Appendix N

Wildfire Evacuation Memorandum

Appendix N-1

Fire and Emergency Response Memorandum

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Re: Shiloh Resort and Casino Project

Fire and Emergency Response Comments for the Shiloh Resort and Casino Project

The primary purpose of the fire code and other fire safety regulations and recommendations is to provide for the safety of life and property from the threats of fire. This document was prepared to summarize the fire risks, code requirements, and recommendations to reduce the threat of fire and loss of life and property.

Experience

My recommendations contained in this document are based on over 45 years of experience in fire safety and emergency management.

A significant part of my duties included the development of fire codes and ordinances for several government agencies. In Sonoma County alone I was involved with several fire code adoptions that also included vegetation management guidelines and requirements of the Public Resources Code for all unincorporated Sonoma County.

Another part of my experience was conducting numerous plan reviews and site inspections for residential and commercial development insuring compliance with local, state, and federal regulations. This included an emphasis on wildland fire code compliance. Another responsibility was the investigation of all fires including structure, vehicle, and wildland incidents.

My emergency response history spans five decades. That history includes responding to hundreds of incidents involving structure fires and wildland emergencies. I have responded to major wildland urban interface incidents throughout Sonoma County and California as an engine Captain, Strike Team Leader responsible for multiple engines and crews, and incident command staff.

Summary of Fire Risk and Recent Fire History

Having reviewed the available information for the Shiloh Resort and Casino Project, I offer the following comments:

Shiloh Resort and Casino Project is a proposed new development with access off Shiloh Road and Old Redwood Highway in unincorporated Sonoma County California. It lies within a moderate and high fire zone of the State Responsibility Area (SRA). It should be noted that Cal Fire's SRA Zones are under review and reported to be updated. The maps are now out for an internal Cal Fire review and should be available to the public sometime in calendar year 2023.

The proposed project site is located on approximately 68 acres and currently has an active vineyard operation, with fruit trees, a single-family dwelling, and miscellaneous outbuildings for the vineyard operation.

The proposed project has a total of 807,000 square feet of occupied space and a parking garage of 1.2 million square feet. The total allowable occupant load for the casino space is approximately 20,814. The total building code allowable occupant load for the casino and hotel space is approximately 20,814. The available parking spaces allow for 5,110 vehicles and nine bus parking spots. The parking spaces at 1.7 people per vehicle would indicate 8,687 customers and staff. The nine bus parking spots with 56 passenger buses would be approximately 504 customers and staff. These numbers do not account for bus and vehicle services that would bring customers to the facility.

Pruitt Creek runs through the middle of the property and the balance of the property is a vineyard. There is a very limited amount of flammable vegetation on the property due to the planted rows of grape vines.

Sonoma County has had its share of wildfire events. Several years of wildfire history reveals that numerous fires have occurred in or around the vicinity where the Tubbs Fire and Kincade Fire have burned. It is well documented that the Hanley Fire in 1964 burned an area like the Tubbs Fire, with final perimeter lines from both fires mirroring one another in some areas.

Similar circumstances have occurred with many fires, including the Atlas Peak fire in 1981, and the Atlas Fire in 2017, which burned simultaneously with the Tubbs Fire.

The development site is in an area that has seen recent significant fire activity, including the Tubbs Fire in October of 2017 and the Kincade Fire in October of 2019. The Tubbs and Kincade fires burned up near the northeast side of the property near the intersection of E. Shiloh Road and Faught Road. The fire stopped short of reaching the project property.

A few factors could have been in play to prevent the fire from reaching the project property. One could have been the active efforts of fire suppression forces in the area and using the roads as a fire break for their suppression actions. Another reason could have been the roads and vineyards served as a "fire break" with their natural limited flammable vegetation features.

The development of the casino and resort will only add to the fire resistive features of the area. The northeast area of the project is proposed to be a noncombustible parking structure, a hard surface parking area and the remaining area will continue to be a vineyard. There will be a 3.5-acre treatment area that will meet all local codes and standards for vegetation management. Pruitt Creek will be protected with vegetation management that is allowed within a riparian area. The actual potential flammable vegetation will be greatly reduced in this area.

The balance of the property will be the casino floor, event center, hotel, swimming pool, and covered parking drop off. This area will be bordered by the existing vineyards on the south, north, and west providing an additional flammable vegetation break.

Tubbs Fire

By the time the Tubbs Fire had been extinguished, near the end of October 2017, it had become the third deadliest wildfire in California history (at that time – it is currently the fourth deadliest wildfire on record), killing 22 people. It also became the most destructive wildfire in California history (at the time-it is now the second most destructive wildfire on record). The Tubbs Fire burned 36,807 acres and 5,636 structures.

Kincade Fire

The Kincade Fire also started on October 23 of 2019 at 9:24 pm at the Geysers north of the project site. This fire burned 77,758 acres. It destroyed 374 structures and damaged 60 others.

As stated previously, according to available fire mapping data neither fire reached the project site. Both fires did come down to Faught Road just east of the project site. The Tubbs Fire did cross over Faught Road north Shiloh Road and the project site.

2019 Kincade Fire Maps
https://storymaps.arcgis.com/stories/3ea9e0ceb81042618f0de719b299d32d

https://sonomalandtrust.maps.arcgis.com/apps/TimeAware/index.html?appid=a5a88825d160440887a181bdd7009730

2017 Tubbs Fire Maps
https://storymaps.arcgis.com/stories/3ea9e0ceb81042618f0de719b299d32d

https://sonomalandtrust.maps.arcgis.com/apps/TimeAware/index.html?appid=a5a88825d160440887a181bdd7009730

Project Evacuation

The hot summer and early fall weather in Sonoma County can be accompanied by strong winds coming from the north and northwest. These temperatures and winds fuel very destructive fires. The fast moving, early morning, wind driven Tubbs Fire in 2017 created a "no-warning" event in Sonoma County where many residents had little or no warning to evacuate.

Since the Tubbs Fire of 2017 the early warning and notification tools that provide information to the public in Sonoma County have vastly improved. This process included ways to increase, expand and improve on all public education messaging related to fires and disasters in the county. Some of public education steps include:

1. Red Flag Warnings. A Red Flag Warning is the highest level of alert for critical weather related to wildfires. The county and most cities post information on fire weather and Red Flag Warnings on their web sites. Most fire stations in the county display messages or actual red flags during red flag days.
   https://www.weather.gov/media/lmk/pdf/what_is_a_red_flag_warning.pdf

2. Fire Cameras. There are dozens of fire cameras now installed in the north bay that includes Sonoma County. The purpose of these cameras is to quickly discover, locate, and confirm a fires ignition. They assist first responders in providing response resources. This enhanced situational awareness will also assist with evacuations. These cameras are also available to be viewed by the public.
   https://www.alertwildfire.org

3. Alerts. Sonoma County as significantly increased their public education efforts for emergency alerts for the residents and visitors of the county. Examples of those alerts are: SoCoAlert, Nixle, NOAA weather radio. These alerts work with mobile and home phones. The NOAA weather radio works independent of telephones and provides weather and emergency alerts
   https://socoemergency.org/get-ready/sign-up/

4. Evacuation Zone Maps. The Sonoma County Sheriff's Office and the Emergency Management Department have developed zones within the unincorporated area of Sonoma County to help manage any emergency evacuation. The unincorporated county is broken down into many zones. When disaster strikes and evacuations are needed county officials will use these zone maps. The specific areas needed to be evacuated will be provided information through the emergency alerts and local media outlets. This project is in Sonoma County Zone #SON-3C1.
   https://socoemergency.org/get-ready/evacuation-map/

   The project developers are committed to provide a comprehensive evacuation plan for all occupants of the development. The components of the plan will allow for early evacuation of all occupants to lesson any impacts on neighboring properties. The guests, employees, and staff will

be made aware of the above early warning tools, specifically the emergency alerts. The plan will be further developed once the land is taken into trust and specific building plans and drawings are available. The plan will be completed prior to occupancy as required by the California Fire Code.

(See recommendation #10 on evacuations below)

California Building and Fire Code Requirements

With the increase in severity and intensity of wildfire activity across California over the past several years, fire researchers and data collection have revealed a great deal of information that was previously unknown. It is now widely known that embers, or fire brands, are the direct or indirect cause of many structure ignitions during a wildfire event. These embers are unburned pieces of vegetation or structural elements that are blown far in advance of the main fire front itself, igniting receptive fuel beds of dry vegetation, or structures themselves. We also know that historically, a future catastrophic event like the Tubbs Fire is somewhat predictable as to the direction it will travel. These types of "Foehn" wind events, known as Santa Ana Winds in Southern California, or Diablo Winds in Northern California, have always been pushed by high wind events that are moving from North to South, Northeast to Southwest, East to West, or some combination of these directional winds. Knowing this information allows us to address potential vulnerabilities on certain aspects of a structure, knowing some facades will face a higher impact of embers and other factors as the fire burns through. While there are no guarantees, it is possible to address these impacts by utilizing appropriate building materials, assembly details, and long-term maintenance to maximize the resistance of a structure from a potential ember ignition.

Wildfire resiliency and life safety issues are a high priority for the developers of this project. There are several wildfire codes and standards that will be applied to the construction of this development. They will include building materials themselves, but will also include landscaping, defensible space efforts, evacuation planning.

The entire project and in particular the exterior materials selected for this project will meet or exceed minimum standards required by California Building Code Chapter 7A, widely referred to as the "WUI Code," or Wildland Urban Interface Code. These requirements were first established in 2008 and continue to be updated and improved on with every adoption of the code by the State. All buildings will be required to have interior fire sprinklers. Fire sprinklers will contain any interior fire to the area of origin and reduce the risk of the fire spreading to other structures.

The exterior landscaping will be required to have a plan to be ignition resistant and have a maintenance component. A great deal of information is currently available regarding landscaping, and how decisions about plant selection and location can have direct impacts on how wildfires affect structures. This information has now been scientifically validated via research, in conjunction with observations from numerous wildfires over the past several years.

Another step toward ember resistance is now being widely accepted and has been recently adopted by the California State Board of Forestry. Flying embers are a significant cause of structure

fires during a wildfire incident. Research shows that a non-combustible zone measuring 0 – 5 feet surrounding a structure can significantly reduce the likelihood of ember ignitions. There should be no vegetation or landscaping in the non-combustible zone, greatly reducing the ability for embers to ignite a structure significantly increasing wildfire resiliency. The structural hardening and vegetation management efforts will help prevent the ignition of fires from flying embers inside and outside of the structures.

Riparian Corridor Fire Safety

As previously mentioned, Pruitt Creek runs through the project site. It starts in unincorporated Sonoma County northeast of the site and travels southwest into the town limits of Windsor. The creek is considered a riparian corridor. The Town of Windsor and the County of Sonoma have both developed wildfire fuel management plans for riparian corridors. The applicant will review these plans and other recommendations, regulations, and guidelines from state and federal agencies. The applicant will provide wildland fuels management and reduction as required in the riparian areas of the project.

The fuel reduction efforts will include annual and seasonal reduction of grass, shrubs, dead and dying plants and other overgrown vegetation. The efforts to reduce ground fuels will aid in preventing ground fires from spreading to other larger shrubs or trees. The separation of trees will reduce the tree to tree spread of fires in the riparian area. This work will aid in preventing fires form spreading to other areas of the project site.

Fire and Life Safety Recommendations for the Project

Wildland fires tend to be driven by slope, terrain, topography and fuel type and concentration. Weather, specifically winds, temperature, fuel moisture and humidity also play a significant factor in fire spread and intensity.

This project site is relatively flat with very little change in slope or topography. Other than the area of Pruitt Creek the entire site is essentially free of any dense brush, hardwoods, or timber fuels that could intensify a wildland fire. As stated earlier, any remaining vegetation will fall under the vegetation management requirements of the California Fire Code. A well-executed vegetation management plan greatly reduces the impact of a potential wildfire. A vegetation management plan will be developed as required by the fire code.

This report identifies areas of vulnerability from a wildfire to this project. While the project proposal meets the minimum wildfire resistant requirements, there are several recommendations that can be taken to further bolster the resiliency and life safety of this project from a wildfire event and other fires within the project's property and structures.

Recommendations

1. Ensure all construction materials meet the minimum or exceed the code requirements from Chapter 7A of the California Building Code, current edition.
2. The contractor must pay close attention to the installation of these materials, with special care taken to eliminate any openings at joints or other locations where embers could intrude and potentially ignite flammable material.
3. A long-term maintenance plan should be created with annual maintenance to ensure fire resistive materials and construction details are maintained at their highest level to reduce ember impacts. This maintenance plan should remain in place for the life of the structure.
4. Develop an overall landscape management and maintenance plan. This vegetation management plan (VMP) should comply with requirements of the local and state fire agencies.
5. Maintain a landscape plan immediately around the structure to reduce the number of flammable materials within the 0 – 5-foot zone immediately surrounding the base of the structure. If any plants are placed in this zone, the plants should be highly fire resilient, and carefully located to avoid being placed in front of any door or window openings around the perimeter of the structure.
6. Create a detailed defensible space plan for the site, with special attention to the downhill slope at the rear of the structure. Grass should be kept mowed, ladder fuels on trees should be removed, and any shrubs should be spaced with appropriate distances to break the fuel continuity of the vegetation.
7. Develop a riparian corridor vegetation management plan. Use the plans developed by the Town of Windsor and Sonoma County as a guide for the plan. Sonoma County, Permit Sonoma 8-2-3 Guidelines for Fire Fuel Management in Riparian Corridors (July 2020), https://permitsonoma.org/policiesandprocedures/8-2-3guidelinesforfirefuelmanagementinripariancorridors
   Town of Windsor Riparian Corridor Wildlife Fuel Management Plan (June 2020), https://www.townofwindsor.com/DocumentCenter/View/24987/Riparian-Corridor-Wildfire-Fuel-Management-Plan---Final
8. A robust construction fire safety plan should be developed for use during construction.
9. Provide all staff and employees on-going fire safety and prevention training as stated in the California Fire Code.
10. A comprehensive evacuation plan is critical for the life safety of customers and the staff of this project. The project was provided evacuation planning recommendations by CAS Safety Consulting. I support the recommendations in their document.

Sincerely,

Vern Losh
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