the County is going to be their fair share. So let's say that, you know, at best they are 20% of those, uh, reservations that are up there. That's the best the County is going to get. Cause as a, as she's pointed out, we can, they can't go back to rush Creek or Berkeley or any of the rest of them and, and, and, and extract anything from them. So we will be getting something, but it certainly won't fund what we're looking for up there. And I think we're always going to be behind the curve that way now to put it, this, this project in perspective, I started thinking about, well, where else does the County have this kind of a situation where in a, uh, Mr.

Speaker 5 (21:00):

Buckley calls it the leapfrog and that, you know, I guess that's proper in some circles and maybe not completely right. Cause rush Creek is beyond this project. So, um, but I was thinking about Kennedy Meadows, which is actually located 30 miles beyond pine crest has a number of cabins and they have campgrounds up there and all that good kind of stuff. And Dardanelles also, um, but those were quite a ways. And th this is 22 miles from Groveland, pine CRA or pine cross to Kennedy. Meadows is 30 miles. And I have dealt with both of those areas number of times. And, um, there is a, there is a lack of law enforcement. There's a fire issue, there's ambulance issues. Um, that's why we have helicopters in this area to Phi and those kinds of people to, to do medical evacs. So I'm, I'm just throwing that out there as a perspective to maybe we can apply what's going on here with this project, with things that we already have in place.

Speaker 5 (22:06):

And I, and I guess when you think about Kennedy Meadows, this at least doesn't seem to be, or seems to be an ex sort of the same boat as a Kennedy Meadows. So, Tracy, first off, I'd like to know that's we aren't going to be getting any more money from any of those prior projects is the way I heard it. It's going to have to be any of the new ones that come on board from this point going forward. Correct. That's what she said. Yes. Okay. So I just offered that perspective of Kennedy Meadows in this project, and maybe that's something that we can think about. Okay. Thank you, Matt.

Speaker 7 (22:48):

Yeah, a couple of good points. Um, Larry dealing with years, I've worked on projects all over California where we don't know the exact impacts, but it's still an express contingent. It's still a condition of approval that, that be done before development starts. So even though we don't know those, uh, do you Charlotte, to you, Larry? Um, the reality is there's going to be, um, fees that are imposed, that are intended to offset the impact and the burden of this new project. Um, and even though they're not clarified and maybe they could have been, and they aren't, I have seen that in other situations. And the fact is this thing will never get developed unless somebody actually, um, solidifies those numbers in the applicant actually pays them and concerning. I mean, so I grew up up the Hill and Milwaukee and area and things like that.

Speaker 7 (23:37):

The reality is we're a very recreational community. We're never going to have the type of responsiveness from emergency services with this application, without it, or a hundred others like it. So the question is we have this sort of international draw of Yosemite. We've got four or five counties that touch it. People are going to visit there, millions of them, whether they're through 12 and me or not. And I think one of the more broad spectrum questions is, do we want to be a County that gets those people and the jobs and the revenue or not. If we do that, we, we sort of have to, we have to invite

these people. Obviously there's a process to make, make sure that, um, we're fulfilling the, the minimums of the law and so forth, but I'm a huge supporter of this for a couple of reasons. Both personally, I grew up camping old school style, but I married a city girl and I could see myself using this.

Speaker 7 (24:37):

You know, the, the style of facility to me is, is, um, is attractive. Number two, I've seen their product in other jurisdictions. I've looked at the material. They seem to do a very nice job of it. And, um, there's a lot of reasons I support the fire is a big issue. It's going to be an issue, whether they're there or not. I think that the, the idea that the users of this facility create an additional fire hazard is pretty well addressed in the conditions of approval, both from the, the fact that there's going to be additional fire review to have onsite, you know, the water truck, they talked about gallons. Obviously it didn't seem adequate 125, but I think that was just shooting from the cuff. There's going to be a fire plan in place. Um, these fire units do not seem to be high propensity for fire risks, the materials that they use, the fact that it's staff, the fact that there's people around, I think that there's adequate fire protections that are built into the conditions of approval. So in any event, I just want to put some hubbub into the mix.

Speaker 3 (25:46):

Well, to, to your point, I read very clearly that, uh, they will not get the building permit issued until they agreed to their fair share dollar value per year. So that, that is in there and they can't, they can't proceed forward. And if the number is too big, they'll just walk away. Uh, you know, for some reason it, it would come out that way. So I, I think they're protect, we are protected. And so are they, they are, they're not required to do this and if they don't want the building permit, they can walk, walk on it. Uh, Charlotte, go ahead. My point of information, or just to remind our group, um, the representative from rush Creek did say that he would be willing to make contributions toward fire safety. So it is possible that we could incorporate already built and running facilities sure. On a, on a voluntary basis yet. I, I understand another source that

Speaker 5 (26:44):

There is a, uh, some sort of a vote coming up next year about, uh, possibly live levying, a fire tax like California did at one point. So I, you know, I don't know how that's going to work out. Okay. So, um, uh, go ahead, Mark. Okay. Sorry. I just, Matt brought up something else that I got to thinking about. He was talking about, you know, his experience growing up and camping and that kind of thing. And if we provide a project that has not a a hundred units or 99 units out there, that where people can go out and camp and get their, get their glamping and done in a more organized and supervised situation, um, there might be less of a risk for the tent, camping in unimproved areas and those campfires and those kinds of things that are definitely, um, because we, the, through this COVID thing, we've seen a lot of that.

Speaker 5 (27:41):

The first timers out there that are throw up a tan anywhere alongside the road, or because most of the improved campgrounds were closed. So they were all over the place out there. And I think an organized, structured, um, type facility might, might actually reduce some fire danger to some extent by having it controlled like that. That's just another thought. Okay. Thank you. All right. I would like to bring us back to sort of, uh, on point here, uh, we were given a charge early on that we had two tasks to do. One task was to approve the EIR and the second was to, um, approve or disapprove or send back to the staff, um, the, um, cup. So at this point, um, I guess the way to start this out is, uh, just go ahead and go with the

way we it's written out for us. Um, considering the EIR does, um, is there any, uh, um, kind of, uh, a motion to approve or not, uh, the EIR,

Speaker 4 (28:56):

I'm sorry if I could interject this as coating desperate w tenant councils, we took it to close the public hearing portion of the I did. I closed it? I'm sorry. I'm sorry. I missed that.

Speaker 5 (29:11):

Okay. Um, so we're back on the EIR. So Larry,

Larry Beil (29:16):

Uh, maybe, uh, let me back up one step here. There's a couple of, uh, environmental type issues that site-specific, that we really haven't talked about as a commission yet. Uh we've we talked about the emergency services. We've kind of beat that, uh, as far as the wildfire hazards on the property and around the property, um, you know, we, we, we got some more information tonight about the, the, the water truck and so on. And I think we're all pretty much in agreement that the minimal size water truck that was mentioned earlier is not adequate, but I believe that, uh, we really got two primary issues. One is a fire that starts on the site and takes off and a fire. And the second issue is a fire that's from somewhere else, that's, that's approaching the project site. So from the first perspective, well, and it addresses actually both that, um, there's no plan to have any significant amount of water storage on the site and with, without really, uh, a like a hydrant type system or anything like that. So I think that is something that should be reconsidered.

Mike Gustafson (chair) (30:24):

Larry, let me, if I may just slightly interrupt you. I was going to address that on the second one as conditions. My, my thought was to throw, cause I had same thing you did. I have, I had issues there. And I had issues with the, um, the, um, the fireplaces. I was going to throw that into the, into the conditions on the CUP that in order to approve the CUP, they would have these following conditions that we would add into it. Whereas the EIR is just, it is what it is.

Larry Beil (30:57):

Oh, okay. I understand that. But to, to make the findings on the EIR, we have to, we have to, uh, vote on whether or not the EIR is adequate. Right. So, uh, I don't, I don't, I have some real concerns that, uh, some of the things that have been discussed by some of the people in some of these comment letters on haven't really been addressed adequately by the final EIR, the final EIR basically did really hardly anything past the draft. So, uh, if, if you want me to talk about them, then that's, then we can, I can put that part off, but, uh, the other issue, and I'll just bring it up and let you move on, is the water quality water quantity, which is a purely environmental issue. I believe, um, the, the study that was done, the hydrogeologic study that was done as part of the draft EIR was done by a different consultant than the one done by Tara V.

Speaker 8 (31:52):

And, uh, and I looked at both of them. I have a little, I have a little experience with this. And, uh, the one done by Tara V was able to get access to some, uh, private Wells up on, uh, Samil road. And they also put into monitoring Wells, and then they put in, then they put in the actual production Wells and they monitored everything during their drawdown tests. Now, the hydrogeologic study done on this site. Um,

I understand from, from, uh, from Jamie Schmidt that, uh, they, there was a request to the property owners to the, uh, I guess would be the East of the property downhill on hard and flat road who have private Wells, that they be allowed to do the same thing there, that this project could use those as monitoring Wells. And they weren't given that access, which is those homeowners, right.

Speaker 8 (32:46):

To either accept it or not, but there was no other, no other, so essentially the, the tests were done with only the three Wells in the site. There was no monitoring Wells offsite at all. So I believe one of the things we could, we could address there. Um, there, there really is no monitoring program that's effective here for what happens if the water quality quantity goes down, uh, or the water quantity in those offsite Wells is affected or in the case of the, the, uh, sewage disposal system, both of which are geographically uphill from those, from those properties. Uh, the private property is adjacent on hard and flat road. Um, there's, there's nothing to be in the, in the current mitigation scheme to really address what if there's some issue with their water because of the effluent. So I believe what could be done is, uh, now they come in and as, as part of a mitigation monitoring scheme, put in monitoring Wells and have to come up with a, a plan, well, how they monitor and what happens if something shows up in those Wells, because right now that doesn't exist.

Speaker 8 (33:55):

Now, if you look at the property boundaries, there is a big slice of forest service land between most of the project site and those properties immediately down on Hardin Flat Road. And I did discuss this with, uh, uh, official from the forest service. And they could go through a process to apply, to get a permit, to put monitoring Wells on forest service property. That's, that's possible. It's not an automatic, but it's possible. So, uh, so that's really the environmental issue other than wildfire hazards. And if you want, I'll put the wildfire hazards discussion aside till later, like you mentioned, but I just wanted to bring up these water quality issues at this point. I don't feel that they've met the criteria that they've really proven. They're just not going to be a significant effect. I think there needs to be a monitoring scheme in place, and there's not one today. Okay. That's, that's my pitch. All right. That could be a condition as well. It could be. Yeah.

Mike Gustafson (chair) (34:55):

Uh, Quincy, uh, could, could you, uh, give me some advice here, should we, uh, make them as conditions or do we want to go and mess? My, my concern is messing with the EIR at this point, um, as opposed to, uh, moving forward in one way shape or another putting into conditions on the CUP. Uh, and I, I see no limitation from what Larry said that we couldn't put that as part of the limitations, if we chose as a committee to vote unanimous, vote for that. And, and it carries enough, ayes, eyes, what, what is your thought?

Quincy Yaley (35:31):

Um, thanks. You could add them as conditions of the, of the use permit, um, using, uh, 1768150 from our Tuolumne County ordinance code, which would allow you to add any additional requirements you feel are necessary to make the findings for the project. Um, you know, I will just remind you that you have the authors of that hydro geologic study, um, on your call. Should you have any specific questions for them regarding the methodology or the, um, what the suggest? Uh, I am not a hydrogeologist, so I don't know that what you are. I can't counsel you on it.

Speaker 3 (36:14):

It's a process question. It was a process question. That's okay. Um, well Larry would, would, would it do any, um, comfort level for you to talk to the hydrologists that are involved or do you, or do you,

Speaker 8 (36:31):

I'm not sure. I mean, I, I mean, at this point, you know, do we have to come up with a mitigation monitoring scheme on the fly tonight?

Mike Gustafson (chair) (36:40):

No, no, we just, no, not at all. It's just, we'd put in some, so, all right. So maybe the way to do this is to do the CUP first and then roll out the conditions and see if everybody's happy with that. Then the EIR falls into that.

Larry Beil (36:56):

Well, I don't want to get into the weeds too much, but Quincy, I believe the cup is only addressing the intrusion into the open space. I'm excited about my permit.

Quincy Yaley (37:06):

Yeah. You put that. Thanks for clarifying layer. You'd put the condition on the site development permit might not,

Mike Gustafson (chair) (37:12):

I'm sorry, this spoke site development and I, I sorry about that. Um, so we, we could put that, so it, if we could craft the wording for the site development permit conditions, I mean, the overall part of this is, you know, if the, if the will of the, the commission is to, um, turn this down, then, uh, you know, all of that kind of goes away, but we don't have to worry about any of it. But, um, I don't know, I don't, haven't taken the temperature here to find that out. So if we wanted to do the site development permit, put it on the condition, see if that, if that floats, if you will, if you allow that pun on words, um, then we could move on to the EIR or the CUP.

Quincy Yaley (38:00):

Mike, just point of clarification. I just want to advise you that you should certify the EIR before you approve the project.

Mike Gustafson (chair) (38:09):

Okay. That's that was the process question. All right. Okay. So, um, seems to me Larry, that th th the resolve this, that we probably need to certify the EIR, and then we will make sure that we get all of the verbiage that we want, assuming that committee or the commission is interested in going ha having this go forward. Yeah. That's a given, uh, one does not B get the other, um, that, uh, have all the conditions that meet your concerns and any other concerns. Cause I'm going to put some into, I've been sitting here being quiet, but there's some I'm going to put in and it may, well, we'll put them all in and we'll just count on the recording, catching all of the nuances here, because we're not going to be able to word them properly, um, on the fly here. So we'll just have to indicate it. So for the recording, what we're doing, would that be acceptable to you?

Larry Beil (39:06):

Well, the, the, okay. Um, you know, we haven't discussed all the possible condition modifications that maybe you and I, and some of the other commissioners may have, but I think without them, I don't feel necessarily comfortable that the EIR was is, should be certified.

Mike Gustafson (chair) (39:26):

Well, as Chrissy said, we have to do that first. So, um,

Speaker 7 (39:31):

Aye chairman, sorry, this is Matt. Might we have kind of a brief version from each of you who would want to add conditions of what they are and what they might cover, not in any particular format. So we have some, some idea of the comprehensive nature of what we might be editing.

Mike Gustafson (chair) (39:50):

Sure. I have no problem with that. Um, at the end. Well, okay. So for me, I'll just go first. I wanted to limit the use of the stoves versus the burn season. I felt that that would reduce that risk significantly. I was going to suggest a, there was to water, a water quality issue, as well as a water availability issue one for a while for our one for, you know, drinking water or whatever. Um, there were some concerns issued that there wouldn't be enough water. So if there was a X size gap, a water tank X to be determined, and I was gonna suggest a hundred thousand gallons just as a point on the graph, uh, that sounded like a big enough number that, uh, they would add a hundred thousand gallon water tank, uh, to be used both for drinking water and for firefighting capability and that the water tender would be in, would still be there, but it would be the, uh, part of the, the fast reaction group. Uh, in other words, it doesn't putting in the big water tank doesn't make the tender go away. It just means it's, it's a fast reaction vehicle. Um, that those were my, my two biggies that I, I wanted to, um, I put in. So let me go to Charlotte. Do you have any thoughts? Um,

Speaker 10 (41:10):

Um, I, well, I, nothing new. I liked the limiting, the stove use. I like Larry's monitoring Wells. I think that's a good idea.

Mike Gustafson (chair) (41:21):

All right, so there's, there's three. All right. Um, Ryan, yeah, I don't, I don't have anything to add regarding the fire. I, I actually liked the way it's worded where we're deferring it to the, to the fire professionals to make some of those determinations as to what's necessary for that site. Okay. All right. Fine. Um, Mark,

Mark Banks (41:47):

The only thing I'm kind of with Ryan on this, that I like the condition 71, that it talks about having the plan and the buy-in from the agencies that would be providing response. But the only thing we might do in my is to absolutely put in there that there needs to be a storage tank of a size determined adequate by that plan. Okay. Something like that, because it doesn't specifically say that there needs to be a tank in there, but I would say that part of that would be there needs to be a tank and then let them decide what size I am not. I, I don't know anything about that to tell you the truth, Mike, whether a hundred thousand or 200 or whatever is appropriate. So

Mike Gustafson (chair) (42:37):

I understand, and I'm quoting this off of another experience I had with a local camp and the size they had, which was 125,000 gallons. And so I, I just, but I'm okay with it just being to be determined on the size, but as long as there's a tank there, um, Matt, do you have anything? Any questions go ahead

Matt (42:59):

Is the current language not adequate where the fire professionals have the latitude to describe the things that, you know, in their view and in their professional judgment, you know, they, they, we could give the admonishment that there's a lot of concern about fire. And please take that into account. Um, are we actually adding anything other than saying, this is a discretion and it must go through an approval and a specific plan through the fire professionals that know what I don't like. Are we actually adding anything other than preparatory language?

Mike Gustafson (chair) (43:33):

Well, this is adding comfort level to it for the commissioners. It's not necessarily trying to design a fire suppression fire suppression plan at the moment I understood, uh, Ryan literary. I'm holding you just for a second.

PART II OF RECORDING

Speaker 1 (00:01):

Um, are we actually adding anything other than saying, this is a discretion and it must go through an approval and be a specific plan through the fire professionals that know what I don't like. Are we actually adding anything other than preparatory language?

Speaker 2 (00:16):

Well, this is adding comfort level to it for the commissioners. It's not necessarily trying to design a fire suppression fire suppression plan at the moment. I understood, uh, Ryan Blackberry. I'm holding you just for a second, Ryan. Go ahead. Yeah, one of the things I wanted to point out is in addition to that other condition, there is a condition 86 that calls for fire tool lockers and fire extinguishers, and then condition 87, that calls for firehose stations with fire hoses and nozzles shall be provided at the site within 200 feet of the firehose provided each station. So I, you know, I don't know the difference offhand between a firehose and a garden hose, but I would imagine that there is some sort of expectation that goes along with that, that they'll be able to produce certain amounts of water and be able to provide some protection. It gets fired. Okay. Yes. Got it. Larry.

Speaker 3 (01:12):

Yeah, I think we're, I think we're heading the right direction here. Um, one of the things that I've I've I was considering was in the case of the, of the heat source for the tents, um, I would have no trouble if they, since they're going to have propane to most of the tanks chance they have a propane, small RV style furnace or something in there that could, it could be, you know, it could be used, uh, uh, you know,

a thermostat and everything. Cause I've, I've spent a few nights and platform tents with woodstove before camp Curry and at the Tetons and you wake up in the middle of the night and you're cold. There's no installation in those dents and you wake up and you start building your fire back up. If you have propane, that takes care of itself. So, I mean, I, I don't want, if they want to do something like that as a safer heating source, I have no problem with that at all.

Speaker 3 (02:04):

Uh, and then, um, and, and that's not, wouldn't be seasonal. That could be, it could be anytime I understand. Okay. So then the other thing that I really think haven't, hasn't been explored, um, the forest service is right now in discussion with rush Creek about rush Creek funding, fuel reduction in the area of the forest that surrounds the wood, the rush Creek property. None of this is even, I haven't, I haven't found that anywhere in this EIR, if you look into a site plan, there's tents, literally within 50 feet of the forest service boundary. And so, you know, I have to do a hundred feet around my house there. And my, you know, this is a subdivision with, with fire response time. It's a lot faster than 40 minutes. So it just, I would think that something that the forest service could, could do this with this project too.

Speaker 3 (02:52):

And it could probably do, even with Terra V when we get to that someday that there, there could be an agreement where the project goes in and reduces those fuels that provides, I mean, it could be a couple hundred feet. It could be a nice fuel break around these sites, a shaded fuel break. So it's not mineral earth, but something that people would still find enjoyable because people are going to wander off this side, they're going to wander into the forest land over there. That's what people do when they're camping. They walk around. So it, at this point, you know, if that's something we can, we can, uh, put in there as an option for this, for this plan to be determined later by the, by all the fire people is that they come with a come up with a scenario is how much the offsite mitigation by reducing the fuel hazards are in the vicinity of this project, is, is we would encourage that. Uh, is, is that something we could possibly do?

Speaker 4 (03:48):

Yeah, we can do anything we want, if it's reasonable.

Speaker 3 (03:51):

Well, I think it's reasonable. I mean, it's something rush Creek's doing on their own because they're just, they're trying to do anything right in there to get their, their insurance down. This is, this is a real issue for these people.

Speaker 4 (04:02):

All right, Mark. So I keep coming back to 71. And in there, the third item is compliance with defensible space, vegetation management, area maintenance requirements. And that's one of the elements that would be in this OFP piece. So I'm, I'm leaning more towards this, this condition 71 was pretty well drafted and, uh, the direction that I think, I think it addresses a lot of the fire concerns based on the right guy working or the right people working on this OFP, you know, the, the, the plan bed chart,

Speaker 5 (04:43):

I think Mark's, um, take on 71 is good. And I think it does cover our need.

Speaker 4 (04:50):

Okay. Um, all right. So you're, you're, you're suggesting that, that does that stand alone based on what Larry says that we don't need to actually put specific wording about a firebreak around those around the site?

Speaker 5 (05:07):

I think 71 is adequate.

Mark Banks (05:11):

Okay. All right. And again, I'll, I'll second that, that I think it is too. And that I just don't want to tie the hands of the, these fire professionals with a planning commissioner that doesn't know, fire myself, speaking for myself.

Mike Gustafson (chair)

And so are you including that as the idea of an external tank, or do you want to have external tank? It limited?

Mark Banks

Honestly, the, the external tank. I mean, you, if you go onto the element or the condition that Ryan stated, I mean, I don't, I almost don't know how they do the I'm sorry, what was it? Ryan was at 87. Yeah. 87, (05:58) Firehose stations with fire hoses and nozzles. I don't know how you'd do that without a tank. So do we

Mike Gustafson (chair)

They did not specifically talk about a tank? Their thing was to talk about the water tender.

Mark Banks

I would be more, I would be more, I would be more comfortable with a tank. Okay.

Charlotte (06:19):

Yeah, definitely.

Mike Gustafson (chair) (06:21):

Okay, Matt,

Mat Nutting (06:24):

Um, I mean, a tank sounds, sounds great, but I'm not sure if that's better than a truck with a tank on the back or a pond with a pump on it. I mean, really, I think we're substituting the job of the fire department. That's already given the latitude to create these plans in their wisdom, which I don't feel that I have. So.

Speaker 6 (06:44):

All right. Let, let me, let me interrupt you. Uh, Quincy is already of our fire people still around.

Speaker 7 (06:51):

Yep. They are. Um, Andy or Steve, do you guys want to chime in?

Speaker 6 (06:56):

Well, yeah, I would. I would like one of them to come on and I want to ask a couple of questions, please.

Speaker 7 (07:04):

Let's see if they're still awake. If,

Speaker 6 (07:07):

Hey, if we're awake, they better be awake.

Speaker 7 (07:10):

And then we've got a senior fire inspector, Steve Gregory. He's actually deleted the individuals who worked at the counter with these applicants when they submit this type of plan. So, uh, Steve Gregory is on the line. Can you hear me?

Speaker 6 (07:23):

Yes, I can. So have you been listening to this discussion? Yes, sir. Okay. So are we as a commission overstepping our bounds to start talking about tanks and tank sizes and all that sort of stuff?

Speaker 1 (07:37):

Absolutely not. Um, just from a operational standpoint, uh, tank versus a pond, uh, with ponds, you really get into a maintenance issue. Long-term so if you're looking down the road, um, ponds from what we've seen could be problematic. So tanks are probably the preferred method, however, that's up to you guys. Um, but no, that's absolutely something that you guys could look at.

Speaker 6 (08:02):

Okay. All right. So we could, we can include that in our verbiage without overstepping our, our purview here. Um, okay. So we're, we're leaning towards using 71 and 87, um, as part of the driving force of our conditions. We're saying we're going to accept those conditions. Uh, Matt, I mean, sorry, Ryan,

Speaker 1 (08:27):

I just had a question of Mr. Gregory in, in reading these conditions. Are there any gaps that you see as a fire professional that you feel should be addressed in the conditions?

Speaker 6 (08:41):

Um, I feel like

Speaker 1 (08:43):

They'd hit most of them and you know, we're at the EIR stage. Um, once they submit a full packet, that's when we'll have a chance to really dig deep into what they're proposing. Okay. So you feel that the conditions as written do give you the latitude to provide that feedback and come to a solution that you feel will be adequate? Yes, sir. Thank you very much,

Speaker 4 (09:07):

Mark. Before we let Steve go, Hey, Steve, I'd like to also ask you if we put verbiage in there that said, uh, a, we would like to see it are there, the applicant needs to supply a tank of the size and, um, quality or, or that, that, uh, would be, uh, subject to approval by your, by you. Is that okay with you? That we actually put the tank, the tank in there? That's not, that's not doing something that I think you said that that's okay.

Steve Gregory (09:47):

Yeah, correct. We don't, I mean, under, under the project as proposed, we review it basically just as they propose it. And as it was originally proposed, we didn't have a lot of latitude to require a huge tank, especially a hundred thousand gallons. Um, but yeah, we could, I'd be happy to meet with a developer and we could discuss a tank size or just tanks in general period.

Mike Gustafson (chair) (10:13):

There you go. So I would rather not tie your hands with a size or anything like that. Just that, that you work with the developer to come up with the size. So I think we're good. We're along the lines of adding some verbiage to 71 saying a tank will be supplied of the size and specifications

Speaker 2 (10:34):

Yeah. To, to be, to, to be Durham and yes. Correct.

Mike Gustafson (chair) (10:13):

Yeah. Okay. And that tank was, is going to also be used for drinking water. It's not just for fire, fire suppression.

Speaker 4 (10:45):

Great.

Speaker 3 (10:48):

Larry. Yeah. Uh, Steve, you still there? Um, I want to bounce back to that, uh, offsite fuel reduction again, uh, the tents within 50 feet of the forest service boundary just makes me a little nervous. Is there, do we need to add some language to the condition that would make it easier for you to make that happen? I mean the most fire professionals, I'm putting words in your mouth, you know, the more clearance you have the better, right? It's, it's, it's only, only gets better as you reduce the fuels away from this property or from these project sites. But, uh, is there something we need to do? So that makes something that you can, uh, uh, you know, so it's something that puts you in a better stance.

Speaker 2 (11:32):

No. So under current fire code and California public resource code, 42 91, we actually have, it's automatically written into the code, which was adopted by the state, which was adopted by the County. Um, we can force the defensible space around each one of the tents and structures. So it's just, like you said earlier,

Speaker 3 (11:50):

Even off site though, I'm talking about offsite. No, once it leaves the property line. No,

Speaker 6 (11:54):

We can't do that. Um, but we do, we can't afford that defensible space around each town. Like, just like you said, like your house, right. But I'm, I'm concerned about the forest property that, which is, you know, the forest has hundreds of thousands of acres. They can't go in and do fuel reduction around every development that's next to their boundaries. Is that something that this project can be asked to do? Um, I would have to defer that one to legal. Well, I could weigh on that just from the point of pine mountain Lake. Um, we were not able to build a firebreak, uh, past our boundaries until we offered to pay for it. And then all of the homeowners around us, all the ranch owners, uh, said, Oh, knock yourself out. We'd love you to do that. So we ended up paying for all the way around the outside edge, but we could turn around and make it a condition on, on the inside of their property line, which is no difference, a hundred feet on the inside versus a hundred feet on the outside.

Speaker 6 (12:51):

What is, I don't know that you've got 81 acres for guys sake, but the way it's designed, they don't have even a hundred feet in and a whole, the whole back end of the lot. They've got to do as much as they can, because if the land owner on the other side, won't let them do it. They won't let him do it. No, the forest, the forest service is willing to discuss this. They're discussing it with rush Creek right now. So rather than wait for the, you know, this, make this a, a condition of approval that they have to enter it into discussion and do go through the hoops to allow them to go on that property or pay the forest service to do it, that, you know, that it's, it provides two things. It provides the opportunity to stop or slow the fire from the site to the forest and up to other properties and vice versa, a wildfire that's in the forest coming onto their property. Okay. Um, well, we're going to have, in order to, I think we have to move along and just make a start playing with, uh, trying to make a motion here to start moving along. Uh, so Quincy, you said it was a site permit that where we need to put this in.

Quincy Yaley (13:57):

So if you're going to put any additional conditions of approval that aren't truly related to the open impacts to any open space or potential impacts to open space, then they should go on the site development permit. I would just, um, add on the, that, um, that if there's there's conditions regarding issues raised in the environmental document that worked down to be, um, either mitigated or less than significant that the conditions shouldn't be intended to further reduce that impact the, if you certify the EIR, then the impacts are, as they are stated in the, in the final EIR. Um, Cody, do you want to add anything to that?

Cody Vasper (deputy County counsel)

I agree going to agree with what you're saying, these conditions that you're discussing, most of them go to (14:52) issues that are discussed in the use permit. Um, if the analysis and the EIR supports conclusion that there's not a significant impact in a particular area, it doesn't make sense to be requiring the applicants to be addressing those areas where there is no significant impact identified.

Quincy Yaley (15:20):

For example, on page 2.8 of the final EIR, it discusses, you know, back to the, the, the potential for adding a condition of approval for monitoring wells, that final EIR section discusses the conservative pumping tests and concludes that impacts or less than significant. So if additional monitoring is

warranted, it could be done through a conditional impact, but it can't be aimed to mitigate the impact. There's is there's a really important difference there.

Mike Gustafson (chair) (15:49):

Well, the difference is lost on me. So it, it seems to me, we would, uh, to Larry's point he wants, he's suggesting, um, having monitoring Wells. And we could, we could, if we chose, I'm not saying we would, but if we chose to put it as a condition for proceeding, not EIR, we're not going to touch the EIR, but we could put that as a condition.

Quincy Yaley (16:12):

If it's not intended to reduce an impact,

Mike Gustafson (chair) (16:16):

It would not reduce the impact. It would. Well, no, it would reduce the impact. Theoretically right

Quincy Yaley (16:23):

The EIR that you're certifying though, Cody feel free to tell me if I'm wrong, the EIR you're certifying is already studied this issue. If you, if you choose to certify it and has said that the impact's less than significant, it would be a distinction versus testing versus monitoring. So that's, that's the, there's a distinction.

Mike Gustafson (chair) (16:44):

All right.

Matt Nutting (16:46):

I make my main points. I think the distinction is we can, we can certify the EIR, nothing stops us from imposing additional conditions, whatever we want them to be concerning the development permanency APY. Right. So we could sort of fleek it fully certify the seat, the, the EIR. And even though there's subject matter, that is the same. We were just stacking it on top of the conditions of approval for the cup and the site plan, right? Yeah.

Quincy Yaley (17:17):

The, the, the key is that the it's not that any of the conditions are not intended that you're adding, if you certify the EIR that they're not intended to further reduce impacts.

Matt Nutting (17:30):

So we could just put that maybe in the motion, this is context. How would we, how would we make that distinction when we're making a motion?

Quincy Yaley (17:41):

I, I think that it's, that it's just been clear that I think by certifying the EIR and, um, adding additional language that, um, it, that, that it's there to, um, not intended to further re further mitigate any impacts should be sufficient. If you adopt the findings of the, um, of the EIR that will, you know, it will kind of say that it will explain the relationship between conditions of approval and mitigation measures.

Matt Nutting (18:13):

I think I got it. Thanks.

Mark Banks (18:16):

Well, Matt, Matt, you be thinking about it cause I'm coming to you, dude.

Matt Nutting (18:20):

I got it. I'm ready. Okay.

Mark Banks (18:24):

Just, just, just to make sure that Larry Larry's comfortable. I think that if we, if we add a condition of approval for monitoring, um, you know, we're not adding any kind of mitigation measure or trying to offset anything in the air or anything. We're just going to add some monitoring.

Larry Beil (18:45):

Is that a question for me?

Mark Banks (18:47):

That was a question for you, Larry.

Larry Beil (18:51):

At some point I can't play that game anymore. So, um, I can't reach the conclusion that th the final EIR, uh, I can't vote to certify the EIR without modifying the findings that would allow the monitoring Wells to be included because that's, that's how I view it. That's my opinion. And that's why we're here to voice our opinions after listening to all this testimony. So I would appreciate it if you could still entertain the notion of the monitoring Wells, despite the fact that I not able to support certifying the EIR for that reason. Gotcha. And there's probably other reasons too, if you want to get into. Okay.

Mark Banks (19:30):

All right. So in order to try to move this along a little bit, uh, Matt, would you like to make a motion regarding the certifying, the EIR?

Speaker 1 (19:37):

Absolutely. I move to adopt the resolution to certify the EIR in errata and adopt the findings and fact of mitigation monitoring and reporting plan pursuant to a sequel. And I guess that's it for part one.

Speaker 4 (19:58):

Okay. I have a motion and a second, any discussion? I can't see everybody. So if somebody hasn't. Okay. All right. So I'm not hearing any, any further discussion I'll call for the vote. Quincy,

Speaker 7 (20:16):

Uh, commissioner Frazier. Hi, commissioner violin, commissioner banks, commissioner relay, commissioner, chairman Gustafson. And the commissioner plan. Does apt, did I get everyone? Yep. Commissioner.

Speaker 4 (20:41):

Okay. So let's move on to the next part, which is the, um, right permit, correct?

Speaker 7 (20:50):

The site permit and the use permit. Okay.

Speaker 4 (20:56):

So did we do them singly, Mr. Chairman? I would suggest considering all this going on. I would, I would say, yeah, we should do them singly. So they stand alone. I don't want to, I don't want to lump them all together if they're not, don't need to be. Um, unless someone wants to make a, if you want to make a motion for putting them together, we'll just see how it goes. You know, it might, it might fail, but we could certainly try it.

Speaker 4 (21:25):

I'm not sure how to separate them. Um, Mr. Chairman, because the recommendation there, based on the same findings and conditions of approval, somebody had the language and how you would bifurcate them. Well, I'm not suggesting they have to be. I just assumed that there were things that Devin commissioners would want to discuss. And so I was going to keep them separate to make it simple, but Hey, I'm all for putting them together. Um, may I ask a question? Sure. Concerning the fire storage, the water tank, um, Mr. Banks referenced, I think it was, uh, conditioned 71, but I don't have it in front of me. Would we just add it to that condition? Where would we add a condition number 89? Do you have a preference? Uh, as a Mark, I would like to add it to 71 just to keep it all together. So it flows. Um, and the suggested verbiage, if Quincy's okay with this would be, uh, provide tank of size and specification as, uh, uh, required by, uh, responding agencies or something to that effect.

Speaker 7 (22:41):

I think what I heard Mr. Gregory say earlier was that it would be something that he wouldn't be sitting with the developer to work out. Um, so I'm not sure what other responding agencies do you wish to include in that discussion?

Mark Banks (22:54):

Okay. So take that out. Provide tank of size and specification as required in whatever they call that thing is the OFPP the operational fire protection plan. Yeah. Provide tank of size and specification as required by O F P P

Quincy Yaley (23:21):

Mark. I'm just going to interject know one of the things that this is will happen as a code analysis and some minor level of that as occurred. And as you've heard Steve Gregory say with what was, um, reviewed a tank wasn't required, if the commission is, uh, specifically asking a tank to be included in that RFP plan, um, I might suggest worrying that a little differently, you know, to include a tank or something like that, or otherwise I could see that being interpreted that it still would be only in the, um, fire prevention Bureau required that. So if you're specifically want to tank, you should specifically say that.

Mike Gustafson (chair) (24:04):

Okay. So we, we just add to include a tank size and specifications as required by LFPP. There you go. Okay. And okay. Are we, is that, when is there a period on that one now? How about the, um, stove, the stove, the cause I liked Larry's idea of going to a propane stove. So with the thermostat so that it can't, uh, it minimizes the D the fire danger. So I'd like to put that in here as well.

Mark Banks

I agree with you. I agree with all that. That's I have one at my house. It's a glass front. You've got the fake logs in there. It runs off of propane. It's clean. It's easy. It's thermostatically controlled. It works great.

Mike Gustafson (chair)

Okay. So I would add to this, that the, uh, fire stoves, a wooden wood burning first always be removed and a gas-fired a fireplace with thermostat be added.

Quincy Yaley (25:09):

Mike, if that's specific to stoves intense, um, there are some other fire pits on the property.

Speaker 6 (25:16):

Well, the fire there's only three and th that's supposedly a going to be man, when they're used, it'll be busy. I'm not messing with that one necessarily.

Speaker 7 (25:27):

Okay. Thank you. There are some controls in place for the fire pit.

Speaker 6 (25:31):

Yes. Right. That's what I mean. I'm not, there's only, and there's only three of them as I remember. Yes. Okay. So it might, yes.

Speaker 1 (25:40):

We didn't really get any feedback from the applicant and how big of a deal that is and changing their budget, their infrastructure, their business model. I mean, I wouldn't have a propane fire in my house over my dead body cause I'm from the mountains, but I mean, are we sure we want to make that kind of a mandate without any feedback from the applicant?

Speaker 6 (26:06):

Well, we could certainly ask. Um, the problem is, I mean, this, this comes down to what, what we've been here, we've heard for the last two and a half or three hours is that folks are concerned about different things causing a fire. And, you know, if you can mitigate that somehow you could remove all the fireplaces on the, all the fire stoves. Okay. But probably that's not what you want to do. You could leave them as is, and just accept the risk, which we've heard a lot of people say, well, that's not such a good thing. Or we can come up with something in between that says, well, yeah, it's not exactly the crackling fireplace kind of thing. I know that I took out my fireplace and put it in a gas fired thing, but I'll tell you what, I don't miss carrying the logs. Um, so you know about, I tell ya, I'm happy to hear. I see you has come up. Daniel's come up on it. I happy to ask the question, but that doesn't necessarily mean I'm going to pull it out, but go ahead, Mr. McQuarrie birdie, if you went on, talk about it.

Speaker 2 (27:05):

Oh, thank you. I really appreciate the opportunity to, uh, to respond to the question. Um, you know, yes. Say propane fireplace would, would probably mean a significant difference and I, to be honest, I haven't investigated it. Um, but what I might, if, if I may be so bold, um, is just suggest is that, you know, I think as, as the applicant would feel very comfortable with that as one option and perhaps as another option, um, Mr. Chairman, you mentioned earlier the idea of the, if we were to go with wood stoves that, uh, we just period not be allowed to use them during a fire ban or during that, I think as you mentioned, the forest service and there's a specific term for their season. And that way we have the optionality to look at, if we did want wood-fire places that it was very specific, we would never be able to use them during, um, the, the period that you mentioned. And then as an alternative, we could look at, um, the, the propane as, as, as I mentioned as an alternative, if, if perhaps I might suggest that,

Speaker 6 (28:10):

Well, you, you, you mentioned earlier that your water heater is run by propane. So it doesn't seem like it's much of a reach to put a T in the line and run a propane fireplace.

Speaker 2 (28:24):

Absolutely. And I, I couldn't agree more. I just haven't, um, to be honest, I haven't, um, put together the economics on, uh, the additional gas use or which probably isn't very great admittedly, but, um, pricing the fireplaces, um, as a, as a different product. Um, but it would be something I would very much like to look into. And I think having the option to be able to go in that direction versus just having a long burn ban season would actually be great. So I'd love the option to be able to go down that path. Uh, but I think having, having both options available, if it were possible, which would greatly help us to evaluate, which might be better for our product at the end of the day, keeping in mind your suggestion about the time when we could use, would being, being restricted.

Speaker 6 (29:12):

Okay. All right. Um, what do you think Larry?

Speaker 2 (29:18):

Well, I see Ryan's hand up, I've talked too much,

Speaker 6 (29:23):

Ryan.

Ryan Relei (29:25):

What, one thing I want to point out is that, you know, there's going to be inherent risk with, with any heat source. So simply switching this over to a propane stove does not change the fact that people might put their socks on them or anything like, so I don't know if there's specific parts of operating a woodstove that we're more concerned about than operating a propane stove. Um, from what I've read through the literature, it's my opinion that they have addressed a lot of these concerns. We have wood-burning fire stoves throughout the County. And, um, I feel that we are really pushing by, by trying to control exactly what type of heat source we can use. And I do agree with the proponent and that if we do want to mitigate, when they can use them and maybe allow a little more latitude on the fire agencies to determine that time that I, I, I can see supporting that.

Speaker 4 (30:21):

Okay, well that was way back when there is a burn season where when the burn season ends, you're not allowed in there, you have for burn permits. And that's from what I was told during dinner, that's June 1st on until they release it at the, you know, when you get the first heavy rain, then they release it. So that would certainly, um, that, that was, you know, one particular way. Yeah. Yeah. Larry,

Speaker 3 (30:46):

Um, you know, I discussed this with, uh, uh, Jim Janette at Garland district and I said, well, when this past year was open fire, open firing burning in your campgrounds and the Grove district stopped, and that was in August. And so rather than, uh, the Cal fire, you know, um, slash burning and, and waste burning that we do around our own project properties here, which is real problematic. If you let it go too long and that's why they have to stop that, uh, it could be a little more, uh, keyed in to the forest service because they are looking to, it's the same general area that they're responsible for. And they're looking at, you know, fuel, fuel loading and moisture levels and winds and humidity. I mean, there's a whole, there's a whole algorithm that go through to decide, uh, campfires are out. And so not every year, not it's, it's, it's, it's dependent on the situation rather than just some blankets you're over June, because I, you know, mostly a lot of times, June at elevation still pretty moist, and maybe it's still fine. So I would prefer to use the, the Fort when the forest service shuts down, open burning in the Groveland district. That's when the that's when the Woodstock is go off. Okay. All right. That'd be my suggestion.

Speaker 4 (32:05):

Yeah. Well, I have no objection as long as we're covering the season when it's most likely to be problematic. And if that's what it does, I, I'm not an expert on that, but I, I I'm accepting that. Mark, could you have your hand up? I did. Um, so, you know, the applicant seemed okay with that. Um, and if Larry likes the forest service thing, we can throw that in there. The only other thing that you could possibly do, and we're talking about condition number 81, um, is to add if they wanted to go to, uh, a, uh, 365 day stove, it would have to be propane. It couldn't be wood. Okay, great. During the winter anyway, but you know,

Speaker 6 (32:48):

I don't see, I don't see in the dead of winter, anybody staying in a tent, unless you parachuted out of an airplane. Well, that

Speaker 4 (32:55):

The tents down during the winter, those shoulder seasons, you know, spring and fall.

Speaker 6 (33:01):

All right. So we have, we have a proposal for the, uh, uh, I'm sorry, Quincy, the permit. What is it? The site permit site development permit. SDP. Okay. So, and that the, um,

Mike Gustafson (chair) (33:18):

Uh, the fire stoves will be operated only when the CA Cal fire or forest service forest service, um, uh, deems it's safe

Quincy Yaley (33:32):

Is there, and the propane stove is not an option, or how would you look?

Mike Gustafson (chair) (33:37):

Well, we took, we, we took the propane out of it when we said we were going to, uh, from what Mark had to say and what Larry had to

Quincy Yaley (33:45):

Say, okay.

Larry Beil (33:47):

W w wait a minute. You mean by propane, out of it that we're not living in the propane burners, right? We're not, yes. We're not limited. We're, we're just, we're not addressing it. Right. And I understand Ryan, you know? Yeah. People put socks on it and things like that, but they are somewhat, I think, inherently safer. You don't have the Ash problem. Um, and the are, thermostatic like, you can have them thermostatically controlled.

Quincy Yaley (34:10):

Okay. So if that, if the condition was worded that stoves in tents can be propane, or if used by wood, sorry, if they are wood stoves, they can only be operated when deemed safe by the forest service. Did I get that correct, Mike?

Mike Gustafson (chair)

Yes. I like it.

Larry Beil (34:31):

Well, the forest service and the forest service, excuse me, the forest service doesn't deem them, correct. The forest service allows people to have, you know, at their, at their improved camp sites, allow people to use open fires most of the season until it gets too dry. And then they'll cut them off. And that's not every year. It's, it's very specific to this. What's the season going? We would just say Larry would just say, follow the guide of the forestry service on burning and allowing open campfire.

Speaker 7 (35:02):

Okay. Campfire burning allowance by the forest service.

Speaker 6 (35:08):

Are you shaking your head? Yes or no?

Speaker 4 (35:14):

Oh, I'm sorry. I think I'm sorry, Charlotte. I think you wanted to say something before I responded. Oh, I think the words we want are, um, in a forest service approved term, because it changes from year to year. Okay. Sorry. And, and thank you, chairman. I think, um, having the optionality for both of these is good for us, so

Speaker 3 (35:38):

Thank you for that discussion. So we have, uh, uh, a motion was that, that was a motion. I think it was fragmented, but it, I think it got the point across. Do we have a second? I'll second. Okay. We have a motion and a second, any further discussion. Well, what was the motion for, I'm sorry. Quincy, would you read it back to your best ability?

Speaker 7 (36:02):

Okay. Well, I, I wasn't sure there was a motion. Um, I think there, Matt make that motion. I didn't, but I'm happy to try. Okay. So, uh, blending before you do that, Matt, maybe I could just, uh, Natalie, will you actually, Natalie's taking, um, fuller notes. Okay. Oh, you want me to read it? Read the three, the conditions we're adding. Yes. Hold up. Okay. So the conditions are adding, we are going to add to existing condition, 71 to say, provide a water tank upsize and, um, and speculations as required by the operational fire prevention plan and that wood stoves, intense shell follow the shell only be used during, or shall not be used when the us forest service prohibits open burning. And that the wood stoves may also utilize probate.

Speaker 1 (37:15):

Maybe if Larry wants to add the language for though.

Speaker 7 (37:20):

Okay. And then an additional condition would add in the requirement of offs, offsite, or just monitoring Wells.

Speaker 3 (37:29):

I think they could be site. What we're trying to do is monitor water quality and water quantity between the Wells and the sewage disposal areas and the offsite, uh, properties to the East. I guess it'd be the East.

Speaker 1 (37:48):

How are we deferring? Are we deferring the specify this specificity of it to an agency that would decide basically we're saying work with such and such agencies to design to develop, or are we actually,

Speaker 3 (38:00):

Um, maybe that's something environmental health could do. I don't know. There's specifically

Speaker 1 (38:06):

Quincy, what would it be? The agency that would, um, make those dictates?

Speaker 7 (38:11):

Well, this is a little bit of a, I think I need to hear more about what the, the goal is from the commission, because the water, the water system will be regulated by the state of California. The wastewater treatment system, uh, will be under the purview of the County. So, um, you know, it more guidance be helpful possible.

Speaker 3 (38:37):

Okay. So let me explain my goal. My goal is that presently, um, the, the hydrogeologic consultants approach, the neighboring property owners, the East to add their, their private Wells in as part of the monitoring during the pump tests. And they were denied access, which again is their right. However, they still have a right to good clean water out of their Wells too. So that there be a monitoring. Well, a design monitoring, well program designed to, uh, that would basically provide, uh, an indication of there's any kind of a water quantity loss or water quality impacts of this project before it reaches those private Wells. So there could be, you'd have to have someone do some design work where they could be, and the, and an obvious spot would be in the forest. And the forest would have to be on course, if you go through the process to get a permit to do that, which is, which is possible.

Speaker 3 (39:36):

Um, so, you know, there's some, there's some thought has to go into it and then there's has to be, you know, how often they monitor it and what happens if something goes so that, you know, it's not something that you and I can sit here and design right now. Um, yeah. So I think there has to be some latitude built in there for, uh, you know, Robert, somebody in environmental health who could, who has done these kinds of things before, or you have, you, have you tasked the hydrogeologic consultant for the project to come back and revisit that, um, you know, if where, where ideally should these washing Wells go, and what's the process you should follow. Because without that, I don't have the assurance that these, these neighboring property Wells are actually being protected.

Speaker 1 (40:20):

Mr. Chairman, um, I don't want to step in that swamp. I'm going to make the motion with the other two fire conditions added if it passes great. If not, we can, um, retest another version of it if with your permission.

Speaker 6 (40:33):

Okay. So you want to go with emotion as it rides right now without any monitoring Wells and the emotion. Correct. Okay. Well, that's the motion that's on. That's been made. Is there a second now? There is a second. All right. We've already had our discussion on this I'll call for the vote.

Speaker 7 (40:53):

Mr. Frazier commissioner. Yes. Commissioner banks. Yes. Commissioner commissioner relay chair Gustafson. And your plan is absent.

Speaker 6 (41:15):

Okay. So the last one is the cup. I mean, I'm waiting for, for Quincy to shake her head. Yes. The last one we have to do is a cup. Yes. Okay. Seeking a motion,

Speaker 5 (41:34):

Mr. Chairman, I certainly am Mr. Chairman. I move that our planning commission approved conditional use permit CUP two zero dash zero one eight with findings and conditions in place.

Speaker 6 (41:53):

All right. We've all heard that. Do we have a second? I gleefully second. We have a gleeful. Second. Um, do we have any further discussion? Okay. Seeing none call for the vote. Quincy commissioner Frazier. Hi,

Speaker 7 (42:13):

Commissioner nutty commissioner banks, commissioner relay commissioner

Speaker 6 (42:22):

For consistency. Nay. Aye.

Speaker 7 (42:29):

Champlain is absent. Motion passes. If I may chair just take an opportunity to make sure that everyone's aware that the decisions that the planning commission has made tonight can be appealed to the board of supervisors and appeal, and the appropriate fees should be filed with the board clerk within 10 days of approval, as well as with the community development department. If there's any questions regarding that, that any members of the public can contact Nally or Izzy or Quincy alias at the community development department.

Speaker 6 (42:54):

I'm just curious, what is the fee, do we know? Or is it moveable

Speaker 7 (42:58):

It's about $1,047 or so.

Speaker 6 (43:01):

Okay. All right. I'm just, I just curious, I didn't know what it was. Okay. Uh, I don't believe there's any other business do come before the commission hearing none. I will adjourn the meeting and I will thank all the commissioners for hanging in there. Appreciate it. It's been, um, been educational and informative and I'm happy with it all.

Speaker 5 (43:28):

I'd also like to thank the public for sticking around through this.

Speaker 6 (43:31):

Yeah. That's a good, yeah, that's good. Everybody put in a lot of time. All right. Anything else? All right. I adjourned the meeting. Thank you all. Have a good evening. Thanks guys. Thank you. Thank you. Take care. Bye-bye.

WILDFIRE MITIGATION PLAN
Yosemite Under Canvas Project

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1 Introduction

This Wildfire Mitigation Plan (WMP) has been prepared for the Yosemite Under Canvas (Project), located in Tuolumne County, California. The purpose of this WMP is to evaluate potential wildland fire hazards, identify measures to reduce wildfire risk to the Project, and memorialize the Project's fire safety requirements. Wildfire risk reduction recommendations detailed in this WMP are based on site-specific characteristics, applicable code requirements, and input from Under Canvas. As part of the assessment, this WMP includes the evaluation of property location, topography, vegetation (fuel types), climate, and fire history. This WMP addresses water supply, access/egress, fuel treatment (vegetation management), communications, operational constraints, staff training, and visitor education.

The following tasks were performed to complete this WMP:

- Gathered site specific vegetation, terrain, and access data.
- Processed and analyzed the data using the latest GIS technology.
- Modeled fire behavior using scientifically based fire behavior models, comparisons with actual wildfires in similar terrain and fuels, and experienced judgment.
- Analyzed the proposed Project development plan and the Project's proposed wildfire hazard reduction measures.
- Analyzed existing emergency response capabilities.
- Assessed fire risk associated with the Project.

1.1 Applicable Codes, Regulations, and Conditions

This WMP demonstrates that the Project would comply with applicable portions of the Tuolumne County Fire Safety Standards or the most current fire and building codes at the time of Project approval. The Project is within an area statutorily designated as a Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CAL FIRE) (CAL FIRE 2007), which under Chapter 7A of the California Building Code requires new structures located in any Fire Hazard Severity Zone comply with the provision of the chapter. The Project is not proposing permanent structures, rather tent structures that would be assembled at the beginning of the season and disassembled and stored onsite at the end of each season; however, the Project will implement a number of design features (detailed below) that meet the intent of Chapter 7A to resist the intrusion of flames or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses. The Project also would be consistent with the 2019 California Building Code, Chapter 31; and the 2019 California Fire Code, Chapter 3. Chapter 31 of the California Building Code addresses special building construction (e.g., membrane structures, temporary structures). Sections 307and 308 in Chapter 3 of the California Fire Code provide regulations for open burning, recreational fires, and portable outdoor fireplaces.

The Project would also comply with all conditions of approval identified in the Final Environmental Impact Report (EIR), which include:

- Provide a tank with pump for fire suppression water that meets the requirements of National Fire Protection Association (NFPA) 1142 Standard (Standard on Water Supplies for Suburban and Rural Fire Fighting) (approximately 8,000 gallons). The pump will be provided with a generator for backup power.
- Provide an approved fire hose station/standpipe with 1 ½" fire hose connections throughout the project so that no tent structure is further than 150 feet from a fire hose station.
- Provide fire tool lockers that will contain approved firefighting equipment such as hose, adapters, and hydrant wrenches.

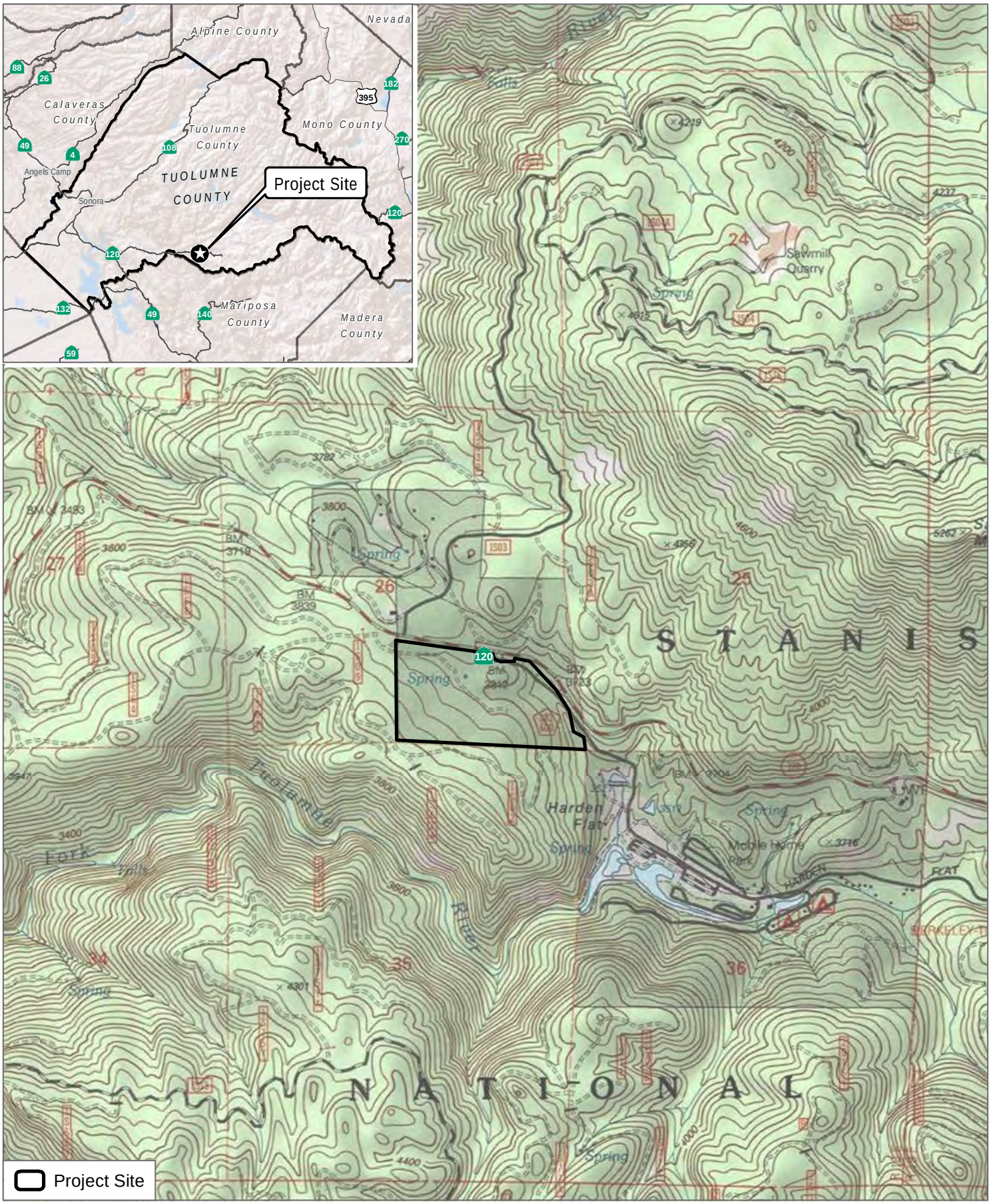
1.2 Project Summary

1.2.1 Location

The Project site is east of the town of Groveland and west of Yosemite National Park in southern Tuolumne County and is located on the Ascension Mountain, CA 7.5' U.S. Geological Survey (USGS) Quadrangle (Figure 1, Project Location), on a private inholding within the Stanislaus National Forest. It falls within the southeastern portion of Section 26, Township 1 South, Range 18 East, Mount Diablo Baseline and Meridian. The Project site is located within unincorporated Tuolumne County, and is comprised of two parcels (APNs 681-206-20 and -30), totaling approximately 80.1 acres. Access to the site is provided by Hardin Flat Road via SR-120. Elevation on the Project site ranges from 3,740 feet above mean sea level (amsl) in the east to 4,050 feet amsl in the west.

Access to the site is provided by Hardin Flat Road via State Route (SR)-120. The site consists of undeveloped land and was previously used for forestry and logging. Adjacent land uses include scattered private residences, recreation facilities, and open space. The nearest building is a Caltrans snowplow garage approximately 1,250 feet north across SR-120 from the nearest proposed project facilities. The nearest residence is approximately 1,300 feet southeast of the nearest proposed project facilities.

Based on Fire Hazard Severity Zone (FHSZ) mapping data (CAL FIRE 2007), the Project site is located in a Very High FHSZ. The California Department of Forestry and Fire Protection (CAL FIRE) uses FHSZs to classify anticipated fire-related hazards for the entire state and includes classifications for State Responsibility Areas (SRAs), Local Responsibility Areas (LRAs), and Federal Responsibility Areas (FRAs). Fire hazard severity classifications take into account the following elements: vegetation, topography, weather, crown fire production, and ember production and movement. The High and Very High Fire Hazard Severity designations can be attributed to a variety of factors including highly flammable, dense, drought-adapted chaparral vegetation; seasonal, strong winds; and a Mediterranean climate that results in vegetation drying during the fall months.



SOURCE: USGS 7.5-Minute Series Ascension Mountain Quadrangle

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Wildfire Mitigation Plan for the Yosemite Under Canvas Project

1.2.2 Project Description

1.2.2.1 Overview and Background

Under Canvas Inc. (Under Canvas or project applicant) is proposing the Yosemite Under Canvas (Project), which is a 99-tent campground with supporting facilities located adjacent to State Route 120 (SR-120) in the vicinity of Hardin Flat, east of the community of Groveland and west of Yosemite National Park, in Tuolumne County, California. Yosemite Under Canvas is a transient tent (no fixed structures) camp for guests to stay between March and October, as weather allows. Under Canvas specializes in camps with added amenities and currently has eight operational camps within the United States, responding to the increased demand for camping accommodations where the host provides all the provisions necessary to camp in a specific location. Under Canvas camps provide guests with canvas tents, beds, bathroom facilities, meals, and community fire pits. Potable water and sanitary sewer would be provided by on-site public systems owned and operated by Under Canvas. A total of 99 tents are proposed for the Yosemite Under Canvas camp along with a lobby tent with dining area, commercial kitchen, commercial kitchen trailer, communal bathrooms, laundry and housekeeping, and number of portable storage containers. Utility improvements to support the camp would include water supply wells, wastewater treatment, and commercial power supplied to the kitchen, laundry, and communal bathrooms. None of the facilities on the Project site will be fixed, however it is anticipated that they would remain on site during off-season. The Project would provide up to three traditional, communal campfire pits interspersed around the Project site. The lighting, maintenance, and extinguishing of these campfires would be managed by camp staff. For additional details regarding amenities and supporting infrastructure please refer to Chapter 2, Project Description, of the Project's EIR (ESA 2020). Figure 2, (Project Site Plan) depicts the Project's proposed site plan.

1.2.2.2 Project Wildfire Hazard Reduction Measures

The following summarizes identified wildfire hazard reduction measures that would be implemented by the Project.

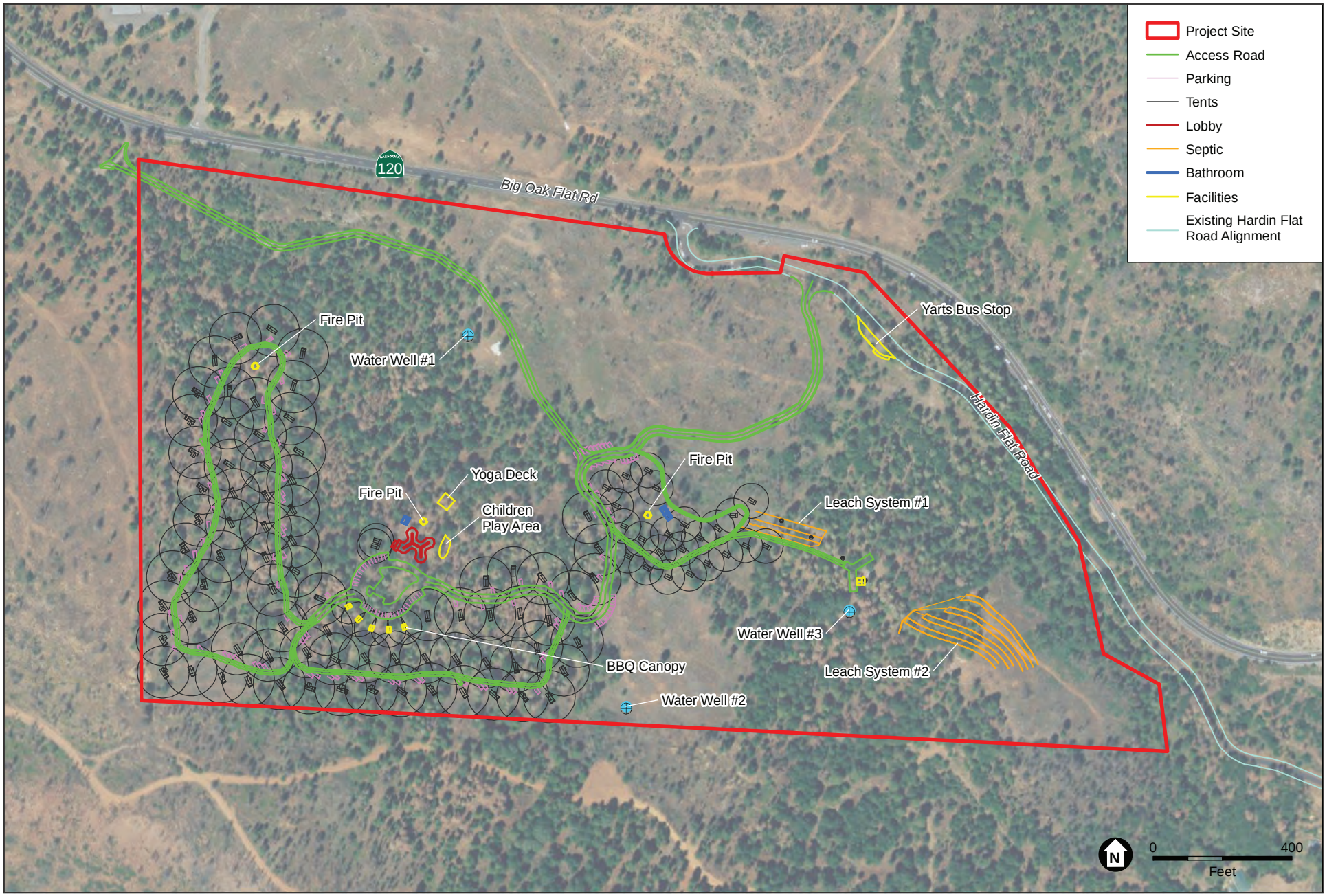
Fuel Treatment

Initial Project site development activities would entail hazardous fuel reduction efforts that would occur as a part of the project's Timber Harvest Plan (THP), which would be subject to review and approval by CAL FIRE. These fuel reduction treatments would reduce the size and distribution of surface fuels to a level that moderate fire behavior to facilitate direct attack by firefighters. As described in the Project's THP, the initial hazardous fuels reduction efforts would entail removal of ladder fuels and treatment of surface fuels across 55 acres of the Project site.

Wildfire Prevention

Wildfire prevention measures would include:

- All tent fabrics would be California State Fire Marshal approved for flame resistance.
- All heating stoves on the site would be equipped with spark arrestors, which would be constructed of woven or welded wire screening of 12 USA standard gage wire (0.1046 inch) having openings not exceeding 1/2-inch. The net free area of the spark arrestor would not be less than four times the net free area of the outside of the chimney outlet (Appendix A).



SOURCE: ESA 2020

FIGURE 2

Site Plan

- The ashes from the stoves would be removed by camp staff in metal containers and disposed of in a steel container. Firewood and combustible materials would not be stored in unenclosed spaces, beneath tents, or on decks under eaves, canopies or other projections or overhangs. Firewood and combustible material would be stored in fuel modification areas and separated from the crown of trees by a minimum horizontal distance of 15 feet.
- Smoking would be restricted to designated areas with receptacles for cigarette waste. The area and a minimum 50-foot buffer would have vegetative material cleared to bare mineral soil.
- Community campfire rings would be enclosed within a large metal ring to contain burning material, and would be installed 12 inches into the ground, with a minimum of 12 inches extending above the ground. A mesh screen would be installed to encompass and cover the fire as a spark arrestor. Branches and other vegetation above each fire area would be removed, and a cone of clearance to the sky would be established. A large metal cover would be provided to cover the fire ring when not in use and nightly after the fire is extinguished by camp staff. A hose bib would be provided in proximity to each fire ring to extinguish fires prior to covering. Remote web cameras of fire pit areas would be installed to monitor each fire pit and would be monitored from the campground office and mobile devices. Fires would not be allowed whenever the U.S. Forest Service imposes restrictions on campfires due to the proximity of the Forest boundary.
- The mobile kitchen facility would be equipped with a hood and range dry chemical extinguishing system.
- Fire tool lockers and fire extinguishers would be provided throughout the site, meeting the requirements of Public Resources Code (PRC) 4428 and 4429. Fire extinguishers would be located in each guest tent structure, as well as in all other facilities as required.
- Fire hose stations with fire hoses and nozzles would be provided within the site, with 200 feet of fire hose provided at each station. These stations would be located in such a manner that no tent structure would be greater than 150 feet from a fire hose station.
- Basic fire and first aid training would be provided to all employees, with at least one employee onsite at any given time with advanced first aid training (Emergency Medical Technician or similar).
- Prior to operation, an Emergency Operations Plan would be developed to address wildfire and other emergency incidents at the site. This plan would be subject to review and approval by applicable emergency services providers. The plan would include, at a minimum:
- A Training and Exercise Plan, to be implemented annually with all employees, covering the Emergency Operation Plan and issues such as response to fire, fire extinguisher and firehose use, first aid and emergency medical response, and dealing with problem guests.
- An orientation briefing for guests concerning potential hazards and what to do in the event of an emergency incident.
- Provision of a site fire and emergency alert system to notify site occupants in the event of an emergency.
- A site evacuation plan, defining routes of ingress and egress, rally points, and protocols for disabled guests and/or guests without their own transport.
- Establishment and maintenance of temporary refuge areas if evacuation is not possible.
- Establishment of an emergency helicopter landing site. The site would not be a permitted heliport as described in California Code of Regulations §3554 and would be maintained for use in emergencies only.

2 Fire Risk Analysis

2.1 Field Assessment

Following review of available digital Project site and area information, including topography, vegetation types, fire history, and the Project's development plan, Dudek conducted a field assessment of the Project site on October 20, 2020. Among the field tasks completed were the following:

- Fuel type/load analysis
- Topographic features documentation
- Photographic documentation
- Confirmation/verification of hazard assumptions
- Ingress/egress documentation

Project site photographs were collected and fuel conditions were documented. Field observations augmented existing Project site data in generating the fire behavior models and formulating the fire safety recommendations provided in this WMP.

2.2 Project Area Fire Environment

Fire environments are dynamic systems and are influenced by many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. The three major components of fire environment are vegetation (fuels), climate, and topography. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a wildfire. The following sections provide more information regarding the fire environment associated with the Project site.

2.2.1 Topography

Topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread up-slope and slower spread downslope. Terrain that forms a funneling effect, such as chimneys, chutes, or saddles on the landscape can result in especially intense fire behavior. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and wind.

The Project site's topography is gently sloping, with the majority of the area on slopes less than 30%. Offsite, and to the south, slopes drop steeply down to the Tuolumne River. Slope is important relative to wildfire because steeper slopes facilitate more rapid fire spread up slope. Slopes within the Project Site are generally to the northeast and east.

The Project site's slopes ascend away from the developed areas of the Project (versus situations where development occurs at top of slope and the terrain descends away from the developed areas). The Project area's topography is generally in alignment with the extreme Diablo wind events, which affect the western slopes of Sierra Nevada and can influence fire spread by creating wind-driven fires, especially when moving upslope.

2.2.2 Climate

Tuolumne County, including the Project Area, experiences a Mediterranean type of climate with hot and dry summers and mildly cold and wet winters. Local climate, which has a large influence on fire risk, is typical of a Mediterranean area. The average high temperature reaches 90°F (32.2°C) in the peak of July. Drying vegetation (fuel moisture of less than 5% for 1-hour fuels is possible) during the summer months becomes fuel available to advancing flames should an ignition occur. Relative humidity of 20% or less is possible during fire season (Weather Spark 2020). Winters are mildly cold, with an average low temperature of 25°F (-3.9°C) at the peak of January. The climate varies with elevation with a drop in temperatures, an increase in rain, and snowfall at higher altitudes. Rainfall mainly occurs during the winter months as the annual precipitation averages 36 inches (914.4mm). Higher elevations experience rain up to 50 inches (1,270mm) annually at a level of 2,600 meters above sea level. Snowfall is abundant, approximately 65 inches during the period between November to March. Spring and autumn have more mild weather compared to the summer and winter.

2.2.3 Fuels (Vegetation)

The Project site is currently undeveloped and is composed of a variety of vegetation types that were mapped by Environmental Science Associates (ESA 2020). Extensive vegetation type mapping is useful for fire planning because it enables each vegetation community to be assigned a fuel model, which is used by a software program to predict fire characteristics, as discussed in Appendix B (Fire Behavior Technical Report) and Section 2.3 below. As shown in Table 1, the Project site's habitat is mixed conifer forest, which primarily includes ponderosa pine (*Pinus ponderosa*), sugar pine (*P. lambertiana*), incense cedar (*Calocedrus decurrens*), Douglas-fir (*Pseudotsuga menziesii var. menziesii*), and black oak (*Quercus kelloggii*). Dominant shrubs include deer brush (*Ceanothus integerrimus*), mountain misery (*Chamaebatia foliolosa*), Sierran gooseberry (*Ribes roezlii*), and both whiteleaf manzanita (*Arctostaphylos viscida*) and green leaf manzanita (*Arctostaphylos manzanita*). Dominant understory species includes blue grass (*Poa bulbosa*), ripgut grass (*Bromus diandrus*), sanicula (*Sanicula crassicaulis*), tall sock-destroyer (*Torilis arvensis*), silver hair grass (*Aira caryophyllea*), winter vetch (*Vicia villosa*), and nemophila (*Nemophila heterophylla*).

This vegetation is adapted to periodic wildfire events. Fire history data described in Section 2.2.5, Fire History, indicates that the vegetation last burned in 2013 over the entirety of the Project area. Detailed information regarding the plant communities within the Project site is provided in the Project's EIR.

Table 1. Habitat Types Within the Project Site

Habitat Type	Acres
Mixed Conifer Forest	64.99
Mixed Conifer Forest (Burned)	19.42
Seasonal Wetland	0.09
Seep	0.01

Table 1. Habitat Types Within the Project Site

Habitat Type	Acres
Ephemeral Drainage	0.62
TOTAL	85.13

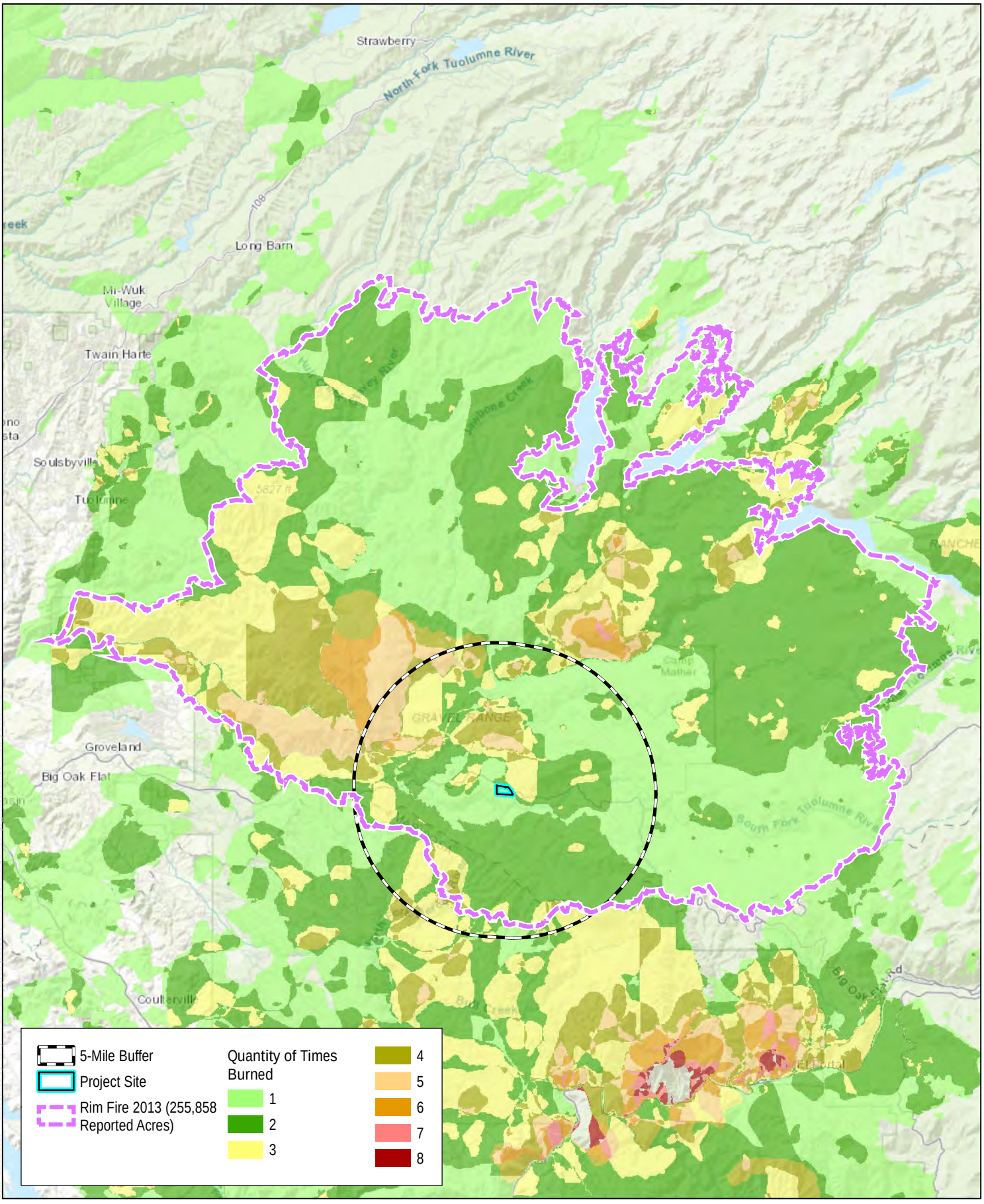
Source: ESA 2020

Most the forested area on the Project site experienced low to moderate fire intensity during the 2013 Rim Fire. Fire impacts resulted in light mortality to the overstory trees. Understory vegetation and sapling and pole size conifers experienced significant mortality. Post-fire salvage logging removed dead or dying merchantable trees, with trees less than 14 inches in diameter (which did not meet merchantability specifications) were left standing. Since the Rim Fire and subsequent salvage harvesting, there has been additional mortality in some overstory trees. A detailed description of forest stand conditions is presented in in the project's THP (Snyder 2020).

2.2.4 Fire History

Fire history is an important component in understanding a site's wildfire risk. As represented in Figure 3 (Fire History), there have been 71 fires recorded by CAL FIRE since 1908 on the Fire and Resource Assessment Program database within five miles of the Project (CAL FIRE 2020a). Of the 27 fires that have burned within three miles of the Project, there have been two fires that burned onto the Project property. An un-named fire burned a small portion of the northeast edge of the property in 1944 and the 2013 Rim Fire burned the entirety of the property in 2013. The Rim Fire burned between August and October 2013 and burned approximately 257,00 acres in the southern-central portion of Tuolumne County. The Rim Fire is currently the 10th largest historic wildfire in the State of California (CAL FIRE 2020b). Tuolumne County Fire Department may have data regarding other smaller, undocumented fires that have occurred in the Project area that have not been included herein as fires under 10 acres are not recorded in CAL FIRE's database (CAL FIRE 2020a).

Sierra Nevada forested landscapes are grouped by Barrett et al. (2010), into distinct fire regimes which are a combination of fire frequency, predictability, intensity, seasonality, and characteristics of fire within a particular ecosystem. The Project site is characterized as Fire Regime I, which is described as having a fire frequency of 0-35 years, with low (surface fires most common) to mixed severity (less than 75 % of the dominant overstory vegetation replaced) (Snyder 2020). Exclusion of fire from Sierra Nevada Forests has resulted in significant changes to the vegetation and has resulted in significant departures from historic fuel structure, tree density, and species composition. Stands are less open with higher levels of surface fuels and include a substantial understory component which contributes to high ladder fuel levels (Snyder 2020). The 2013 Rim Fire resulted in a patchwork of fire severity across the site, with fire severity ranging from low to severe. Low to moderate fire severity resulted in impacts to understory and surface fuels with light to moderate impact to overstory trees. Areas experiencing severe fire severity resulted in loss of surface vegetation, understory, and overstory trees (Snyder 2020).



SOURCE: BASE MAP- ESRI MAPPING SERVICE; FIRE DATA-CALFIRE 2020

DUDEK

0 2.5 5 Miles

FIGURE 3

Fire History Map

Wildfire Mitigation Plan for the Yosemite Under Canvas Project

2.3 Potential Fire Behavior

Following field data collection efforts and available data analysis, fire behavior modeling was conducted to document the type and intensity of fire that would be expected on the project site given characteristic site features such as topography, vegetation, and weather. Dudek utilized BehavePlus software package version 6 (Andrews, Bevins, and Seli 2008) to analyze potential fire behavior in several locations on the property, including an analysis of potential fire behavior following implementation of the project's timber harvesting, mastication, slash treatment, and vegetation management (Snyder 2010). Results are provided below and a more detailed presentation of the BehavePlus analysis, including fuel moisture and weather input variables, is provided in Appendix B.

2.3.1 BehavePlus Fire Behavior Modeling Analysis

An analysis utilizing the BehavePlus software package was conducted to evaluate fire behavior variables and to objectively predict flame lengths, intensities, and spread rates for three modeling scenarios. These fire scenarios incorporated observed fuel types representing the dominant vegetation representative of the site and adjacent land, in addition to slope gradients, and wind and fuel moisture values. Modeling scenario locations were selected to better understand different fire behavior that may be experienced on or adjacent to the site. A more detailed discussion of the fire behavior modeling effort is presented in Appendix B (Fire Behavior Technical Report).

Vegetation types, which were derived from available resource materials and confirmed during the field assessment for the Project Site, were classified into a fuel model. Fuel models are selected by their vegetation type; fuel stratum most likely to carry the fire; and depth and compactness of the fuels. Fire behavior modeling was conducted for vegetative types that surround the proposed development. Fuel models were also assigned to illustrate post-project fire behavior changes. Based on the anticipated pre- and post-project vegetation conditions, three different fuel models were used in the fire behavior modeling effort presented herein. Fuel models are summarized in Table 2.

Table 2. Fuel Models used for Fire Behavior Modeling

Fuel Model Assignment	Title	Description
Existing conditions		
GR4	Moderate Load, Dry Climate Grass	The primary carrier of fire in GR4 is continuous, dry-climate grass. Load and depth are greater than GR2; fuelbed depth is about 2 feet.
GS2	Moderate Load, Dry Climate Grass-Shrub	The primary carrier of fire in GS2 is grass and shrubs combined. Shrubs are 1 to 3 feet high, grass load is moderate. Spread rate is high; flame length moderate. Moisture of extinction is low.
TL5	High Load Conifer Litter	The primary carrier of fire in TL5 is high load conifer litter; light slash or mortality fuel. Spread rate is low; flame length low.
Post-Project		
GR1	Short, Sparse Dry Climate Grass	The primary carrier of fire in GR1 is sparse grass, though small amounts of fine dead fuel may be present. The grass in GR1 is generally short, either naturally or by grazing, and may be sparse or discontinuous. The moisture of extinction of GR1 is indicative of a dry climate fuelbed, but GR1 may also be applied in high-extinction moisture fuelbeds because in both cases predicted spread rate and flame length are low compared to other GR models.

Fuel Model Assignment	Title	Description
SH1	Low Load Dry Climate Shrub	The primary carrier of fire in SH1 is woody shrubs and shrub litter. Low shrub fuel load, fuelbed depth about 1 foot; some grass may be present. Spread rate is very low; flame length very low.
TL4	Small downed logs	The primary carrier of fire in TL4 is moderate load of fine litter and coarse fuels. Includes small diameter downed logs. Spread rate is low; flame length low.

The results of fire behavior modeling analysis for pre- and post-project conditions are presented in Tables 3 and 4, respectively. Identification of modeling run (fire scenarios) locations is presented graphically in Figure 4, Fire Behavior Analysis Map.

Table 3. Fire Behavior Model Results Existing Conditions

Fire Scenarios	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Grass, 20% uphill slope, 10 mph wind speed				
Fuel Model GR4 – Moderate Load, Dry Climate Grass	9.7	786	1.2	0.2
Scenario 2: Grass-Shrub, 17% uphill slope, 10 mph wind speed				
Fuel Model GS2 – Low Load Dry Climate Shrub	5.6	242	0.3	0.2
Scenario 3: Conifer litter and slash, 21% downhill slope, 10 mph wind speed				
Fuel Model TL5 – High Load Conifer Litter	2.2	32	0.1	0.1

Notes: Spotting distance from a wind driven surface fire.

Table 4. Fire Behavior Modeling Results for Post-Project Conditions

Scenario	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Grass, 20% uphill slope, 10 mph wind speed				
Fuel Model GR1 – Short, Sparse Dry Climate Grass	2.1	30	0.3	0.1
Scenario 2: Grass-Shrub, 17% uphill slope, 10 mph wind speed				
Fuel Model SH1 – Low Load Dry Climate Shrub	1.8	21	0.1	0.1
Scenario 3: Small downed logs, 21% downhill slope, 10 mph wind speed				
Fuel Model TL4 – Litter and small downed logs	1.4	12	0.0	0.0

The results presented in Tables 3 and 4 depict values based on inputs to the BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis; rather, the models provide a worst-case wildfire behavior condition as part of a conservative approach. For planning purposes, the averaged worst-case fire behavior

is the most useful information for conservative fuel modification design. Model results should be used as a basis for planning only, as actual fire behavior for a given location would be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

2.3.2 Modeling Results

2.3.2.1 Existing Conditions

As presented in Table 3, wildfire behavior in grass groundcover fuel beds, presented as Fuel Model GR4, represents the most extreme conditions. In this case, flame lengths are calculated reach 9.7 feet with 10 mph winds; spread rates reach 1.2 mph. The spotting distance, where airborne embers can ignite new fires downwind of the initial fire, is calculated at 0.2 mile. In comparison, a timber litter fuel type could generate flame lengths up to 2.2 feet high with a spread rate of 0.1 mph. The fire could potentially be spotting for a distance of 0.1 mile.

2.3.2.2 Post-Treatment Conditions

As presented in Table 4, Dudek conducted modeling of the site for post-development fuel recommendations for this project. Fuel modification includes the timber harvesting, mastication and fuel treatment proposed as part of the site preparation and ongoing vegetation management.

For modeling the post-development condition, fuel model assignments were re-classified for each scenario. The treatments in each area resulted in a reduction in flame length and intensity. The 9.7-foot tall flames predicted in the grass fuel bed during pre-development were reduced to 2.1 feet tall; the fireline intensity was reduced from 786 BTU/ft/sec to 30 BTU/ft/sec.

2.4 Project Fire Risk Assessment

Based on the Project site's location, fire history, and the regions' fire regime (Barrett et al. 2010), it can be anticipated that periodic wildfires may start on, burn onto, or spot into the Project site. On-site wildfire ignitions could occur as a result of campfires, stoves, cigarettes, arson, or equipment use, amongst others. Off-site ignitions could occur along SR-120 (vehicle fire, discarded cigarette, dragging tow chain), Hardin Flat Road, or through public access to adjacent Forest Service lands.

Fire Behavior Modeling Results for Existing Conditions

Fire Scenarios	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Grass, 20% uphill slope, 10 mph wind speed				
Fuel Model GR4 – Moderate Load, Dry Climate Grass	9.7	786	1.2	0.2
Scenario 2: Grass-Shrub, 17% uphill slope, 10 mph wind speed				
Fuel Model GS2 – Low Load Dry Climate Shrub	5.6	242	0.3	0.2
Scenario 3: Conifer litter and slash, 21% downhill slope, 10 mph wind speed				
Fuel Model TL5 – High Load Conifer Litter	2.2	32	0.1	0.1

1. Spotting distance from a wind driven surface fire.

Fire Behavior Modeling Results for Post-Project Conditions

Scenario	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Grass, 20% uphill slope, 10 mph wind speed				
Fuel Model GR1 – Short, Sparse Dry Climate Grass	2.1	30	0.3	0.1
Scenario 2: Grass-Shrub, 17% uphill slope, 10 mph wind speed				
Fuel Model SH1 – Low Load Dry Climate Shrub	1.8	21	0.1	0.1
Scenario 3: Small downed logs, 21% downhill slope, 10 mph wind speed				
Fuel Model TL4 – Litter and small downed logs	1.4	12	0.0	0.0

Path: Z:\Projects\L13233201\MAPDOC\MAPS\Fire\Fig3_BehavePlusAnalysisMap.mxd

SOURCE: AERIAL-NAIP 2016

DUDEK

0 500 1,000 Feet

FIGURE 4
BehavePlus Analysis Map
Wildfire Mitigation Plan for the Yosemite Under Canvas Project

3 Emergency Response and Service

3.1 Existing Fire Department Response Capabilities

The Project site is a private inholding within the Stanislaus National Forest, with surrounding National Forest System lands immediately adjacent to the west, south, and east. As is the case with all private land parcels in the vicinity, the site is located within a State Responsibility Area (SRA) for fire protection responsibility. The surrounding federal lands of the Stanislaus National Forest are designated as a Federal Responsibility Area (FRA). Through an agreement with the U.S. Forest Service (USFS), wildfire protection on SRA lands in the area is provided by the USFS (ESA 2020). Such arrangements are common in areas where relatively small and scattered private inholdings are present within much larger areas of federal land.

The Tuolumne County Fire Department (TCFD) is responsible for providing structural fire protection and emergency medical services to the Project site, though it also has wildland firefighting resources and can provide wildland fire protection as needed. The TCFD is administered by CAL FIRE under a cooperative agreement with Tuolumne County. The Groveland Community Services District (GCSD) also has a cooperative agreement with CAL FIRE. Accordingly, Station 78 in Groveland is a cooperative fire department with all three agencies participating: TCFD, CAL FIRE, and GCSD. TCFD is headquartered in Sonora and includes thirteen fire stations, with eight stations within unincorporated Tuolumne County. The nearest TCFD firefighting resources are located at Fire Station 78 in Groveland, approximately 17 road miles west of the project site on SR-120. Resources at the station include:

- Two (2) Type 1 fire engines,
- One (1) Type 2 engine, and
- One (1) Type 3 engine

Station 78 staffs five part-time fire fighters and maintains shifts of two firefighters on duty for 24 hours a day, seven days a week. The station currently serves approximately 3,451 residents and in 2018 responded to 509 emergency calls. (ESA 2020).

Wildland firefighting resources in the area are a mix of federal, state, and local resources. As stated previously, the USFS is responsible for providing wildfire protection to the Project site through a cooperative agreement with CAL FIRE. The USFS maintains a fire station at the Groveland Ranger District office at Buck Meadows, which is located approximately 9.2 road miles west of the Project site off SR-120. Resources at the facility include:

- One (1) Type 3 wildland firefighting engine and crew (Engine 42),
- Interagency Hotshot Crew (Groveland Interagency Hotshot Crew),
- One (1) water tender (Water Tender 42) and
- Several patrol/utility vehicles

The USFS and Yosemite National Park also jointly maintain a cooperative Type 3 engine (Engine 346) at Hodgdon Meadow at Yosemite National Park, approximately 7.8 road miles from the Project site.

According to the Tuolumne County General Plan EIR, TCFD does not use the NFPA standard for fire protection services that requires 1-2 firefighters per 1,000 residents because this standard does not fit TCFD's personnel resources and service population. TCFD response time for urban areas is nine minutes, suburban areas have a response time of 10 minutes, rural areas have a response time of 14 minutes, and remote areas have a response time dependent directly on travel distance (ESA 2020).

The TCFD has mutual aid agreements with the Twain Harte Fire Protection District (FPD), Tuolumne City FPD, Columbia FPD, Sonora Fire Department, GCSD, Strawberry FPD and the Tuolumne Rancheria Fire Department (ESA 2020). In addition to these agreements, both CAL FIRE (and by extension, the TCFD) and the USFS have entered into various cooperative and fire assistance agreements with the U.S. Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and Bureau of Indian Affairs. Based upon these and other interagency agreements, most large wildfire events in the region are responded to by multiple agencies operating under the varying levels of the incident command structure, which is a standardized approach to the command, control, and coordination of emergency response providing a common hierarchy within which responders from multiple agencies can be effective. Emergency and non-emergency medical transport services for Tuolumne County are provided by the Tuolumne County Ambulance Service. The Ambulance Service employs 60 full-time and part-time Paramedics and Emergency Medical Technicians (EMTs). The Tuolumne County Ambulance Service receives approximately 8,000 calls per year (ESA 2020).

3.2 Project-Related Emergency Response Calls

Based on an analysis of actual emergency call data from eight existing and operational Under Canvas facilities for 2019, only eight (8) emergency service calls were placed. This includes 4 Ambulance calls, 2 Animal Control calls, and 2 Police/Sheriff calls. None were fire-related calls.

4 Fire Safety Standards

The fire safety standard included in the following sections have been developed to reduce wildfire risk during operations of the proposed Project. Recommendations for construction-phase fire prevention measures are presented in Appendix C.

4.1 Vegetation/Forest Management

Initial Project site development activities would entail hazardous fuel reduction efforts that would occur throughout the property as a part of the project's Timber Harvest Plan (THP), which is subject to review and approval by CAL FIRE. These fuel reduction treatments would reduce the size and distribution of surface fuels to a level that moderate fire behavior to facilitate direct attack by firefighters. As described in the Project's THP, the initial hazardous fuels reduction efforts would entail the following:

- Live trees with trunk diameters 9-inches and greater would be retained. Standing dead and dying trees would be removed. Downed logs less than 20-inches diameter on the small end would be removed.
- Surface and ladder fuels will be treated to reduce total fuels greater than 3-inches in diameter and 4 feet in length to achieve a post-treatment fuel load of less than 5 tons per acre. Down logs greater than 20-inches on the small end and 20-feet in length would be retained. All other fuels greater than 3-inches small end diameter and less than 20-inches diameter on the small end would be chipped on site via masticator or removed.
- Mastication will result in 80-percent of treated material being less than 18-inches in length and at least 60-percent being less than 12-inches in length. Mastication will also treat live and dead brush throughout 85% of the treatment area and will remove live ladder fuels from within the dripline of retained trees. Post treatment depth of surface fuels would be less than 3-inches over 80-percent of the treatment area.
- All snags and dead and dying trees less than 26-inches in trunk diameter would be removed. A small number of snags greater than 26-inches in trunk diameter and several large black oak trees would be retained unless removal is determined to be necessary based on safety considerations.

The extent of THP-related hazardous fuels treatment is 55 acres of the Project site. As discussed, this initial hazardous fuels reduction work would reduce fuel continuity and moderate potential fire behavior on the Project site. The following sections provide vegetation/forest treatment standards to help minimize the chance of wildfire from originating on the site and maintain reduced fuel loads.

4.1.1 Developed Area Vegetation Management

The Project includes development of a transient camp area with tents, communal bathrooms, a commercial kitchen, laundry and housekeeping, and a lobby tent with a dining area. However, no permanent buildings with traditional foundations are proposed for the project. Instead, the facilities will be either temporary or portable, and not permanently fixed to the land. Utility improvements to support the camp would include water supply wells, wastewater treatment, and commercial power supplied to the kitchen, laundry, and communal bathrooms (ESA 2020).

Following is a list of the proposed facilities, along with the recommended vegetation management and/or fuel treatments to occur within the Fuel Modification Area surrounding them.

Guest Tents

The project proposes a total of 99 guest tents with 77 suite tents with an in-suite washbasin, shower, and toilet, and twenty-two safari tents with access to a communal bathroom. The approximate tent footprints would range from 200 to 400 square feet. Tents would be made from fire-retardant-treated canvas mounted on non-permanent wooden decks. Decks would typically be mounted on moveable above-ground concrete footings. The tents would be removed at the end of each season in October, with the decks remaining in place. The tents would be stored on-site in shipping containers.

- A 30-foot Fuel Modification Area is recommended for all Guest Tents, measured horizontally from the outermost edge of the tent, platform or support stakes in all directions.
- For guest tents with wood heating stoves, tree branches and other vegetation above the stove flue/chimney are to be removed and maintained to establish clearance to the sky, 10 feet horizontally.

Bathroom Facilities

To serve the safari tents, two communal bathroom facilities would be provided, which would be manufactured off-site. The units would be prefabricated and mounted on wheels, and would be non-permanent in nature, but would likely remain on-site during the off season.

- A 30-foot Fuel Modification Area is recommended for the portable Bathroom Facilities, measured horizontally from the outermost edge of the units in all directions.

Reception/Dining Tent and Support Facilities

One reception/dining tent would be provided, as well as an adjacent commercial kitchen trailer and a number of support (housekeeping and maintenance) portable storage containers. As with the guest tents, the reception/dining tent would be disassembled at the end of each season and stored in an on-site shipping container. The commercial kitchen trailer would be prefabricated and mounted on wheels, and would be non-permanent in nature, but would likely remain on-site during the off season. The remaining housekeeping and maintenance support containers would also likely remain on-site during the off-season.

- A 50-foot Fuel Modification Area is recommended for the Reception/Dining Tents and Support Facilities, measured horizontally from the outermost edge of the tents, platforms, support stakes, or portable units in all directions.

Communal Facilities (BBQ Canopies, Yoga Deck, Children Play Area)

- A 30-foot Fuel Modification Area is recommended for all Communal Facilities, measured horizontally from the outermost edge of the equipment in all directions.

Communal Campfire Pits

The project would provide up to three traditional, communal campfire pits interspersed around the project site. Large metal rings would be installed to contain burning material, with a mesh screen installed to encompass and cover the fire as a spark arrestor. The lighting, maintenance, and extinguishing of these campfires would be managed by camp staff.

- A 50-foot Fuel Modification Area is recommended for the Communal Fire Pits, measured horizontally from the outermost edge of the fire pit enclosure in all directions. Tree branches and other vegetation above each fire pit area are to be removed and maintained to establish clearance to the sky.

Water Wells, Cisterns, Pumps

Drinking and potable water at the camp would be provided by groundwater source wells; water distribution would include storage cisterns and pumps.

- A 30-foot Fuel Modification Area is recommended for the Water Wells, Cisterns and Pumps, measured horizontally from the outermost edge of the equipment or enclosure in all directions.

Standby Generator and Propane Tank

To provide electric power to the site during power outages, a propane-powered standby generator would be installed. The generator would be placed inside its own enclosure for protection against the elements and for noise abatement purposes.

- A 30-foot Fuel Modification Area is recommended for the Standby Generator and Propane Tank, measured horizontally from the outermost edge of the equipment, enclosure or tank in all directions. Branches and other vegetation above the generator exhaust pipe are to be removed and maintained to establish clearance to the sky.

Storage Containers

Shipping containers will be maintained on site to store tents, supplies and other equipment during operations and over each winter.

- A 30-foot Fuel Modification Area is recommended for the Storage Containers, measured horizontally from the outermost edge of the equipment or enclosure in all directions.

4.1.1.1 Treatment Standards

The following vegetation management and fuel treatment standards are applicable to the Project's Fuel Modification Areas (Figure 5, Fuel Modification Areas), as defined above:

- Removal of dead, down, dying, diseased, and hazard trees.
- Pruning (limbing) of live branches within six (6) to eight (8) feet above ground level, but no more than one-third (1/3) the live crown, for all trees in a Fuel Modification Area.

- Trimming and/or thinning of shrubs to eliminate ladder fuels.
- Cutting of annual grasses to within 3" of ground level.
- All accumulations of needle and leaf litter shall be removed regularly from tents, roofs, decks/platforms.
- Firewood shall be stored a minimum of thirty (30) feet from any tent, structure, or facility unless covered in a fire resistive material or enclosure.
- Remove any portion of trees, which extend within ten (10) feet of the outlet of a chimney.
- Liquid Propane Gas tanks shall have a minimum of ten (10) feet of bare mineral soil clearance with no flammable vegetation around their exterior.
- Debris and trimmings produced by thinning and pruning shall be removed, except for larger woody debris that may be chipped and left for weed and erosion control.

4.1.2 Roadside and Footpath Vegetation Management

Internal circulation would be provided by a main internal access road, tent access loop roads, internal cart paths and footpaths. Onsite roadways and pathways would be covered with gravel where needed (ESA 2020). All roads would be constructed to have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13.5 feet. A secondary point of access would be provided for emergency purposes on the northwest side of the site via an existing unimproved roadway and would be maintained and signed for emergency use only.

Parking would be provided along proposed camp roads and would be located near the deluxe/suite tents. The safari tents would have a common parking area. All of the tents would be accessed via gravel paths and trails.

Roadside Vegetation Management

The following vegetation/fuel treatment standards are applicable to the Project's roadside management areas, as defined above (applicable within 20 feet of the outside edge of the road surface, on both sides of all on-site Project roads and along the edge of SR-120 and Hardin Flat Road where the 20-foot treatment area occurs on the Project site:

- Maintain all designated fire access roads (any road that a responding fire engine would use to access an emergency) unobstructed at all times, no branches or tree canopies lower than 13.5 feet, no tree trunks intruding into roadway width, and clear of flammable vegetation.
- Maintain 10 feet from the edge of all parking areas and deluxe/suite tent driveways.
- Treat or maintain vegetation on each side, as follows:
    - Remove dead, down, dying, diseased, and hazard trees.
    - Pruning (limbing) of live branches within six (6) to eight (8) feet above ground level, but no more than one-third (1/3) the live crown, for all trees in a Fuel Modification Area.
    - Trimming and/or thinning of shrubs to eliminate ladder fuels.
    - Cutting of annual grasses to within 3" of ground level.

- Debris and trimmings produced by thinning and pruning shall be removed, except for larger woody debris that may be chipped and left for weed and erosion control.

Cart path and Footpath Vegetation Management

The following vegetation/fuel treatment standards are applicable to the Project's cart path and footpath management areas, as defined above (applicable within 10 feet of the outside edge of the path surface, on both sides of all on-site Project pathways:

Treatment or maintenance of vegetation on each side, as follows:

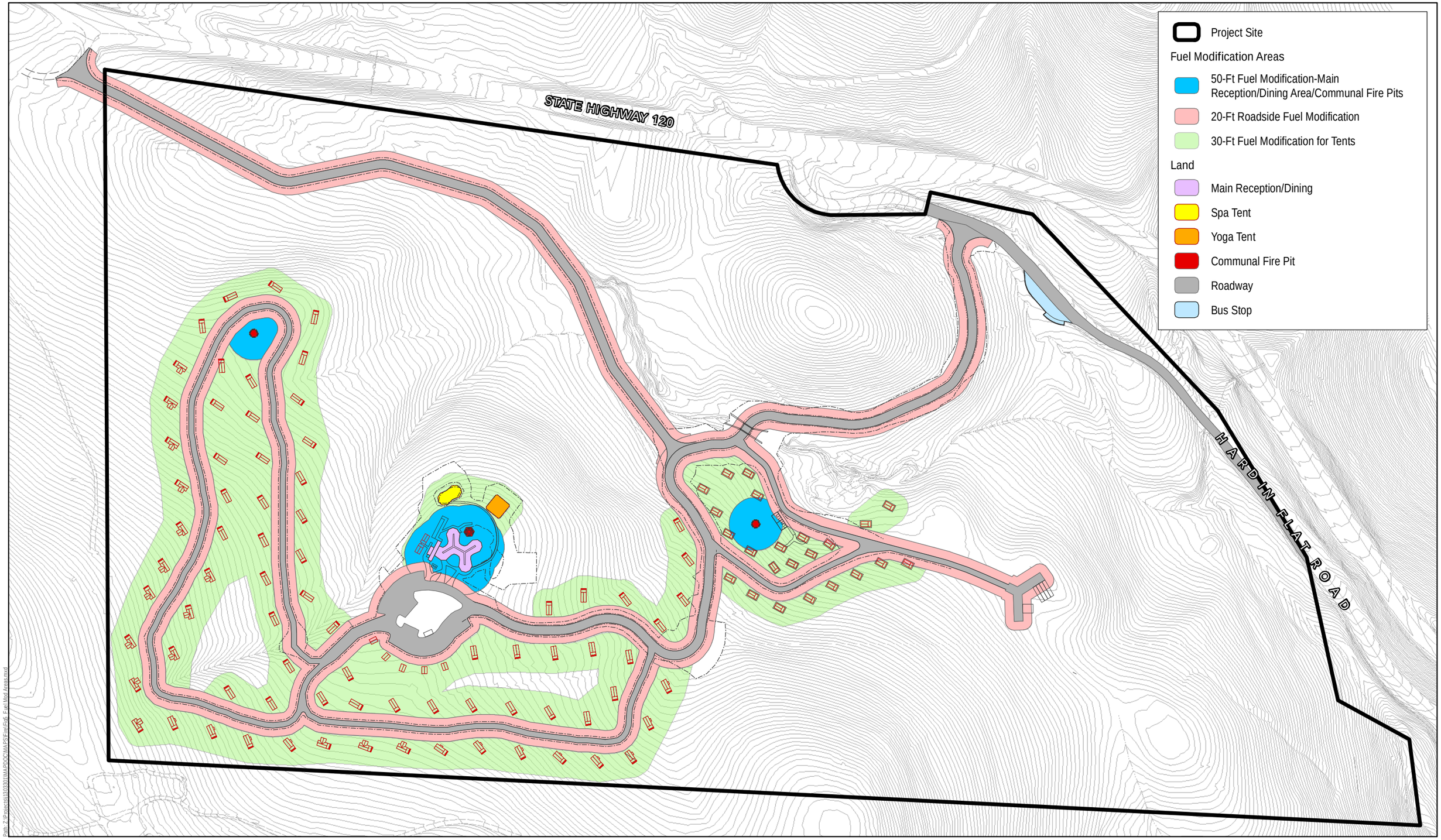
- Remove dead, down, dying, diseased, and hazard trees.
- Pruning (limbing) of live branches within six (6) to eight (8) feet above ground level, but no more than one-third (1/3) the live crown, for all trees in a Fuel Modification Area.
- Trimming and/or thinning of shrubs to eliminate ladder fuels.
- Cutting of annual grasses to within 3" of ground level.
- Debris and trimmings produced by thinning and pruning shall be removed, except for larger woody debris that may be chipped and left for weed and erosion control.

4.1.3 Undeveloped Area Forest/Vegetation Management

A Forest Management Plan should be developed by a Registered Professional Forester to outline long-term management of forested areas outside of the developed areas addressed above. The Plan should focus on maintaining forest stand conditions that minimize the potential for extreme fire behavior (e.g., crown fire), including reduction of surface fuel loads, treatment of ladder fuels, removal of dead/dying vegetation, and creating stand densities that promote overall tree and forest health.

4.1.4 Routine Maintenance

Vegetation management as described above would be completed annually before opening day of the camping season of each year and more often as needed for fire safety, as determined by the TCFD.



SOURCE: DAX CONSULTING 2020

DUDEK 0 110 220 Feet

FIGURE 5
Fuel Modification Areas
Wildfire Mitigation Plan for the Yosemite Under Canvas Project

4.2 Roads and Access

Internal circulation would be provided by a main internal access road (Under Canvas Way) and internal cart paths and footpaths. The proposed Under Canvas Way would begin from Hardin Flat Road at a point approximately 500 feet south from the intersection of SR-120 and Hardin Flat Road. Onsite roadways and paths would be topped with gravel where needed. Portions of the existing emergency access road may require grading and the addition of gravel; rolling dips are proposed to improve drainage conditions (ESA 2020).

All roads would be constructed to have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13.5 feet. For any dead-end roadways in excess of 150 feet in length, the project would provide a turnaround for fire apparatus.

Parking would be provided along proposed camp roads and would be located near the deluxe/suite tents; the safari tents would have a common parking area. Approximately 130 total parking spaces would be provided for guests and employees. All of the tents would be accessed via gravel paths and trails. No parking would be permitted within the dedicated 20-foot width roadway to avoid obstructing any emergency or fire access.

Access Roads

Project site access, including road widths and connectivity, would comply with the requirements of the Tuolumne County Fire Department. Figure 2 (Project Site Plan) presents the proposed roads.

- All fire access and vehicle roadways would be of approved surfacing materials and designed and maintained to support the imposed loads of fire apparatus (not less than 75,000 pounds) that may respond, typically Type III engines and ambulances.
- All roads would have an unobstructed width of not less than 20 feet.
- Any dead-end roads longer than 150 feet would have approved provisions for a fire apparatus turnaround.
- Roadways and/or driveways would provide fire department access to within 150 feet of all tent platforms and camp infrastructure facilities.
- Vertical clearance of vegetation along roadways would be maintained at 13.5 feet.

Secondary Access/Egress

A secondary point of access/egress would be provided for emergency purposes on the northwest side of the site (extending from the deluxe/suite tent loop road) via an existing unimproved roadway that connects to Forest Service Road 1S09. This road would be maintained for emergency use through an agreement with the Stanislaus National Forest; obtaining this permit is a condition of project approval and shall be the responsibility of Under Canvas.

- The secondary access/egress roadway would be of approved surfacing materials and designed and maintained to support the imposed loads of fire apparatus (not less than 75,000 pounds) that may respond, typically Type III engines and ambulances.
- The road would have an unobstructed width of not less than 20 feet.
- Vertical clearance of vegetation along roadways would be maintained at 13.5 feet.

4.3 Water Supply

Water service for the Project would be provided on site by the use of wells and water tanks. The source would be developed as a Public Water System and classified as a Transient Non-Community water system. Water distribution would include storage cisterns, small diameter distribution lines, re-pressure pumps, source development, and services to the laundry, lobby tent, bath units, and deluxe/suite tents. All water storage, mains, and water pressures would be designed to fully comply with Tuolumne County requirements.

4.3.1 Water Tank

A 20,000-gallon water tank will be provided on site to supply domestic and fire suppression needs. Of that, approximately 8,000 will be dedicated to fire suppression, based on NFPA Standard 1142 (Standard on Water Supplies for Suburban and Rural Fire Fighting). The tank shall be equipped with a with pump that meets the requirements of NFPA Standard 1142. The pump shall be provided with a generator for backup power.

4.3.2 Fire Hoses

Fire hose stations/standpipes with 1 ½" fire hose connections will be provided throughout the camp at locations spaced such that no tent structure is further than 150 feet from a fire hose station. Fire hose stations/standpipes should also be placed no further than 150 feet from communal facilities, communal campfire pits, pumps, generators, and propane tanks. It is not anticipated that responding fire agency personnel (e.g., CAL FIRE, GCSD, TCFD) would utilize these water connections and hoses for fire suppression activities. The intent of these water connections/hoses would be for use by trained Under Canvas staff should a small fire occur on site.

4.4 Operations

The business model of the facility is to operate a seasonal camping facility from spring through fall and disassemble and store the tents and support facilities during the winter. As a result, fire safety operational standards presented below are designed for the camping operational period when the facility will be staffed and occupied.

Camping Season Operations

The operational season for the site would generally be from mid-March to mid-October, depending on weather conditions. The average occupancy at existing Under Canvas facilities averages 2.5 guests per tent (approximately 250 for the Project).

Off-season Operations

The tents would be removed at the end of each season in October, with the decks remaining in place. The reception/dining tent would be disassembled at the end of each season and stored in an on-site shipping container. The commercial kitchen trailer would be prefabricated and mounted on wheels and remain on-site during the off season. The remaining housekeeping and maintenance support containers would also likely remain on-site during the off-season.

The following facility operational standards shall be implemented:

- All fires occurring on-site shall be immediately reported to TCFD.
- Under Canvas shall identify a Fire Safety Coordinator. Considering staff scheduling, it is anticipated that more than one staff person will fill this role so that a Fire Safety Coordinator will be on site at all times when staff and visitors are on site. The Fire Safety Coordinator shall be responsible for the following:
    - Initial point of contact for all emergencies
    - Communication with fire agencies
    - Annual Staff Training (see Section 4.6)
    - Annual inspection and regular operation of all emergency tools and equipment
    - Annual vegetation management and fuel treatment
    - Oversight of Visitor Education program (see Section 4.7)
    - Oversight of evacuations
- Scheduling and conducting an annual risk assessment with TCFD prior to opening annually, implementing all risk reductions measures identified during this assessment, and scheduling follow-up assessments with TCFD, as necessary.
- Certain weather conditions can increase fire risk, resulting in the declaration of a Red Flag Warning (RFW) by the National Weather Service (NWS). The Project is located in NWS's West Slope Northern Sierra Nevada Weather Zone (CAZ069). To ensure compliance with Red Flag Warnings restrictions, the NWS website shall be monitored no less than daily when staff and visitors are on site. When a RFW is issued by the NWS for CAZ069, all open flame fires (campfires, tent wood-burning stoves, and charcoal fires) will be prohibited. If vehicles are required to be used during RFW conditions, vehicles shall remain only on designated Project roads.

4.5 Equipment Inventory and Maintenance

While it is not expected that the Under Canvas staff assume the role intended for professional firefighters, there should be an inventory on site of tools and equipment that can be used in an initial attack role for small ignitions that originate on site. In all instances, TCFD should be called first. If the fire appears manageable, evacuate guests, and then attack the fire.

It is recommended that some basic initial attack firefighting equipment be maintained in a centrally located, on-site cache (fire tool locker). This would include:

- Fire extinguishers and backpack pumps;
- Fire line tools: round pointed shovels, Pulaski's, and adze hoes (approximately 10 each) and one chain saw;
- Spare fire hose, adapters and wrenches;
- Personal Protective Equipment: helmets, nomex jackets and pants, gloves, goggles.

For additional fire protection support, a water tank with pump (and generator for backup power) for fire suppression water that meets the requirements of NFPA 1142 standard (approximately 8,000 gallons) will also be provided on site.

Located throughout the Project will be approved fire hose station/standpipes with 1 ½" fire hose connections so that no tent structure is further than 150 from a fire hose station.

4.6 Staff Training

All staff should be trained each year following the guidelines in the Training and Exercise Plan for fire prevention, initial response, medical emergencies, and fire reporting, along with reviewing the Emergency Operations Plan. The training should also include a comprehensive site and facility field review identifying all camp emergency features, equipment and resources. Where applicable, the safe and proper operation of emergency equipment and tools should be demonstrated.

The primary purpose of the project staff is guest safety. Staff will follow the guidelines established by the wildland fire and operational plans approved by TCFD. Those plans will include emergency alert and evacuation guidelines that staff will implement to ensure the safety of all guests.

4.7 Visitor Education

The Owner/Operator would be required to educate visitors/guest regarding fire risk and prevention, which would include providing Figure 7, Evacuation Routes, and Appendix D, CAL FIRE's Wildfire Is Coming Are You Ready To…Go? brochure to each guest. Educational materials shall be available in the lobby as well in each of the guest tents. It is also recommended that visitors/guests are encouraged to subscribe to the County's Emergency Alert https://www.tuolumnecounty.ca.gov/1170/Emergency-Alerts, and the National Park Service Yosemite Alert System, https://member.everbridge.net/index/453003085619123/#/signup. To encourage visitors/guests to register, the QR Codes in Figure 6 shall be posted/provided in the lobby, each tent, and communal or informational areas within the Project site. Additionally, this information should be made available on the Project's website.

Emergency Operations Plan

All guests should be invited to attend a regularly scheduled orientation briefing, reviewing the applicable portions of the Emergency Operations Plan concerning potential hazards and what to do in the event of an emergency incident.

- Review the site fire and emergency alert system designed to notify site occupants in the event of an emergency.
- Review the site evacuation plan, defining routes of ingress and egress, rally points, and protocols for disabled guests and/or guests without their own transport.
- Review temporary refuge areas if evacuation is not possible.

The Owner/Operator of the Project would be responsible for maintaining fire breaks, ensuring fire safety measures detailed in this WMP have been implemented, and educating guests/visitors on wildfire. TCFD would review and approve all wildfire educational material/programs before printing and distribution.

Figure 6 QR Codes for Local Emergency Alert Systems

Tuolumne County Emergency Alert System

NPS Yosemite Alert System

5 Evacuation

Early evacuation for any type of wildfire emergency at the Project is the preferred method of providing for visitor safety, consistent with CAL FIRE's current approach and adopted by Tuolumne County. As such, the Project would formally adopt, practice, and implement a "Ready, Set, Go!" (International Fire Chiefs Association 2013) approach to evacuation. The "Ready, Set, Go!" concept is widely known and encouraged by the State of California and most fire agencies. Pre-planning for emergencies, including wildfire emergencies, focuses on being prepared, having a well-defined plan, minimizing potential for errors, maintaining the Project's fire protection systems, and implementing a conservative (evacuate as early as possible) approach to evacuation and Project operations during periods of fire weather extremes.

Note that large-scale evacuations during wildfire or other emergencies are managed by agencies including the Office of Emergency Services, law enforcement, and fire agencies. Emergencies are often fluid events and on-scene emergency personnel provide key information and direction regarding evacuations. This WMP provides limited information regarding wildfire evacuation, and actual evacuation procedures would be a case-by-case basis and managed and controlled by the aforementioned agencies.

The Tuolumne County Office of Emergency Services has published a Wildland Fire Evacuation Plan that should be the basis for evacuation planning for the Project site. The recommendations below follow the guidelines presented in the pamphlet.

Notifications

Evacuation notifications at the Project site may be made using several methods: Everbridge Emergency Response Notification System, local radio stations, online at MyMotherlode.com, and face-to-face when feasible. Two types of warnings are used: an Evacuation Warning is issued when an evacuation order is imminent; an Evacuation Order is issued when there is an immediate threat to life and/or property.

It is crucial to leave when an evacuation is ordered. The direction of the evacuation route will depend upon the location of the fire in relation to the camp.

Preparation

Guests and staff must be prepared for an evacuation at all time because of the remote location of the camp. With guests typically traveling off-site each day for sight-seeing, it is important that a meeting place is designated in advance for reuniting during and after an evacuation. Likewise, staff should also have a designated meeting place. All guests and staff should become familiar with travel route options in advance.

If a wildfire is approaching, or following issuance of an Evacuation Warning, vehicles should be parked facing the road for a quick departure. If time permits, belongings should be placed in vehicles and staff/gusts should put on a long sleeve shirt and long pants and cover face with bandanas. Following issuance of an Evacuation Order, staff and guests should leave immediately.

The Fire Safety Coordinator shall ensure that all Project gates are unlocked and open to vehicle traffic following issuance of an Evacuation Warning or Order. This includes ensuring that the secondary access/egress road is unlocked and unobstructed.

During an Evacuation

Leave immediately after being notified of the Evacuation Order. Primary evacuation routes have been identified in Figure 7.

Observe instructions provided by emergency personnel for areas to be evacuated, travel routes, traffic control and safe locations. Never block the travel route.

If trapped by fire while evacuating, park in a clear area, close all windows and vents, cover up and lie low if possible.

Refuge Area

Temporary refuge areas are designed as temporary holding areas for smaller groups of people. Because of the project location, surrounding vegetation, lack of suitable sites usable as refuge areas, and the large number of potential guests at the camp, it is not recommended that a refuge area be designated or utilized.

Resources

Emergencies: 911

Tuolumne County Office of Emergency Services: www.tuolumnecounty.ca.gov/oes

Tuolumne County Wildland Fire Evacuation Plan:

https://www.tuolumnecounty.ca.gov/DocumentCenter/View/13426/Tuolumne-County-Evacuation-Plan-Pamphlet

Radio stations: KKBN FM 93.5; KVML FM 102.7, AM 1450; KZSQ FM 92.7.

Online: myMotherlode.com

Path: Z:\Projects\13\13330\MAP\DOCMAPS\EmrEng6_Fire_Evac.mxd

SOURCE: AERIAL-NAIP 2016

DUDEK

0 110 220 Feet

FIGURE **7**

Evacuation Routes

Wildfire Mitigation Plan for the Yosemite Under Canvas Project

6 List of Preparers

Project Manager

Scott Eckardt, RPF
Senior Fire Protection Planner
Dudek

Fire Protection Planners

Doug Nickles, RPF
Senior Fire Protection Planner
Dudek

Lisa Maier
Fire Protection Planner
Dudek

GIS and Mapping

Lesley Terry
GIS and CADD Specialist
Dudek

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Appendix A

Tent Stove Details

PRODUCT CODE	PRODUCT NAME
TN10	True North TN-10 EPA Stove

Product and Placement Details

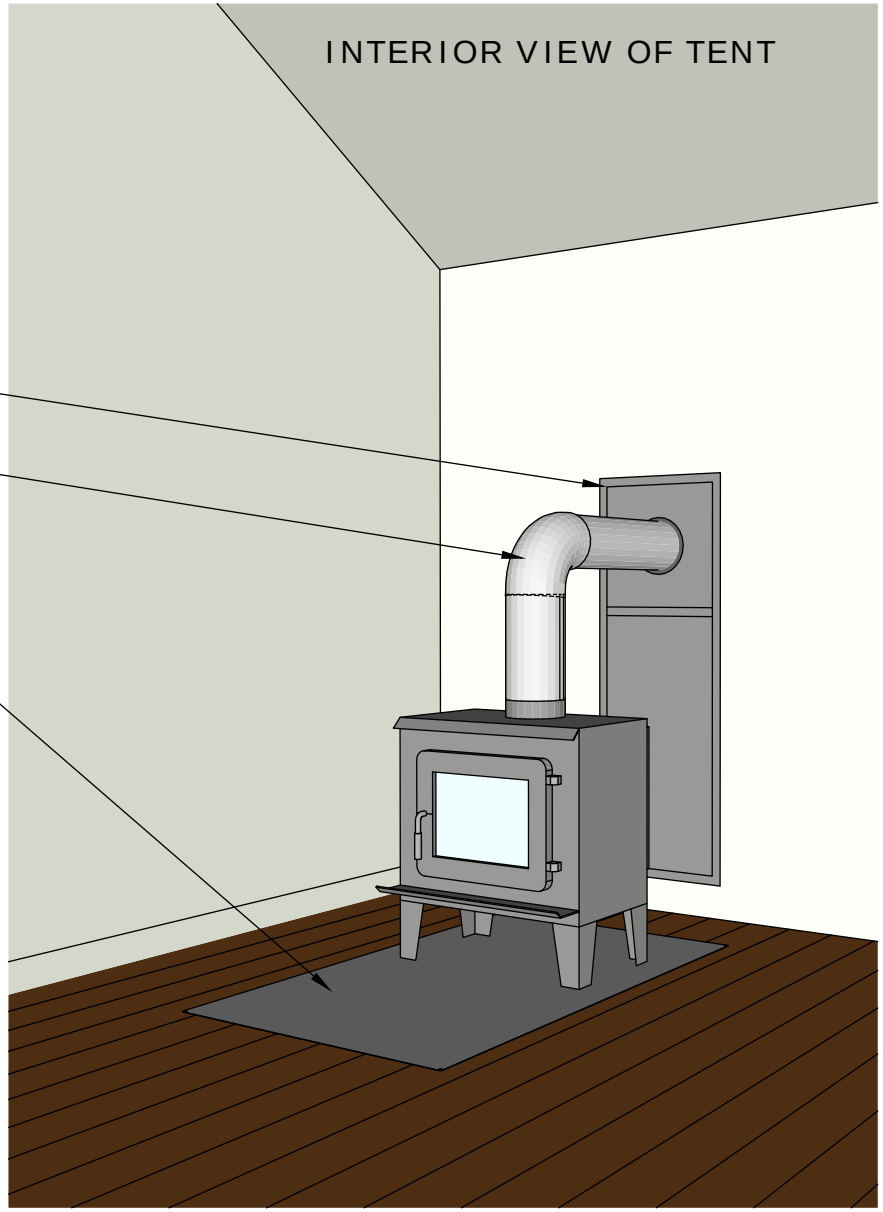
- Stove Model: True North TN-10. See manufacture manual for details.

- Stove located inside of canvas guest tent. Canvas treated with high quality flame retardant. See materials spec page for certification.

- Stove passes through tent threshold via high heat silicone coated stove jack.

- Stove uses 6” high quality vent pipe. The exterior vent extends 2’ beyond roofline to achieve proper clearances and draft.

- Stove sits on 22 gauge steel ember protection mat that exceed manufacturers suggested dimensions.



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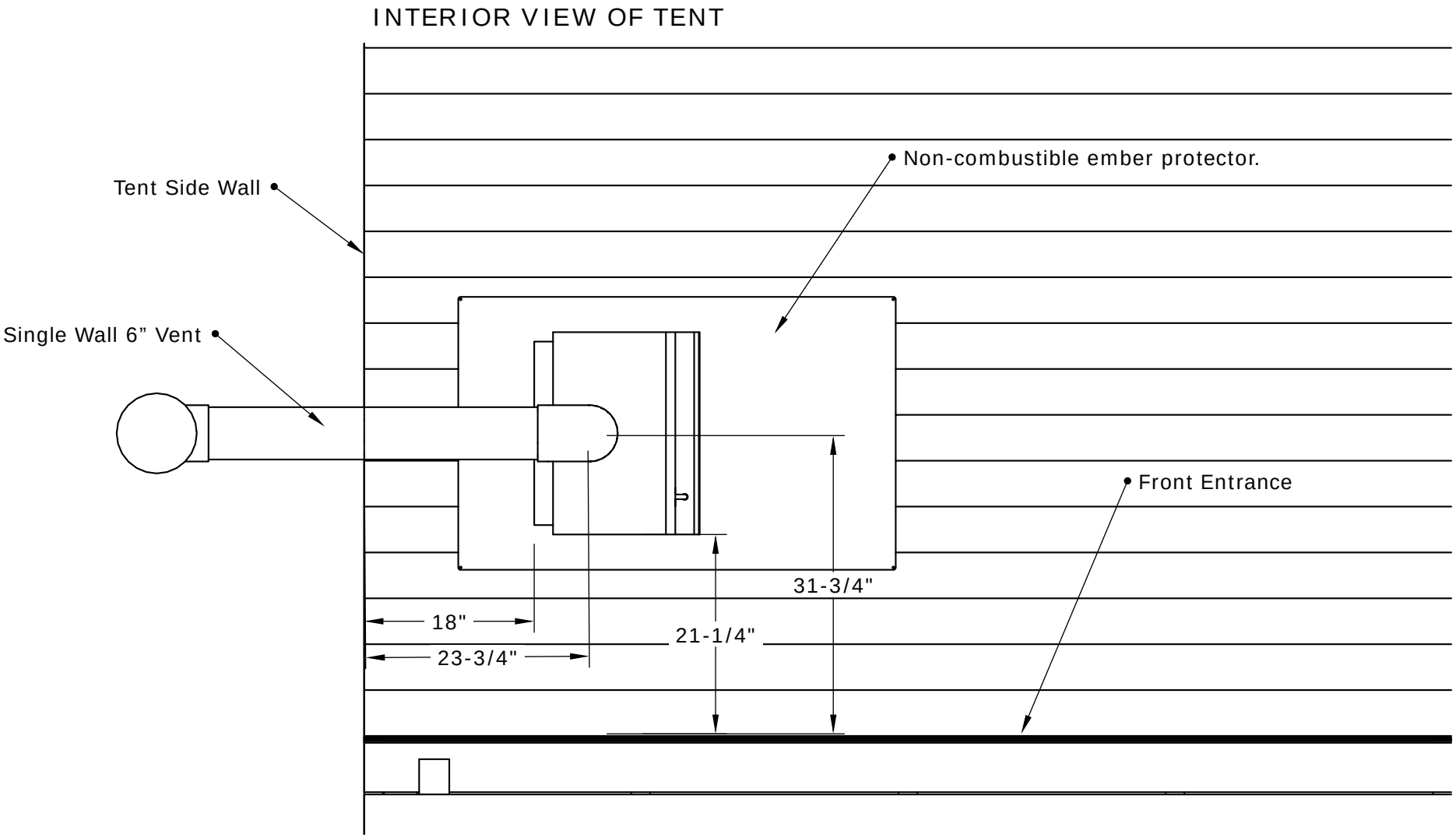
PRODUCT CODE **PRODUCT NAME**

TN10 Clearances to Combustibles - Single Wall Connector



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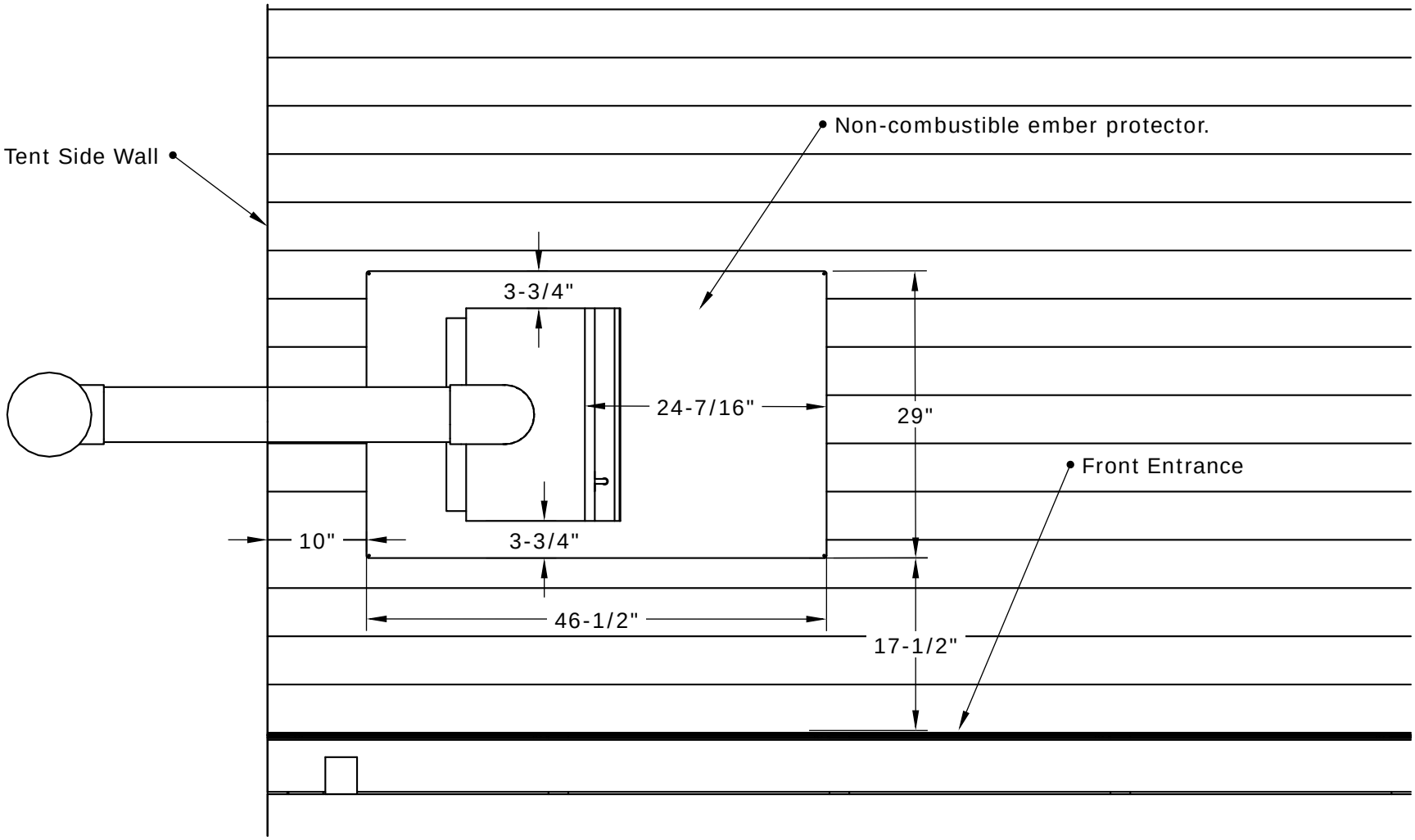
PRODUCT CODE **PRODUCT NAME**

TN10 Ember Protection

INTERIOR TOP VIEW OF TENT



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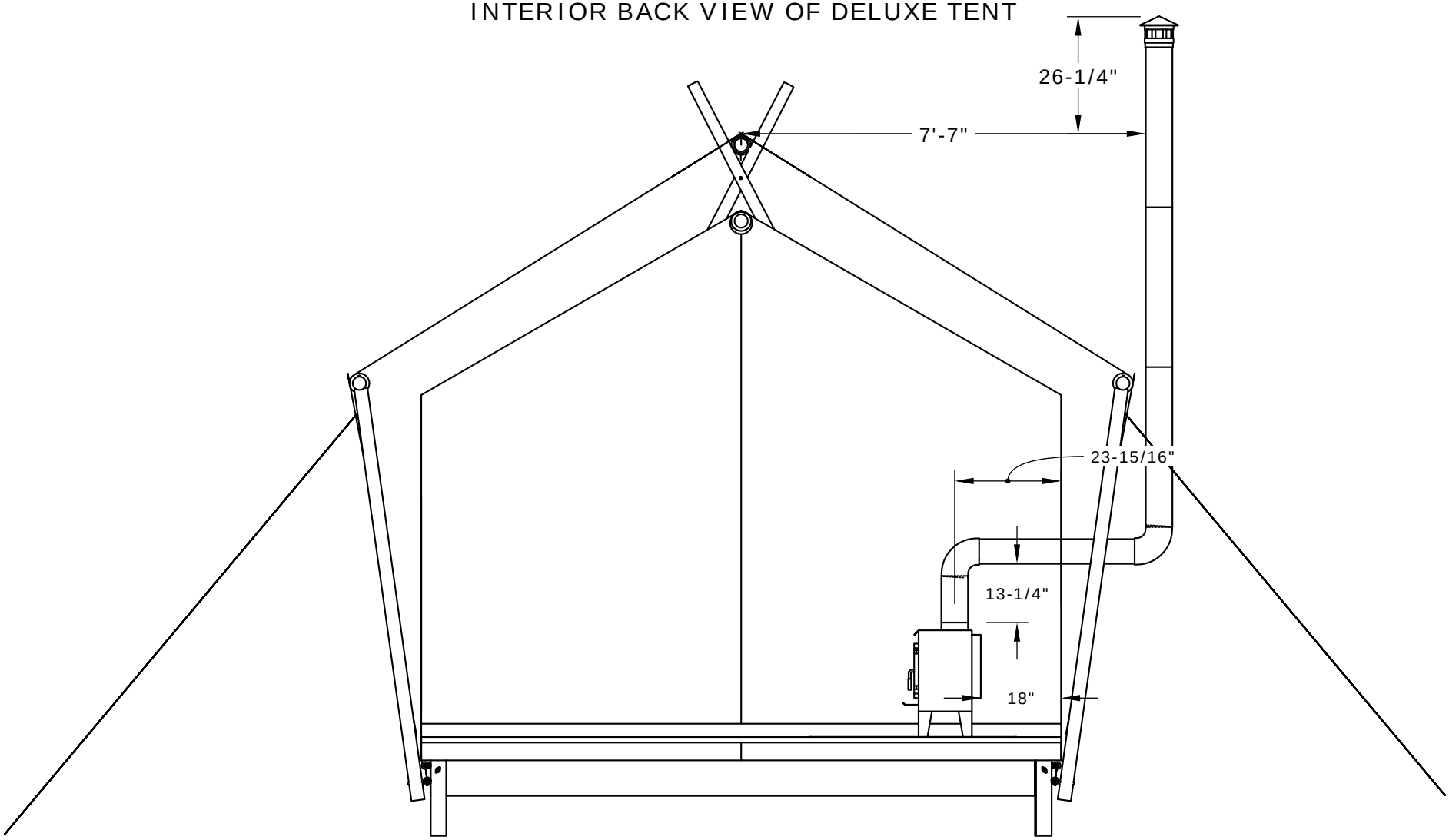
PRODUCT CODE **PRODUCT NAME**

TN10 Vent Pipe Clearances

INTERIOR BACK VIEW OF DELUXE TENT



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Should you desire to do so please seek approval from a Company Director.

Certificate of Compliance And Flame Resistance

Issued to:
Jasper Madison
211 Yukon Lane, #3
Belgrade MT 59714
USA

Description: Army Duck, 60", 10.10 oz
Part No: **1310-0012**
Fabric: Army Duck, 60", 10.10 oz
Color: Natural
S.O. No:
Serial No:

REGISTERED STATE OF CALIFORNIA STATE FIRE MARSHAL FLAME RETARDANT NFPA -701

RAINIER

18375 Olympic Ave S
Tukwila WA 98188
800.621.2495

THE ABOVE LISTED FABRIC IS CERTIFIED FLAME RETARDANT ACCORDING TO THE FOLLOWING SPECIFICATIONS AND STANDARDS:
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 701, SMALL SCALE
CAN/ULC-S109
CALIFORNIA FIRE CODE TITLE 24

ALSO, WE CERTIFY THIS LOT OF FABRIC IS IN GENERAL CONFORMANCE WITH THE AVERAGE TYPICAL, PHYSICAL AND TECHNICAL PERFORMANCE PARAMETERS PUBLISHED FOR THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED BY AN INDEPENDENT AND APPROVED LABORATORY. RESULTS OF FLAMMABILITY TEST OF FIRE RESISTANCE (SMALL SCALE TEST) ARE AVAILABLE IF REQUIRED.

Vu Lam
Management Representative for Quality

Oct 2019
Manufacture Date

Certificate of Compliance And Flame Resistance

Issued to:
Jasper Madison
211 Yukon Lane, #3
Belgrade MT 59714
USA

Description: **CBT 12ft Cottage Back - Under Canvas**
Part No: **1320-0322**
Fabric: Vinyl, 18 oz, Matte Finish Coated Polyester FR
Color: White
S.O. No:
Serial No: Part 2060-0233

REGISTERED
STATE OF CALIFORNIA
STATE FIRE MARSHAL
FLAME RETARDANT
F-41501

RAINIER

18375 Olympic Ave S
Tukwila WA 98188
800.621.2495

THE ABOVE LISTED FABRIC IS CERTIFIED FLAME RETARDANT ACCORDING TO THE FOLLOWING SPECIFICATIONS AND STANDARDS:
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 701, SMALL SCALE
CAN/ULC-S109
CALIFORNIA FIRE CODE TITLE 24

ALSO, WE CERTIFY THIS LOT OF FABRIC IS IN GENERAL CONFORMANCE WITH THE AVERAGE TYPICAL, PHYSICAL AND TECHNICAL PERFORMANCE PARAMETERS PUBLISHED FOR THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED BY AN INDEPENDENT AND APPROVED LABORATORY. RESULTS OF FLAMMABILITY TEST OF FIRE RESISTANCE (SMALL SCALE TEST) ARE AVAILABLE IF REQUIRED.

Vu Lam
Management Representative for Quality

Oct 2019
Manufacture Date

Certificate of Compliance And Flame Resistance

Issued to:
Jasper Madison
211 Yukon Lane, #3
Belgrade MT 59714
USA

Description:	RFMODSAF Modular Cottage Rain Fly – Under Canvas
Part No:	**1320-0484**
Fabric:	Vinyl, 13 oz, 61", FR Laminate
Color:	Tan
S.O. No:	
Serial No:	Part 2060-0314

REGISTERED STATE OF CALIFORNIA STATE FIRE MARSHAL FLAME RETARDANT
F-41501

RAINIER

18375 Olympic Ave S
Tukwila WA 98188
800.621.2495

THE ABOVE LISTED FABRIC IS CERTIFIED FLAME RETARDANT ACCORDING TO THE FOLLOWING SPECIFICATIONS AND STANDARDS:
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 701, SMALL SCALE
CAN/ULC-S109
CALIFORNIA FIRE CODE TITLE 24

ALSO, WE CERTIFY THIS LOT OF FABRIC IS IN GENERAL CONFORMANCE WITH THE AVERAGE TYPICAL, PHYSICAL AND TECHNICAL PERFORMANCE PARAMETERS PUBLISHED FOR THIS PRODUCT. THIS PRODUCT HAS BEEN TESTED BY AN INDEPENDENT AND APPROVED LABORATORY. RESULTS OF FLAMMABILITY TEST OF FIRE RESISTANCE (SMALL SCALE TEST) ARE AVAILABLE IF REQUIRED.

Vu Lam
Management Representative for Quality

Jan 2020
Manufacture Date

Appendix B

Fire Behavior Technical Report

1 Fire Behavior Modeling Background

Fire behavior modeling has been used by researchers for approximately 50+ years to predict how a fire will move through a given landscape (Linn 2003). The models have had varied complexities and applications throughout the years. One model has become the most widely used for predicting fire behavior on a given landscape. That model, known as "BEHAVE," was developed by the U. S. Government (USDA Forest Service, Rocky Mountain Research Station) and has been in use since 1984. Since that time, it has undergone continued research, improvements, and refinement. The current version, BehavePlus, V6, includes the latest updates incorporating years of research and testing. Numerous studies have been completed testing the validity of the fire behavior models' ability to predict fire behavior given site specific inputs. One of the most successful ways the model has been improved has been through post-wildfire modeling (Brown 1972, Lawson 1972, Sneeuwjagt and Frandsen 1977, Andrews 1980, Brown 1982, Rothermel and Rinehart 1983, Bushey 1985, McAlpine and Xanthopoulos 1989, Grabner, et. al. 1994, Marsden-Smedley and Catchpole 1995, Grabner 1996, Alexander 1998, Grabner et al. 2001). In this type of study, BehavePlus is used to model fire behavior based on pre-fire conditions in an area that recently burned. Real-world fire behavior, documented during the wildfire, can then be compared to the prediction results of BehavePlus and refinements to the fuel models incorporated, retested, and so on.

Fire behavior modeling includes a high level of analysis and information detail to arrive at reasonably accurate representations of how wildfire would move through available fuels on a given site. Fire behavior calculations are based on site specific fuel characteristics supported by fire science research that analyzes heat transfer related to specific fire behavior. Predicting wildland fire behavior is not an exact science. As such, the minute-by-minute movement of a fire will probably never be predictable, especially when considering the variable state of weather and the fact that weather conditions are typically estimated from forecasts made many hours before a fire. Nevertheless, field-tested and experienced judgment in assessing the fire environment, coupled with a systematic method of calculating fire behavior yields surprisingly accurate results. To be used effectively, the basic assumptions and limitations of fire behavior modeling applications must be understood.

1. First, it must be realized that the fire model describes fire behavior only in the flaming front. The primary driving force in the predictive calculations is the dead fuels less than 0.25 inches in diameter. These are the fine fuels that carry fire. Fuels greater than one inch have little effect, while fuels greater than three inches have no effect on fire behavior.
2. Second, the model bases calculations and descriptions on a wildfire spreading through surface fuels that are within six feet of the ground and contiguous to the ground. Surface fuels are often classified as grass, brush, litter, or slash.
3. Third, the software assumes that weather and topography are uniform. However, because wildfires almost always burn under non-uniform conditions, creating their own weather, length of projection period and choice of fuel model must be carefully considered to obtain useful predictions.

4. Fourth, fire behavior computer modeling systems are not intended for determining sufficient fuel modification zone/defensible space widths. However, it does provide the average length of the flames, which is a key element for determining defensible space distances for minimizing structure ignition.

Although BehavePlus has limitations, it can still provide valuable fire behavior predictions, which can be used as a tool in the decision-making process. In order to make reliable estimates of fire behavior, one must understand the relationship of fuels to the fire environment and be able to recognize the variations in these fuels. Natural fuels are made up of the various components of vegetation, both live and dead, that occur in a particular landscape. The type and quantity will depend upon soil, climate, geographic features, and fire history. The major fuel groups of grass, shrub, trees, and slash are defined by their constituent types and quantities of litter and duff layers, dead woody material, grasses and forbs, shrubs, regeneration, and trees. Fire behavior can be predicted largely by analyzing the characteristics of these fuels. Fire behavior is affected by seven principal fuel characteristics: fuel loading, size and shape, compactness, horizontal continuity, vertical arrangement, moisture content, and chemical properties.

2 Modeling Inputs

2.1 Fuels

The seven fuel characteristics help to define the 13 standard fire behavior fuel models (Anderson 1982). According to the model classifications, fuel models used for fire behavior modeling (BehavePlus) have been classified into four groups, based upon fuel loading (tons/acre), fuel height, and surface-to-volume ratio. Observation of the fuels in the field (on site) determines which fuel models should be applied in modeling efforts. The following describes the distribution of fuel models among general vegetation types for the standard 13 fuel models:

- Grasses Fuel Models 1 through 3
- Brush Fuel Models 4 through 7
- Timber Fuel Models 8 through 10
- Logging slash Fuel Models 11 through 13.

In addition, the aforementioned fuel characteristics were utilized in the recent development of 40 additional fire behavior fuel models (Scott and Burgan 2005) developed for refining use of the BehavePlus modeling system. These models attempt to improve the accuracy of the 13 standard fuel models outside of severe fire season conditions, and to allow for the simulation of fuel treatment prescriptions. The following describes the distribution of fuel models among general vegetation types for the 40 new fuel models:

- Non-burnable Models NB1, NB2, NB3, NB8, NB9

- Grass Models GR1 through GR9
- Grass shrub Models GS1 through GS4
- Shrub Models SH1 through SH9
- Timber understory Models TU1 through TU5
- Timber litter Models TL1 through TL9
- Slash blowdown Models SB1 through SB4.

For the Yosemite Under Canvas Project fire behavior analyses, fuel model assignments were based on observed field conditions and referring to Table 3.05-2 in the 2016 Rim Fire Reforestation Environmental Impact Statement (USFS 2016). As is customary for this type of analysis, the terrain and fuels directly adjacent to the proposed development are used for determining flame lengths and fire spread. It is these fuels that would have the potential to affect the project's structures from a radiant and convective heat perspective as well as from direct flame impingement.

Table 3.05-2 Fuel Models within the Rim Reforestation Project Area

Fuel Model	Description	Flame Length (feet)	Fireline Intensity (BTU/feet/second)
NB9	Bare Ground	0	0
GR1	Short Grass Low Load	0 to 3	45
GR2	Short Grass Moderate Load	1 to 8	300
GS2	Grass and Shrub	4 to 8	500
SH1	Low Load Shrub	0 to 1	125
SH2	Moderate Load Shrub	1 to 4	400
SH5	High Load Shrub	12 to 25	3,700
TL1	Recently Burned	0 to 1	5
TL2	Low Load Broadleaf Litter	0 to 1	7
TL4	Small Down Log	1 to 4	25
TL5	High Load Conifer Litter	1 to 4	50
TL7	Large Down Logs	1 to 4	50
TL8	Timber Litter	1 to 4	150
SB4	Blowdown with brush and small tree intermixed	12 to 25	3,000

Source: USFS 2016

Fuel beds, including grass, shrubs, timber and slash, were observed on and adjacent to the proposed development. These fuel types may produce flying embers that could affect the project; defenses have been built into the project design to minimize ember generation and potential impact. In most instances, various combinations of these fuels were observed and the predominate fuel likely to carry the flaming front of a wildfire determined the fuel model selected. Table B-1 provides a description of the three fuel models observed that were subsequently used in the analysis for this project. Modeled areas include grass dominated ground fuel (Fuel Model GR4); grass and shrub dominated ground fuel (Fuel Model GS2); conifer litter and light slash ground fuel (Fuel Model TL5).

Dudek also conducted modeling of the site for post-development recommendations for this project, including the timber harvesting, mastication and fuel treatment proposed as part of the site preparation

and ongoing vegetation management (refer to Table B-2 for post-development fuel model descriptions). Fuel modification includes routine vegetation management around each camp site, alongside roadways, around the main camp facilities and infrastructure, as well as the project periphery. For modeling the post-development condition, fuel model assignments were re-classified to Fuel Model GR1, SH1 and TL4 respectively.

Table B-1. Existing Fuel Model Characteristics

Fuel Model Assignment	Title	Description	Fine fuel load (tons/ac)
GR4	Moderate Load, Dry Climate Grass	The primary carrier of fire in GR4 is continuous, dry-climate grass. Load and depth are greater than GR2; fuelbed depth is about 2 feet.	2.15
GS2	Moderate Load, Dry Climate Grass-Shrub	The primary carrier of fire in GS2 is grass and shrubs combined. Shrubs are 1 to 3 feet high, grass load is moderate. Spread rate is high; flame length moderate. Moisture of extinction is low.	2.1
TL5	High Load Conifer Litter	The primary carrier of fire in TL5 is high load conifer litter; light slash or mortality fuel. Spread rate is low; flame length low.	1.15

Table B-2. Post-development Fuel Model Characteristics

Fuel Model Assignment	Title	Description	Fine fuel load (tons/ac)
GR1	Short, Sparse Dry Climate Grass	The primary carrier of fire in GR1 is sparse grass, though small amounts of fine dead fuel may be present. The grass in GR1 is generally short, either naturally or by grazing, and may be sparse or discontinuous. The moisture of extinction of GR1 is indicative of a dry climate fuelbed, but GR1 may also be applied in high-extinction moisture fuelbeds because in both cases predicted spread rate and flame length are low compared to other GR models.	0.40
SH1	Low Load Dry Climate Shrub	The primary carrier of fire in SH1 is woody shrubs and shrub litter. Low shrub fuel load, fuelbed depth about 1 foot; some grass may be present. Spread rate is very low; flame length very low.	1.7
TL4	Small downed logs	The primary carrier of fire in TL4 is moderate load of fine litter and coarse fuels. Includes small diameter downed logs. Spread rate is low; flame length low.	0.50

2.2 Weather

Analyses were conducted for conservative, worst case, 90th percentile weather condition scenarios. Fuel moisture and wind speed information data was incorporated into the BehavePlus modeling runs, again utilizing data from the 2016 Rim Fire EIS (Table 3.05-3) (USFS 2016). The input wind speed and direction is roughly an average surface wind at 20 feet above the vegetation over the analysis area. Table B-3 summarizes the weather and wind input variables used in the BehavePlus modeling efforts.

Table 3.05-3 Weather Parameters for High Conditions (90th Percentile Weather[1])

Parameter	Value
1-hour fuel moisture (0 to 0.25 inch diameter)	4%
10-hour fuel moisture (0.25 to 1 inch diameter)	5%
100-hour fuel moisture (1 to 3 inch diameter)	7%
1000-hour fuel moisture (3 inch plus diameter, CWD)	9%
Herbaceous fuel moisture	30%
Woody fuel moisture	70%
20-foot wind speed (mph)	10

CWD=Coarse Woody Debris; mph=miles per hour

Source: USFS 2016

Table B-3. Fuel Moisture and Wind Inputs

Variable	Weather Condition (90th Percentile)
1h Moisture	4%
10h Moisture	5%
100h Moisture	7%
1000h Moisture	9%
Live Herbaceous Moisture	30%
Live Woody Moisture	70%
20-foot Wind Speed (mph)	10
BehavePlus Wind Adjustment Factor	0.4

2.3 Slope

Slope is a measure of angle in degrees from horizontal and can be presented in units of degrees or percent. Slope is important in fire behavior analysis as it affects the exposure of fuel beds. Additionally, fires burning uphill spread faster than those burning on flat terrain or downhill as uphill vegetation is pre-heated and dried in advance of the flaming front, resulting in faster ignition rates. For the BehavePlus analysis, slope

[1] Mount Elizabeth Remote Automated Weather Station during the period of April 1, 1970 to October 31, 2013 (USFS 2016).

values were determined by field observation at the locations for each modeling scenario, and ranged in value between 17 to 21 percent.

3 BehavePlus Analysis

To objectively predict flame lengths, intensities, and spread rates, the BehavePlus V6 fire behavior modeling system (Andrews, Bevins, and Seli 2004) was used in three modeling scenarios and incorporated observed fuel types representing the dominant vegetative fuels, slope gradients, and wind and fuel moisture values. Modeling scenario locations were selected to better understand different fire behavior that may be experienced on or adjacent to the site. The results of fire behavior modeling analysis for pre- and post-development conditions are presented in Tables B-4 and B-5, respectively. Identification of modeling run (fire scenarios) locations is presented graphically in Figure 4, Fire Behavior Analysis Map exhibit in the Project's WMP.

Fire Scenario locations and descriptions:

- Scenario 1. Fire flaming front approaching from the north around the vicinity of SR-120 towards the existing grass-dominated groundcover beneath scattered timber (Fuel Model GR4) adjacent to and on the northern portion of the project, with northern winds. Post-development includes the mastication and fuel treatment recommendations (Fuel Model GR1).
- Scenario 2. Fire flaming front approaching from the northeast from along the SR-120 towards the northeast portion of the project, through the existing grass and shrub groundcover beneath scattered timber (Fuel Model GS2), with northeastern winds. Post-development includes the mastication and fuel treatment recommendations (Fuel Model SH1).
- Scenario 3. Fire flaming front approaching from the south towards the southern project development, through the timber litter and light slash ground fuels (Fuel Model TL5), with southern winds. Post-development includes the mastication and fuel treatment recommendations (Fuel Model TL4).

Table B-4. Fire Behavior Modeling Results for Existing Conditions

Scenario	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)*
Scenario 1: Grass, 20% uphill slope, 10 mph wind speed				
Fuel Model GR4 – Moderate Load, Dry Climate Grass	9.7	786	1.2	0.2
Scenario 2: Grass-Shrub, 17% uphill slope, 10 mph wind speed				
Fuel Model GS2 – Low Load Dry Climate Shrub	5.6	242	0.3	0.2
Scenario 3: Conifer litter and slash, 21% downhill slope, 10 mph wind speed				
Fuel Model TL5 – High Load Conifer Litter	2.2	32	0.1	0.1

*Spotting distance from a wind driven surface fire.

Table B-5. Fire Behavior Modeling Results for Post-Project Conditions

Scenario	Flame Length (feet)	Fireline Intensity (BTU/feet/second)	Spread Rate (mph)	Spotting Distance (miles)
Scenario 1: Grass, 20% uphill slope, 10 mph wind speed				
Fuel Model GR1 – Short, Sparse Dry Climate Grass	2.1	30	0.3	0.1
Scenario 2: Grass-Shrub, 17% uphill slope, 10 mph wind speed				
Fuel Model SH1 – Low Load Dry Climate Shrub	1.8	21	0.1	0.1
Scenario 3: Small downed logs, 21% downhill slope, 10 mph wind speed				
Fuel Model TL4 – Litter and small downed logs	1.4	12	0.0	0.0

As presented in Table B-4, wildfire behavior in grass groundcover fuel beds, presented as Fuel Model GR4, represents the most extreme conditions. In this case, flame lengths are calculated reach 9.7 feet with 10 mph winds; spread rates reach 1.2 mph. The spotting distance, where airborne embers can ignite new fires downwind of the initial fire, is calculated at 0.2 mile. In comparison, a timber litter fuel type could generate flame lengths up to 2.2 feet high with a spread rate of 0.1 mph. The fire could potentially be spotting for a distance of 0.1 mile.

As presented in Table B-5, Dudek conducted modeling of the site for post-development fuel recommendations for this project. Fuel modification includes the timber harvesting, mastication and fuel treatment proposed as part of the site preparation and ongoing vegetation management. For modeling the post-development condition, fuel model assignments were re-classified for each scenario. The treatments in each area resulted in a reduction in flame length and intensity. The 9.7-foot tall flames predicted in the grass fuel bed during pre-development were reduced to 2.1 feet tall; the fireline intensity was reduced from 786 BTU/ft/sec to 30 BTU/ft/sec.

It should be noted that the results presented in Tables B-4 and B-5 depict values based on inputs to the BehavePlus software. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis, but models provide a worst-case wildfire condition as part of a conservative approach. Further, this modeling analysis assumes a correlation between the project site vegetation and fuel model characteristics. Model results should be used as a basis for planning only, as actual fire behavior for a given location will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

The information in Table B-6 pertains to interpretation of flame length and fireline intensity as it relates to fire suppression efforts. Based on the post-development calculated flame lengths of under 3.0 feet tall, fire fighters should be able to conduct a direct attack on the fire.

Table B-6. Fire Suppression Interpretation

Flame Length (ft)	Fireline Intensity (Btu/ft/s)	Interpretations
Under 4	Under 100	Fires can generally be attacked at the head or flanks by persons using hand tools. Hand line should hold the fire.
4 to 8	100-500	Fires are too intense for direct attack on the head by persons using hand tools. Hand line cannot be relied on to hold the fire. Equipment such as dozers, pumpers, and retardant aircraft can be effective.
8 to 11	500-1000	Fires may present serious control problems -- torching out, crowning, and spotting. Control efforts at the fire head will probably be ineffective.
Over 11	Over 1000	Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective.

Appendix C

Construction-Phase Fire Prevention Measures

The following measures are identified to minimize construction-related wildfire risks. The Project owner/manager (Under Canvas) is responsible for ensuring that all contractors on the site have the contractual obligations in place to abide by the measures presented herein.

Materials:

- Minimize combustible and flammable materials storage on site.
- Store any combustible or flammable materials that need to be on site away from ignition sources.
- Label all containers as to their contents and store in the same location as flammable or combustible liquids.
- Dispose of combustible waste in accordance with all applicable laws and regulations.

Construction Operations:

- Prevent driving or parking of vehicles and equipment over unmaintained and dry vegetation.
- Conduct hot work activities according to the guidelines provided below.
- Restrict construction activities during Red Flag Warning periods as identified below.
- Do not permit smoking on the site.
- Keep construction work areas free of combustible materials.

Tools and Equipment:

- Equip all internal combustion engines with spark arrestors that are in good working order.
- Do not overload circuits or rely on extension cords where other upgrades would be safer.
- Turn off and unplug electrical equipment when not in use.
- Clean up and repair of flammable liquid leaks immediately.
- Report and repair fuel leaks without delay.
- Maintain equipment in good working order by inspecting regularly and maintaining motors and tools free of excessive dust and grease.
- Equip all construction-related vehicles with a 10 pound, 4A:80BC Dry Chemical Fire Extinguisher, a 5-gallon backpack pump fire extinguisher, a 46-inch round point hardwood shovel, and a first aid kit.

Hot Work:

- Implement hot work requirements identified in California Fire Code (CFC) Chapter 26, Welding and other Hot Work, and National Fire Protection Association (NFPA) 51B, "Fire Prevention During Welding, Cutting and other Hot Work". (Hot Work is defined in the CFC as operations involving cutting, welding, thermite welding, brazing, soldering, grinding, thermal spraying, thawing pipe, or other similar operations. Hot work areas are defined as the areas exposed to sparks, hot slag, radiant heat, or convective heat because of the hot work.)
- Obtain all necessary Hot Work permit prior to conducting hot work operations.

- Conduct all Hot Work according to the following:
    - All personnel involved in hot work shall be trained in safe operation of the equipment by the SSO. This will include providing training at "tailgate safety meetings." Personnel would also be made aware of the risks involved and emergency procedures, such as how to transmit an alarm and who is responsible to call 9-1-1.
    - Signage required in areas where workers may enter indicating "Caution; Hot Work in progress; Stay Clear" would be posted on site.
    - Hot work would not be done on any containers which contain or have contained flammable liquids, gases, or solids until containers have been thoroughly cleaned, purged, or inerted.
    - A fire extinguisher with a minimum rating of 4A:80BC, a 5-gallon backpack pump fire extinguisher, and a 46-round point hardwood shovel, shall be readily accessible within 25 feet of hot work area.
    - Welding and cutting would comply with 2016 CFC Chapter 35- Welding and Hot Work.
    - Piping manifolds and hose systems for fuel gases and oxygen would comply with 2016 CFC Section 3509.
    - Cylinder use and storage would comply with 2016 CFC Chapter 53 - Compressed Gases.
    - Equipment would be approved by a fire agency, including torches, manifolds, regulators, or pressure-reducing valves, and any acetylene generators.
    - Personal protective clothing would be selected to minimize the potential for ignition, burning, trapping hot sparks, and electric shock.
    - A fire watch will be in place for a minimum of 30 minutes, or longer as considered necessary by the SSO, following any hot work.
    - Any ignitions will be immediately extinguished (as possible) by site personnel, and GCSD/TCFD/CAL FIRE would be notified of the incident.

Red Flag Warnings:

- During Red Flag Warnings (RFWs) issued by the National Weather Service (when weather conditions (e.g., low humidity, high winds) favor wildfire ignition and spread), implement the following:
    - Display red flags at construction entrances and the construction office/trailer, indicating to employees and contractors that restrictions are in place.
    - Restrict Hot Work, grading, or other work that could result in heat, flame, sparks, or ignition until the RFW has been lifted.
    - If vehicles are required to be used during RFWs, operate them only on designated site access roads with non-combustible surfaces (e.g., gravel, bare soil).

Fire Monitoring and Suppression:

- Provide at least one pick-up trucks outfitted with a Type-6 Skid-Mounted Unit, including fire pump, hose, and nozzle, that is staffed with personnel properly trained to use the equipment.

- Provide a cache of shovels, McLeods, and Pulaskis available at staging sites. The amount of equipment will be determined by consultation between the SSO and GCSD/TCFD/CAL FIRE.
- Conduct fire patrols to monitor work activities. The SSO shall verify proper tools and equipment are on site, assess any fire agency work restrictions, and serve as a lookout for fire starts, including staying behind (e.g., a fire watch) to make certain no residual fire exists. Fire watch may be performed by any site personnel under the direction of the SSO. Fire patrols shall be performed during the fire season and the patrol personnel shall be equipped with a portable fire extinguisher and communications equipment.

Access:

- Clear parking areas and fuel or oil storage areas of all grass and brush by a distance of at least 30 feet.
- Maintain evacuation routes free of obstructions. Unavoidable evacuation route blockages shall be coordinated such that a secondary route is identified and available.
- During significant emergency situations, an evacuation notice may be issued by the construction manager/supervisor. When an evacuation has been called, all site employees will gather at the designated assembly area and the manager/supervisor, or a designated supervisor, will account for all personnel. Once all employees are accounted for, the vehicles will safely convoy from the site to safe zones, which are generally areas off site away from the threat.

Communications:

- Report any fires ignited on site immediately to GCSD/TCFD/CAL FIRE.
- Post fire rules on the Project bulletin board at the contractor's field office and/or areas visible to all construction personnel. This shall include all contractors and subcontractors if more than one.
- Address fire safety at all daily tailgate meetings. Foremen will remind employees of fire safety, prevention, and emergency protocols on a daily basis.
- Provide cell phones, satellite phones, and/or radios to construction crews that are operational within the area of work to report an emergency. Test and confirm that communication pathways and equipment are operational each day prior to initiating construction activities. Report all fires and medical emergencies immediately to GCSD/TCFD/CAL FIRE.

Training:

- Provide basic fire prevention training to all employees upon employment, and maintain documentation of the training, including:
    - Review of OSHA Fire Protection and Prevention: 29 CFR 1926.24, including how it can be accessed
    - Fire Management: Wildfire Prevention (43 C.F.R. 9212.0 et seq.)
    - Proper response and notification in the event of a fire
    - Instruction on the use of portable fire extinguishers; hand tools such as shovels, and recognition of potential fire hazards

Appendix D

CAL FIRE Evacuation Brochure

WILDFIRE IS COMING. ARE YOU READY TO...

GO!

WILDFIRE EVACUATION GUIDE.

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
SINCE 1885

GIVE YOUR FAMILY THE BEST CHANCE OF SURVIVING A WILDFIRE BY EVACUATING EARLY.

ReadyForWildfire.org

TAKE ACTION IMMEDIATELY WHEN WILDFIRE STRIKES

Follow these steps as soon as possible to get ready to Go!

1. Review your Evacuation Checklist.
2. Ensure your Emergency Supply Kit is in your vehicle.
3. Cover up to protect against heat and flying embers. Wear long pants, long sleeve shirt, heavy shoes/boots, cap, dry bandanna for face cover, goggles or glasses. 100% cotton is preferable.
4. Locate your pets and take them with you.

WHEN TO EVACUATE

Leave as soon as evacuation is recommended by fire officials to avoid being caught in fire, smoke or road congestion. Don't wait to be ordered by authorities to leave. Evacuating early also helps firefighters keep roads clear of congestion, and lets them move more freely to do their job. In an intense wildfire, they may not have time to knock on every door. If you are advised to leave, don't hesitate!

- Officials will determine the areas to be evacuated and escape routes to use depending upon the fire's location, behavior, winds, terrain, etc.
- Law enforcement agencies are typically responsible for enforcing an evacuation order. Follow their directions promptly.
- You will be advised of potential evacuations as early as possible. You must take the initiative to stay informed and aware. Listen to your radio/TV for announcements from law enforcement and emergency personnel.
- You may be directed to temporary assembly areas to await transfer to a safe location.

The terms "Voluntary" and "Mandatory" are used to describe evacuation orders. However, local jurisdictions may use other terminology such as "Precautionary" and "Immediate Threat." These terms are used to alert you to the significance of the danger. All evacuation instructions provided by officials should be followed immediately for your safety.

WHAT TO DO IF YOU BECOME TRAPPED

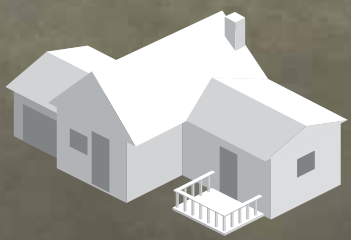
WHILE IN YOUR VEHICLE:

- Stay calm.
- Park your vehicle in an area clear of vegetation.
- Close all vehicle windows and vents.
- Cover yourself with a wool or cotton blanket or jacket.
- Lie on vehicle floor.
- Use your cell phone to advise officials—**Call 911.**

WHILE ON FOOT:

- Stay calm.
- Go to an area clear of vegetation, a ditch or depression on level ground if possible.
- Lie face down and cover up your body.
- Use your cell phone to advise officials—**Call 911.**

WHILE IN YOUR HOME:



- Stay calm and keep your family together.
- **Call 911** and inform authorities of your location.
- Fill sinks and tubs with cold water.
- Keep doors and windows closed, but unlocked.
- Stay inside your house.
- Stay away from outside walls and windows.

PRE-EVACUATION PREPARATION STEPS

When an evacuation is anticipated, follow these checklists (*if time allows*) to give your home the best chance of surviving a wildfire:

OUTSIDE

- ☐ 1 Gather up flammable items from the exterior of the house and bring them inside (patio furniture, children's toys, door mats, trash cans, etc.) or place them in your pool.
- ☐ 2 Turn off propane tanks.
- ☐ 3 Move propane BBQ appliances away from structures.
- ☐ 4 Connect garden hoses to outside water valves or spigots for use by firefighters. Fill water buckets and place them around the house.
- ☐ 5 Don't leave sprinklers on or water running; they can affect critical water pressure.
- ☐ 6 Leave exterior lights on so your home is visible to firefighters in the smoke or darkness of night.
- ☐ 7 Put your Emergency Supply Kit in your vehicle.
- ☐ 8 Back your car into the driveway with vehicle loaded and all doors and windows closed. Carry your car keys with you.
- ☐ 9 Have a ladder available and place it at the corner of the house for firefighters to quickly access your roof.
- ☐ 10 Seal attic and ground vents with pre-cut plywood or commercial seals.
- ☐ 11 Monitor your property and the fire situation. Don't wait for an evacuation order if you feel threatened and need to leave.
- ☐ 12 Check on neighbors and make sure they are preparing to leave.

INSIDE THE HOUSE

- ☐ 13 Shut all windows and doors, leaving them unlocked.
- ☐ 14 Remove flammable window shades and curtains. Close metal shutters.
- ☐ 15 Move flammable furniture to the center of the room, away from windows and doors.
- ☐ 16 Shut off gas at the meter. Turn off pilot lights.
- ☐ 17 Leave your lights on so firefighters can see your house under smoky conditions.
- ☐ 18 Shut off the air conditioning.

ANIMALS

- ☐ 19 Locate your pets and keep them nearby.
- ☐ 20 Prepare farm animals for transport and think about moving them to a safe location early.

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NEIGHBORING
PROPERTY

KNOW THE LAW
BE READY TO EVACUATE

CALIFORNIA LAW AUTHORIZES OFFICERS TO RESTRICT ACCESS TO ANY AREA WHERE A MENACE TO PUBLIC HEALTH OR SAFETY EXISTS DUE TO A CALAMITY SUCH AS FLOOD, STORM, FIRE, EARTHQUAKE, EXPLOSION, ACCIDENT OR OTHER DISASTER. REFUSAL TO COMPLY IS A MISDEMEANOR. (PENAL CODE 409.5)

HOW TO BE PREPARED
BEFORE WILDFIRE STRIKES

DEVELOP AN ACTION PLAN THAT INCLUDES:

Where to Go

Have a safe destination planned. It should be a low-risk area, such as a well-prepared friend's or relative's house, an evacuation center, motel, etc.

How To Get There

Plan several travel route options in case one route is blocked by the fire or by emergency vehicles and equipment.

What To Take

Assemble your emergency supply kit long before a wildfire or other disaster occurs. Plan to be away from your home for at least three days. Don't forget to plan for your pets or livestock as well.

For more information on preparing your family, pets and property for wildfire see the Ready for Wildfire "Are You Set?" brochure or visit ReadyforWildfire.org/set.

RETURNING HOME
AFTER A WILDFIRE

Do not return to your home until fire officials determine it is safe. Notification that it is safe to return home will be given as soon as possible considering safety and accessibility.

When you return home:

- Be alert for downed power lines and other hazards.
- Check propane tanks, regulators, and lines before turning gas on.
- Check your residence carefully for hidden embers or smoldering fires.

READY, SET, GO! PREPARATION GUIDES

Preparing for a wildfire starts with three simple steps: Ready, Set, Go! Keep all three wildfire preparation guides on hand as a quick reference for helping your family and property be safe in the event of a wildfire.

WILDFIRE IS COMING PREPARATION GUIDES:

Step 1:
Is Your Home Ready?

Creating defensible space and hardening your home against wildfire.

Step 2:
Are You Set?

Developing a Wildfire Action Plan.

Step 3:
Are You Ready to Go?

A quick-reference evacuation guide.

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
SINCE 1885

Go to ReadyForWildfire.org for more detailed information on all three guides to prepare for and survive a wildfire.