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ATTACHMENT C

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

In the Matter of the Application of Southern California Edison (U338E) for a Certificate of Public Convenience and Necessity for the RTRP Transmission Project.	A.15-04-013 (Filed April 15, 2015)

DECLARATION OF PETER M. BRYAN

September 20, 2023

Re: CPUC Docket A.15-04-013: New Proposed Overhead Transmission Line Route in the City of Norco and Surrounding Areas Within a Wildland Urban Interface Area; Declaration in Support of Petition to Modify CPUC Decision 20-03-001.

I, Peter M. Bryan, state as follows:

1. I am a Senior Associate employed by the McMullen Company, Inc. The Company's principal place of business is 1260 Lake Blvd., Davis, CA 95616.

Statement of Qualifications

2. I have been employed in the California fire service for over forty years, 1972-2014. I served as the Fire Chief in the following cities and agencies:

City of Hemet
City of Monrovia
City of Norco
City and Fire Protection District in Rancho Cucamonga
City and Fire Protection District in Wheatland

3. I received a Bachelor of Science degree in Fire Protection Administration and Technology from California State University, Los Angeles in Sept. 1984, and a Master of Science degree in Fire Protection Administration from Pacific Western University in May, 1986.

4. I have been consulting in fire and life safety aspects in California for nearly forty years, from 1984 to the present as a fire and life safety expert preparing detailed analysis and reports and providing courtroom testimony. A more detailed CV is attached to this Declaration. I am a member of the Society of Fire Protection Engineers, International Association of Fire Chiefs, and an alumni member of the International Association of Firefighters. My full resume is contained in Attachment A.

Background and Scope of Work

5. The McMullen Company Inc. (TMC) has been retained by the City of Norco to review and determine the fire and life safety aspects of a proposed overhead transmission line route for the Riverside Transmission Reliability Project (RTRP) as related to the Wildland Urban Interface (WUI) fire hazards in the City of Norco and the surrounding communities along the planned route from the City of Jurupa Valley, along the Santa Ana River open space to the east where the line will terminate at the new Wildlife substation near the Riverside airport. The City of Norco contains some Very High Fire Hazard Severity Zone (VHFHSZ) areas in the City along with the Santa Ana River watershed areas. Both VHFHSZ and watershed areas contain very flammable and hazardous vegetation which threaten the fire and life safety of residents and businesses.

The McMullen Company

6. The McMullen Company (TMC) was founded in 1993 by our President and former Chief California State Fire Marshal James F. McMullen. Our team of Senior Associates and Consultants offer hundreds of years of combined knowledge and experience. We can offer the most respected and experienced professionals in the fire and life safety industry. We are recognized globally and serve clients ranging from individuals to government, small and large businesses and corporations, special districts, insurance companies and law firms.

Purpose of Declaration

7. The purpose of this Declaration is as follows:
   a) To document the changed conditions that have resulted in a significant increase in severe wildfire risk in the area where the proposed RTRP is approved to construct an overhead 230 kV transmission line.
   b) Assess the consideration given to wildfire risk in the 2013 EIR and 2018 SEIR for the RTRP and explain that the earlier CEQA analysis of fire hazards concentrated almost solely on the risk of fires during construction, and failed to thoroughly consider the ongoing fire threat risk related to an overhead high voltage transmission line in a location with a history of wildfires, or the changed circumstances described above.
   c) Provide a conclusion based upon my expertise and my professional opinion that changed circumstances have greatly increased the wildfire risk associated with the overhead portion of the proposed RTRP since the CPUC's 2013 EIR, the 2018 SEIR, and its 2020 Decision approving the project, and that the Commission should reconsider those risks, and the potential benefits of underground construction before allowing overhead construction in this area.

City of Norco and Proposed Overhead Transmission Line Route

8. The City of Norco is approximately 14 square miles and contains commercial and residential areas among hazardous vegetation fuels, including Chaparral, river watershed, and hazardous weeds such as tumbleweeds. Chaparral is California's most distinctive vegetation characterized by drought-tolerant, mostly dead material that extends from the coastline to the foothills and interior mountain slopes. River watershed contains a vast amount of Arundo habitat, which is a heavy water using, invasive species of plant that can grow four inches per day reaching a mature height of 25 feet in approximately 12 months; Arundo can choke out other vegetation and provides a considerable amount of fuel for fires. Similar vegetation is found throughout the other communities where the overhead portion of the RTRP is located, including the unincorporated area of Riverside County north of the City of Norco and the City of Riverside. The fuel loading in the Santa Ana River Basin has almost tripled because of the infestation. See the difference in vegetation in the Santa Ana riverbed in the two aerial photos in Attachment B. These photos, taken in 2014 and 2023 show a substantial growth in the area covered by vegetation and in the size of the trees and shrubs in the open space area since 2014. The third hazardous plant type is the "Tumbleweed," these are brownish, dead plants, often formed from "Russian thistle" when the plant dies and breaks off from its stem base. Tumbleweeds move with the wind and can pile up to very high depths along the Santa Ana River, hillsides, and streets. Over the past decade, an increasingly large amount of fire loading and hazardous vegetation fuels have built up in the City of Norco and the surrounding communities to the east along the proposed overhead RTRP route, including Chaparral, Arundo and the seasonal Tumbleweeds. These fuels are immediately adjacent to residential and commercial business areas.

9. Norco and the surrounding communities to the east are centered in the principal direction and flow of the hazardous Santa Ana Winds, wildly strong, intensely hot, low humidity, downslope air currents originating in California inland areas and flowing to the ocean. They develop annually from September until spring, but can also develop when the inland areas have cool-cold temperatures and high-pressure builds causing the cold, upper altitude air to sink. Santa Ana Winds can develop sustained wind speeds of 70-90 mph with gusts up to 150 mph, bringing temperatures as high as 90-110 degrees and dry conditions of 5-10% Relative Humidity. When the Santa Ana Winds develop, fires are often unstoppable until the weather conditions relax.

10. The terrain in Norco ranges from the dense, fairly flat Santa Ana River areas to steep hillsides in the Norco Hills. The proposed overhead portion of the RTRP crosses both topographic areas. The river watershed areas are very difficult to access for firefighting due to the density and height of the Arundo (up to 25 feet). The hillsides are often covered in hazardous vegetation and difficult to climb carrying firefighting tools and hose. The areas in the unincorporated area of Riverside County north of the City of Norco, including the Hidden Valley Wilderness Area and the City of Riverside, include similar hazardous vegetation including grasses, seasonal tumbleweeds, and Arundo which make access for firefighting and rescue difficult. See the photographs in Attachment E.

California Very High Fire Hazard Severity Zones

11. California has designated areas in the state that are in VHFHSZ because of the hazardous vegetation, the slope and aspect of the terrain, fire weather conditions, and it includes areas within municipal boundaries. The VHFHSZ mapping is updated regularly as conditions in the state change, both improving conditions and worsening. The California fire service, local agencies, and the City of Norco are expecting the State of California to update and revise the fire hazard mapping, especially the VHFHSZ areas. The VHFHSZ area, High area, and Moderate area are expected to increase in size as the communities develop and housing expands into those areas. The City of Norco, and most local agencies, will play an integral part in updating those areas. It is likely that the fire hazard zones in the area of the Santa Ana River along the RTRP route would be expanded or upgraded to a VHFHSZ. The State map dated June 15, 2023 indicates a total statewide area of VHFHSZ of 16,920,753 acres; this is an increase from the previous map dated 2007 of 12,515,693 acres. This is a 35% increase; Riverside County had 533,507 acres of VHFHSZ in 2022 and that size is likely to increase significantly with the new mapping.

12. California Government Code Section 51179 states, “A local agency shall designate, by ordinance, very high fire hazard severity zones in its jurisdiction within 120 days of receiving recommendations from the director pursuant to subdivisions (b) and (c) of Section 51178. A local agency shall be exempt from this requirement if ordinances of the local agency, adopted on or before December 31, 1992, impose standards that are equivalent to, or more restrictive than, the standards imposed by this chapter.

13. The proposed overhead portion of the RTRP includes, or is adjacent to, VHFHSZ areas according to California adopted mapping completed by CAL FIRE and includes areas identified as subject to elevated wildfire hazards by local governments and the CPUC. See the Map provided in Attachment D.

Changed Circumstances That Have Increased Wildland Fire Risks in the Vicinity of the Overhead Portion of the RTRP

14. The City of Norco and the nearby California inland areas have a long history of wildfire incidents, including the area through which the overhead portion of RTRP is to be built. Norco has been served by the Riverside County Fire Department/California Department of Forestry and Fire Protection (CAL FIRE) since 2012. In 2011 and prior years the City of Norco staffed a city/municipal fire department. Recent wildfire/vegetation fire statistics in the watershed and hillside areas adjacent to the overhead RTRP route demonstrate the increasing severity of the wildfire risk. I have reviewed fire incident statistics provided by the City of Norco and its Fire Department. Just within the City of Norco, there have been 16 wildland fire incidents during the period from January 1, 2018 to March 12, 2021—one year after issuance of the CPUC Decision 20-03-001 approving the RTRP. This reflects an average of 4.9 wildland fire incidents per year. From March 12, 2021 to December 31, 2022 there were 23 wildland fire incidents within the City of Norco. The annual incidence of wildland fires has increased to 13.1 per year. This is an annual increase of 267%. It is

important to remember that these statistics only reflect wildland fires within the City of Norco, which represents only a small portion of the overhead transmission route planned for the RTRP.

15. The City of Riverside Fire Department provided statistics on fires within the Santa Ana riverbed and the nearby open space areas between 2018 and June 2023. The department reported 501 vegetation fires, 598 rubbish fires (likely associated with homeless activity) and 262 fires related to unauthorized burning. Taken together these statistics demonstrate that the area in and adjacent to the RTRP overhead transmission route is highly vulnerable to wildfires. The number of emergency incident responses in the area of the proposed RTRP route is very significant and demands a very high number of resources because of the difficulty of accessing the area and the increasing amount of hazardous vegetation. Fire hazards are assessed based on risk and frequency; the risk is very significant in the proposed RTRP route as evidenced by the fact that the number of responses is a very significant number annually.

16. Another significant change in the overall fire risk stems from the fact that streets in the area of the proposed overhead RTRP route are spaced farther apart than in most southern California municipalities because the minimum lot sizing of one-half acre for equestrian and animal keeping purposes. Thus, access to the areas underneath or adjacent to the proposed overhead transmission line are more limited and difficult in fire conditions. The smaller number of streets, and their often narrow widths, make it difficult in Santa Ana wind-blown fire conditions for firefighters to visually see the roadways and evacuate people and animals in vehicle-towed trailers at the same time emergency personnel are responding into the areas. The Santa Ana River watershed prevents egress and evacuation north from the residential areas of Norco, which causes both evacuations and first responder ingress for emergency response to use the same limited number of streets. These conditions are documented in a photograph of a street in Norco close to the location of the overhead line crossing of the Santa Ana River. See the Photograph in Attachment C.

17. The City of Norco has changed considerably since the 2013 EIR, including more residential construction in the vicinity of the proposed overhead portion of the RTRP and hillside areas adjacent to the route. Since the 2013 EIR, the City of Norco has seen 159 new homes constructed. Much of this expansion of the residential and animal-keeping areas is in the path of the Santa Ana Winds should a fire occur in the proposed overhead RTRP route, thus threatening people, livestock, and buildings.

18. Overhead transmission lines within the overhead portion of the RTRP would exacerbate the risk to the City of Norco and the surrounding communities in two ways. Overhead wires can arc during wind conditions such as severe Santa Ana Winds, even with insulation and arc prevention measures, at wind speed gusts up to 150 mph causing the hazardous vegetation to become ignited. Fire can also start adjacent to overhead transmission lines causing the products of combustion from the fires (smoke and burning vegetation and burning materials from house fires) to accumulate on wires and conductors causing a path for electricity to arc and dropping sparks and hot, molten materials to the vegetation below igniting new, unburned vegetation. Emergency fire department resources

are limited in the Norco area and surrounding communities due to the lower building density, and response to fires with the number of firefighters required for the types of hazardous vegetation below the proposed overhead RTRP route can delay the application of water to the fire and thus the fires can become larger in size.

19. As demonstrated by the fire incident statistics discussed above, the wildfire risk in the City of Norco continues to increase rapidly since 2013 due to the difficulty and inability to reduce the hazardous vegetation in the Santa Ana River watershed area, including the proposed overhead RTRP route, to any significant degree. There have been some efforts in past years, generally when various construction takes place, but to no lasting effect. Arundo regrows at a rapid pace, rendering past efforts to reduce fuel ineffectual.

20. Wildland firefighting in this area adjacent to the overhead RTRP route must be quick and aggressive if the Fire Department is to be successful in defending such areas from a wildfire that could spread in the Santa Ana Winds dangerous conditions. Because of the access difficulties into wildland areas full of hazardous vegetation, the number of requests for aircraft for emergency fire response is increasing. As the number of hazardous vegetation fires increases, the availability of aircraft to fight fires is of even greater importance to limit fire spread and protect people, livestock, and property along the RTRP route. Utilizing aircraft to fight these wildland fires involves firefighting tactics where the visibility in the airspace over the fire can be limited. Overhead high voltage transmission lines can have a tremendous impact in restricting aerial attack flight routes when there are high winds and significant smoke from a wildfire. An example of the hazardous conditions faced by firefighting aircraft operating near transmission lines and towers can be seen in a television screenshot from a recent fire involving hazardous vegetation. See Attachment F.

21. The proposed overhead portion of the RTRP would further increase fire risk in the Corona-Eastvale-Mira Loma-Norco-Riverside region by increasing the risk of ignition from high voltage lines contacting vegetation in high wind conditions and impeding firefighting efforts by making aerial attack extremely dangerous during Santa Ana Wind and smoky fire conditions. Overhead transmission lines in California have caused firefighting aircraft to crash during firefighting operations. Firefighting aircraft are stationed at Hemet-Ryan Airport and San Bernardino International Airport. These resources are located close to the RTRP corridor and can be expected to be frequently called upon for firefighting in that location.

22. Overhead transmission lines in the overhead portion of the RTRP would also increase the hazard to the many general aviation aircraft flying in the vicinity, as well as small personal aircraft (Parakites, hang gliders, kites, paragliders, etc.). General aviation aircraft fly into and out of the Corona Municipal Airport in large numbers (approximately 300-350 general aviation aircraft per day). Small personal aircraft make use of the Norco Hills adjacent to the proposed overhead transmission line route for takeoff and often have unexpected landings around the Santa Ana River watershed areas. Aircraft encountering overhead transmission lines in the proposed overhead transmission line route can easily crash into the Santa Ana River watershed area. The combination of damaged aircraft and highly flammable aviation gas coming in contact with hot aircraft parts can easily ignite the Arundo and other hazardous vegetation. Even without a fire, aircraft damaged from contact with overhead transmission

lines can crash in the Santa Ana River watershed area. Due to the tall and dense Arundo, access to such crashes and rescue can be delayed, and the increased time-to-rescue may cause injuries to become more severe. Fire personnel from the City of Norco and the City of Corona have often jointly responded to downed aircraft emergencies in the Santa Ana River watershed and adjacent areas.

The Environmental Impact Reports for the RTRP Do Not Accurately or Adequately Address the Changed Conditions or Increased Fire Risk Along the Overhead Portion of the RTRP

23. After reviewing the portions of the 2013 EIR and the 2018 Subsequent EIR (SEIR) for the RTRP that address fire threats and risks, I have concluded that many of the statements purporting to establish that the project would not create significant impacts in terms of wildfire risk are not accurate and do not adequately reflect the changed conditions which have greatly increased the risk of wildland fires in the area. These statements are addressed below:

A. EIR at p. 3-214: "The proposed RTRP area comprises a predominantly urban environment containing industrial, commercial, and residential uses; *however, a small portion of the proposed 230 kV transmission line route crosses abundant vegetation that may pose conditions conducive to wildfires near the banks of the Santa Ana River*. In the unlikely event that sparks generated by idling construction vehicles or equipment accidentally ignite vegetation located in or adjacent to the Proposed Project rights-of-way or staging areas, fire suppression services may be required during Proposed Project construction. *In addition, transmission interference could present a potential fire risk in this area during Proposed Project operation, requiring the need for fire suppression services. Incidences of fire could occur if tree limbs or structures were to interfere with a live phase conductor.* The likelihood of this occurring would be reduced by the periodic clearing of vegetation and tree limbs within Proposed Project rights-of-way, in conformance with CPUC General Order 95, and Public Resources Code section 4293. Similarly, structures that may present a fire hazard and danger to the public would be restricted from the rights-of-way. SCE would implement EPE NOI-02, which requires that construction crews avoid the idling of vehicles and power equipment when not in use, which would also minimize the potential for fire. *To further reduce the likelihood of fire incidences in the proposed RTRP area, RPU and SCE would implement MM HAZ-03, which would require development and enforcement of a Proposed Project-specific Fire Management Plan.* Fire safety standards established in the RTRP Fire Management Plan would be followed relative to Proposed Project construction, and construction personnel would be trained to use proper fire prevention and management techniques. As a standard precautionary measure, power would be automatically removed from the line if conductor failure were to occur. Lightning protection would also be provided by overhead groundwires along the line. Prior to construction, SCE would also coordinate with the Riverside County Fire Department to ensure that construction activities and associated lane closures would not hinder firefighting response pathways or delay response time. *Implementation of MM HAZ-03 would reduce potential fire impacts to less than significant levels*." (Emphasis added.)

Response to Excerpt A: The first italicized passage in the excerpt above confirms that there are conditions conducive to wildfires along the overhead RTRP right of way, but the EIR does not reflect the substantial increase in fuel loading in the Santa Ana riverbed since the 2013 EIR. The remainder of the passage focuses on regulations and mitigation measures designed to address the risk of fire during the construction period. Notably, the only mitigation measure which directly addresses reduction of fire ignition risks (mitigation measure MM HAZ-03) applies just to risks of ignition during construction, and would not reduce the overall fire risk from the project. Nor does this mitigation measure address the project's limitations on aerial firefighting aircraft due to the presence of tall transmission towers and reduced visibility from wildland fire smoke.

In light of the changed conditions and increased fire risk along the overhead portion of the RTRP, neither General Order No. 95 nor Public Resources Code section 4293 provide sufficient protections to effectively reduce fire risk along the RTRP overhead route. General Order 95 requires inspections, but it does not otherwise mandate significant fire prevention activities. GO 95 does require that utilities correct risks/violations related to transmission and distribution construction within 6 -12 months if the location is within a Tier 2 or Tier 3 High Fire Threat District. And both GO 95 and Public Resources Code Section 4293 require minimum clearances of between 4 to 10 feet between transmission line conductors and nearby vegetation. However, those clearance mandates have been in place for many years, and have not had the effect of preventing wildfires caused by transmission and distribution lines. Moreover, the mandated clearances are only a few feet, and such distances are essentially meaningless in a hot, dry, windy Santa Ana event, when vegetation along the overhead RTRP route can be blown hundreds of feet and could readily contact an electrified conductor.

The EIR's conclusion that these general regulations and a single mitigation measure related to construction activities would reduce the potential fire impacts of the overhead portion of the RTRP to less than significant levels is not justified in my opinion and clearly does not reflect the changed conditions along the RTRP route which have aggravated the fire risk substantially.

B. SEIR at p. 5-34 "The Revised Project is located in an area of low wildland fire hazard….Due to the temporary and minimal amount of fire and police service required, the Revised Project's contribution to the significant cumulative impact on fire and police protection services would be less than considerable."

Response to Excerpt B: This comment only applies to the Revised Project, which is limited to the underground transmission located in city streets north of the Goose Creek Golf Course. It does not apply to the remaining portion of the original RTRP slated for overhead construction. Overhead construction would create a significant strain on fire protection services, inhibit aerial firefighting and increase the risk of wildland fire spread to populated areas. The comment that this is an area of low wildland fire hazard does not reflect the changed conditions along the overhead RTRP route which have seen a substantial increase in fire risk.

C. SEIR at p. 7-4. "Fires caused by power lines are also a significant potential accident, but because higher voltage transmission line conductors are spaced far apart, fires started by contact with fallen or windblown tree limbs and debris, or from arcing, are rare….The risk of fire hazards, including the risk of wildfire, were addressed in the 2013 RTRP EIR."

Response to Excerpt C: Contrary to the assertion in this passage of the SEIR, the 2013 EIR did NOT properly consider or mitigate fire risk other than the risk of ignition from construction activity, and clearly did not consider the increased fire risks due to the changed circumstances now present along the overhead RTRP route. The SEIR thus relied on a limited assessment of construction-related fire risk to dismiss the potential for all impacts from wildfires during the operation of the RTRP. In addition, neither the EIR nor the SEIR addressed the fact that overhead lines would inhibit aerial firefighting aircraft attempting to attack wildfires. Nor does the SEIR have adequate support for the conclusion that transmission lines represent a rare risk of ignition. Overhead transmission lines can cause ignition of wildfires if vegetation is blown into the lines in hot, dry, windy conditions. In fact, multiple major fires have been caused by transmission-related ignition. See the extensive list of fires investigated by the CPUC's Safety and Enforcement Division involving utility transmission and distribution facilities: https://www.cpuc.ca.gov/industries-and-topics/wildfires/wildfires-staff-investigations

D. SEIR Appendix M at M-3.1-13. "The SEIR stated in Appendix M, "Construction activities that could result in a wildland fire include operation of construction equipment with combustion engines, operation of rock-striking equipment, and worker smoking. Sparks from construction equipment or improper disposal of cigarettes could ignite a fire, which could escape initial attack containment and become a catastrophic fire, particularly in areas with heavy fire fuels and high exposure to Santa Ana winds."

Response to Excerpt D: The SEIR admits that there is potential for a catastrophic fire from ignition in the project area, but only considers construction-related ignition. This clearly fails to address the significant impacts from wildfires that are started or further spread by contact with high-voltage transmission or from transmission lines inhibiting aerial firefighting. Nor does it address the changed circumstances that have greatly increased the risk of wildland fires in this area from sources other than construction of the line.

E. SEIR, Appendix M.3.1, at p. M-3.1-15. "The 230-kV transmission line traverses the boundary of a Tier 2 HFTD south of the Hidden Valley Wildfire Preserve. Within Tier 2 areas, GO 95 now requires stricter fire-safety measures related to corrections of safety hazards, vegetation clearance requirements, facility inspections, and the annual preparation of fire prevention plan. SCE is required by law to adhere to GO 95. Additionally, MM HAZ-03 from the certified 2013 RTRP EIR requires the preparation of Fire Prevention and Management Plan and would ensure that project construction complies with the applicable fire regulations, including GO 95. The CPUC's new fire regulations would further increase fire-safety in the project area and impact would remain less than significant. Additional analysis of fire hazards related to the 230-kV transmission line and Revised Project is not required."

Response to Excerpt E: This passage from the SEIR admits that the RTRP route will encroach upon HFTD territory. However, once again the CPUC primarily relies on a mitigation measure that is focused only on minimizing ignition threats from construction activity, which is insufficient to counteract wildfire risk from the continued operation of the RTRP. As addressed above, the general requirements of GO 95 are insufficient to address the changed circumstances that result in an increased fire risk in this particular location, nor do they address the concerns that tall transmission towers inhibit aerial firefighting tactics during a wildfire.

F. SEIR, Appendix M 3.3, at p. M-3.3-107. "Vegetation conditions along the south side of the Santa Ana River have not substantially changed since the 2013 RTRP EIR was certified."

Response to Excerpt F: The 2018 SEIR is incorrect to state that fuel loads have not increased in the area of the overhead portion of the RTRP. The photographic evidence in Attachment B shows a dramatic increase in fuel loads. See also Attachment E which documents the extremely dense concentration of flammable vegetation in the Santa Ana riverbed. Nor does this comment account for the fact that additional housing has been built closer to the high fuel load areas within the high fire threat areas along the overhead RTRP route.

G. Decision 20-03-001, at 19. "To the contrary, the EIR and the SEIR both conclude that fire-related impacts from the RTRP would be less than significant".

Response to Excerpt of Decision: The CPUC's 2020 Decision errs in relying on the conclusion of the 2013 EIR and the 2018 SEIR that fire-related impacts from the RTRP would be less than significant. The changed circumstances described in the preceding sections of this Declaration demonstrate that the fuel load in the open space near the Santa Ana river has substantially increased, that wildfire activity in the RTRP route area is increasing, that the risk to nearby populated areas is increasing as housing construction expands; and the overall risk of wildfire spreading to populated areas will be substantially increased due to transmission towers that would inhibit aerial attack on wildfires in the area. These are all changed circumstances since the EIR and SEIR were published and relied upon by the Decision granting a CPCN for the RTRP project.

24. The State of California places a greater importance on careful consideration of wildfire risk in the CEQA review of projects, as documented by the 2018 update to the CEQA Guidelines that added an entire section addressing wildfire impacts (CEQA Guidelines, Appendix G, § XX), as well as guidance issued by the California Attorney General's office in 2022 on analyzing and mitigating wildfire impacts under CEQA. These recent actions are yet further evidence of the significant increase in wildfire hazards. The Attorney General's guidance document repeatedly and forcefully acknowledges that the fire conditions are not what they were a decade ago. (See Attachment G: AG Guidance, pp. 2-3.)

California 2018 Paradise and Hawaii 2023 Lahaina Fires

25. California experiences a very high number of vegetation fires annually. With the increasing global warming effects occurring in the last decade, the California wildfire threat to communities has grown exponentially. In Northern California in 2018 for example, the Camp fi5e in Paradise resulted in 85 civilian fatalities, 12 civilian injuries, 5 firefighter injuries, 153,336 acres burned and more than 18,000 structures destroyed, most of which were homes. The area where the Camp Fire occurred had many similarities to the conditions in the Santa Ana riverbed and open space areas, including hazardous vegetation and dangerous topography with narrow streets for emergency evacuations, and firefighting and law enforcement access. The courts have determined that a faulty overhead transmission line was responsible for the Camp Fire and tragic loss of life.

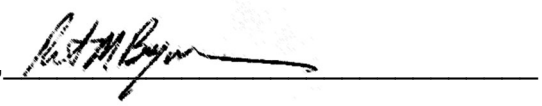
26. The initial video footage of the Lahaina fire in Hawaii shows arcing of overhead wires early on in the fire's development. The cause of the fire and largest loss of life in a fire in the United States hasn't been conclusively determined, but the arcing is of primary interest. The presence of energized power lines continue to be a serious risk that can contribute to wildfire ignition. Like the situation faced by the residents of Lahaina, evacuation routes through much of Norco are limited due to topography.

Conclusion and Summary

27 It is the professional opinion of The McMullen Company that due to changed circumstances of increased overall fire risk in the Santa Ana River vicinity, including the City of Norco, combined with increased residential development, the proposed overhead portion of the RTRP would seriously increase fire risk in and around high fire threat areas, interfere with fighting wildland fires in an increasingly heavily populated area, and should not be allowed to go forward by the CPUC without reopening the proceeding to fully consider all of the changed circumstances contributing to the increased fire threat risks in the overhead portion of the project, and due consideration of underground construction alternatives.

28 . I declare under penalty of perjury under the laws of the State of California that the statements and information contained in this Declaration are true and correct.

Executed this 21st day of September, 2023, at Colorado Springs, Colorado.

Signed, 

Peter M. Bryan, Senior Associate
The McMullen Company

List of Attachments to Declaration of Peter M. Bryan

Attachment A. Resume of Peter M. Bryan

Attachment B: Aerial photos comparing the terrain and vegetation along the RTRP route from 2014 to 2023. Prepared by the City of Norco Planning Dept.

Attachment C: Photographs of the a street in a residential portion of the City of Norco close to the location where the overhead RTRP route would cross the Santa Ana River. Prepared by the City of Norco Planning Dept.

Attachment D: Map consisting of an aerial photo showing local, state and CPUC enhanced fire threat zones and the route of the overhead portion of the RTRP. Prepared by the City of Norco Planning Dept.

Attachment E: Photographs of the community near the location where the overhead RTRP route would cross the Santa Ana River and in adjacent open space within the City of Norco. Prepared by the City of Norco Planning Dept.

Attachment F: Screenshot of television image depicting a fire from 2023 in southern California. Image captured by Peter Bryan.

Attachment G: Office of the Attorney General, *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act*, December, 2022.

ATTACHMENT A

Resume of Peter M. Bryan

Peter M. Bryan, Senior Associate

The McMullen Company, Inc.
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chiefpmb@earthlink.net Cell (909) 472-1556

Summary of Qualifications

- 40 years in Public Safety with 28 years of Public Administration in Fire Chief and Chief Officer positions
- Interim Fire Chief for agencies in 2010; 2011-12; and 2014
- Experienced fire chief in career and paid-call/combination departments serving populations from 8,000 to 180,000
- Expert testimony in legal cases involving building and fire safety codes, employment law, and fire protection safety
- Extensive experience in developing and implementing strategic planning process in multiple agencies, resulting in the improvement of services to the public and adoption of plan elements
- Developed four comprehensive fire and emergency services strategic plans and responsible for adoption by the governing City Council
- Developed and implemented two Paramedic programs and improved services in two other agencies
- Extensive experience in developing and implementing fees and other revenues, and cost containment practices in four agencies
- Developed and implemented new and updated employee policies/rules and regulations for four agencies
- Trainer and facilitator for leadership and management programs; presenter at League of CA Cities; IAFC FRI; NFPA; CA Fire Chiefs Conference, Prevention Officers, Administrative Fire Services Section, and Training Officers; CA State Firefighters Association
- Emergency Response and Preparedness Planning including LHMP, EOP, and EOC Operating Manuals; EOC Operations and Planning Section Chief qualified. Disaster management and claims reimbursement for major wildland fires, significant floods and windstorms, and earthquakes for communities up to 50 square miles and 180,000 population
- Workers compensation case management including litigation, claims reduction programs, and wellness improvement programs for agencies with up to 124 employees
- Coordinated fire service agency transition for city service to county/state provided service
- Extensive direct interaction with state and local government, Councils, Boards and Agencies with leadership roles
- Diverse experience teaching including University undergraduate, pubic sector, professional development in continuing education; California State University Los Angeles, Cogswell Polytechnical College, and Community Colleges

Projects, Reports, and Courtroom Experience

- Orange County CA Coastal Developments with CEQA
- Bay Area CA Developments
- Los Angeles County Wildland Urban Interface Developments
- Los Angeles County CA Health Care Expansion
- Los Angeles County CA Business Occupancy Exiting
- Sierra Nevada Mountains CA Developments with CEQA
- Los Angeles Fire Agencies CA Employment Law Practices Courtroom
- San Bernardino County CA Fire Investigations and Criminal Trials (1973-1983)
- Riverside County CA Fire Investigations (1996-1999)
- Texas Fire Investigation
- Albuquerque NM Fatality Fire Response and Investigation
- Los Angeles County CA High Rise Fire and Fatality Investigations
- Fuel Systems Fire Code Requirements
- San Diego County CA Auto Dealership Hazardous Materials
- Kern County CA Fatality Fire Investigation
- Los Angeles County CA Health Care and Cannabis Oil Fatality Investigations
- Walker County TX Fire Investigation

Peter M. Bryan, Senior Associate

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Work Experience

2015-23 The McMullen Company Davis, California

Senior Associate

- Employment law and fire department operations court expert, fire and life safety code consulting for existing businesses and new development, wildland urban interface fire and life safety code consulting, fire loss and related code requirements.

1990-96, 2012-21 Mt. San Antonio College Walnut, California

Adjunct Faculty

- Develop and write undergraduate fire administration and technology program, provide instruction
- Fire Protection Systems and Building Construction

2001, 2014-18 California State University Los Angeles, California

Adjunct Faculty

- Develop undergraduate fire administration and technology program courses and provide instruction
- Fire Protection Laws, Fire Defense Planning, Emergency Management & Terrorism, Fire Prevention and Building Codes: Interpretation and Enforcement

2014 City of Hemet Fire Department Hemet, California

Interim *Fire Chief*

- Supervising and administering a fire department serving a population of approximately 85,00 with 51 total personnel
- Implemented new Paramedic program
- Analyzing feasibility of a contract for fire services as determined by the City Council; develop transition plan if directed
- Annual development and approval of the budget including operations, payroll, and accounts payable
- Manage a semi-annual weed abatement program, including notices, AP, AR elements

2011-12 City of Norco Fire Department Norco, California

Interim *Fire Chief*

- Supervising and administering a fire department serving a population of approximately 35,000 including service to a U.S. Navy facility and state corrections prison
- Managed and coordinated the transition to a county/state fire services contract
- Maintained the high quality ALS EMS, fire service and rescue services to the public through completion of the transition

2010 Wheatland Fire Authority Wheatland, California

Interim *Fire Chief*

- Supervising and administering a paid-call/combination fire department serving approximately 8,000 residents, 90 square miles, and a recreation and concerts population that can exceed 25,000
- Annual development and approval of the budget including operations, payroll, and accounts payable
- Development of strategic and staffing plan to meet the increasing service demands and LAFCo/County Planning development regulations

Peter M. Bryan, Senior Associate

The McMullen Company, Inc.
1260 Lake Blvd. #226, Davis, CA 95616
chiefpmb@earthlink.net Cell (909) 472-1556

2001 to 2009 City of Rancho Cucamonga Fire District Rancho Cucamonga, California

Fire Chief

- Directed department operations and functions serving 180,000 population with 116 full-time and 8 part-time personnel
- Annual development and approval of $ 25 million budget including operations and personnel and $ 50 million capital projects
- Lead staff in the development of strategic and staffing plan to meet the service demands through more effective and cost efficient utilization of resources including staffing
- Lead the development of the comprehensive performance evaluation system
- Supervised the team and attorney consultants to develop and adopt the comprehensive employee rules and regulations including FBOR provisions
- Implemented Fire Inspection Bureau programs and staffing by the use of new recurring revenues
- Developed and implemented wellness improvement and injuries/workers compensation reduction programs
- Developed and implemented state-of-the-art automated Emergency Operations Center, EOC Operations Manual, and EOP

Battalion Chief

- Responsible for personnel development program in leadership and technical skills, training and in-service education manager, EOC manager and Planning Section Chief

1999 to 2001 City of Monrovia Fire Department Monrovia, California

Fire Chief

- Directed department operations and functions serving 45,000 population with 60 full-time personnel
- Annual development and approval of $ 15 million budget including operations and personnel
- Lead staff in the development of strategic and staffing plan to meet the service demands through more effective and cost efficient utilization of resources including staffing
- Developed and implemented new recurring revenue program based on development impacts

1996 to 1999 City of Norco Fire Department Norco, California

Fire Chief

- Directed department operations and functions serving 35,000 population with 35 full-time personnel
- Annual development and approval of $ 10 million budget including operations and personnel
- Lead staff in the development of strategic and staffing plan to meet the service demands through more effective and cost efficient utilization of resources including staffing
- Developed and implemented new recurring revenue program based on development impacts
- Developed and implemented new Paramedic program

1973 to 1996 Cities of Upland, Ontario, and Victorville Fire Departments California

Fire Division and Battalion Chief, Captain, Fire Investigator, Inspector, Engineer, Firefighter

1984 to 2004 Bryan and Associates Consulting Rancho Cucamonga/Monrovia, California

Principal and CEO

- Principal and owner of Bryan and Associates a fire and life safety consulting firm; expertise in code consulting; new development; development of wildland urban interface/intermix fire protection plans; station, apparatus, and personnel implementation schedules. Significant projects include a 10,000 acre strategic and development plan, 2,500 home fire protection plan, missile defense contractor, county jail, regional shopping mall, regional airport terminal, and regional convention center.

Peter M. Bryan, Senior Associate

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Education

Pacific Western University Los Angeles, California
Master of Science Fire Protection Administration – May 1986

California State University Los Angeles, California
Bachelors of Science Fire Protection Administration and Technology – September 1984

Society of Fire Protection Engineers
Professional Member/Technologist

California State Fire Marshal Training and Education System Sacramento, California
California Fire Chief Certification – July 2001
Chief Officer Certification – May 1990

California State Education System
Lifetime/Full-time Community College Teaching Credential - 1984

Publications and Instructor/Expert/Presenter Experience

- **Author:** Fire Engineering
  Fire Service Ethics Meets News Media Coverage - 2016
  Are Your Critical Decision-Making Skills Evolving? – Aug 2015
  Family Member Medical Crisis…How Would You Respond? – Dec 2013
  Reducing Unwanted Alarm System Initiated Incident Responses – Jan 2013
  Firefighter Wellness and Fitness: Is It About Time for a Mandatory Program – Jan 2013
  Fire Service Leadership and Management: Revenue Change Based Negotiations for Fire Departments – Dec 2012
  Effective Simple Performance Evaluations for Fire Service Personnel – Nov 2012
  Transition, Merger, Consolidation: Managing Fire Service Changes – Sep 2012
  You Really CAN Reduce Fixed Public Safety Costs – Aug 2012
  Implementing Policies and Rules Can Help Rebuild Public Trust in Government – May 2012
  Self-Supporting Inspection Bureau – Jan 2012
  How to Improve Your Workers Compensation Program – Aug 2011
  Automating Emergency Operations Center – May 2011
  A Model for Reducing Injuries and Their Costs – Feb 2010
  Evaluating Fire Service Delivery – Apr 2008

- **Instructor/Presenter Experience:**
  League of CA Cities 2013 and 2015 Leading Change in the New Reality
  California State University Los Angeles Part-Time Faculty, 2001, 2014-15
  IAFC FRI 2013 Performance Evaluations, Leading Change in the New Reality; 2012 Wellness and Workers Compensation – Reducing Injuries
  NFPA 2013 Reducing Unwanted Alarm System Responses
  CSFA 2013 Wellness is Everyone's Responsibility
  CA Fire Chiefs 2012 Managing the Difficult Times
  Cogswell Polytechnical 2010-2011 Analytical Approaches and Disaster/Defense Planning Courses
  CA Fire Chiefs AFSS Division 2011 Conflict Resolution and Labor Relations
  CA Fire Chiefs FPO Division 2011 and 2010 Bureau Administration
  Southern CA Finance Officers 2008 Personal Development

Peter M. Bryan, Senior Associate

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chiefpmb@earthlink.net Cell (909) 472-1556

Leadership, Professional Affiliations, and Community Involvement

- **California Governor's Appointment:** California 911 Advisory Board – 2005-2013
- **Committee Member:** International Association of Fire Chiefs
- **Board Member:** California Fire Chiefs Association – 1996-2010
- **Elected President:** San Bernardino County Fire Chiefs Association
- **Elected President:** San Bernardino County Fire and Arson Investigators Association
- **Elected/Distinguished President:** Kiwanis Club of Upland Foothill – 1991
- **School Site Council Chair and Member:** Los Osos, Etiwanda, and Alta Loma High Schools – 1995-2011

Summary of Relationships with Governmental Agencies

- **Cities of Chino, Montclair, Ontario, Rancho Cucamonga, and Upland**: 2004-2009
  Board of Director for West End Communication Authority (in conjunction with each City Manager)
- **City of Hemet**: 2014
  Interim Fire Chief; implement Paramedic program; manage weed abatement semi-annual program; manage transition of fire services process
- **City of Hesperia and Rancho Las Flores Development**: 1991-1994
  Developed Fire Protection Plan
- **City of Monrovia**: 1999-2001
  Fire Chief (includes working with proposed Miller Development); Department of Health Services; Monrovia Kiwanis Club; Mutual Aid Agreements
- **City of Norco**: 1996-1999 and 2011-12
  Fire Chief and Interim Fire Chief (includes working with Hidden Valley Development); Managed transition to Riverside County Fire Department; AMR agreements; Mutual Aid Agreements
- **City of Ontario**: 1978-1979, 1995-2004, and 2004-2009
  Consultant; Fire Inspector/Investigator (New construction and development consultant and project manager with City Manager for radio system upgrade)
- **City of Rancho Cucamonga and Rancho Cucamonga Fire District**: 1988-1994 and 2001-2009
  Fire Chief; develop and approval of five-year strategic plan; Consultant; AMR agreement
- **City of Upland**: 1979-1996
  Fire Marshal and Battalion/Division Chief
  Upland Foothill Kiwanis President
- **City of Victorville :** 1973-1978
  Acting Captain, Engineer, Firefighter
- **County of San Bernardino and Lytle Creek Development**: 1996-1998
  Developed Fire Protection Plan
- **State of California 9-1-1 Advisory Board Member and Long Range Planning Committee Chair 2005-2013**
- **Wheatland Fire Authority:** 2010
  Interim Fire Chief

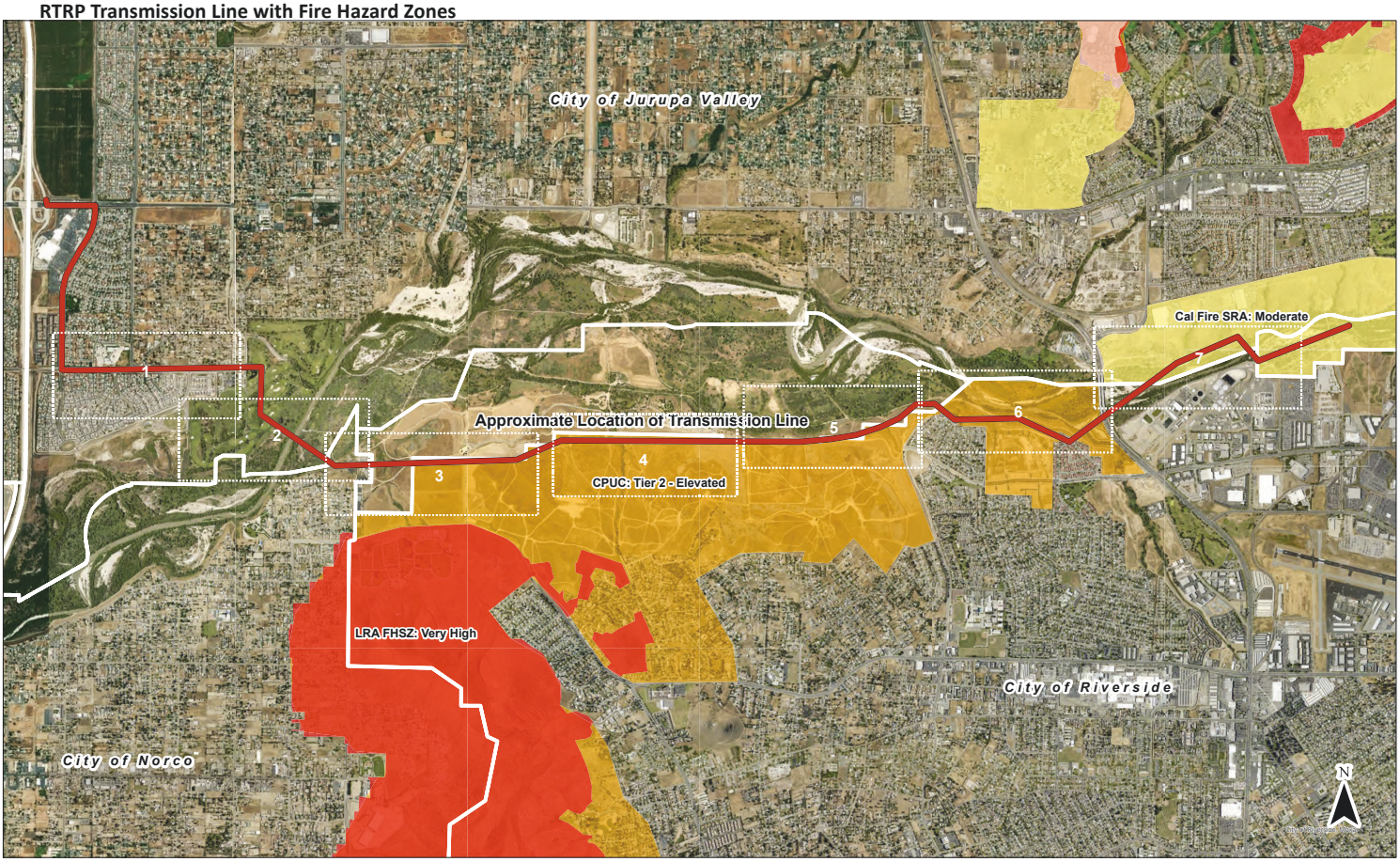
ATTACHMENT B

Aerial photos comparing the terrain and vegetation along the RTRP route from 2014 to 2023.

Prepared by the City of Norco Planning Dept.


Santa Ana River Trl
Grulla Ct
Pinto Pl
Tue Jul 22 2014
Vertical
Sat May 13 2023
2023 Nearmap, HERE
200 ft

RTRP Transmission Line with Fire Hazard Zones



0 1 2 4 Miles

Basemap
- Transmission Line
- City Boundary
- Aerial Comparisons

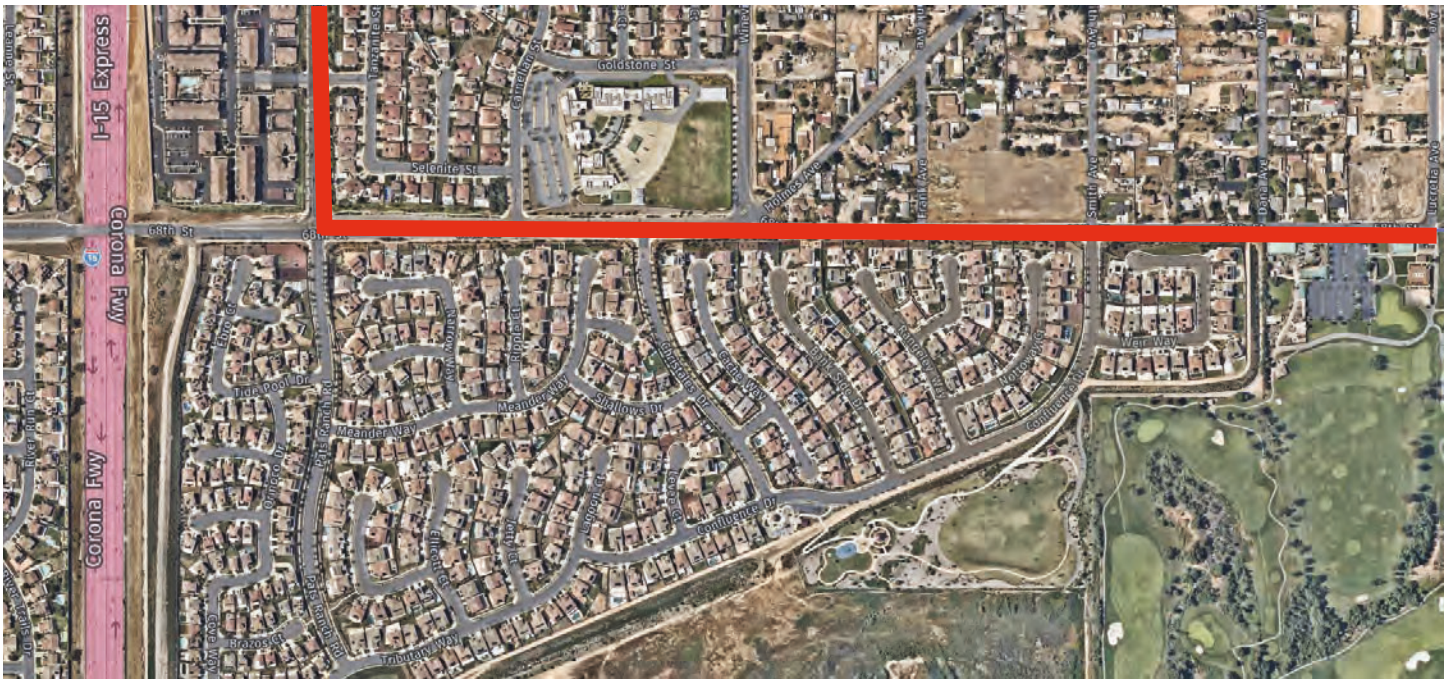
CPUC Fire Threat Areas
- Tier 3 - Extreme
- Tier 2 - Elevated

Local Responsibility FHSZ
- Very High

Cal Fire State Responsibility FHSZ
- Very High
- High
- Moderate

AERIAL COMPARISON #1

2014



2023

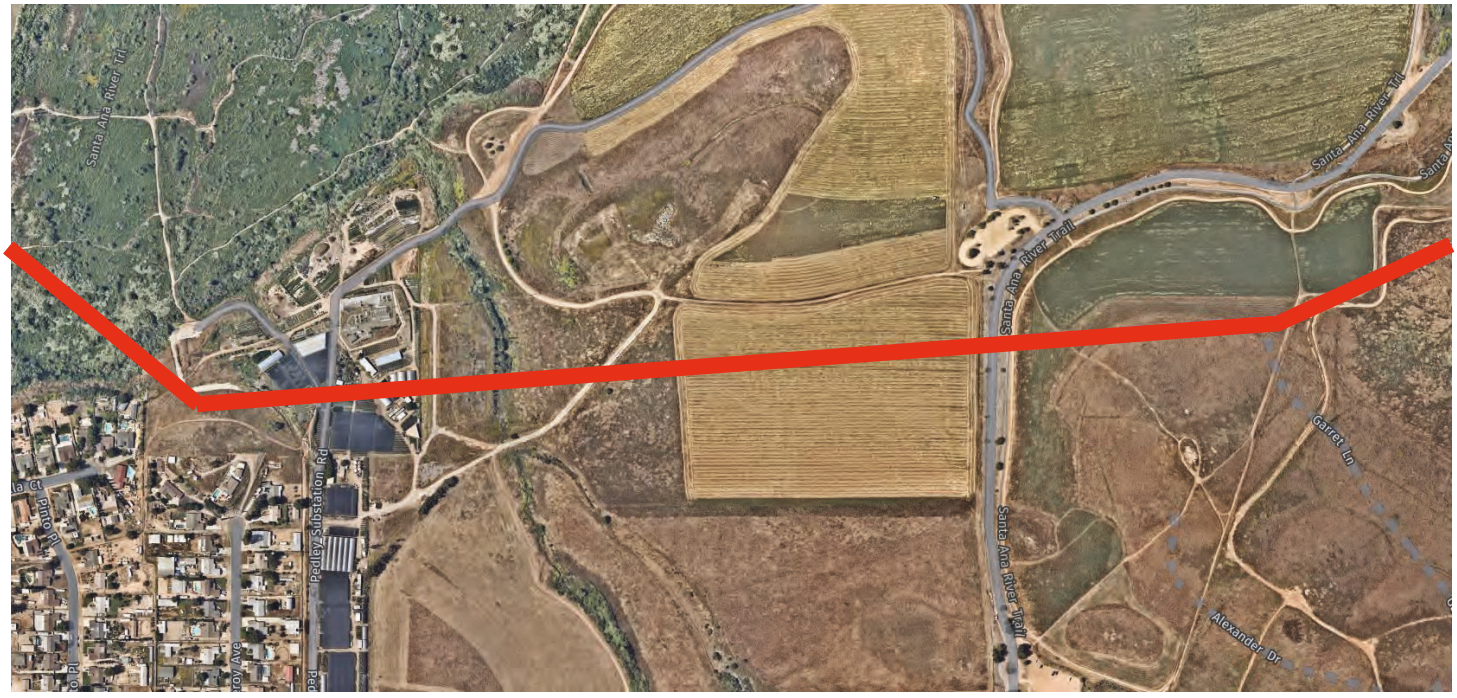
AERIAL COMPARISON #2

2014

2023

AERIAL COMPARISON #3

2014



2023

AERIAL COMPARISON #4

2014

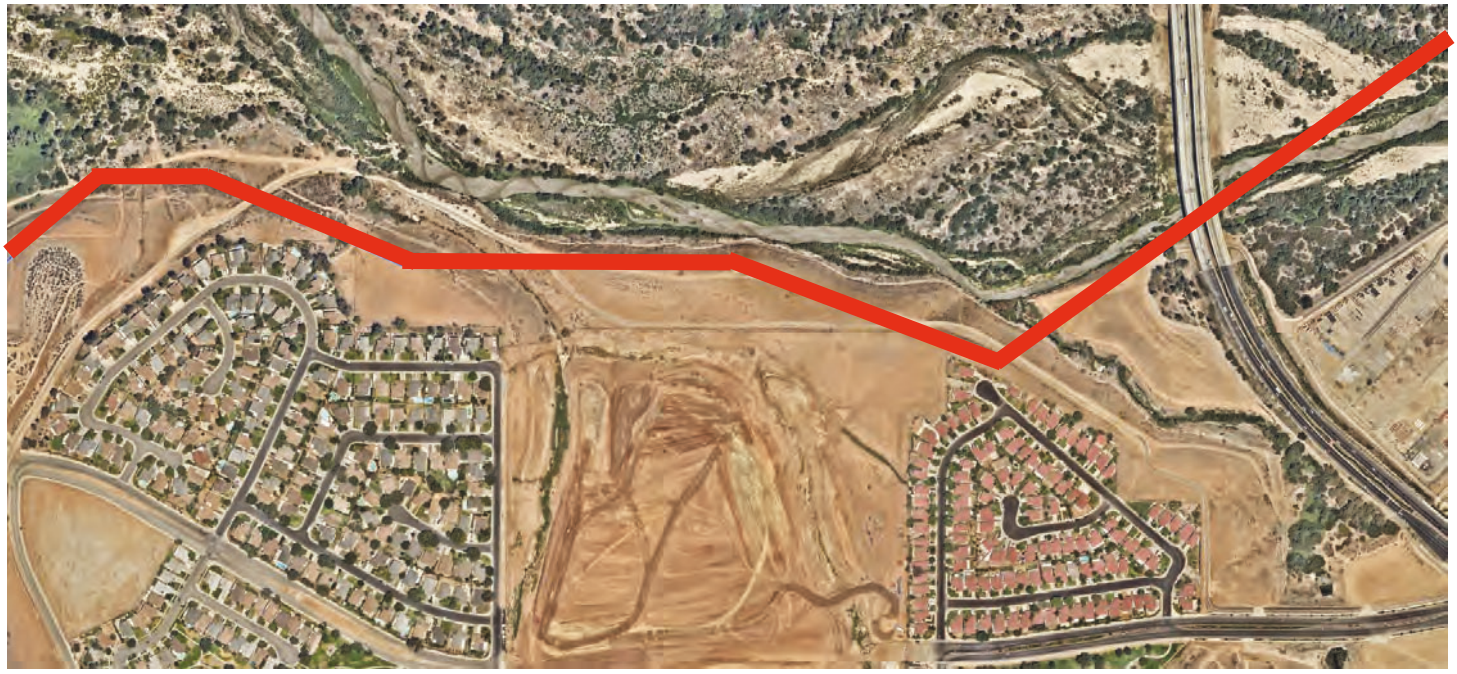
2023

AERIAL COMPARISON #5

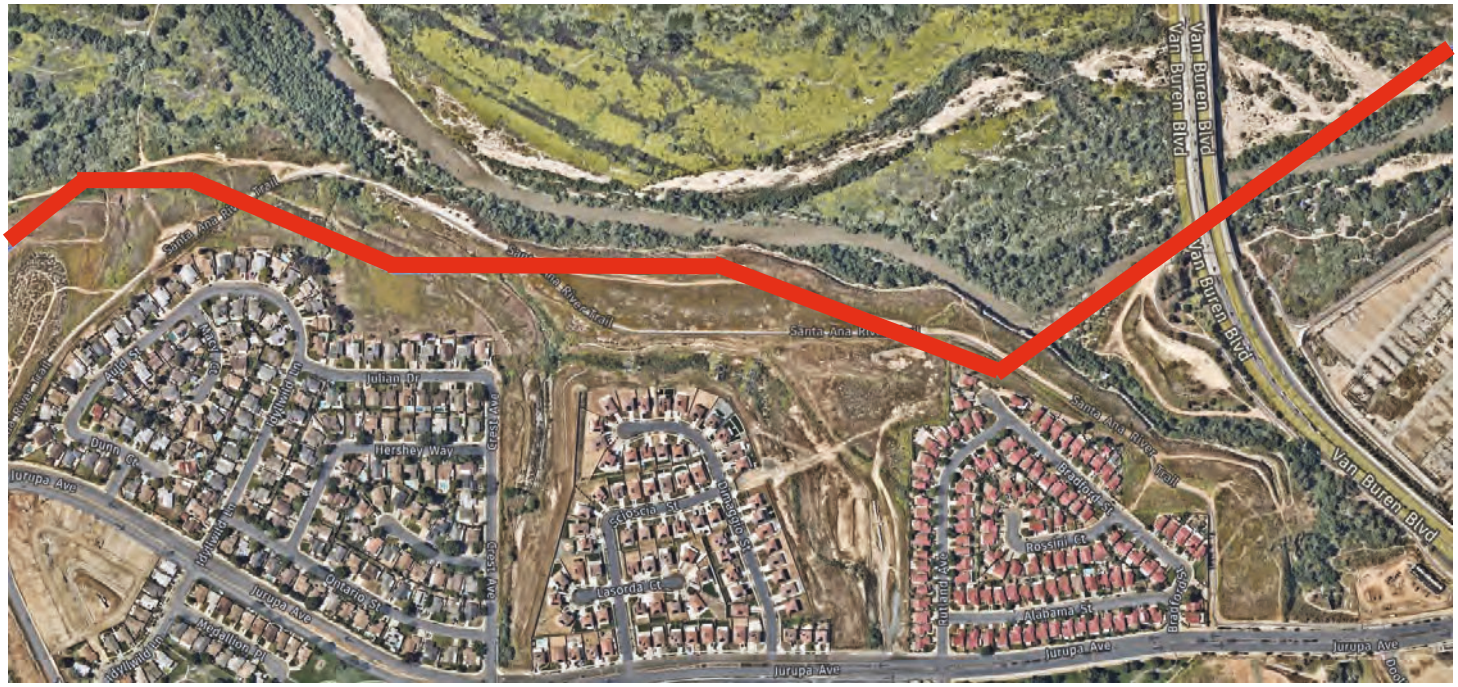
2014

2023

AERIAL COMPARISON #6



2014



2023

AERIAL COMPARISON #7

2014

2023

ATTACHMENT C

Photographs of the a street in a residential portion of the City of Norco close to the location where the overhead RTRP route would cross the Santa Ana River.

Prepared by the City of Norco Planning Dept.


California Ave
Image Landsat / Copernicus
Google Earth


Santa Ana River
Santa Ana River
Santa Ana River
STREET VIEW
River Dr
River Dr
River Dr
Corona Ave
Corona Ave
Corona Ave
Sutton Pl
Carthay Dr
Valley View Ave
Valley View Ave
Ramona Way
THE SCARLET WORM FARM
Joyfulpuppies
Pet store
Training
Seventh St
Seventh St
Seventh St
Seventh St
Woodward Ave
N

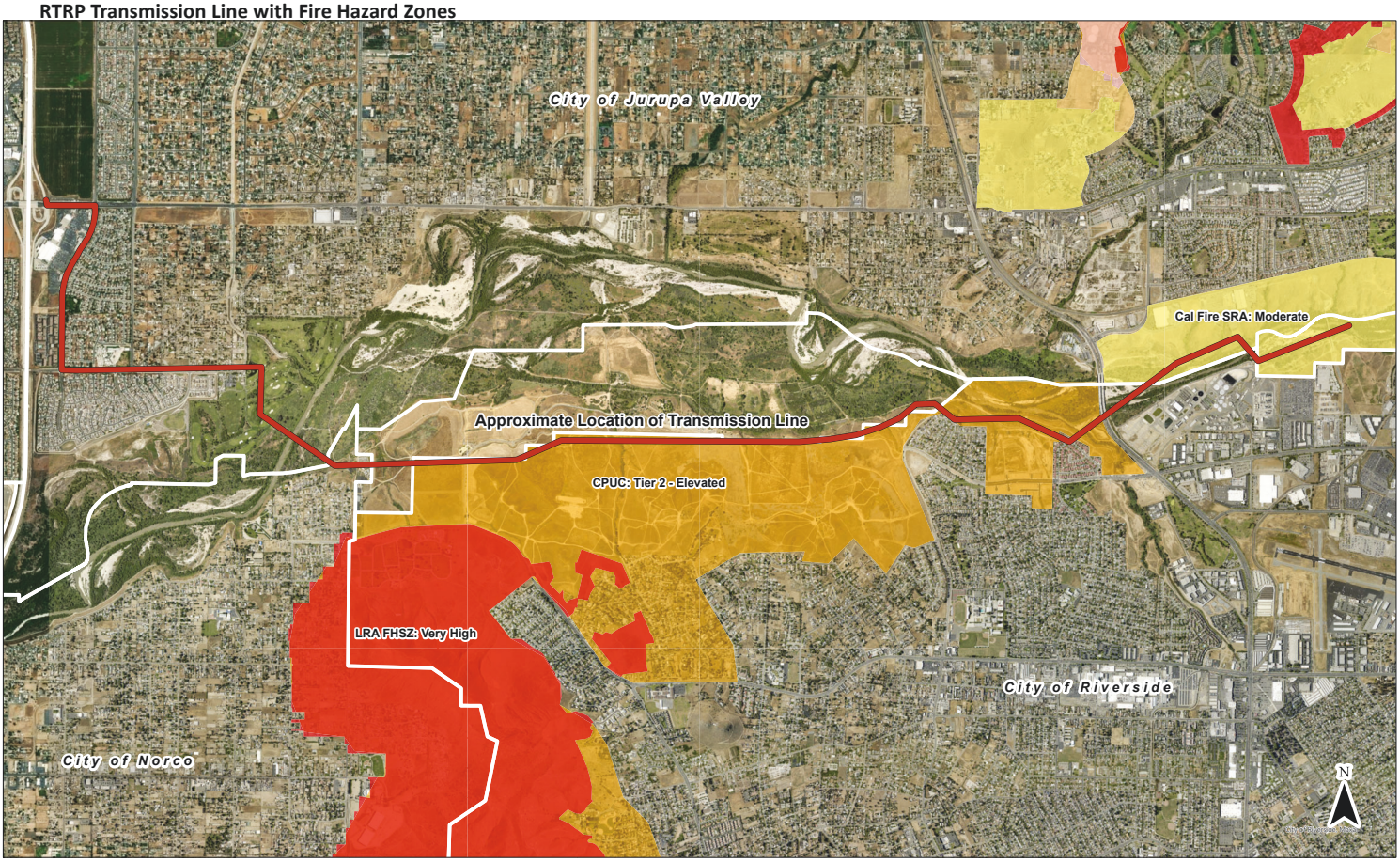

STREET WIDTH
APROXIMATELY
24' WIDE
River Dr
Google

ATTACHMENT D

Map consisting of an aerial photo showing local, state and CPUC enhanced fire threat zones and the route of the overhead portion of the RTRP.

Prepared by the City of Norco Planning Dept.

RTRP Transmission Line with Fire Hazard Zones

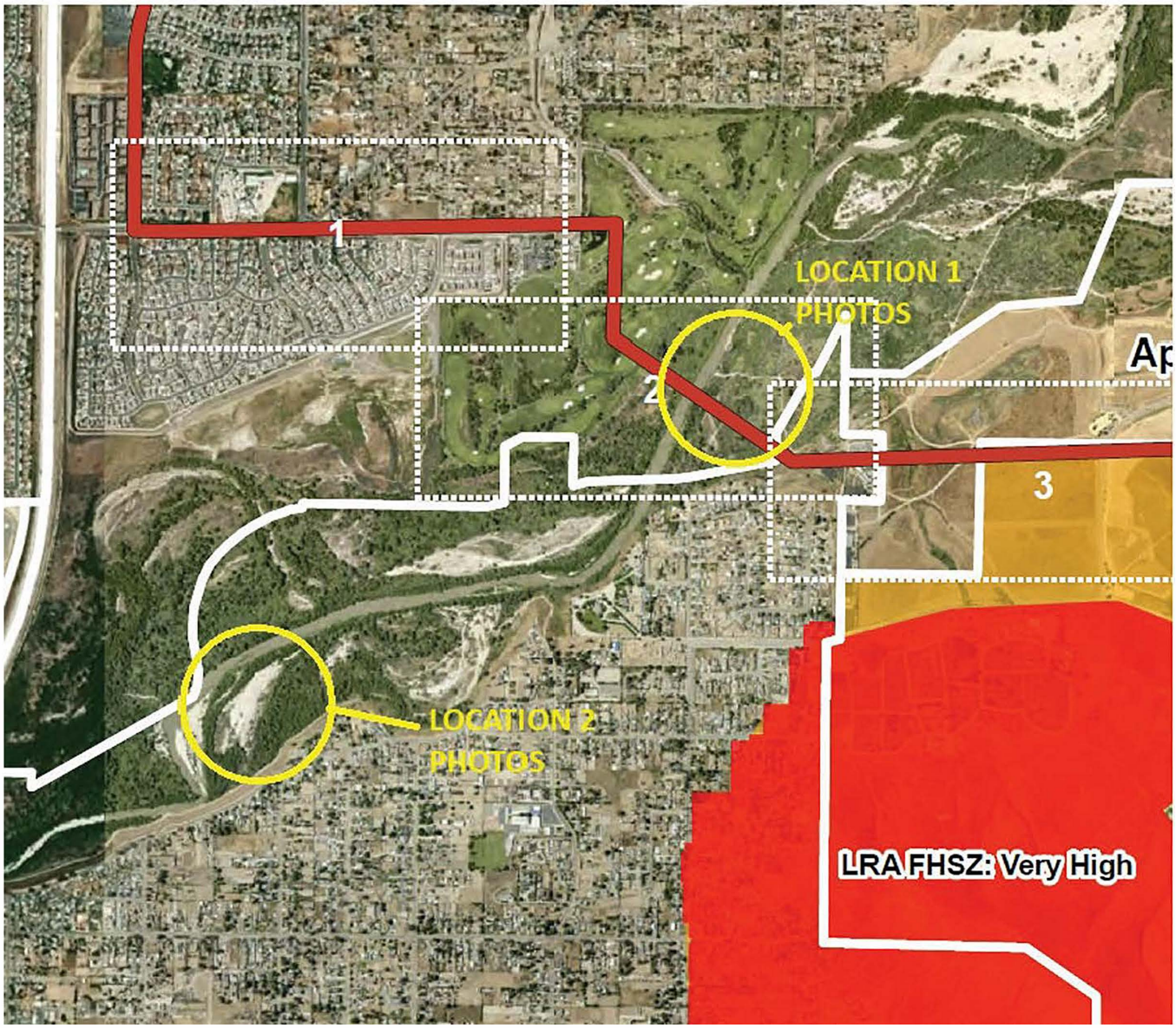


ATTACHMENT E

Photographs of the community near the location where the overhead RTRP route would cross the Santa Ana River and in adjacent open space within the City of Norco.

Prepared by the City of Norco Planning Dept.

Photo Location Map


1
2
3
LOCATION 1
PHOTOS
LOCATION 2
PHOTOS
LRA FHSZ: Very High

Photos from Location 1

Photos from Location 2

ATTACHMENT F

Screenshot of television image depicting a fire from 2023 in southern California. Image captured by Peter Bryan.

ATTACHMENT G

Office of the Attorney General, *Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act*, December, 2022.

State of California
Office of the Attorney General

ROB BONTA
ATTORNEY GENERAL

Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act

I. Introduction

Wildfires are part of California's present, and with the effects of climate change, an increasing part of our future. Development in fire-prone areas increases the likelihood that more destructive fires will ignite, fire-fighting resources will be taxed, more habitat and people will be put in harm's way or displaced, and more structures will burn. It is therefore imperative that local jurisdictions making decisions to approve new developments carefully consider wildfire impacts as part of the environmental review process, plan where best to place new development, and mitigate wildfire impacts to the extent feasible.

This guidance is designed to help lead agencies[1] comply with the California Environmental Quality Act, Public Resources Code, section 21000 et seq. (CEQA), when considering whether to approve projects in wildfire-prone areas. These areas are often in the wildland-urban interface, generally defined as the area where the built environment meets or intermingles with the natural environment.[2] The California Department of Forestry and Fire Protection (CAL FIRE) has classified lands based on fire hazard, the highest being those classified as high or very high fire hazard severity zones. It has also identified areas where the State (as opposed to a local agency) has responsibility for fire-fighting.[3] Particularly in these high-risk areas, but also throughout the

---

[1] Lead agencies are any public agencies with "principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." (Pub. Resources Code, § 21067.)

[2] CAL FIRE has published an instructive map on the wildland-urban interface in California: https://frap.fire.ca.gov/media/10300/wui_19_ada.pdf. The wildland-urban interface is defined differently by different agencies for different purposes, but the most widely used definition for wildfire purposes include the intermix and interface areas mapped by Radeloff et al. 2005, 2018. See Volker C. Radeloff, et al., *Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk.* PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA, 115(13):3314-3319 (2018), available at https://www.pnas.org/doi/10.1073/pnas.1718850115.

[3] See https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Note that areas mapped by CAL FIRE as high or very high fire hazard are not always coextensive with the wildland-urban interface. In addition, CAL FIRE's maps are currently in the process of being updated and lead agencies should consult with CAL

wildland-urban interface, wildfire risks must be considered during the environmental review process for individual development projects.

This guidance provides suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation.[4] This guidance is aimed at proposed development projects, such as residential, recreational, or commercial developments.[5] The extent to which it applies will inherently vary by project, based on project design and location. This document does not impose additional requirements on local governments or alter any applicable laws or regulations. Rather, it is intended to provide guidance on some of the issues, alternatives, and mitigation measures that should be considered during the environmental review process. This guidance is based on the Office of the Attorney General's experience reviewing, commenting on, and litigating CEQA documents for projects in high wildfire prone areas, and is intended to assist lead agencies with their planning and approval of future projects. The guidance reflects current requirements and conditions and may need to be updated as changes occur.

II. Background

Although wildfires are and have been an important natural process throughout California's history, recent changes in fire frequency, intensity, and location are posing increasing threats to the residents and environment of California. More acres of California have burned in the past decade than in the previous 90 years[6] and eight of the State's ten largest fires since 1932 have occurred in the last decade.[7] While lightning is a common cause of some of the State's largest

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FIRE before relying on the classifications listed on this map. CAL FIRE's list of state responsibility areas (defined as areas where the State of California, as opposed to a local agency, is financially responsible for prevention and suppression of wildfires) can be found at: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=468717e399fa4238ad86861638765ce1. Each county should have a map of the very high or high fire hazard severity zones in its jurisdiction, and they are also included on the CAL FIRE zone map: https://egis.fire.ca.gov/FHSZ/.

[4] Readers who want to determine their legal obligations under CEQA should consult their own attorney for legal advice.

[5] This guidance is not intended to apply to state and local agency fire management activities, such as prescribed burns, approval of vegetation management plans to reduce wildfire risk, and review of timber harvesting plans.

[6] CAL FIRE, Top 20 Largest California Wildfires (Jan. 13, 2022), available at https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf. See also Hugh D. Safford et al., *The 2020 California Fire Season: A Year Like No Other, a Return to the Past or a Harbinger of the Future?* (Apr. 17, 2022) GLOBAL ECOLOGY AND BIOGEOGRAPHY, available at https://onlinelibrary.wiley.com/doi/10.1111/geb.13498?af=R.

[7] Paul Rogers, *Map: 1 of Every 8 acres in California has Burned in the Last 10 Years. Here's Where the Biggest Fires Spread—and are Burning Now*, Mercury News (Sept. 29, 2021), available at https://www.mercurynews.com/2021/09/29/top-10-california-wildfires-megafires-map/. Notably, the large fires of late are not unprecedented in the State's history with similarly large fires occurring specifically during the 1920s. See Jon E. Keeley & Alexandra D. Syphard, *Large California Wildfires: 2020*

fires, in recent years, many of the State's most destructive fires have been caused by human activity, such as downed powerlines or electrical sources associated with residential development or industrial facilities.[8]

Wildfires can have dramatic, adverse ecological impacts. Frequent wildfires can result in habitat loss and fragmentation, shifts in vegetative compositions, reductions in small mammal populations, and accelerated loss of predatory species.[9] Wildfire can also have adverse impacts on erosion and water quality. During active burning, ash and associated contaminants can enter water supplies. Later, after large burns, rainstorms can flush vast amounts of sediment from exposed soils into those same water supplies.[10]

Wildfires also have tragic consequences for California's residents. Since 2010, wildfires have killed nearly 150 people in California[11] and, since 2005, wildfires have destroyed over 97,000 structures,[12] requiring mass evacuations and exacerbating the State's already-pressing need for more housing. In addition, wildfire smoke is unhealthy to breathe and is a public health concern.[13] Further, wildfire losses are not experienced equally. Lower-income households are more likely to lose all of their assets and less likely to have adequate insurance to cover their losses.[14] Meanwhile, the costs of wildfire suppression and resiliency have become significant. In

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Fires in Historical Context (Aug. 25, 2021) FIRE ECOLOGY, available at https://fireecology.springeropen.com/articles/10.1186/s42408-021-00110-7.

[8] See CAL FIRE, Top 20 Largest California Wildfires (Jan. 13, 2022), available at https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf; CalFire, Top 20 Most Destructive California Wildfires (Jan. 13, 2022), available at https://www.fire.ca.gov/media/t1rdhizr/top20_destruction.pdf.

[9] See Alexandra D. Syphard, et al., *Human Influence on California Fire Regimes.* ECOLOGICAL APPLICATION 17:1388-1402 (2007).

[10] United States Environmental Protection Agency, Wildfires: How do They Affect Our Water Supplies? (Aug. 13, 2019), available at https://www.epa.gov/sciencematters/wildfires-how-do-they-affect-our-water-supplies#:~:text=Vegetation%20that%20holds%20soil%20in,%2C%20rivers%2C%20and%20downstream%20reservoirs.

[11] CAL FIRE, Top Deadliest California Wildfires (Oct. 22, 2021), available at https://www.fire.ca.gov/media/lbfd0m2f/top20_deadliest.pdf.

[12] Headwaters Economics, Wildfires Destroy thousands of structures each year (Nov. 2020, updated Aug. 2022), available at https://headwaterseconomics.org/natural-hazards/structures-destroyed-by-wildfire/.

[13] See Kurtis Alexander, *California Ranks Worst in Nation for Air Pollution Because of Wildfire Smoke*, S.F. Chronicle (June 23, 2022), available at https://www.sfchronicle.com/bayarea/article/california-air-quality-17259687.php. See also Lora Kolodny, *The West Coast Is Suffering from Some of the Worst Air in the World — These Apps Show How Bad it Is*, CNBC (Sept. 13, 2020), available at https://www.cnbc.com/2020/09/12/air-quality-apps-purpleair-airnow-iqair-essential-in-western-us.html; and California Air Resources Board, *Protecting Yourself from Wildfire Smoke*, available at https://ww2.arb.ca.gov/protecting-yourself-wildfire-smoke.

[14] California Council on Science and Technology, The Costs of Wildfire in California (Oct. 2020), at p. 69, available at https://ccst.us/reports/the-costs-of-wildfire-in-california/.

2021, the State invested $1.5 billion in wildfire resiliency efforts, and the 2022-2023 budget includes an additional $1.2 billion to support wildfire and forest resilience.[15] The changing nature of wildfires, under various metrics—frequency, area burned, adverse ecological impacts, the number of Californians displaced—is a worsening crisis that will unfortunately be part of California's future.[16]

As of 2010, about one-third of California's housing units were located within the wildland-urban interface.[17] Residential developments in the wildland-urban interface and other wildfire prone areas can significantly increase the risks of wildfires and the risk to public safety for several reasons. First, introducing more people—via additional development—into a flammable landscape increases the likelihood of: (1) a wildfire igniting due to the increased presence of people; and (2) the ignition becoming a wildfire because of the placement of homes amongst the flammable vegetation.[18] Second, building housing units in the wildland-urban interface puts more people in harm's way.[19] Wildfires, particularly those that impact developments in relatively remote locations, may impede the evacuation of communities and emergency access, making it more difficult to ensure public safety and to limit, control, or extinguish wildfires. Finally, fires in remote locations require significant fire-fighting resources and mobilization of fire-fighters from all over the State—putting a major strain on the State's fire-fighters and the State's budget. Put simply, bringing more people into or near flammable wildlands leads to more frequent, intense, destructive, costly, and dangerous wildfires.[20]

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[15] Gavin Newsom, California State Budget (2022-2023), at p. 61, available at https://www.ebudget.ca.gov/FullBudgetSummary.pdf; California State Budget, Budget Addendum (2021-2022), at p. 3, available at https://www.ebudget.ca.gov/BudgetAddendum.pdf.

[16] See California Council on Science and Technology, *The Costs of Wildfire in California* (Oct. 2020), at p. 17, available at https://ccst.us/reports/the-costs-of-wildfire-in-california/.

[17] Community Wildfire Planning Center, Land Use Planning Approaches in the Wildland-Urban Interface (Feb. 2021), at p. 7, available at https://www.communitywildfire.org/wp-content/uploads/2021/02/CWPC_Land-Use-WUI-Report_Final_2021.pdf; see also Heather Anu Kramer, et al., *High Wildfire Damage in Interface Communities in California* (2019) INTERNATIONAL JOURNAL OF WILDLAND FIRE, available at https://www.fs.usda.gov/nrs/pubs/jrnl/2019/nrs_2019_kramer_001.pdf. At the current rate of growth and under current growth patterns, it is anticipated that an additional 645,000 housing units will be developed in areas designated by CAL FIRE as very high fire hazard severity zones by 2050. Next 10, Rebuilding for a Resilient Recovery: Planning in California's Wildland Urban Interface (June 2021), at p. 9, available at https://www.next10.org/publications/rebuilding-resilient.

[18] See Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) Fremontia, *47*(2), at p. 29; Volker C. Radeloff, et al., *Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk.* PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA, 115(13):3314-3319 (2018).

[19] See Heather Anu Kramer, et al., *High Wildfire Damage in Interface Communities in California* (2019) International Journal of Wildland Fire, available at https://www.fs.usda.gov/nrs/pubs/jrnl/2019/nrs_2019_kramer_001.pdf; Volker C. Radeloff, et al., *Rapid growth of the US wildland-Urban interface raises wildfire risk.* PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES USA, 115(13):3314-3319 (2018).

[20] See Michael L. Mann, et al., *Incorporating Anthropogenic Influences into Fire Probability Models: Effects of Human Activity and Climate Change on Fire Activity in California* (Apr. 28, 2016) PLOS ONE

III. Wildfire and Land Use Planning

While this guidance is focused on best practices to disclose, analyze, and mitigate wildfire impacts in compliance with CEQA, it is important to note that general planning also provides a critical opportunity for local jurisdictions to think proactively about how to accommodate their housing and development needs while reducing the risks of wildfire.[21] In the last ten years, new legislation has passed requiring local jurisdictions to consider wildfire risks in their general planning processes.[22] The Governor's Office of Planning and Research (OPR) recently published comprehensive guidance to help local agencies comply with these requirements.[23] We encourage local jurisdictions to consult this guidance and to thoughtfully plan for new development given the increasing risk of wildfires throughout the state.[24]

11(4), available at https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0153589; Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) FREMONTIA, *47*(2), at pp. 28-35, available at https://pubs.er.usgs.gov/publication/70215982; Alexandra D. Syphard, et al., *Land Use Planning and Wildfire: Development Policies Influence Future Probability of Housing Loss* (2013) PLOS ONE, available at https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0071708&type=printable; see also Final Statement of Reasons for Regulatory Action re Amendments to the State CEQA Guidelines OAL Notice File No. Z-2018-0116-12 ("Statement of Reasons"), at p. 87, available at https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_Final_Statement_of%20Reasons_111218.pdf.

[21] See Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) FREMONTIA, *47*(2), at p. 33, available at https://pubs.er.usgs.gov/publication/70215982 [concluding that "the most effective strategy at reducing future structure loss would focus on reducing the extent of low-density housing via careful land planning decisions"].

[22] See Sen Bill No. 1241 (2011-2012 Reg. Sess.), amending and/or adding Gov. Code, §§ 65302, subd. (g)(3), 65302.5, subd. (b), and 66474.02) [requiring local jurisdictions within state responsibility areas or very high fire hazard severity zones to address wildfire risk when updating their safety elements and to submit their draft updates to the State Board of Forestry and Fire Protection for review]; Sen. Bill No. 99 (2019-2020 Reg. Sess.), amending Gov. Code, § 65302, subd. (g)(5) [requiring updated safety elements to identify residential developments within hazard areas that do not have at least two evacuation routes]; Assem. Bill No. 747 (2019-2020 Reg. Sess.), adding Gov. Code, § 65302.15 [requiring local jurisdictions to update their safety element to address the capacity of evacuation routes under a range of various emergency scenarios]; Assem. Bill No. 1409 (2020-2021 Reg. Sess.), amending Gov. Code, § 65302.15 [requiring that safety elements identify locations where people can evacuate to].

[23] Governor's Office of Planning and Research, Fire Hazard Planning Technical Advisory, 2022 Update (Aug. 2022), available at https://opr.ca.gov/docs/20220817-Fire_Hazard_Planning_TA.pdf; and Wildland-Urban Interface Planning Guide: Examples and Best Practices for California Communities (Aug. 2022), available at https://opr.ca.gov/docs/20220817-Complete_WUI_Planning_Guide.pdf.

[24] Local jurisdictions that have complied with their general planning obligations, including incorporating wildfire and evacuation planning considerations into their general plans, may benefit from streamlined CEQA requirements at the project approval level. If a development project is consistent with an updated general plan and an environmental impact report (EIR) was prepared for that plan, the CEQA review for the project may be limited to the parcel-specific impacts of the project or impacts that new information,

IV. Analyzing and Mitigating Wildfire Risk Impacts Under CEQA

A. CEQA's requirements for analyzing wildfire risks

CEQA requires local jurisdictions considering development projects to prepare an environmental impact report (EIR) or a mitigated negative declaration[25] if the project may potentially have a significant impact on the environment and is not otherwise exempt from CEQA.[26] Under CEQA, local jurisdictions may act as lead agencies with responsibility for preparing the EIR (or other CEQA document), or as responsible agencies relying on an EIR prepared by a lead agency. CEQA provides a critical process for local jurisdictions to understand how new developments will exacerbate existing wildfire risks, allowing them to consider project design features, alternatives, and mitigation measures that provide for smarter development and the protection of existing communities.

The CEQA Guidelines[27] require that an EIR include a description of the physical environmental conditions in the vicinity of the project, at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced.[28] This "baseline" of existing environmental conditions is generally used to determine the significance of project-related impacts. In the EIR's discussion of the existing environmental conditions, lead agencies should include information about open space areas and habitats within the project area that may be fire prone, as well as a discussion of fire history and fuels on the project site. Including a discussion of existing available water supplies for fire-fighting is also critical. Providing detail about existing environmental conditions at the project site that may exacerbate or minimize wildfire impacts will help ensure that the EIR fully considers the project's impacts on wildfire risk.

The CEQA Guidelines require an analysis of "any significant environmental effects the project might cause or risk exacerbating by bringing development and people into the area affected," including by locating development in wildfire risk areas.[29] The "environmental checklist form" in Appendix G of the CEQA Guidelines, Section XX, directs lead agencies to assess whether

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arising since adoption of the general plan, shows will be more significant than described in the prior EIR. (Pub. Resources Code, § 21083.3; CEQA Guidelines, § 15193).

[25] Where "EIR" is used in this guidance it should also be considered to refer to a mitigated negative declaration.

[26] Pub. Resources Code, § 21067; CEQA Guidelines, §§ 15050 and 15367.

[27] The CEQA Guidelines are found at California Code of Regulations, title 14, section 15000, et seq.

[28] CEQA Guidelines, § 15125.

[29] CEQA Guidelines, § 15126.2.

projects located *in or near* state responsibility areas or lands classified as very high fire hazard severity zones,[30] would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan;
b) 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;
c) 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; or
d) 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.[31]

In addition to the four questions above, Section IX(g) of the checklist broadly directs lead agencies to consider whether a project will "expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires."[32] In answering these questions, lead agencies must consider both on- and off-site impacts.[33]

B. Analyzing a project's impact on wildfire risks

Several variables should be considered in analyzing a project's impact on wildfire risk, including:

- **Project Density:** Project density influences how likely a fire is to start or spread, and how likely it is that the development and its occupants will be in danger when a fire starts. Fire spread and structure loss is more likely to occur in low- to intermediate-density developments.[34] This is because there are more people present to ignite a fire (as compared to undeveloped land), and the development is not concentrated enough

[30] See footnote 1 for more information on state responsibility areas and very high fire hazard severity zones.

[31] CEQA Guidelines, Appendix G, XX.

[32] CEQA Guidelines, Appendix G, IX(g). This Guidance focuses on these key wildfire-related questions in Sections IX(g) and XX of the checklist, but in conducting environmental review, lead agencies must continue to thoroughly address the other questions identified in Section XX and the checklist more generally.

[33] CEQA Guidelines, § 15360 [defining the environment to be considered as "the area in which significant effects would occur either directly or indirectly as a result of the project"].

[34] Alexandra D. Syphard, *The Relative Influence of Climate and Housing Development on Current and Projected Future Fire Patterns and Structure Loss Across Three California Landscapes* (2019) GLOBAL ENVIRONMENTAL CHANGE; Alexandra D. Syphard, et al., *Housing Arrangement and Location Determine the Likelihood of Housing Loss Due to Wildfire* (Mar. 28, 2012) PLOS ONE, available at https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0033954.

(as compared to high-density developments) to disrupt fire spread by removing or substantially fragmenting wildland vegetation.[35] "Isolated clusters of development and low housing density mean that homes are embedded within, and more exposed to, a matrix of wildland vegetation."[36] Moreover, fire-fighters may have difficulty accessing more remote and disconnected developments.[37]

- **Project Location in the Landscape:** Project placement in the landscape relative to fire history, topography and wind patterns also influences wildfire risk. Although wildfire ignitions are primarily human-caused in California, wildfire behavior is largely driven by topography, fuel, climatic conditions, and fire weather (such as low humidity and high winds). How a development project is planned within the landscape determines to what extent it will influence fire risk.[38] For example, if a project site is located in a wind corridor, above-ground power lines may become a source of ignition. Similarly, siting residential structures in rugged terrain or on the top of steep hills may increase the wildfire risk. By contrast, if a project site includes landscape features that could prevent or slow the spread of fire, such as a lake or an irrigated golf course, the development may be strategically located so as to capitalize on that feature as a natural fuel break.[39]

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[35] See generally Alexandra D. Syphard, et. al., *Multiple-Scale Relationships between Vegetation, the Wildland-Urban Interface, and Structure Loss to Wildfire in California* (Mar. 12, 2021) MDPI FIRE 2021.

[36] Max A. Moritz, et al., *Learning to Coexist with Wildfire* (2014) NATURE 515(7525), at p. 64; see also Alexandra D. Syphard, et. Al., *Multiple-Scale Relationships between Vegetation, the Wildland-Urban Interface, and Structure Loss to Wildfire in California* (March 12, 2021) MDPI FIRE 2021.

[37] See Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) FREMONTIA, *47*(2), at p. 31.

[38] See generally Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020) University of California Agriculture and Natural Resources, Publication 8680, available at https://escholarship.org/uc/item/6n12m6pn; Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) FREMONTIA, *47*(2), at pp. 28-35, available at https://pubs.er.usgs.gov/publication/70215982.

[39] See Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020) University of California Agriculture and Natural Resources, Publication 8680, at p. 10, available at https://escholarship.org/uc/item/6n12m6pn; see also Conservation Biology Institute, *Paradise Nature-Based Fire Resilience Project Final Report* (June 2020), available at https://d2k78bk4kdhbpr.cloudfront.net/media/reports/files/CBI_Paradise_Final_Report_for_Posting_Online.pdf [An examination of how siting and greenbelts may have protected homes during the Paradise fire]. Siting of a new fire-resistant development between wildlands and existing development may even serve as a protective barrier for the existing development. But there can still be some risk of ember spread if the new development succumbs to fire. See Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) FREMONTIA, *47*(2), at pp. 28-35, available at https://pubs.er.usgs.gov/publication/70215982; California Council on Science and Technology, The Costs of Wildfire in California (Oct. 2020), at p. 67, available at https://ccst.us/reports/the-costs-of-wildfire-in-california/.

- **Water Supply and Infrastructure**: As part of evaluating a project's wildfire risk impacts, an EIR should analyze the adequacy of water supplies and infrastructure to address fire-fighting within the project site.[40] This analysis should consider the potential loss of water pressure during a fire, which may decrease available water supply[41] and the potential loss of power, which may eliminate the supply.[42]

To understand how a project may exacerbate the risk of wildfire, an EIR should qualitatively assess these variables and also use fire modeling and other spatial and statistical analyses to quantify the risks to the extent feasible. Experts should utilize fire models to account for various siting and design elements, as well as a variety of different fire scenarios. The modeling should include scenarios for fires that start in, near, and far from the project site, as well as extreme weather conditions that exacerbate fire spread.

Lead agencies are encouraged to develop thresholds of significance that either identify an increase in wildfire risk as a significant impact or determine, based on substantial evidence, that some increase in the risk of wildfires is not considered a significant impact. Relevant factors should include the project's impact on ignition risk, the likelihood of fire spread, and the extent of exposure for existing and new residents based on various fire scenarios. Modeling the various scenarios enables local agencies to quantify increased wildfire risks resulting from a project adding more people to wildfire prone areas and to assess the risks according to the threshold of significance.

Some EIRs have concluded that the conversion of some wildland vegetation into paved development reduces or does not increase wildfire risk. This conclusion is contrary to existing evidence and the well-accepted understanding that the fundamental driver of increased wildfire risk is the introduction of people into a flammable landscape.[43] Accordingly, the conversion of vegetation into developed land does not obviate the need for lead agencies to carefully consider and model how the addition of development into wildfire prone areas contributes to the risk of wildfire.

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[40] See Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020) University of California Agriculture and Natural Resources, Publication 8680, at p. 19 and Appendix B, available at https://escholarship.org/uc/item/6n12m6pn.

[41] See Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020), at p. 19, University of California Agriculture and Natural Resources, Publication 8680, available at https://escholarship.org/uc/item/6n12m6pn.

[42] See Alexandra D. Syphard, *Nexus Between Wildfire, Climate Change and Population Growth in California* (2020) FREMONTIA, *47*(2), at p. 26.

[43] See Heather Anu Kramer, et al., *High Wildfire Damage in Interface Communities in California* (2019) INTERNATIONAL JOURNAL OF WILDLAND FIRE, available at https://www.fs.usda.gov/nrs/pubs/jrnl/2019/nrs_2019_kramer_001.pdf; see also Exhibit A to the Final Statement of Reasons for Regulatory Action re Amendments to the State CEQA Guidelines, OAL Notice File No. Z-2018-0116-12, at p. 212, available at https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_ExA_FSOR.pdf.

C. Analyzing the project's impact on evacuation and emergency access

The addition of new development into high wildfire risk or adjacent areas may impact the evacuation of project residents, as well as the existing population (e.g., residents, workers, students, visitors, and possibly livestock) in the area and the ability of emergency responders to simultaneously access the area to fight wildfire. This can, in turn, impact the risk and extent of large-scale fire spread and community safety within and around the new development. The EIR should evaluate these impacts both during construction and over the life of the project. The required analysis is relative to a project's impacts and risks; e.g., a higher density infill project within an already developed area would likely not require the same level of analysis as a new low-density development within the wildland-urban interface and surrounded largely by open space.[44]

For projects located in high wildfire risk areas that present an increased risk of ignition and/or evacuation impacts, evacuation modeling and planning should be considered and developed at the time of project review and approval—when there is greater flexibility to modify a project's design, density, siting, and configuration to address wildfire considerations—rather than deferred to a later stage of the development process. Lead agencies will be best-positioned to ensure proposed development projects facilitate emergency access and ease constraints on evacuation with this information in hand prior to project approval. The ultimate objective is to allow for informed decision-making that minimizes the environmental and public safety hazards associated with new developments that increase the risk of ignition and impede evacuation in high wildfire prone areas.

Evacuation modeling and analysis should include the following:

- Evaluation of the capacity of roadways to accommodate project and community evacuation and simultaneous emergency access.
- Assessment of the timing for evacuation.
- Identification of alternative plans for evacuation depending upon the location and dynamics of the emergency.
- Evaluation of the project's impacts on existing evacuation plans.
- Consideration of the adequacy of emergency access, including the project's proximity to existing fire services and the capacity of existing services.
- Traffic modeling to quantify travel times under various likely scenarios.

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[44] See Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020), University of California Agriculture and Natural Resources, Publication 8680, at p. 5, available at https://escholarship.org/uc/item/6n12m6pn [describing the benefits of infill development].

In considering these evacuation and emergency access impacts, lead agencies may use existing resources and analyses, but such resources and analyses should be augmented when necessary. For example, agencies should:

- Utilize information from the EIR's analysis of traffic/transportation impacts, but they should not limit themselves to that information, which may not reflect the impact of emergency conditions on travel times.
- Consult with local fire officials and ensure that assumptions and conclusions regarding evacuation risk are substantiated with sound facts. Emergency conditions may not allow for ideal evacuation scenarios—staggered, staged, or targeted evacuation in response to a wildfire may sometimes be possible, but human behavior is difficult to predict and wildfires can be erratic, unpredictable, and fast-moving.[45]
- Consider impacts to existing evacuation plans, but recognize that, depending on the scope of an existing evacuation plan, additional analyses or project-specific plans may be needed. Community evacuation plans often identify roles and responsibilities for emergency personnel and evacuation routes, but do not necessarily consider the capacity of roadways, assess the timing for community evacuation, or identify alternative plans for evacuation depending upon the location and dynamics of the emergency.
- Avoid overreliance on community evacuation plans identifying shelter-in-place locations. Sheltering in place, particularly when considered at the community planning stage,[46] can serve as a valuable contingency, but it should not be relied upon in lieu of analyzing and mitigating a project's evacuation impacts.[47]

Local jurisdictions are encouraged to develop thresholds of significance for evacuation times. These thresholds should reflect any existing planning objectives for evacuation, as well as

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[45] See FEMA and U.S. Fire Administration, *Wildland Urban Interface: A Look at Issues and Resolutions* (June 2022), available at https://www.usfa.fema.gov/downloads/pdf/publications/wui-issues-resolutions-report.pdf.

[46] FEMA, *Planning Considerations: Evacuation and Shelter-in-Place* (July 2019), available at https://www.fema.gov/sites/default/files/2020-07/planning -considerations-evacuation-and-shelter-in-place.pdf. The distinction between temporary shelter-in-place locations and buildings designed or retrofitted for longer term shelter-in-place should also be considered. See Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020) University of California Agriculture and Natural Resources, Publication 8680, at p. 17, available at https://escholarship.org/uc/item/6n12m6pn [discussing the difference between "safety zones"—areas with little flammable vegetations, such as golf courses—versus buildings that are designed to provide protection from heat and embers while the front of a fire passes, typically for a duration of at least 30-60 minutes].

[47] See Mejia, *Pepperdine University Defends 'Shelter in Place' Decision During Woolsey Fire*, Los Angeles Times (Nov. 13, 2018), available at https://www.latimes.com/local/lanow/la-me-ln-pepperdine-shelter-20181113-story.html; Chandler, *Am I Going to Stay in the Parking Lot . . . While the Fires Burn Around Me?*, Record Searchlight (Dec. 12, 2019), available at https://www.redding.com/in-depth/news/2019/04/25/california-wildfire-shelter-place-plans-questioned-evacuation-preparation/3427075002/.

informed expert analysis of safe and reasonable evacuation times given the existing and proposed development. Local jurisdictions should consider whether any increase in evacuation times for the local community would be a significant impact. A conclusion that an increase in evacuation times is a less than significant impact should be based on a threshold of significance that reflects community-wide goals and standards.

In establishing thresholds, local jurisdictions should consider referring to successful evacuations from prior emergencies within their community or similarly situated communities. The thresholds should include, but not be limited to, whether the project creates an inconsistency with: (1) an adopted emergency operations or evacuation plan; (2) a safety element that has been updated per the requirements in Government Code sections 65302(g)(5) and 65302.15 to integrate wildfire and evacuation concerns; or (3) recommendations developed by the California Board of Forestry and Fire Protection regarding the safety of subdivisions pursuant to Public Resources Code section 4290.5.

D. Mitigating wildfire risk, evacuation, and emergency access impacts

If a project presents significant increased wildfire risks and/or evacuation and access impacts, CEQA requires the lead agency to consider and adopt feasible alternatives and mitigation measures to avoid or reduce the project's impacts (or make a finding of overriding consideration).[48] Not all project design features or mitigation measures will achieve the same reduction in impacts for every project—the effects and effectiveness of measures will vary geographically and by project. An EIR that baldly concludes that certain project design features or mitigation measures will reduce or eliminate all potential wildfire risks, without first describing those risks, fails to fully analyze the project's impacts. Compressing the analysis of impacts and mitigation deprives decision makers of a full description of the project's adverse impacts and, therefore, fails to equip the decision makers with the necessary information to properly address the impacts by adopting project design features, mitigation measures, or alternatives. To avoid this error and provide for better project design, the project EIR should first analyze the increased wildfire risks and evacuation impacts, and then consider feasible mitigation and alternatives to avoid or reduce those impacts.

Set forth below are some examples of potential mitigation measures and design alternatives that may reduce wildfire risk impacts. This list is not exclusive and a lead agency's adoption of some or all of these mitigation measures for a particular project may not be sufficient to comply with CEQA's requirement to adopt all feasible mitigation measures.

- Increasing housing density and consolidated design, relying on higher density infill developments as much as possible.
- Avoidance and minimization of low-density exurban development patterns or leapfrog-type developments (i.e., those with undeveloped wildland between developed areas).

[48] Pub. Resources Code, § 21081.

- Decreasing the extent and amount of "edge," or interface area, where development is adjacent to undeveloped wildlands.
- Creation of buffer zones and defensible space within and adjacent to the development, with particular attention to ensuring that vegetation will not touch structures or overhang roofs.[49] It is also important that legal obligations are structured so that defensible space measures are retained over time.[50]
- Siting projects to maximize the role of low-flammability landscape features that may buffer the development from fire spread.
- Undergrounding power lines.
- Limiting development along steep slopes and amidst rugged terrain, so as to decrease exposure to rapid fire spread and increase accessibility for fire-fighting.
- Placement of development close to existing or planned ingress/egress and designated evacuation routes to efficiently evacuate the project population and the existing community population, consistent with evacuation plans, while simultaneously allowing emergency access.
- Placement of projects close to adequate emergency services.
- Construction of additional points of ingress and egress and modification of evacuation routes to minimize or avoid increasing evacuation times or emergency access response times.
- Fire hardening structures and homes—upgrading the building materials and installation techniques to increase the structure's resistance to heat, flames, and embers—beyond what is required in applicable building codes, both for new structures and existing structures in proximity to the new development.
- Requiring fire-hardened communication to the project site including high-speed internet service.
- Enhanced communication to the project population about emergency evacuation plans and evacuation zones.
- Parking limitations to ensure access roads are not clogged with parked vehicles.
- On-site water supply/storage to augment ordinary supplies that may be lost during a wildfire.

In all situations, mitigation measures should be combined and tailored to the specifics of the project, the surrounding landscape, and nearby existing uses. In some contexts, the mitigation measure itself may have an adverse impact that should be evaluated in an EIR. In addition,

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[49] Note, however, that defensible space around homes does not alone tend to account for structural survival. See Alexandra D. Syphard, *Why Are so Many Structures Burning in California?* (2020) FREMONTIA, *47*(2), at p. 32, available at https://pubs.er.usgs.gov/publication/70215982; Alexandra D. Syphard et al., *The Role of Defensible Space for Residential Structure Protection During Wildfires* (Oct. 14, 2014) INTERNATIONAL JOURNAL OF WILDLAND FIRE, available at http://dx.doi.org/10.1071/WF13158.

[50] See Max Moritz, et al., *Building to Coexist with Fire: Community Risk Reduction Measures for New Development in California* (Apr. 2020), at p. 12, University of California Agriculture and Natural Resources, Publication 8680, available at https://escholarship.org/uc/item/6n12m6pn.

mitigation measures may not provide the same level of protection or mitigation in all scenarios.[51] For example, home hardening has been shown to be an extremely effective measure for preventing structure loss during a wildfire. The California Building Code was updated in 2008 to require more advanced fire hardening and homes built to the revised standards were shown to be 40 percent less likely to be destroyed by a wildfire than similarly situated homes built prior to the update.[52] However, home hardening by itself may not be an adequate mitigation measure in all situations. During the Camp Fire, which swept through Paradise in 2018, homes built before and after the 2008 Building Code update were destroyed at roughly equal rates.[53] Home hardening in conformance with the 2008 Building Code alone did not meaningfully effect survivability; rather, proximity to other destroyed structures, the extent of vegetative overstory, and defensive space around homes was more relevant to whether or not a home survived.[54] While home hardening may be a worthy measure, this highlights the importance of combining measures, with an awareness to overall landscape conditions, to maximize public safety and minimize wildfire-related losses. It also demonstrates that defensive measures can improve but do not guarantee survivability, which highlights the continued importance of planning for evacuation and emergency access.

VII. Conclusion

As climate change and housing pressure continue to impact the State's landscape, wildfire risks, and development needs, local agencies need to thoroughly evaluate where and how new development is planned and constructed. With careful forethought during the various planning processes and thoughtful environmental review at the individual project development stage, new development can be designed and positioned to minimize future wildfire risks, enhance fire resiliency of our communities, and protect the health and safety of California's residents and natural resources. While the applicable rules, requirements, and analytical tools to reduce wildfire risk are evolving, this guidance is intended to provide suggestions for how best to comply with CEQA when analyzing and mitigating the wildfire risks of development projects in the wildland-urban interface and other fire prone areas.

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[51] See Alexandra D. Syphard, et. al., *Multiple-Scale Relationships between Vegetation, the Wildland-Urban Interface, and Structure Loss to Wildfire in California* (Mar. 12, 2021), at p. 13, MDPI FIRE 2021 [noting that "the most effective fire risk reduction approach will account for multiple factors at multiple scales and will incorporate simultaneous strategies"].

[52] Patrick W Baylis, et al., *Mandated vs. Voluntary Adaptation to Natural Disasters: the Case of U.S. Wildfires* (Dec. 2021), National Bureau of Economic Research, available at https://www.nber.org/papers/w29621.

[53] Eric E. Knapp, et al., *Housing Arrangement and Vegetation Factors Associated with Single-Family Home Survival in the 2018 Camp Fire, California* (2021) FIRE ECOLOGY 17:25, available at https://fireecology.springeropen.com/track/pdf/10.1186/s42408-021-00117-0.pdf [37 percent of homes built between 1997 and 2008 survived, while 44 percent of homes built between 2008 and 2018 survived].

[54] Eric E. Knapp, et al., *Housing Arrangement and Vegetation Factors Associated with Single-Family Home Survival in the 2018 Camp Fire, California* (2021) FIRE ECOLOGY 17:25, available at https://fireecology.springeropen.com/track/pdf/10.1186/s42408-021-00117-0.pdf.