



WILDFIRE RISK ASSESSMENT

PREPARED FOR JEREMY RANCH OWNERS ASSOCIATION, PARK CITY, UT

CREATED BY WILDWOOD CONSULTANTS

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PROJECT AREA OVERVIEW



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EXECUTIVE SUMMARY

The primary goal of the study is to provide the Jeremy Ranch Owners Association (JROA) and its members with a template from which cost estimates, wildfire fuel mitigation and/or risk reduction project priorities can be modeled.

This snapshot represents a limited overview of the community's current wildland fire risk and its susceptibility to a catastrophic wildfire.

Although the information given will provide a cornerstone to develop a community-wide comprehensive wildfire risk reduction strategy, absolute protection to life and property in the urban-rural interface can never be guaranteed. Ultimately, the individual property owner is responsible for their own wildfire preparedness. For a wildfire risk reduction effort to be effective in Jeremy Ranch, the program must include community support and engagement. This is not a "how-to" narrative, but rather a description of steps, conditions, and situations to consider when implementing a fuel treatment and public education campaign.

Jeremy Ranch Owners Association's governed and managed open space property is in Western Summit County, and is situated on a combined estimated 0.60 square mile parcel located north of Interstate 80. The JROA property is classified as an Urban-Rural Interface consisting of areas where structures adjoin wildland but retain clear delineation between the structures and the undeveloped land. See **PROJECT AREA OVERVIEW**

The community consists of five designated plots within the general residential development. It is bordered by, and shares common roadways to the west with three other named residential communities. It currently has a mixture of approximately 630 high value single-family homes with a few remaining undeveloped private lots, Summit County owned lots and Summit Water District owned lots. Portions of this community are either surrounded by, or adjoin a well established golf course. This transition provides clear fire protection lines of demarcation between the Wildland Urban Interface (WUI) and the community. There are five main points of emergency egress leading out of the area to the south toward Interstate 80, and one to the north via East Canyon. Two other egress routes exist, one into Red Hawk Estates to the east, and one to the west through The Woods of Parleys Lane. These two routes however,

are gated and may hinder a time critical exit. see **EXHIBIT 1**

Values / At-risk Assets

Jeremy Ranch is listed in the Federal Register for *Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire*. The setting contains a high density of large homes, two to three houses per acre, which because of their proximity to each other, pose a significant impact to fire suppression difficulty. Fire propagates during a high wind fire event through radiant heat and the broadcasting of embers. Grouping homes in close vicinity increases the probability of house to house ignitions. The community's water shed, downstream municipal water and fishery resources are at risk from natural post-fire runoff in addition to toxic wastewater escape from structure fire suppression. There is a high potential for economic loss to the community and adjoining businesses from a decline in property values and the challenges of a multi-year post-fire rehabilitation.

Examples of Recent Jeremy Ranch Fire Activity:

- In 2017 lightning ignited a fire on the hill above Jeremy Ranch Elementary by the Red Hawk Trail. The fire was quickly contained, it burned about one acre.
- In 2000 a wildfire was sparked by illegal fireworks. It occurred on the hillside behind Daybreaker Drive and took a substantial amount of resources to suppress.
- In 1988 a 5,600 acre fire broke out from an illegal campfire in the Mountain Dell fork of Parleys Canyon. It quickly spread north into Emigration Canyon and began to work its way east in the direction of Jeremy Ranch before authorities were able to contain it.

DISCLAIMER

While the author has made every effort to ensure the accuracy and reliability of the information contained in this report, WildWood Consultants does not accept any responsibility other than providing information for a fundamental examination of JROA's current condition of the surrounding wildland fire fuel and ignition potential of the community. WildWood Consultants, its officers, employees and agents do not accept any liability, however arising, including for negligence, for any loss, injury or damage resulting from the use of, or reliance upon, the information contained in this document.

OBJECTIVES

- Bring stakeholders together and collaborate on how best to address the challenges of reducing the probability of a significant fire event.
- Minimize property loss while increasing life safety for both residents and first responders.
- Evaluate JROA's vulnerability for the likelihood of a catastrophic wildfire.
- Increase the amount of wildfire resilient acreage.
- Recommend and prioritize areas for treatment options.
- Encourage adopting a home hardening strategy and develop a public awareness campaign.
- Provide essential information for the further development of an in-depth emergency management plan, incorporating factors such as: emergency evacuation and notification guidelines, complete a Community Wildfire Protection Plan (CWPP), home ignition assessments, fire and defensible awareness outreach program and an annual Firewise community event.
- Offer suggestions for amending governing documents to reflect today's accepted best practices for mitigating home wildland fire risk.

FINDINGS

METHODOLOGY

Field observations were made throughout the following locations:

- Plat 4 & 5 along the northern and eastern border and extending through the adjacent Summit County owned parcel BN-A-3-OS-X.
- The JROA open-space parcel (JR-11) between plats 1 & 2.
- The JROA open-space parcel (SS-4-E) bordered to the south by the Jeremy Woods Condos and to the north by the Moose Hollow HOA parcel (MOOSE-OS-AM)

In all the research areas, fuel type, slope angle and aspect were recorded. Area structures at risk were evaluated and put into threat categories.

The remainder of open space consists of golf fairways, greens and riparian zones. These settings provide excellent resistance from advancing ground fire and provide a tactical position for fire suppression personnel and equipment. Field observations were not performed in these areas, however, they were surveyed using aerial photographic imagery.

Research for fire risk, predicted fire behavior and difficulty in suppression was accomplished using geospatial mapping provided by the Utah Department of Natural Resources WILDFIRE RISK ASSESSMENT PORTAL. Consultation was carried out with Wildland Fire Specialists from the U.S. Forest Service Wasatch-Cache Nation Forest, and Utah Division of Forestry, Fire and State lands.

RESULTS

The predominant fuel type within the JROA open-space parcels is dry climate shrub and sage brush with occasional and isolated populations of Gambel

Oak, mainly in the higher elevations. Dry climate shrub is classified as a high surface fuel with maximum height of 6 ft, **EXHIBIT 2**. Even though this type has a very high fuel load, its complex arrangement is highly fire adapted and resilient with the ability to survive and regenerate following a fire.

A fire in this area is considered a surface low intensity fire with an expected moderate (20 ft / min) to high (40 ft / min) rate of spread. Anticipated flame length is 8 to 12 ft with lengths reaching 12 to 20 ft in extreme fire weather conditions. The basis for these components are predicted using average historical local fire weather data. Suppression difficulty, see **EXHIBIT 3**, is calculated using slope and fuel type characteristics. These factors impact the ability of fire personnel to gain access with fire apparatus and the degree of fireline production. Based on the National Fireline Handbook and an average slope of 10-40%, the projected rate of production is classified as slow.

The JROA parcel and its surrounding open space occupy a variety of aspects. Slope angle is level 0% / 0° to moderate 55% / 30°. The open-space parcel north and east of plat 5 reaches slope angles up to 125% / 50° in the upper elevation. A fire's rate of spread is dependent mainly on slope angle and/or wind velocity. The bulk of homes within the surveyed area are located at the base of the slope and will be minimally impacted by slope angle.

There are two main locations identified which are contiguous with an external fire threat. Homes located in Plat 5 along the north side of Day Breaker Drive, with backyards bordering the open space, will likely be threatened by a wind-driven, cross-slope or slow-moving fire advancing down from above, see **EXHIBIT 4**. There is substantial

defensible space to the rear of these homes created by green belts and fire-resistant landscaping. Because the predicted fire intensity is low to moderate along the corridor, the resulting threat to adjacent structures is considered low. No recommendations are given for fuel reduction in this asset protection zone. Evidence of uncontrolled channelled high volume rain water run off exists. This is indicative of the probability that homes along this area may be impacted by post fire debris flows resulting in severe damage. Further hydrology and soil studies are recommended so possible preventative safeguards can be addressed.

Homes located in Plat 1 along West Saddleback Rd Trail have a low to moderate threat potential due to being situated on the crest of the open space parcel below, see **EXHIBIT 5**. However, there are areas along the trail where Choke Cherry brush has grown up to and encroaches into some backyards which may increase risk, see **EXHIBIT 6**. In addition to providing a fuel break for these homes, the West Saddleback Rd Trail establishes a strategic point to which fire suppression efforts can be taken. A fire's rate of spread and intensity increases as topography increases in steepness. Fires spreads best uphill. Statistically, fires that start at the base of a slope become the largest fires. Once these fires gain momentum through the availability of fuel and preheating, the fire moves upward, enabling them to reach a greater size. e.g, an increase in slope angel from 20% to 40% will double the flame height and will quadruple the rate of spread.

Although there appears to be a low probability of an outside wildfire impacting the JROA's property, the likelihood of house to house ignition in the event of an isolated structure or backyard fire, is high. Under extreme fire and weather conditions or *red flag warning*, where humidity is low in conjunction with high winds, the proximity of homes elevates the risk of radiant heat and embers igniting an

adjacent structure. This closeness, together with the contiguous landscaped vegetation, offers continuity of fuel and ultimately escalates the chance of a catastrophic large loss fire event. There are numerous homes where vegetation has been allowed to grow up to the combustible siding of the home, see **EXHIBIT 7**. The connecting of homes through vegetation overlap is the *Strategic Management Zone* where fuel reduction efforts need to be focused.

KEY ACTION POINTS

- Educate homeowners to recognize their responsibility for both protecting their personal property and protecting their neighbors by reducing the likelihood of a multi-structural fire incident.
- Encourage neighbors to work with one another efficiently and effectively.
- Identify barriers to homeowner participation and engage all segments of the community.
- Coordinate independent home wildfire risk assessments through commercial providers or local fire agencies.
- Develop a community information campaign and have publications available.
- Reach out and collaborate with Park City Fire District to develop an emergency evacuation plan and mark primary routes.
- Ensure emergency access through adjacent gated communities.
- Record any out of pocket expenses and time associated with wildfire risk reduction. This shows proactive in-kind contributions and is a factor for the consideration of any state or federal grant money which might be allocated to JROA in the future.

FUEL TREATMENT PRIORITIES

The following are accepted and effective practices for reducing a home's ignition potential. Each home is unique to this risk and a customized stand alone wildfire risk assessment is essential for completing a comprehensive home hardening plan. These recommendations accomplish several immediate objectives: they increase the probability of disrupting an advancing wildfire, they establish intra-neighborhood fire control lines and they straighten tactical advantage and firefighter safety during suppression efforts.

- Remove or greatly reduce the amount of landscape vegetation which comes in direct contact to homes and wooden fences.
- Limb up larger trees 6 ft from the ground. Smaller trees limb no more than 1/3 of it's height.
- Break the continuity of fuel by increasing the spacing between trees and shrubs.
- Avoid using organic mulch along the edge of combustible siding, stairs and under decks. Decorative gravel, concrete or stone is preferable in these areas.
- Remove dead, dry vegetation.

- Along the West Saddleback Rd. Trail, where the Choke Cherry brush has grown up to, and is encroaching into backyards, cut back 25 ft. Relocate cut material to an area where it can be chipped.

COST ESTIMATE

Expense to the JROA is minimal and should only consist of costs associated with community meetings, events and printed information. All detailed information pertaining to the "how to" is available at no charge through Utah Division of Forestry, Fire and State Lands or The Park City Fire District. Chipping services are provided at no cost through the Park City Fire District as well. The small amount of fuel reduction recommended along West Saddleback Rd. Trail can be accomplished through a community project or through a landscaping contractor.

Home hardening tasks are homeowner responsibilities and can generally be accomplished at no cost, unless they choose to contract with a landscaping company.

GUIDING DOCUMENTS

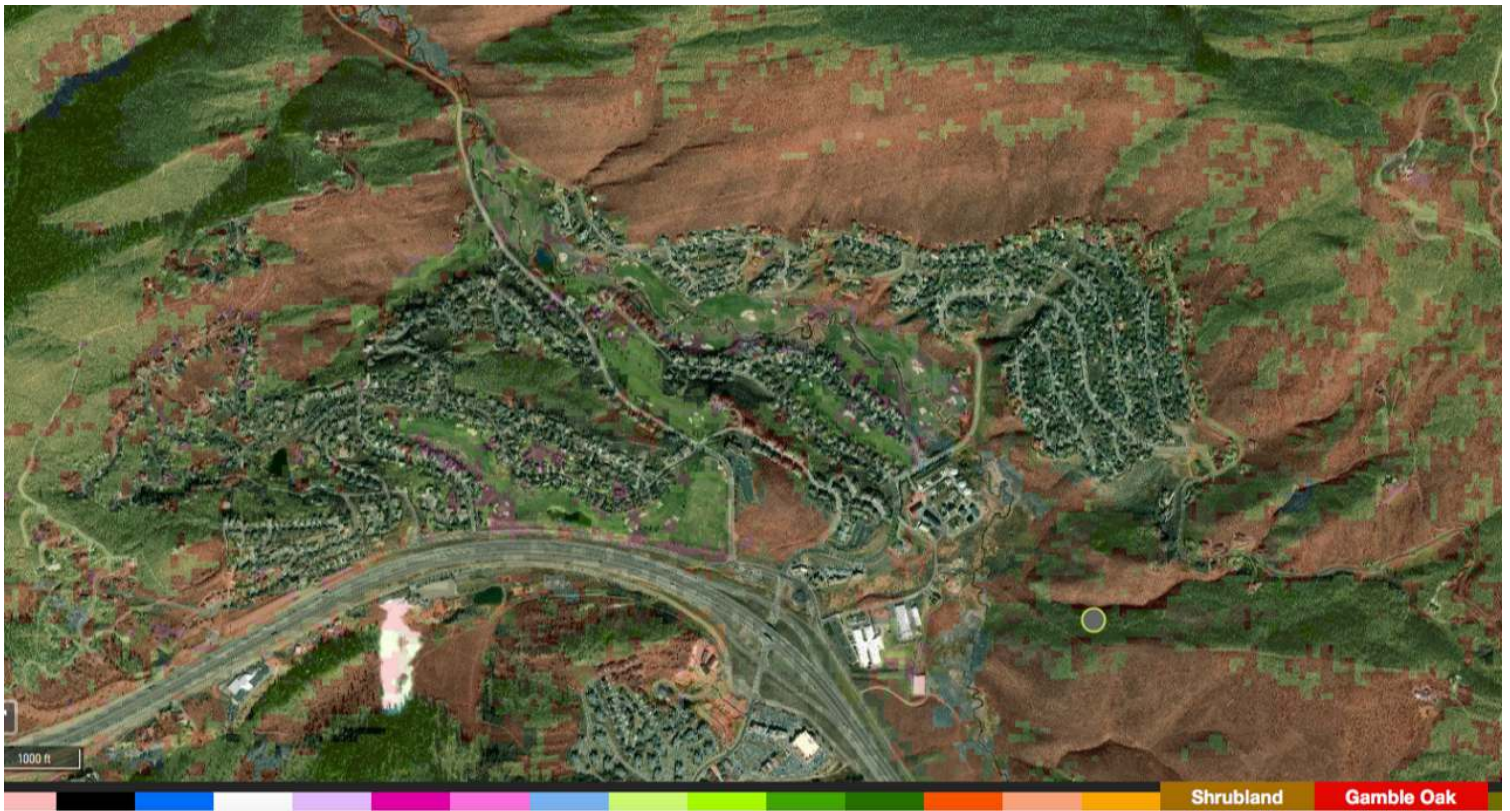
There are two main actions that guide federal and state efforts to strengthen public participation in wildfire management and identify the challenges we all face. The first is the Federal Healthy Forest Restoration Act signed into law in 2003. The second is a document published by Utah State Governors office, Utah's Catastrophic Wildfire Reduction Strategy. These guidelines are worth reviewing for a better global understanding on how to embrace and develop a community fire management plan.

EXHIBIT 1 EMERGENCY EGRESS POINT



Exit route through The Woods At Parleys is blocked, even though *No Parking Anytime* is clearly marked.

EXHIBIT 2 **VEGETATION TYPE AND DISTRIBUTION**



**SHRUB
SAGE BRUSH
GAMBEL OAK**

EXHIBIT 3 SUPPRESSION DIFFICULTY



THE SUPPRESSION DIFFICULTY DATA REFLECTS THE DIFFICULTY OR RELATIVE COST TO SUPPRESS A FIRE GIVEN THE TERRAIN AND VEGETATION CONDITIONS. PRODUCTION RATE IS AN ESTIMATED VALUE WHICH PREDICTS THE RATE OF FIRE LINE CONSTRUCTION.

EXHIBIT 4 NORTH AND EAST OF DAYBREAKER DRIVE



EXHIBIT 5 WEST SADDLEBACK DRIVE TRAIL



EXHIBIT 6 CHOKES CHERRY BRUSH TREATMENT



EXHIBIT 7 **VEGETATION IN CONTACT WITH HOME**

