

Squilchuck Valley Area Community Wildfire Protection Plan



Reducing Wildfire Danger Through Collaboration and Knowledge

Chelan County, Washington

Amendment No. 1

May, 2015



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Community Wildfire Protection Plan
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Amendments to 2005 Squilchuck Valley Area CWPP

2. Planning Area

General Description of the Area

(This subsection is hereby amended as follows).

The Squilchuck Road is a main artery to the areas of Wenatchee Heights, Pitcher Canyon, Halverson Canyon, Forest Ridge subdivision, National Forest lands, and the Mission Ridge ski area (see Squilchuck CWPP area map 1, page 3). Squilchuck Road extends from Mission Street approximately (8) eight miles southwest of Wenatchee to Mission Ridge Road, and then another four miles to the Mission Ridge ski area. Squilchuck Road is the primary egress from the upper reaches of the valley. Secondary, limited, egress from the upper reaches of the valley is possible via the paved Stemilt Loop road on the southeast side of the valley. Limited egress means that residents, particularly in subdivisions may be difficult to evacuate in the event of a fast moving wild fire.

General Description of Existing Subdivisions

(This entire subsection is replaced with the concept of six “Communities” and three “Special Areas” within the current CWPP boundaries as described below under Article 6. Landowner Committees).

4. Assessment

(This section is amended with additions or corrections to original subsections, and the addition of some new sections, as noted below)

Existing Information *(amended)*

The most current map of insects and pathogen occurrence in the watershed, and in a surrounding 1-mile buffer zone, was obtained from Roy Magelssen, US Forest Service, Okanogan-Wenatchee National Forest. Updated fire occurrence data and other data used for the fire risk assessment (see below) were obtained from Brian Maier, US Forest Service, Okanogan-Wenatchee National Forest.

Insect & Disease Occurrence *(new section)*

The occurrence of insects and disease pathogens, and associated tree mortality or morbidity, is widespread in Squilchuck forests (Figure 1, page 4). Although insects and disease occurrence is widespread, the severity of the infestations, hence the creation of woody fuels, is not severe.

Fire Risk Assessment *(new section)*

A fire risk assessment of the Squilchuck watershed was done by Brian Maier (brianmaier@fs.fed.us), Fire Analyst with the US Forest Service in Wenatchee, to quantify and locate levels of fire risk in the watershed. Additional comments and suggestions were given by Dr. James Agee, Emeritus Professor of fire ecology at the University of Washington. “Risk” here is defined as the combination of the likelihood of fire occurring, it’s probable intensity, and the value of affected resources. For example, areas with high chances of fire and potentially high resource loss (fire severity, value of homes etc.) are at high risk and of high concern, whereas areas of low chance and value are at low risk and low priority for action. Hence, the assessment is valuable for targeting and planning fuel reduction and other projects intended to reduce fire behavior and

property loss to residents in the watershed. The following is a condensed version of the risk assessment that highlights and interprets Maier's results.

Methods

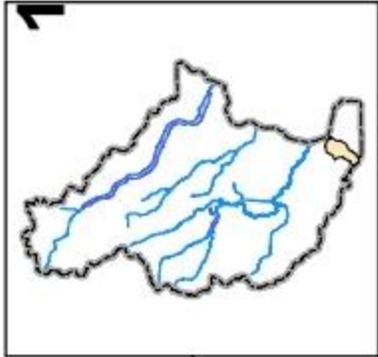
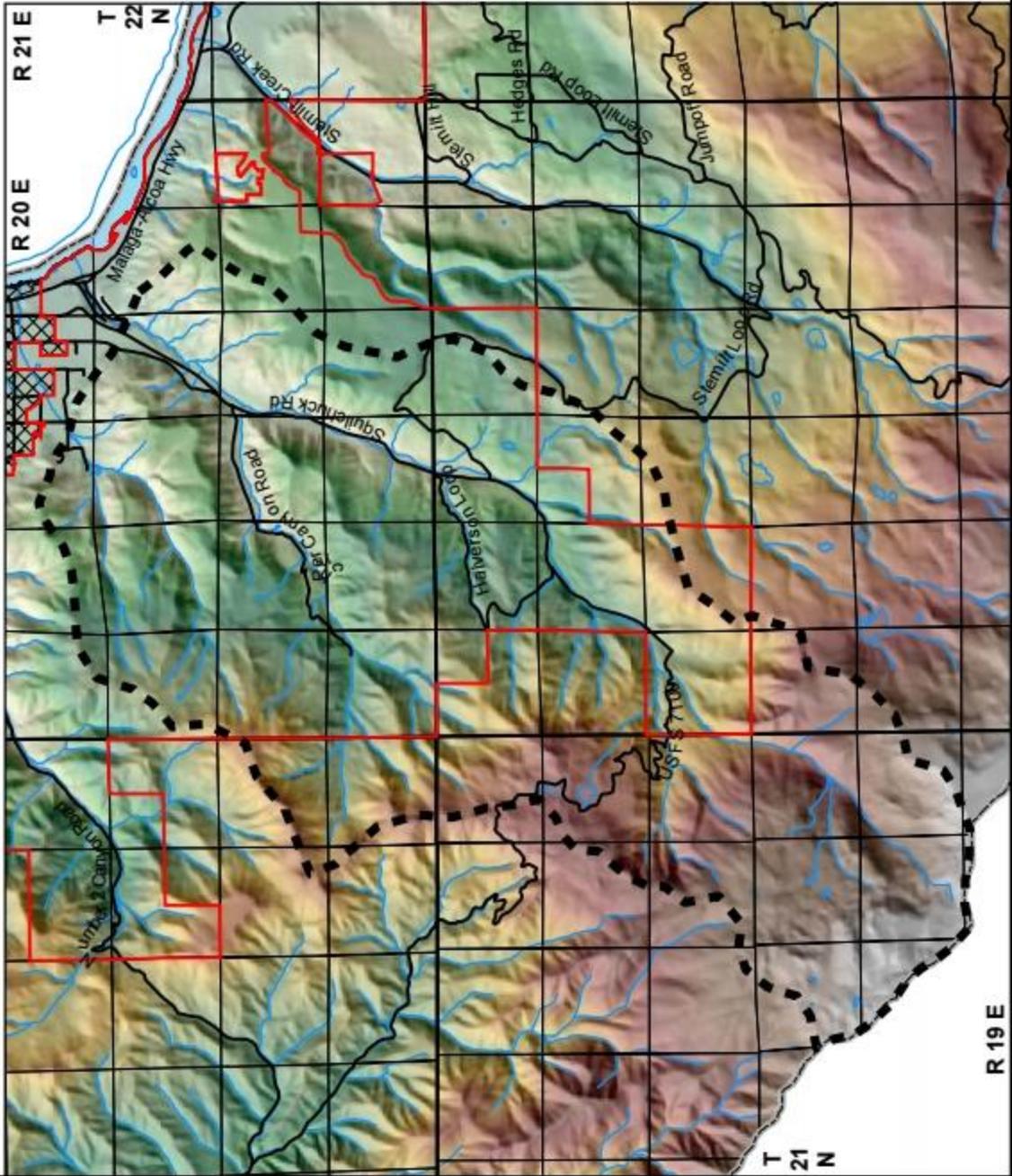
Methods parallel those used in recent wildfire risk assessments compiled by the Western Wildland Environmental Threat Assessment Center, Prineville, Oregon. The four main components of risk in this context are: burn probability, fire intensity, location of highly valued resources, and a "response function" that measures the effectiveness of fire suppression efforts. For the purposes of this initial assessment residential structures were the only highly-valued identified resource for which a response function was developed. Additional response metrics could be developed by the community for a more complete landscape scale assessment.

The basic process was to collect data from local, regional, and national fire management programs to model fire behavior and risk to residential structures in the watershed and within a 1-mile buffer outside the watershed. Examples of data collected are: vegetation types, fuels levels, fuel moistures during fire season, wind direction and speed during typical fire weather and residential structure data.

Results & Discussion

Recent Fires.--Most fires started between 1992-2011 were in the upper half of the watershed on Forest Service (FS) lands on the southwest side of the drainage, and on the mix of WA State (DNR, Dept. Fish and Wildlife) and private lands on the southeast side of the watershed and the adjacent Stemilt Creek watershed (Figure 2, page 5). On FS lands, most fires started from lightning, campfires, and "miscellaneous" sources. (Miscellaneous is reported as such and cannot be broken down). On State and private lands fire starts were a mix of lightning, campfires, miscellaneous, and debris burning. Most fires were less than 1 acre, whereas fires caused by debris burning averaged 28 acres (Table 1, page 7). Based simply on the proximity of known fire starts, structures adjacent to Squilchuck State Park (e.g. Forest Ridge) and immediately down-valley are expected to have a higher probability of encountering wildfires than structures further down the valley.

Squilchuck Community Wildfire Protection Planning Area



Legend

- County boundary
- Fire Dist. No. 1
- Squilchuck CWP P area
- City of Wenatchee
- Roads
- Streams



Note: CWP P boundary created by WDNR using topography
 Hillshade generated using WDNR 30m DEM
 All other data provided by Chelan County GIS
 Map by Chelan County Conservation District
 CCCD does not warrant, guarantee, or accept any liability for the accuracy or completeness of any data. Map prepared for presentation purposes only.

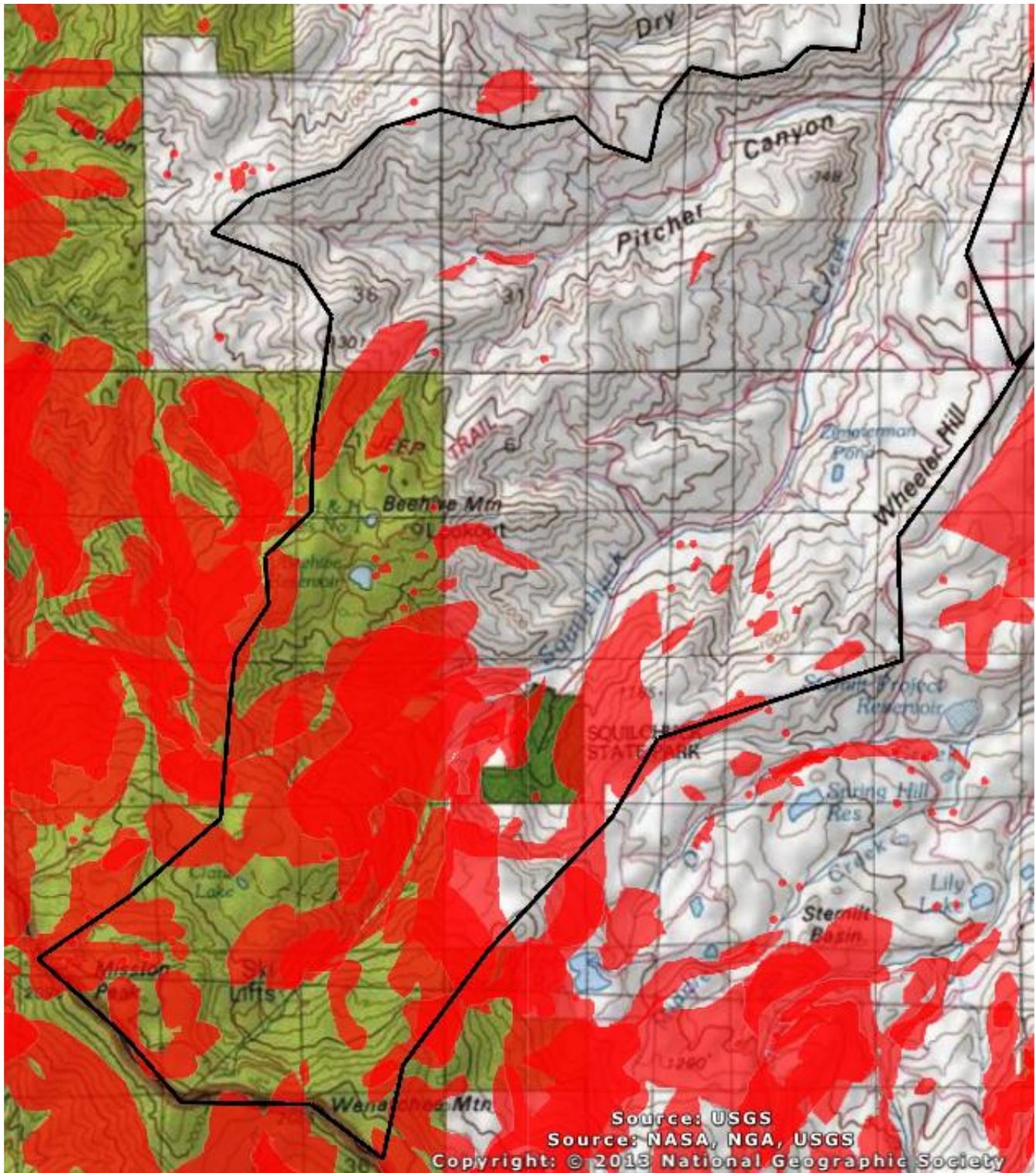
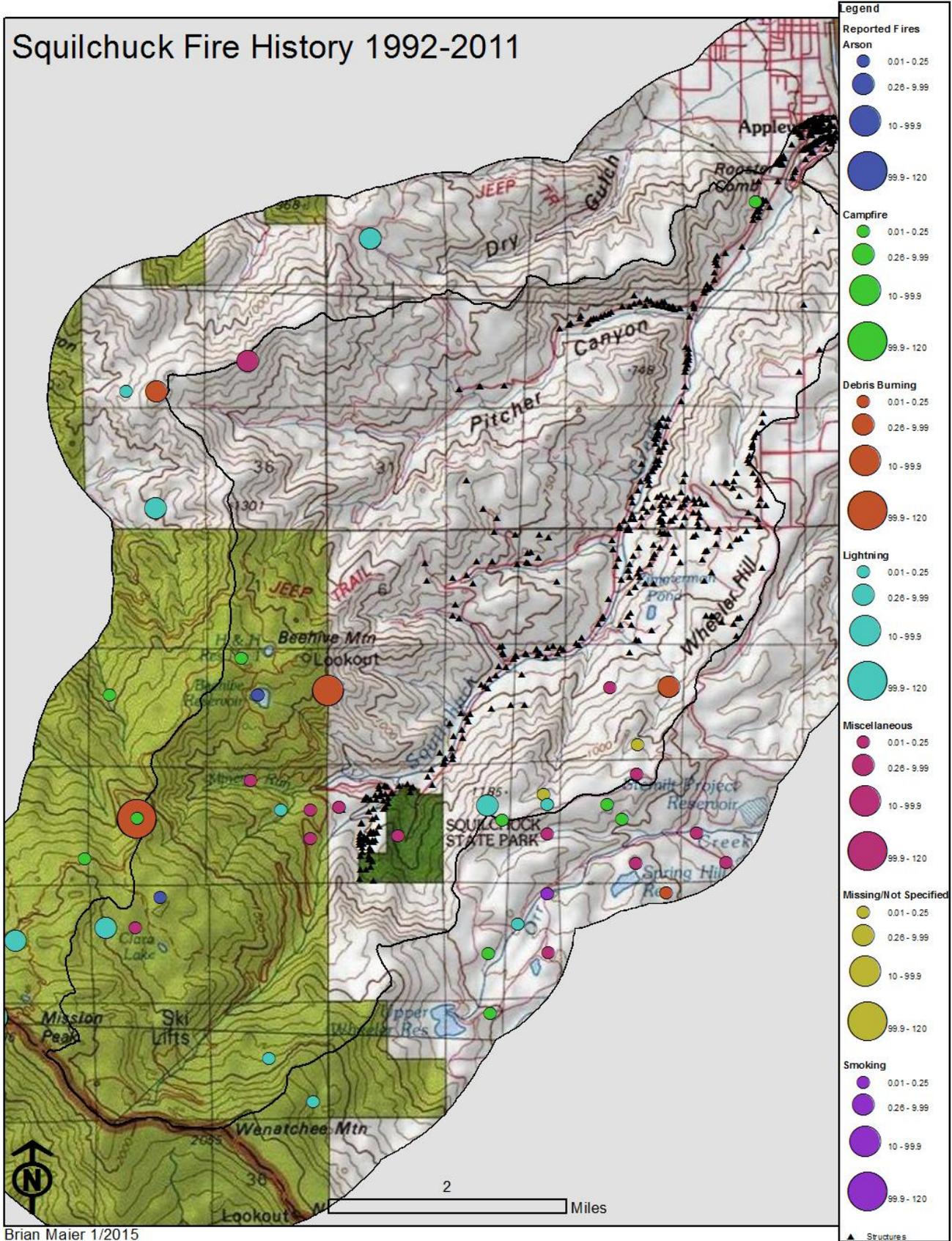


Figure 1. Map of active insect and disease occurrence from aerial surveys in the Squilchuck drainage, and adjacent area, from 2004 to 2014. The large red area on Wheeler Hill (mid right side) is an artifact and represents unsurveyed areas, not insect and disease occurrence. The black line is approximate boundary of Squilchuck drainage. Forest Service lands are shown in green. Source: Roy Magelssen, US Forest Service, Okanogan-Wenatchee National Forest.



Brian Maier 1/2015

Figure 2. Location and size of fire starts in the Squilchuck watershed and adjacent 1-mile buffer from 1992-2011. Source: Okanogan-Wenatchee National Forest, 2015.

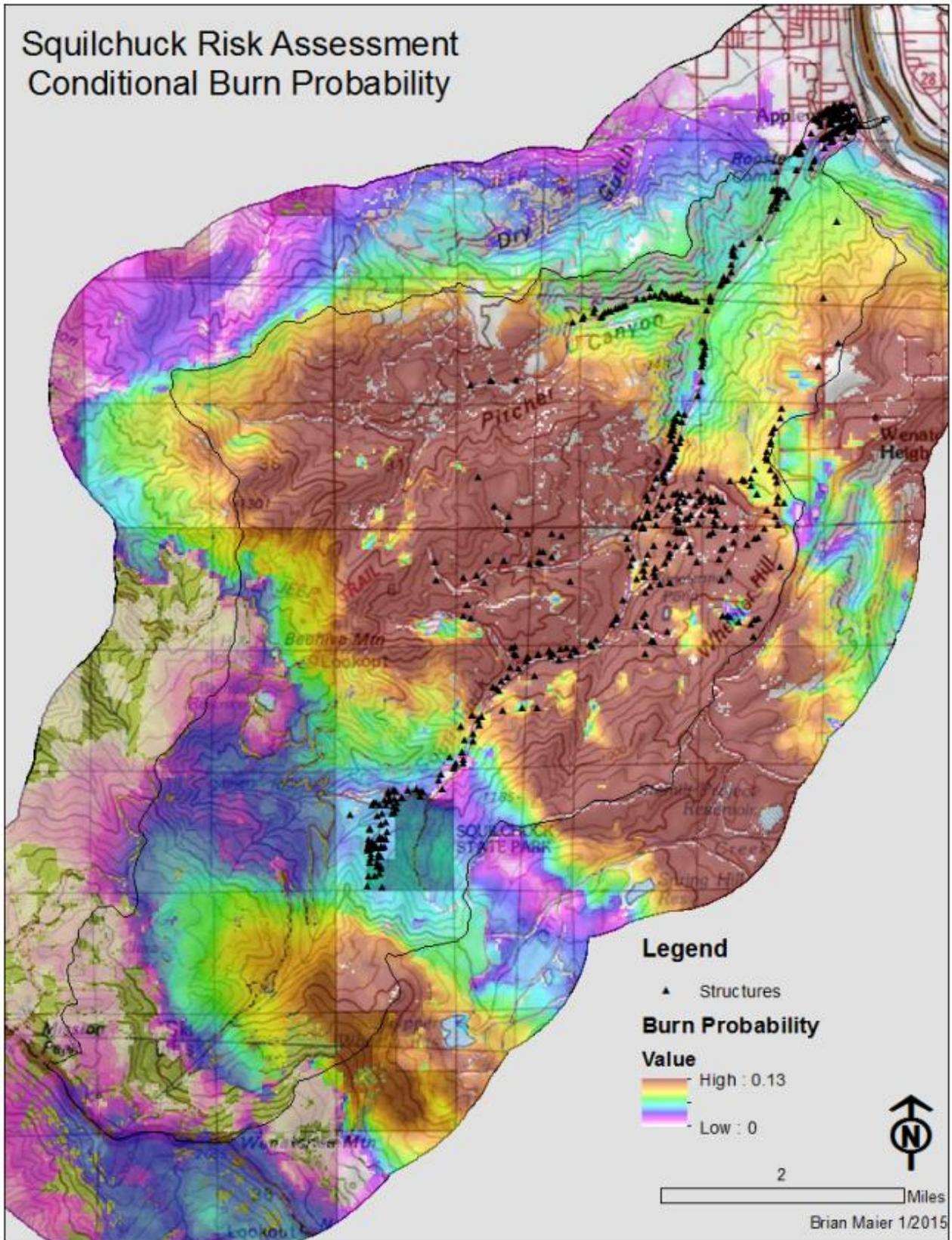


Figure 3. Burn probability modeled from 1000 random ignitions under existing fuel conditions and severe fire weather.

Table 1. Number and average size of fire starts in the Squilchuck watershed and adjacent 1-mile buffer from 1992-2011. Source: Okanogan-Wenatchee National Forest, 2015.

Cause	Count	Average size (acres)
Arson	2	0.1
Campfire	11	0.1
Debris burning	6	28.0
Lightning	13	1.5
Miscellaneous	14	0.3
Missing/Not specified	5	0.1
Smoking	1	0.1
Total	52	3.7

Burn Probability.--Burn probability, as modeled, is a measure of the chance that a wildfire will burn a selected point within eight hours of ignition during extreme fire danger, under dominant wind patterns and fuel characteristics during the fire season (Figure 3, page 6). The probability is calculated as the proportion of times the location (map pixel) burned when fire was simulated in the model from 1000 randomly located fire starts of any kind. It can be interpreted as a measure of fire spread after a fire gets started.

Given the random location of fire starts in the modeling process, estimated burn probabilities are relatively highest (brown and yellow) in the center of the watershed and in the upper watershed north of Squilchuck State Park and west of Wheeler Reservoir (Figure 3, page 6). For the center of the watershed, it is likely that the dominant grass and shrub fuels and open wind-swept terrain allow fires that start in the area to burn rapidly and widely. Recall the rapid fire spread of the 2014 Carlton Complex fires in similar steep grassland-shrub terrain. Fires starting in heavier timber up the watershed spread relatively less rapidly and have a higher chance of immediate suppression than fires in grass-shrub.

That result requires some explanation. Despite that high burn probability in the center of the watershed from the random-fire model runs, we already have seen that fire starts have not been random and have mainly occurred up valley. However, the calculated probability is useful to give an idea of the potentially high rate of fire spread in the center portion of the watershed if a fire occurs.

Probably of more concern is the relatively high fire probability (burn spread) in the upper watershed south of the State Park where high levels of woody forest fuels produce relatively high-intensity fires (see next section). Couple that with an historically high number of fire starts indicates a potentially important area for fuels management and other risk reduction projects. Finally, note that the burn probabilities are relative within the drainage, and encompass a relatively low range of values less than or equal to 0.13 (i.e., 13% chance of fire).

The burn probability simulations (Figure 3, page 6), which simulated fires starting anywhere in the drainage, can also be used to estimate how fires that start on any particular ownership are likely to affect other ownerships (Table 2, page 8). Fires starting on private lands (highlighted yellow row in table) are predicted to be the overwhelmingly biggest source of fire burning private lands in the drainage, as well as being the largest source of fire burning all other ownerships. In contrast, fires starting on state lands might burned only 10% of the private lands, and fires starting on Forest Service lands was predicted to burn only about 7% of the private lands in the basin. The intensity of those burns, however, was not estimated by this analysis.

One could estimate that intensity and potential structural loss from the next two analyses described below. The main point to consider is that fire prevention on private lands is critical for fire security across the drainage.

Table 2: The percentage area burned on a given ownership from fires started on adjacent ownerships. For example 7% of the acres burned on Private land during the simulations were from fires originating on USFS lands.

	Percentage Acres Burned				
Source of fire	BLM	Private	State	State Parks	Forest Service
BLM	12%	1%	0%	0%	0%
Private	86%	82%	65%	80%	37%
State	2%	10%	27%	0%	2%
State Parks	0%	0%	1%	10%	0%
Forest Service	0%	7%	7%	10%	61%

Fire Intensity.—Potential fire intensity was estimated from model runs based on the flame length that would occur if there is a fire at the location. A basic underlying factor in flame length is the amount and size of fuels on the ground and in the forest canopy: open forests have lower canopy (trees not dense) and ground fuel (logs and small branches) loads than dense closed forests. (Figure 4, page 10) shows that the most severe fires (red in map) would occur in the upper valley.

Conditional Net Value Change.—Conditional Net Value Change is the change in net value (i.e., residential structure loss) given that a fire occurs (i.e., “conditional” on fire occurring (Figure 5, page 11). This is the product of: the probability of a given fire intensity times the fire suppression response function (Table3, page 9). The response function assigns a number on the difficulty of fire suppression. As with the flame length estimates, the projected net loss of structures is highest (red in map) in the vicinity of Squilchuck State Park, and somewhat lower north (down-stream) of the Park.

These net value changes are likely conservative (low) given that the modeling process treated combustibility of structures like trees in a forest; i.e., the structures burn when the fire front reaches them. In fact, structures are very likely to burn in advance of the fire front as a result of embers blown in advance of the fire front (James Agee, Univ. Washington). Hence, when considering the risk to structures, the potential fire behavior in upwind areas needs to be considered, and appropriate risk reduction projects initiated in that area. Forest Ridge is a good example of the need to treat the much larger neighborhood to reduce risk of structural loss.

Table 3. Response function values by flame length class. Values of the Response Function are the midpoint (+/- 20%) of the relative net value change (percent of initial value) for each class. For example, for flame lengths greater than 8 feet 60-100% of residential structures would be lost.

Flame Length (ft)	Fire Suppression Effectiveness	Response Function (% average loss of residential structures)
0 to 4	Fire can be attacked at the head or flanks by persons with hand tools	-10
4 to 8	Fire too intense for direct attack at the head by persons using hand tools; equipment such as dozers, pumpers, and aircraft may be effective	-40
Greater than 8	Fires present serious control problems, control efforts at the head likely will be ineffective	-80

Structure Exposure Analysis.--The structure exposure analysis (figure 6, page 12) is the spatial coincidence of a modeled wildfire probability (x axis, Figure 3, page 6) and fire intensity (x- axis, Figure 4, page 10) with the location (street name) of a highly valued resource, in this case residential structures. Some streets/structures had zero conditional burn probability and are not shown: Depot, Duke, Judkins, Malaga Alcoa, Marker, Mission, Simmons, and Wenatchee.

Three basic risk groups, or neighborhoods, of structures were identified. Structures in and around Squilchuck State Park had a low modeled fire probability but high fire intensity. However, as noted before, the probability of a fire occurring based on historical fire starts is high, which might shift the group to the right in the figure into a higher risk area. Mid-watershed streets that previously were shown to have high modeled fire probability and moderate fire intensity are a second group in the lower middle and right part of the figure. As with the first group, probability of a fire occurring based on historical fire starts might shift this mid-watershed group left into a less risky zone. The rest of the streets coupled low fire probabilities with low fire intensities (lower left in figure 6, page 12).

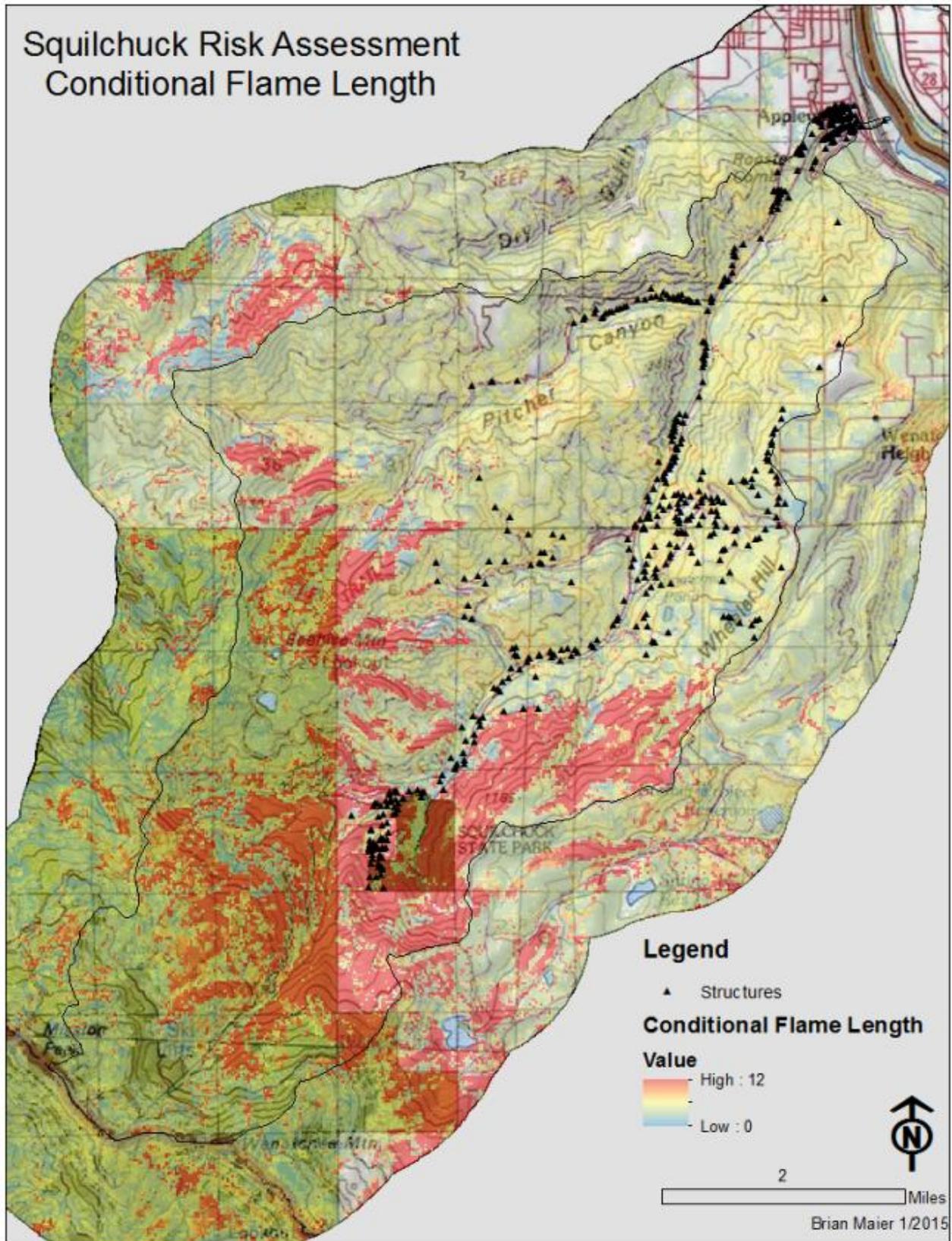


Figure 4. Estimated flame length (feet) as a measure of fire severity, given a fire at the location.

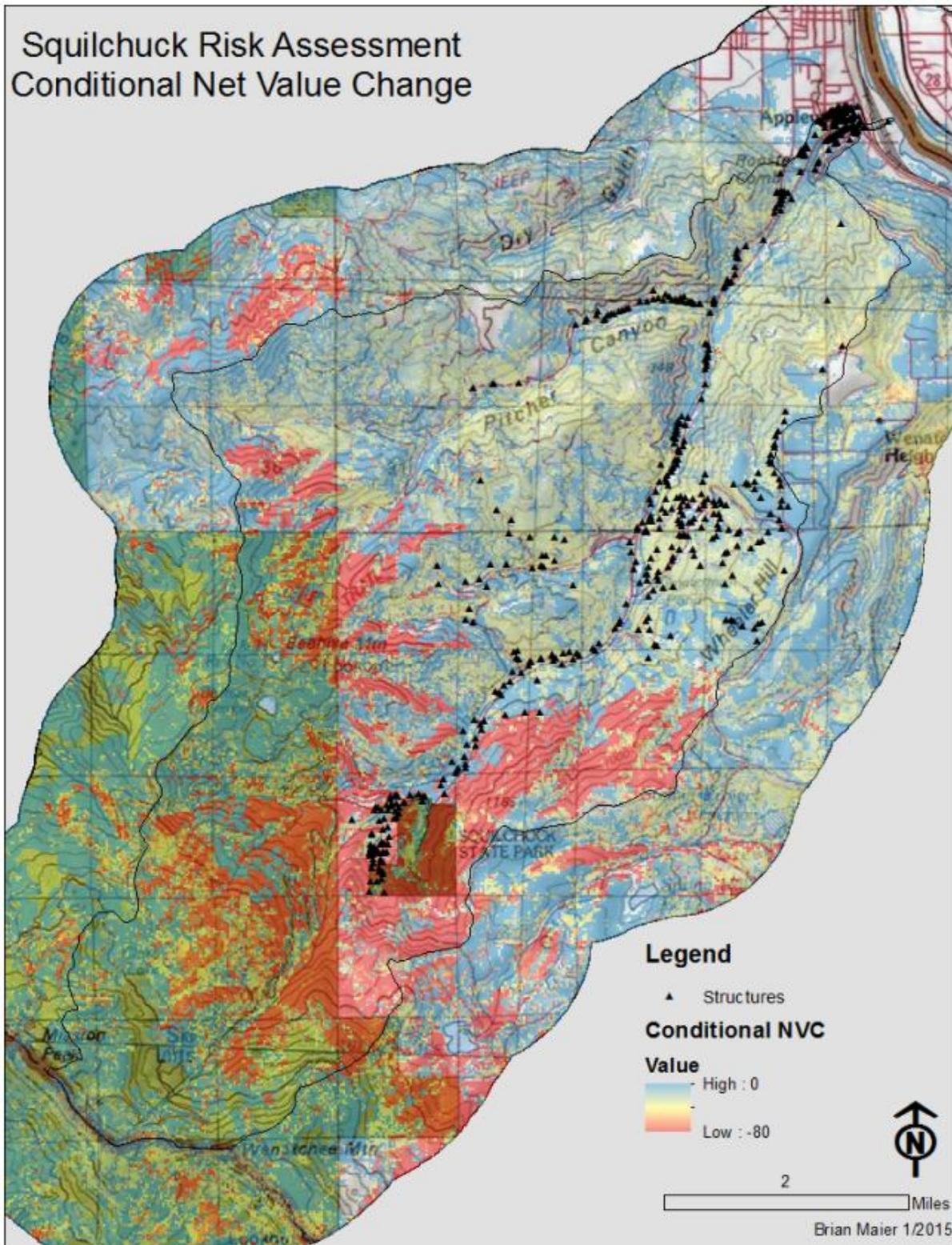


Figure 5. Estimated percentage loss of residential structures (conditional net value change) given a fire occurring. (Note in legend that “high” refers to zero loss and a large loss is interpreted as “low”.)

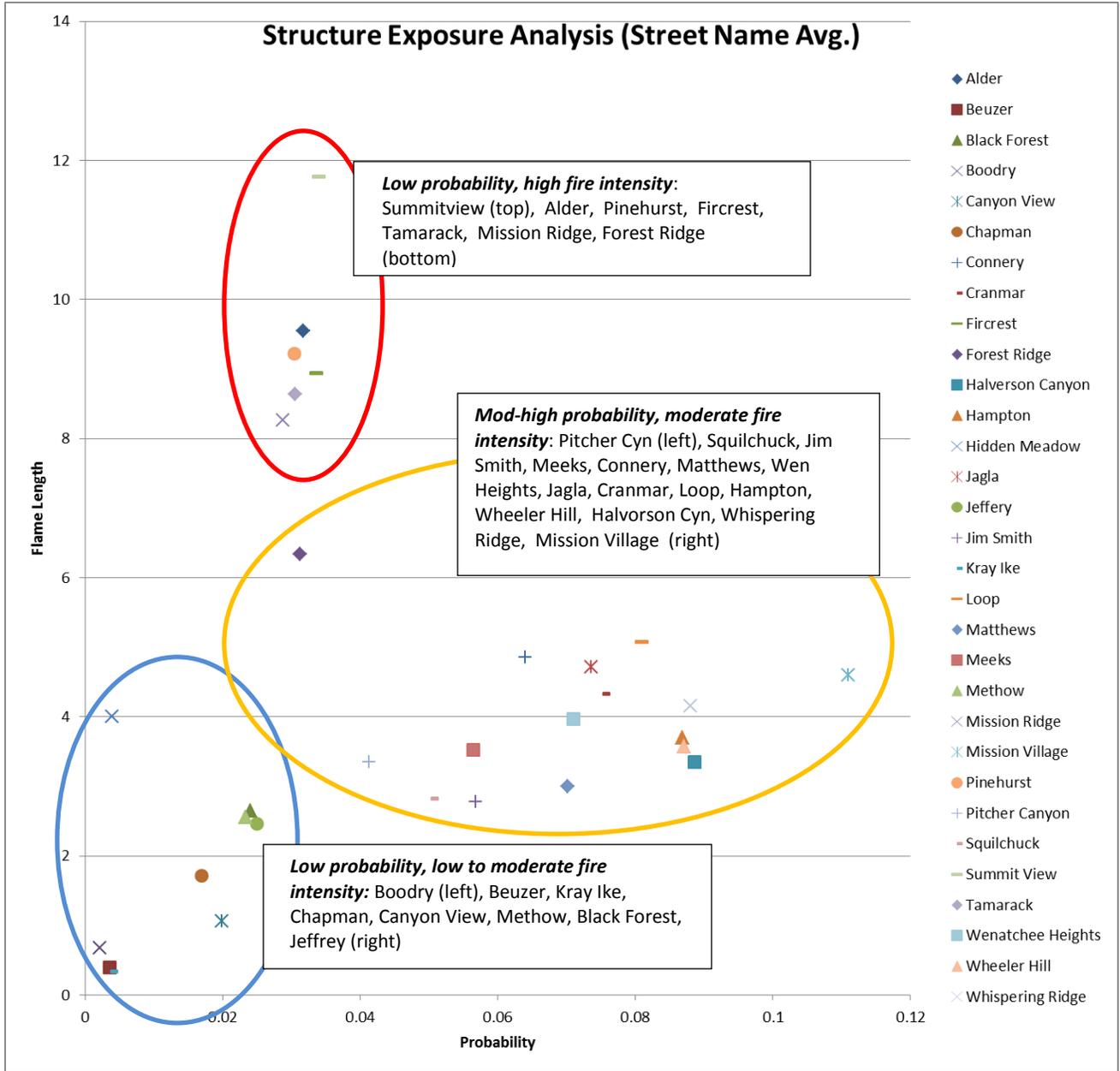


Figure 6. Average structure exposure on streets within the watershed based on burn probability (x axis) and flame length (fire intensity), (y axis).

Protection Capabilities, Structural Vulnerability, Key Contacts

(These sections have been greatly expanded with the document in Appendix 1, “Chelan County Fire District One Squilchuck Creek Area Structure Protection Plan”. That document also largely supersedes Section 5. Risk Evaluation as noted below).

5. Risk Evaluation *(This whole section has been updated – see below)*

Access, Staging Area for Tactical Resources, Command Post Locations, Water Supplies, & Fuel Breaks and Safety Zones *(All these sections are completely amended with the Chelan County Fire District One, Squilchuck Creek Area Structure Protection Plan in Appendix 1.)*

Evacuation *(this section completely amended with below text)*

When conducting wildfire evacuation notifications, the Chelan County Sheriff’s Office- Department of Emergency Management - adheres to the wildfire and forest fire model policy developed by the Washington Association of Chiefs of Police (WASPC) in 2007. (See WASPC Model Policy for ‘Facilitating Safe Access to Private Property during a Wildfire or Forest Fire).

Although, the Sheriff is ultimately responsible for conducting evacuation notifications within the county, the process of determining evacuation zones during a fire event will be a collaborative process. If the fire response agencies have established the “unified command” structure, the determination of needed evacuation zones will be made by the unified command team. If unified command has not yet been established during a fire response, the Sheriff’s Office will seek input from the Fire District and other relevant agencies to determine need for evacuation zones, and at what level of advisement. In either case, the coordination of evacuations will be implemented by the Sheriff’s Office.

Using deputies and other law enforcement (LE) personnel the Sheriff’s Office will attempt to contact each residence located within the affected evacuation zone(s) to inform them of the evacuation level and potential hazards related to the fire. The number of deputies and other LE personnel required to conduct the evacuation notifications will be dependent upon the size and population within the affected zone. When at all possible, residents will be handed a paper evacuation notice relevant to the evacuation level advisement for that area. When evacuation levels are established during a fire, the information will be shared with documented Firewise community contacts, and media contacts to disseminate to the public.

In the event of a fast moving fire which has high potential to threaten residential areas of the county, a Emergency Alert System (EAS) activation will be considered by the Sheriff’s Office in conjunction with the fire command team. If deemed necessary, the EAS notification will be formatted by either the RIVERCOM emergency communication center, or the emergency management office, and activated by the local broadcasters.

Evacuation notifications will remain in effect until the fire command team recommends lowering or eliminating the evacuation level in a specific area. The lowering of evacuation levels may be completed by deputies making in-person contacts with residents, or a combination of road sign advisements and public information notifications via local media.

Fire evacuation notifications consist of three levels:

- **Level 1 – Advisement Issued** . Residents and persons within this evacuation zone are advised a fire is burning in the area, and of the projected threats associated with the approaching fire. Recommendations are made to prepare for: the evacuation of persons with special needs; movement of mobile property; and (under certain circumstances) pets and livestock. Level 1 advisements are not accompanied by checkpoints or roadblocks, but may have “Level 1 Evacuation” signage in place on county roadways when feasible.

- **Level 2 – Evacuation Advised.** Residents and persons within this evacuations zone are advised that fire conditions indicate a probability of hazards associated with the approaching fire will severely limit the ability of emergency services to provide protection, and dangerous conditions exist which may threaten a person’s residence or business. Residents are advised they must be prepared to leave at a moment’s notice. Level 2 evacuation notices may, or may not be accompanied by checkpoints or roadblocks. Road closures with “Level 2 Evacuation” signage will be in place on county roadways when feasible.
- **Level 3 – Immediate Evacuation Advised.** Residents and persons within this evacuation zone are advised that current conditions exist which indicate an immediate threat to life and safety, and emergency services may not be available to respond. Residents and persons are advised to evacuate immediately. Further, residents are informed of the availability of established emergency shelters in their area. Level 3 evacuation notices will be accompanied by checkpoints and/or road blocks. Road blocks will be manned by a deputy or other law enforcement personnel. Road closures with “Level 3 Evacuation” signage will be in place on county roadways. The area will be restricted to residents, property owners, and emergency service personnel. A registry will be established at access points to confirm only residents and property are accessing the area.

Special Note: The Chelan County Special Needs Registry is a voluntary registry of individuals who would require assistance in the event of an emergency. This assistance could be as simple as advising a person of a situation in the vicinity of their residence to those who need evacuation assistance in the event of a natural or man-made disaster. This registry alerts emergency responders as to a resident’s address and gives them the vital information they need to better meet the resident's needs. It is important that emergency personnel know where to find you, and how best to meet some of your requirements during a disaster requiring evacuation.

Participation in the registry is **voluntary** and all information is strictly confidential, used only for emergency purposes. Individuals are eligible to be registered with the Special Needs Registry if they are frail, elderly, medically needy, and/or disabled and are not served in or by a residential facility program (i.e. nursing home, retirement apartments, etc.). Eligible individuals need only to complete the form and return it to the Emergency Management Office. Forms are available on our website at www.chelandem.org, stopping by our office at 408 N. Western, Wenatchee during business hours, or calling our office at 509-667-6863.

6. Current Activities

Landowner Committees

(This subsection is replaced as below)

In the 2005 CWPP, several committees involving the valley’s citizens were described and planned. In reality, these valley-wide committees were never actively established, but in 2010, residents in the Forest Ridge subdivision formed Forest Ridge Wildfire Coalition (FRWC). FRWC has been successful in organizing the residents of the Upper Squilchuck Valley and accomplishing some of the goals described in this section. Therefore, the 2005 CWPP valley-wide committee format has been replaced with the concept of six “Communities” and three “Special Areas” within the 2005 CWPP boundaries (map 1, page 3).

The intent for creating these CWPP subdivisions is the expectation of greater involvement within the “Communities” regarding wildfire mitigation and highlighting the economic, cultural and recreational importance of the “Special Areas”. These Communities are encouraged to become affiliated with Firewise Communities USA, which would provide residents with fire mitigation resources and make grant funding

more accessible. The subdivisions/residents should be mindful of planning within the context of the entire CWPP, which is essential when considering that wildfire is a large landscape process. Two to four page summaries describing the “Communities” and “Special Areas” and their respective fire issues are presented in this updated plan.

“Communities” are defined as:

1. Lower Squilchuck Valley: from Wenatchee City limits south to Wenatchee Heights Road
2. Upper Squilchuck Valley: from Wenatchee Heights Road south to Squilchuck State Park
3. Mission Ridge Road/Forest Ridge
4. Pitcher Canyon
5. Wheeler Hill/Wenatchee Heights: including Whispering Ridge
6. Halverson and Hampton Canyons

“Special Areas” are defined as:

7. Mission Ridge Ski & Board Resort
8. Scout-A-Vista
9. Squilchuck State Park

7. Mitigation Action Plan

(This section is replaced as below)

Overview

Organizers within the six “Communities” can utilize Section 7 as an incubator for bringing forth ideas for projects to be engaged in. For clarity, the mitigation plan has been broken down into four areas which can be deleted from or added to at any time depending on circumstances.

The structure presented does somewhat coincide with the grant application cycle with most known grant sources. Therefore, incorporation of project descriptions into this Mitigation Action Plan can facilitate their inclusion into future grant requests.

These projects are not listed in order of priority.

Education and Outreach

- Post fire hazard level signs at the significant intersections.
- Distribute Firewise construction and landscaping information at owner meetings, community gatherings, community bulletin boards and community websites.
- Hold workshops for residents on Firewise landscaping, insect control, fire resistant construction methods, and other pertinent subjects.
- Encourage the use of the Firewise Communities/USA website.
- Employ local media such as newspapers and radio to let the community know about Firewise activities and information.

- Provide opportunities for residents, communities and agencies such as CCFD 1 and DNR to provide input to the planning and implementation of wild fire mitigation programs.
- Emphasize responsibilities of residents and recreational users of lands within the CWPP regarding wildfire concerns.
- Individual preparedness: How to create a Wildfire Emergency Evacuation check list.
- Provide information regarding the Ready, Set, Go! (RSG) program.
- Encourage adoption of the Wildland-Urban Interface (WUI) code by Chelan County Commissioners.

Improving fire prevention in the Wildland/Urban interface (WUI)

- Encourage individual home risk assessments and work towards the completion of wildfire hazard forms in conjunction with CCFD 1, Cascadia CD and DNR.
- Encourage adoption of the Wildland-Urban Interface (WUI) code by Chelan County Commissioners
- As needed, update and refine mapping of the entire CWPP to include topographic features, individual resident locations, structures, and water sources for CCFD 1.
- Annually update and distribute community emergency phone trees for residents.
- Complete and distribute an evacuation plans to residents.
- Inform and coordinate prevention efforts with CCFD 1, DNR and Chelan County.

Fuels Reduction and Forest Pest Mitigation

- Encourage and assist residents to implement Firewise recommendations individually, through work parties, and contractual agreements.
- Create defensible space around all homes and essential infrastructure.
- Thin, limb and clear all road easements.
- Assess and create both internal and perimeter fuel breaks.
- Encourage and assist adjacent private and agency landowners to map and assess fire behavior and risk across the landscape, and consequently perform fuel reduction strategically across the landscape to minimize the movement and intensity of fire across the landscape to residential and agricultural areas.
- Work with local landowners, CCFD 1, federal, state and county agencies on continuing dialogue about slash disposal planning and timing.
- Explore and employ methods to recycle biomass from fuel reduction project waste, construction waste and other wood products.
- Seek out funding sources from different entities to help support the fuel reduction efforts. (Note: Forest Ridge has received three WSFM grants to do fuels reduction work in the past three years.)

Infrastructure

- Support funding of enhanced CCFD 1 services to the CWPP area.
- Review and support improvements to the cell phone towers serving the CWPP area.
- Support better emergency signage in the CWPP area.

Resources for Wildfire Mitigation and Grant funding

- Firewise Communities/USA website: Firewise community information
www.Firewise.org
- Washington State Department of Natural Resources (DNR) SE Region: Grant funding
509-925-8510
- Cascadia Conservation District: Grant funding, homeowner assistance
<http://cascadiacd.org> 5096649313
- Chelan County Fire District 1
<http://www.chelancountyfire.com> 509-662-4734
- Chelan County Department of Emergency Management
<http://www.co.chelan.wa.us/sheriff> 509-667-6863
- U.S. Forest Service
Okanogan-Wenatchee National Forest
Wenatchee River Ranger District
509-548-2553
- Chelan County Fire Marshall
509-667-6222
- Healthy Forests Restoration Act
<https://docs.google.com/viewer?url=http%3A%2F%2Fwww.gpo.gov%2Ffdsys%2Fpkg%2FBILLS-108hr1904enr%2Fpdf%2FBILLS-108hr1904enr.pdf>
- Squilchuck Valley Area CWPP 2005 and 2015 amendment
http://www.dnr.wa.gov/RecreationEducation/Topics/PreventionInformation/Pages/rp_burn_countymitigation_plans.aspx
- 2012 Wildland-Urban Interface (WUI) code
- <http://publicecodes.cyberregs.com/icod/iwuic/2012/>

Glossary

Active Crown Fire: a crown fire in which the entire fuel complex – all fuel strata – become involved, but the crowning phase remains dependent on heat released from the surface fuel strata or continued spread (also called a Running Crown Fire or Continuous Crown Fire).

ArcGIS 10.x: Geographic Information System (GIS) software designed to handle mapping data in a way that can be analyzed, queried, and displayed. ArcGIS is in its tenth major revision and is published by the Environmental Systems Research Institute (ESRI).

Burn Probability: Is a measure of the chance that a wildfire will burn a selected point within eight hours of ignition during extreme fire danger, under dominant wind patterns and fuel characteristics during the fire season.

Conditional Net Value Change: Is the change in net value (i.e. residential structure loss) given that a fire occurs. This is the product of: the probability of a given fire intensity times the fire suppression response function.

Crown Fire (Crowning): The movement of fire through the crowns of trees or shrubs, which may or may not be independent of the surface fire.

Defensible Space: An area around a structure where fuels and vegetation are modified cleared or reduced to slow the spread of wildfire toward or from the structure. The design and distance of the defensible space is based on fuels, topography, and the design/materials used in the construction of the structure.

Energy Release Component: An index of how hot a fire could burn. ERC is directly related to the 24-hour, potential worst case, total available energy within the flaming front at the head of a fire.

Evacuation: Fire evacuation notifications consist of three levels: Level 1- Advisement issued: Residents and persons are advised a fire is burning in the area. Level 2- Evacuation advised. Level 3- Immediate evacuation advised.

Extended Defensible Space (also known as Zone 3): A defensible space area where treatment is continued beyond the minimum boundary. This zone focuses on forest management with fuels reduction being a secondary consideration.

Fine Fuels: Fuels that are less than ¼ inch in diameter such as grass, leaves, draped pine needles, fern, tree moss, and some kinds of slash which, when dry, ignite readily and are consumed rapidly.

Fire Danger: Not used as a technical term in this document due to various and nebulous meanings that have been historically applied.

Fire Hazard: Given an ignition, the likelihood and severity of Fire Outcomes (Fire Effects) that result in damage to people, property, and/or the environment. Derived from the Community Assessment and the Fire Behavior Potential.

Fire Mitigation: Any action designed to decrease the likelihood of an ignition, reduce Fire Behavior Potential, or to protect property from the impact of undesirable Fire Outcomes.

Fire Outcomes (aka Fire Effects): A description of the expected effects of a wildfire on people, property and/or the environment based on the Fire Behavior Potential and physical presence of Values-at-Risk. Outcomes can be desirable as well as undesirable.

Fire Risk: The probability that an ignition will occur in an area with potential for damaging effects to people, property, and/or the environment. Risk is based primarily on historical ignitions data.

Fire Risk Assessment: The combination of the likelihood of fire occurring, its probable intensity, and the value of affected resources.

Flagged Addressing: A term describing the placement of multiple addresses on a single sign, servicing multiple structures located on a common access.

FMU (Fire Management Unit): A method of prioritizing fire mitigation work efforts. Units can be defined by function (e.g., public education efforts) or geography (e.g., fuel reduction projects in a given area).

Fuelbreak: A natural or constructed discontinuity in a fuel profile used to isolate, stop, or reduce the spread of fire. Fuelbreaks may also make retardant lines more effective and serve as control lines for fire suppression actions. Fuel breaks in the WUI are designed to limit the spread and intensity of crown fire activity.

ICP (Incident Command Post): The base camp and command center from which fire suppression operations are directed.

Jackpot Fuels: a large concentration of discontinuous fuels in a given area such as a slash pile.

Passive Crown Fire: a crown fire in which individual or small groups of trees torch out (candle), but solid flaming in the canopy fuels cannot be maintained except for short periods.

Potential Fire Behavior: The expected severity of a wildland fire expressed as the rate of spread, the level of crown fire activity, and flame length. Derived from fire behavior modeling programs using the following inputs: fuels, canopy cover, historical weather averages, elevation, slope, and aspect.

Slash: Debris left after logging, pruning, thinning, or brush cutting; includes logs, chips, bark, branches, stumps, and broken understory trees or brush.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Structure Exposure Analysis: Is the spatial coincidence of a modeled wildfire probability and fire intensity, with the location of a highly valued resource.

Structure Protection Plan: Is designed to safely and efficiently assign forces to protect structures in the event of an approaching wildland fire.

Structural Triage: the process of identifying, sorting, and committing resources to a specific structure.

Surface Fire: A fire that burns on the surface litter, debris, and small vegetation on the ground.

Timelag: Time needed under specified conditions for a fuel particle to lose 63 percent of the difference between its initial moisture content and its equilibrium moisture content.

Values at Risk: People, property, ecological elements, and other human and intrinsic values within the project area. Values at Risk are identified by inhabitants as important to the way of life of the study area and are susceptible specifically to damage from undesirable fire outcomes.

WSRB (Washington Survey and Rating Bureau): Provides property underwriting and rating information for the insurance industry. Services are available to all companies licensed to sell property insurance, and to the public and professionals involved in promoting sound fire protection practices in Washington State.

WHR (Community Wildfire Hazard Rating. AKA Community Assessment): A fifty-point scale analysis designed to identify factors which increase the potential for and/or severity of undesirable fire outcomes in WUI communities.

Wildfire Fuel Models/Types: The wildfire fuel models and types described within this document may be researched in greater detail by accessing via the internet the following documents: "Nation Fire Danger Rating System (NFDRS) Fuel Models" from the Bureau of Land Management and the USFS publication "Fire and Fuels".

Wildfire Transmission: Measures the source of incoming fires by land ownership. It is the percentage area burned on an ownership from fire starting in other ownerships.

WUI (Wildland Urban Interface): The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Defines the area where natural disturbance processes like wildfire have the greatest impact on human lives and property, and where fire prevention and suppression are high priorities that incur high costs.

**Appendix 1. Chelan County Fire District One
*Squilchuck Creek Area Structure Protection Plan***



Chelan County Fire District One

Squilchuck Creek Area Structure Protection Plan

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Chelan County Fire District One

Squilchuck Creek Area Structure Protection Plan

Preface

The Squilchuck Creek Area structure protection plan is designed to safely and efficiently assign forces to protect structures in the event of an approaching wildland fire. All structures referenced in this document were surveyed in August 2005 using NFPA 1144, 2002 Edition (Wildland Fire Risk And Hazard Severity Assessment Form). Of the 264 residences surveyed, 10 scored as moderate risk, 187 as high risk, and 67 as extreme risk. This means that **96%** of the residential structures surveyed in the Squilchuck Area, scored as high risk or above.

Strategy Decisions

Strategy decisions should take into account the following tactical considerations:

- Common areas have heavily forested pockets with some steep slopes. Fire may move rapidly through common areas with torching, crowning and spotting. Lower slopes have light flashy fuels, mainly grass and sagebrush. Fire may move rapidly through common areas with spotting across lines.
- Most homes would require maximum effort to defend, requiring prompt activation of this plan and the need to triage structures.
- Access to area subdivisions is described as “one way in one way out”. Traffic control and apparatus staging and placement must be carefully considered.
- The homes range from average to very large with most homes in the area having composition or wood roofing materials.
- A community water system and hydrants does exist. Water shuttle using water tenders may be necessary to support engines.
- Chelan County Fire District #1 and its cooperators cannot assemble enough structure protection resources to simultaneously protect all residential structures in the subdivisions. Successful defense will require structural triage, time for pre-treatment and/or highly mobile tactics, and burnout operations.
- Resources from the Federal and State wildland cooperators will be necessary to implement the strategies described here. Order additional resources including, engine, strike teams, aircraft and hand crews early.

Chelan County Fire District One

Squilchuck Creek Area Structure Protection Plan

General Description of the Area

The Squilchuck Road is a main artery to the areas of Wenatchee Heights, Pitcher Canyon, Halverson Canyon and Forest Ridge subdivision. The Squilchuck Road extends from Mission Street approximately (8) miles southwest of Wenatchee to Mission Ridge Road. The subdivisions will be difficult to evacuate and defend in the event of a fast moving wildland fire.

Very few home sites include adequate defensible space, and common areas within the Squilchuck Creek basin are medium to heavy fuels. Fuel types are generally grass and sagebrush in the lower slopes and mature fir/spruce and some pine in the higher slopes.

There is a mixture of overhead and underground power service in the Squilchuck Creek area.

General description of subdivisions

Pitcher Canyon Road – This area consists of homes, which are spread out and have “one way in one way out”. This area consists of newer homes at the beginning of Pitcher Canyon and older homes towards the end of the roadway. Most of the newer homes have a defensible space, with a few having shake roofs. Some of the older homes have a defensible space, but a few do not. Hydrants (5) are throughout the area until the pavement ends. Roads are paved in the main canyon, but changes to a narrow dirt road with three (3) structures at the top of the canyon. Fuels transition from grass/ sage to scattered timber at higher elevations. Electrical is underground and livestock could be a factor.

Halverson Canyon – (Includes Hampton Road.) This area consists of older homes which are spread out and most have an adequate defensible space while others do not. There are common areas that are not maintained and have adequate fuel loads that can pose problems. There are no hydrants in Halverson Canyon, but there are two in the lower Hampton Canyon area. Halverson Road ties into Hampton Road and both can be accessed off of Squilchuck Road. Electrical power is either above or below ground. Fuel types transition from grass, grass/sage in the lower canyon to grass, brush, timber in the upper canyon and side slopes as the elevation increases. Hampton Canyon fuels are mainly timber/brush with scattered grass. Main roads are paved, but steep and narrow, and there are many long dirt roads or driveways. Livestock could be a factor.

Wenatchee Heights – (Includes Whispering Ridge, Canyon View Place, Wheeler Road, Meeks Road, Jim Smith Road, Conarty Road, Jagla Road, Cherry Road, Bohart Road, Steinbach Road, Gudmundson Road, Edgemont Road, Grubb Road, Stemilt Loop Road.) This area consists of older and newer homes, which are spread out. Most homes on the outer edge of the subdivisions do not have an adequate defensible space. Most homes in the area have composition, metal or wood roofing materials. Hydrants are located throughout the subdivisions with the exception of Stemilt Loop Road. There is more than one way out. Wenatchee Heights road ties into Stemilt Loop Road. There are common areas that are not maintained so the grass, sagebrush and

Chelan County Fire District One

Squilchuck Creek Area Structure Protection Plan

heavy timber will be a factor. Many homes in the Wenatchee Heights area are located at the top of long steep slopes, with light to moderate fuel loading. Fuels are grass, grass/ sage, scattered timber, dense timber types. Electrical power is either above or below ground. Livestock could be a factor.

Forest Ridge – (Includes Forest Ridge Drive, Alder Court, Tamarack Place, Summit View Place, Pinehurst Place, Fircrest Place.) This area mainly consists of large homes located within heavy forested area with little or no defensible space. At any given time there may be homes under construction. The homes in the area have tile, composition, or wood roofing materials. A large percentage of homes have wood shake roofing. Access to the subdivision is described as “one way in one way out”. Hydrants are throughout the area. Roads are paved, generally wide, with good turnarounds. There is overhead power at the bottom of the subdivision, but most power service is underground.

Squilchuck Canyon – The Squilchuck Road is the main road to all other subdivisions. The road is a paved, two lane county road, and approximately 7 miles long. Structures in this area vary greatly in age. Access is good in most of the canyon, but there are many long dirt driveways with minimal turnaround space at the structures. Hydrants exist throughout the area, but are scattered. Fuels transition from grass to thick timber as elevations increase. Power is generally overhead in the area. Livestock would be a concern.

General Fire Behavior Potential

The Squilchuck Creek area subdivisions incorporate pockets of grass and sagebrush ground at lower slopes. The higher slopes will incorporate pockets of heavily forested ground. The common areas are similar in nature. Fire may move rapidly through these common areas and potential for spotting is highest in the common areas and could be difficult to manage if wind is a factor. The threat will then be in all areas of the subdivisions with fire all around the structures.

Many of the homes have wood shake roofs. Shakes are easily lofted, and represent an excellent brand source for spot fires. Should structures become involved, spotting potential will be enormous.

Fire from the east.

- Fuel Models 1 and 5
- Primary carrier of the fire is grass and sagebrush.
- Expected rate of spread is moderate to high, with low to moderate fire line intensity.
- Prevailing winds are from the west down the Wenatchee River Valley.
- If this is a wind driven event expect erratic fire behavior, rapid rates of spread. Spot fires will be critical to keep out of the interior of the subdivisions and common areas.
- Dozer lines and burn out operations could be the key in saving numerous homes and aid in steering the fire away from the populated area. The fire will be coming down slope on a south aspect slope. Consider dozer lines to the north of the subdivisions and burnout as fire approaches.
- Utilize aerial resources such as rotor and fixed wing aircraft.

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Squilchuck Creek Area Structure Protection Plan

Fire from the west.

- Fuel Models 2, 5 and 10
- Primary carrier of the fire is open timber/grass understory and heavy timber
- Expect ground fire with single tree torching, crowning and spotting.
- Attempt to contain the fire to the lower slopes and light fuels
- If a fire coming from the west escapes initial attack, and becomes established it is likely to overrun the area subdivisions in an uphill run with torching, crowning and spotting. Access and egress could easily be cut, and few adequate escape routes or safety zones exist in the upper reaches.
- Utilize aerial resources such as rotor and fixed wing aircraft.

Water Resources

Water supply in the Squilchuck Creek area is adequate. A water shuttle using water tenders may be necessary if we lose power to the pumping stations. Nearby water sources include hydrants, Squilchuck Creek, orchard irrigation systems and area ponds.

Key Contacts

Organization	Contact	Phone Number
Chelan County Fire District #1	Main Station	(O) (509) 662-4734
Chelan County Fire District #1 Administration	Chief Mike Burnett	(O) (509) 662-4734 (C) (509) 264-0402
	Deputy Chief Bill Neckels	(O) (509) 662-4734 (C) (307) 699- 4610
Chelan County Sheriff	RiverCom	911 or (509) 667-6851
Department of Emergency Management		(509) 667-6863
Leavenworth Ranger District (USFS)		(509) 548-6977
Central WA Interagency Comm. Center (CWICC)		(O) (509) 662-4393
Chelan County P.U.D.		(O) (509) 663-8121 (E) (877) 783-8123

Chelan County Fire District One

Squilchuck Creek Area Structure Protection Plan

Evacuation

The Squilchuck Creek area will need to be evacuated early if a fire is approaching. See Evacuation Plan for Area.

Command Post Locations

Chelan County Fire District One Main Station, 206 Easy Street

Main Office	(509) 662-4734
Second Line	(509) 662-4735
Third Line	(509) 662-3247
Fourth Line	(509) 662-9717
Main Fax	(509) 663-3967
Secondary Fax	(509) 663-9640

Mission View Elementary School, 60 Terminal Avenue

Mission View Elementary School	(509) 663-5851
Wenatchee School District	(509) 663-8161
Emergency Contact #'s	(509) ? (509) ?

Chelan County Fire District One

Squilchuck Creek Area Structure Protection Plan

Staging Area for Tactical Resources

If a fire threatens the Squilchuck Creek area subdivisions, Chelan County Fire District #1 will provide first response with mutual aid resources available throughout the county. These resources will respond to a pre-designated staging area. A staging area may be established at the Beehive Grange and/or Lincoln Park Circle. All resources should be staged and deployed as called for by the Incident Commander or Operations Chief. A Staging Area Manager will manage the staging area.

Staging Areas may be established at the following locations:

Vue Dale Drive-in Theatre	1546 S. Wenatchee Ave.	(509) 662-7740
Lincoln Park	Crawford Avenue @ Mission Street	
Chelan County Gravel Pit	Wenatchee Heights Road @ Squilchuck Road	
Squilchuck State Park	Squilchuck Road @ Mission Ridge Road	(509) 664-6373

Strategic and Tactical Priorities

This structure protection plan includes both a pre-treatment phase and a control and defense phase. Each phase will be activated using the following trigger points.

Pre-treatment Trigger: A fire escapes initial attack or spots within 1.5 miles of the subdivision. Coincides with the notification phase for evacuation.

Control and Defense Trigger: A fire starts within or near the developed area, and in the judgment of the Incident Commander/Operations Section Chief; it is necessary to switch the focus of tactical operations from preparation/pre-treatment to offensive fire control or active structure defense.

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Squilchuck Creek Area Structure Protection Plan

Tactical Priorities in Pre-treatment Phase:

- ✓ Dispatch structure protection forces to the subdivision to prepare structures working with area homeowners whenever possible. Coordinate activities with evacuation notification process.
- ✓ Move woodpiles from around structures and remove roof debris. If time, reduce flammable vegetation adjacent to structures.
- ✓ Advise residents to close windows and doors.
- ✓ Advise homeowners to prep the interior of the structure. Remove furniture and light curtains and other flammables from in front of windows; close windows and doors.
- ✓ Close heavy curtains, shutters or shades.
- ✓ Advise homeowners to leave home lights on inside and out, day and night.
- ✓ If available, place homeowners' ladders at corner of structure on side with the least fire threat and away from power drops.
- ✓ Coil and charge homeowner's garden hoses.
- ✓ Identify, mark and turn off LPG tanks, and mark other hazardous materials (fuel storage, pesticides, etc.)

Tactical Priorities in Control and Defense Phase:

Any fire starting within the area should be attacked as aggressively as possible within the limits of firefighter safety and resource availability. Maximum effort should be employed to control the main fire or spot fires before they impact the developed area. A strategy of aggressive initial attack should be used. Defensive structure protection should be employed only when the safety of personnel can be assured.

When conditions are more extreme, defensive structure protection may represent a safer and more successful strategy. Chelan County Fire District One and its cooperators cannot quickly assemble structure protection forces adequate to protect all 268 homes in the Squilchuck Creek Area Structure Protection Plan. Therefore, it is important those defensive forces:

- Remain completely mobile and able to rapidly respond to more than one potentially threatened structure

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- Triage structures and focus efforts on the most defensible structures, identify those that are most likely to be impacted by the fire.
- Don't shut off the power unless you expect to make interior attack on the building or other safety concerns exist. Turning off the power often means you lose domestic water.
- Avoid long hose lays and stationary tactics.
- Keep engine water tanks full using hydrants or water tenders.
- Maximize the use of homeowner resources including ladders and garden hoses so that fire department resources can remain as mobile as possible.
- Recognize a losing situation and maximize the number of homes saved. If a home becomes well involved, leave it and move on to one you can save.

Incident Commander/Structure Protection Group Supervisor Checklist:

- Ensure the safety of the public and emergency personnel as first priority
- Maintain Lookouts, Communications, Escape routes and Safe zones (LCES) for all personnel
- Post lookouts in appropriate locations.
- Provide for or coordinate with traffic control (see evacuation plan)
- Provide for or coordinate with evacuation of residents (see evacuation plan)
- Make sure crews are briefed on safety, hazards and strategy
- Require full PPE (turnouts and SCBA) for any interior attack on burning structures
- Attempt to contain fire or spot fires on initial attack
- Manage simultaneous actions of aggressive initial attack and defensive structure protection
- Use existing structure triage and pre-plan to best assign structure protection resources
- Order resources, stage them and deploy them from staging

Firefighter Hazards and Safety Concerns

- Steep slopes with unburned fuel below
- Rapid fire spread can cause entrapment
- Spotting potential and possibility of rapid spread of fires coming from north or west

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Squilchuck Creek Area Structure Protection Plan

- Lack of escape routes (other than road system) and safe zones (except minimal ones within road right-of-way.)
- Residents evacuating the area
- Narrow driveways with no turnarounds
- Propane tanks
- Overhead power lines

Suggested Resource Needs to be based on specific impacted areas

High probability of structure loss 5 strike teams of Type 1 Engines
3 strike teams of Type 6 Engines
Tenders to support Strike Teams
2 Type 1 Interagency Hotshot Crews
1 Type II 20 Person Hand Crew
Appropriate Aerial Resources
4 Dozers

Appendix 2. “About the Community” “Concerns” “Recommendations” Map

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Lower Squilchuck Valley Community

Number of Structures (approximately)	60
Number of lots (approximately)	Not counted
Utilities Above or Below Ground	Above along county roads, then mainly underground to residences.
General Construction	Mixture of stick-built homes, manufactured homes and mobile homes
Average lot size	A wide range of lots sizes from <1 acre to large parcels with orchards or fields.
Home addresses	Inconsistent, reflective and non-reflective.
Duel access Roads	Access primarily is via the main county road, so ingress and egress is either up or down the valley.
Width, Slope and Surface	Main county road is paved. Most driveways are single-lane gravel of gentle grade because of location in the valley bottom.
Predominate wildfire fuel types in area	Estimated: 80% light and 20% medium density grass and scattered sage and other shrubs in draws. Some scattered large ponderosa pine on north facing slopes.
Slopes	The area is primarily steep slopes >30% on the upper north and south upper sides of the narrow Squilchuck Creek with gentle slopes <20% .
Emergency Vehicle Turnarounds	Few turnarounds for large fire trucks. Most roads access residences. Some areas have multiple bridges for ingress-egress but, some bridges may not be suitable (load rated) for large fire trucks.
Water Supply	PUD, hydrants.
Other Hazards	Debris pile burning near residences and orchards adjacent to wild lands may be a source of wildfire.

About the Community: The community is the northernmost community in the Squilchuck Valley CWPP area. It occurs in the lower valley from south of the city limits up the drainage about 4 miles to the junction the Wenatchee Heights Road. The Community is within Chelan County Fire District 1. Fire Stations occur at the bottom of the Squilchuck Rd., about a mile within the city limits, and at the junction Squilchuck Rd. and Wenatchee Heights Rd. The Community is characterized with residences in the valley bottom and near bottom slopes, with adjacent steep grassy and rocky slopes.

On the southeast side of the valley, slopes rise from the valley bottom about 1000' to the Wenatchee Heights plateau and its orchards. On the northwest side of the valley, slopes rise steeply 1000' to the uninhabited ridge top separating Squilchuck Creek from Pitcher Canyon (Community No. 4). Vegetation and fuels on both sides of the valley are primarily grass and sagebrush, with occasional brushy draws with tall serviceberry. Orchards occur in the valley bottom, especially within the first 2 miles of the city limits, and on some middle and upper slopes farther up the drainage on the northwest side.

Lower Squilchuck Valley Community

General Community: **Concerns**

Hazard Rating: **Low**

Name	Priority	Description
Construction	1	<p>Residential landscaping often does not reflect Firewise recommendations with trees, shrubs, etc. being too close to structures.</p> <p>Firewood and other combustibles such as LP tanks are often under or adjacent to decks or other structural areas.</p> <p>PUD water may be used for continuous structure protection. Some residences have wells, and orchards will have irrigation water from the creek or Beehive systems.</p> <p>Property owners often do not utilize Firewise material choices in construction, building maintenance and landscaping. Flammable roofing and siding materials are used for construction on many structures. Encourage the use of Class A flame spread roofing and fire resistant siding.</p>
Preparedness & evacuation planning/safe areas	1	<p>Many homes have inconsistent visible house numbering.</p> <p>Most of the Lower Squilchuck Valley area is served by one way in/out roads. Greater public awareness of evacuation plans and safe areas are necessary.</p> <p>Residences adjacent to wildlands may be at risk if wildland fuels are dense or close to structures.</p>

Special Note: The Chelan County Special Needs Registry is a voluntary registry of individuals who are frail, elderly, medically needy, and/or disabled and are not served in or by a residential facility program (i.e. nursing home, retirement apartments, etc.) who would require assistance in the event of an emergency. This registry alerts emergency responders as to a resident's address and gives them the vital information they need to better meet the resident's needs. Participation in the registry is **voluntary** and all information is strictly confidential, used only for emergency purposes. Call 509-667-6863 for more information

Lower Squilchuck Valley Community

General Community: Recommendations

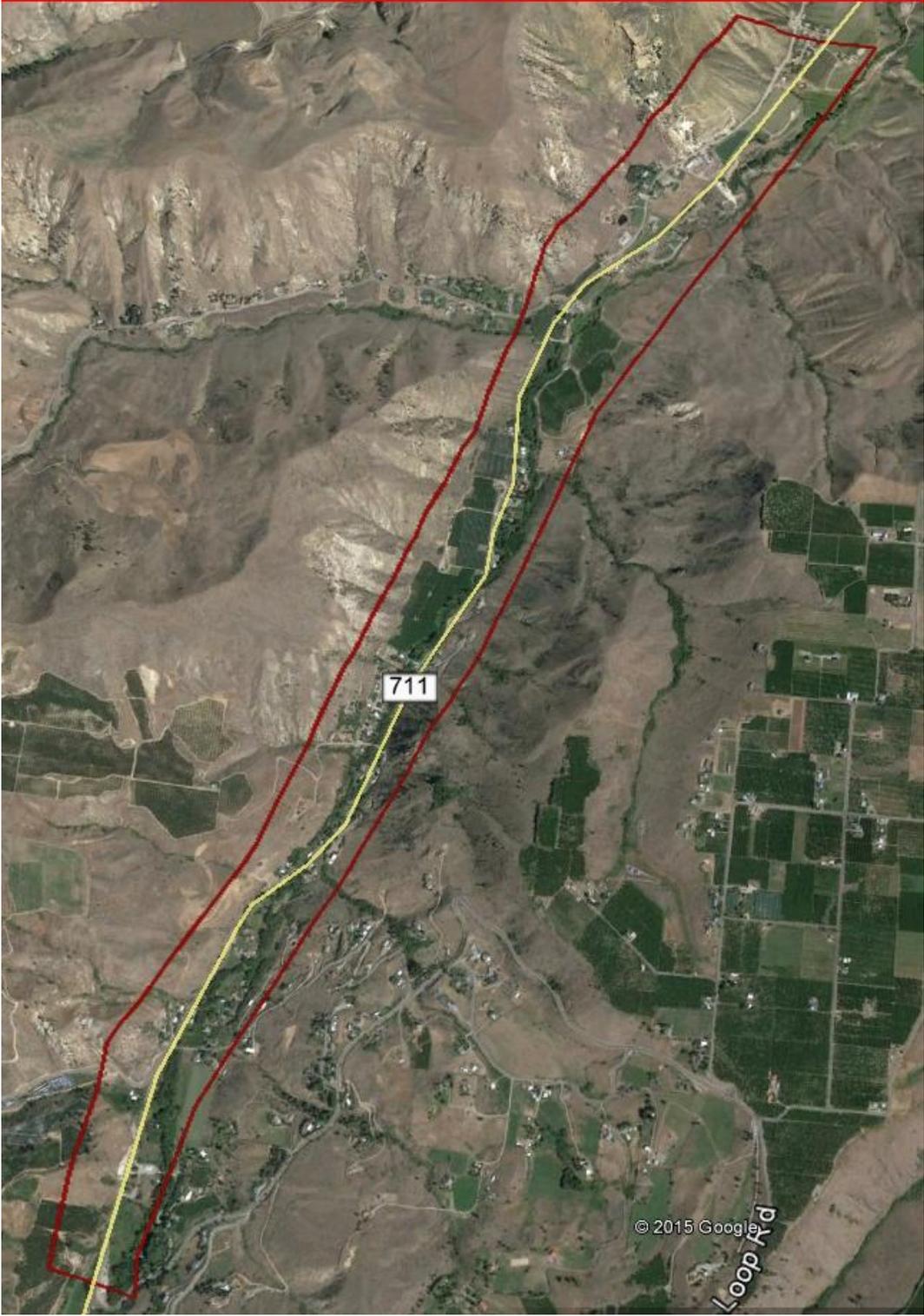
Category	Priority	Description
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Construction	1	<p>Encourage the use of Class A flame spread roofing and fire resistant siding.</p> <p>Recommend enclosing or screening open areas below decks to prevent ingress of embers and keep free of flammable materials. Encourage ongoing wildfire and home fire mitigation actions by residents.</p> <p>Locate residential and orchard (for wind machines) LP tanks within the defensible space in accordance with the International Fire Code.</p> <p>Chelan County Fire District 1 discourages homeowners from developing continuous flowing fire protective systems (e.g. sprinkler systems) utilizing PUD water. During a wildfire event, this resource may be needed by firefighters to extinguish structure fires.</p> <p>Employ Firewise home and landscape treatment to create a “defensible space” around residences and buildings as described by Cascadia Conservation District's Qualitative Assessment Guidelines and Firewise guidelines (http://www.firewise.org/). These guidelines describe actions within three protection zones near structures: less than 30’, 30-100’, and 100’ to 200’.</p> <p>See Firewise website http://www.firewise.org/ for comprehensive recommendations.</p>
Preparedness & evacuation planning/safe areas	1	<p>Engage with Chelan County Emergency Management to develop evacuation plans for the community and to identify safe areas.</p> <p>Encourage the use of reflective blue and white address signs available from Chelan County Fire District 1.</p> <p>Encourage residents to provide for emergency vehicle access and turnaround on their access roads. In particular, try to ensure multiple points of entry and exit in case of fire blocking one route.</p> <p>Sign capacity load for bridges across Squilchuck Creek to ensure safety of large emergency vehicles.</p>

Insurance rating: Adhering to the above recommendations may positively affect the Community’s fire insurance rates in the future.

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Lower Squilchuck Valley Community



Upper Squilchuck Valley Community

Drafted by Sara Rolfs

Number of Structures (approximately)	88
Number of home sites (approximately)	44
Utilities Above or Below Ground	Above, outside of subdivisions, underground within.
General Construction	Mixture of combustible/noncombustible siding, roofing, decks.
Average lot size	Range from .40 to 160 acres
Home addresses	Inconsistent, reflective and non-reflective.
Duel access Roads	One way in/out via Squilchuck Road, Mission Ridge Road and various collector roads.
Road Width, Slope and Surface	Various County approved paved roads.
Predominate wildfire fuel types in area	Estimated: 40% medium dense brush, 20% small and large fir and pine forest. 40% large and small deciduous brush in grassy open areas.
Slopes	Estimated: 10% of slopes < 9% grade, 30% of slopes 10-20% grade, 25% of slopes 21-30% grade, 35% of slopes 31-40% grade.
Emergency Vehicle Turnarounds	Turn around locations are: the sand pile at Wheeler Road and Squilchuck Road, the passing lanes south of Squilchuck State Park and at the Park.
Water Supply	PUD hydrants, well and creek water.
Other Hazards	The area is partially built out. Many nonresident, vacant lot owners do not adequately reduce wildfire fuels.

About the Community: The Community is located approximately 4 miles southwest of the City of Wenatchee and is within Chelan County Fire District 1. Access into the Community is via Squilchuck and Mission Ridge Roads which provide one way in/out access.

(From page 13, Fuels/Hazards, 2005 CWPP document)

"Washington State Department of Natural Resources (DNR) has classified the Squilchuck Valley area (including Forest Ridge) as a "high risk" Wildland/Urban Interface (WUI) area. Past activities such as logging and fire suppression have altered the normal fire regime, stand species, and forest health. Dense, overstocked stands of trees are increasing the fire hazard in the Squilchuck Valley CWPP area. Many stands of ponderosa pine are dominated by trees less than 18 inches in diameter. Pockets of trees are being affected by low level (< .03 to 4.5) trees/acre) infestation by mountain pine beetle and/or fire engraver (DNR GIS; see map on page 10, 2005 CWPP document). Trees often have contiguous crown and adjacent ladder fuels, and continuous tall underbrush also predominates on the landscape."

In 2010, a large area project of the Mission Ridge Road and Forest Ridge community was undertaken to create a fuel break just south and adjacent to the Upper Squilchuck Community. Part of the project included some thinning and pruning of the road side area on the south east side of Upper Squilchuck Rd.

As a result of these efforts, in 2010 a number of Forest Ridge residents formed Forest Ridge Wildfire Coalition (FRWC), to achieve and maintain designation as a Firewise Community USA affiliate. FRWC has led an important continuous effort to promote wildfire risk reduction through resident wildfire education, fuels removal within the subdivision and the greater Upper Squilchuck Valley area, residential structural risk assessments, and actions to maintain and expand the perimeter fuels break. In addition, promotion of Firewise building materials and landscaping practices as well as the ongoing encouragement to reduce wildfire fuels within and around the subdivision serve to reduce danger to life and property.

Upper Squilchuck Valley Community residents realize they live in an area of elevated wildfire risk. Being prepared with evacuation plans, a "telephone tree" communication system, and other emergency plans, contribute both to resident safety and supports emergency responders. The Upper Squilchuck valley experienced a level 3 evacuation in 2012 with the Wenatchee Complex/Table Mountain fires, and also a level 1 evacuation in 2013 which provided an opportunity to refine these plans. FRWC will continue to provide leadership in wildfire risk mitigation to the Community .

Upper Squilchuck Valley Community

General Community: **Concerns** Hazard Rating: **Moderate**

Name	Priority	Description
Construction	1	<p>Defensible Space around structures needs improvement. Not all houses have the recommended 100 ft. of defensible space around the perimeter of their structures</p> <p>Firewood and other combustibles such as LP tanks are often under or adjacent to decks or other structural areas.</p> <p>Flammable roofing and siding materials are used for construction on many structures.</p> <p>PUD water is used for continuous structure protection.</p> <p>Property owners often do not utilize Firewise material choices in construction, building maintenance and landscaping.</p> <p>Many homes have inconsistent visible house numbering.</p>
Preparedness & evacuation planning/safe areas	1	<p>All of the Upper Squilchuck Valley area is served by one way in/out roads. Greater public awareness of evacuation plans and safe areas are necessary.</p>
Neighbor outreach	1	<p>Many properties endanger neighboring lots as well as the surrounding area because of owners not following Firewise practices.</p>
Riparian area concerns	1	<p>Several riparian areas containing dense foliage require the appropriate permitting for needed wildfire fuels reduction in such areas.</p>
Road forest fuels treatment	1	<p>The Community has several areas of excessive vegetation adjacent to roads which require fuels reduction treatment to enable safe emergency exit. This is especially true for long driveways.</p>

Special Note: The Chelan County Special Needs Registry is a voluntary registry of individuals who are frail, elderly, medically needy, and/or disabled and are not served in or by a residential facility program (i.e. nursing home, retirement apartments, etc.) who would require assistance in the event of an emergency. This registry alerts emergency responders as to a resident's address and gives them the vital information they need to better meet the resident's needs. Participation in the registry is **voluntary** and all information is strictly confidential, used only for emergency purposes. Call 509-667-6863 for more information

Upper Squilchuck Valley Community

General Community: Recommendations

Category	Priority	Description
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Construction	1	<p>The Upper Squilchuck Valley Community is supportive of Chelan County government adopting the International Wildland-Urban Interface Code (IWUIC).</p> <p>The use of Class A flame spread Roofing and 1-hour fire resistant siding is encouraged.</p> <p>It is recommended that enclosed or screened open areas below decks to prevent ingress of embers and keep free of flammable materials. FRWC encourages ongoing wildfire and home fire mitigation actions by residents.</p> <p>Locate LP tanks within the defensible space in accordance with the International Fire Code.</p> <p>Chelan County Fire District 1 discourages home owners from developing continuous flowing fire protective systems utilizing PUD water. During a wildfire event, this resource may be needed by firefighters to extinguish structure fires.</p> <p>Employ Firewise home and landscape treatment as described by Cascadia Conservation District's Qualitative Assessment Guidelines affecting specific areas next to and under structures, such as foundation to 30 feet out, 30 feet to 100 feet out and 100 feet to 200 feet out.</p>
Preparedness & evacuation planning/safe areas	1	The use of reflective blue and white address signs are recommended and are available from Chelan County Fire District 1.
	1	The Community will engage with Chelan County Emergency Management to develop evacuation plans for the community and to identify safe areas. These plans will be communicated to the community via the Forest Ridge Wildfire Coalition website at: http://frwc.info .
Neighbor out-reach	1	<p>FRWC Assessments Committee will continue to offer free Firewise assessments to supporters.</p> <p>In conjunction with Chelan County Fire District 1, FRWC will continue to compile a community phone-tree and utilize an emergency notification procedure.</p>
Road forest fuels treatment	2	Roads in the community are one way in/out. Road right-of-ways must be made Firewise and maintained for emergency exit. DNR and US Forest Service wildfire crews could possibly be utilized during down times for this purpose.

Insurance rating: Adhering to the above recommendations may positively affect the Community's fire insurance rates in the future.

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Upper Squilchuck Valley Community



Mission Ridge Road & Forest Ridge Community

Authored by Jerry Holm, Don Flick, Gary Jeffries, approved by the Board of Forest Ridge Wildfire Coalition

Number of Structures (approximately)	75
Number of lots (approximately)	124
Utilities Above or Below Ground	Above, outside of subdivision, underground within.
General Construction	Mixture of combustible/noncombustible siding, roofing, decks.
Average lot size	Range from .40 acre to 4.10 acres with most lots sized < 1.0 acre.
Home addresses	Inconsistent, reflective and non-reflective.
Duel access Roads	One way in/out via Forest Ridge Drive, Squilchuck Road, Mission Ridge Road and various collector roads.
Road Width, Slope and Surface	Various County approved paved roads.
Predominate wildfire fuel types in area	Estimated: 45% medium to dense brush, grasses and 45% small and large fir and pine forest. Some open areas with grasses and brush with 10% slash. Some insect /disease damage to trees.
Slopes	Estimated: 10% of slopes < 9% grade, 30% of slopes 10-20% grade, 25% of slopes 21-30% grade, 35% of slopes 31-40% grade.
Emergency Vehicle Turnarounds	Most roads end at cul-de-sac or County approved turnarounds.
Water Supply	PUD, hydrants.
Other Hazards	The area is partially built out. Many nonresident, vacant lot owners do not adequately reduce wildfire fuels.

About the Community: The Community is located approximately 10 miles southwest of the City of Wenatchee and is within Chelan County Fire District 1. Access into the Community is via Squilchuck and Mission Ridge Roads which provide one way in/out access.

(From page 13, Fuels/Hazards, 2005 CWPP document)

"Washington State Department of Natural Resources (DNR) has classified the Squilchuck Valley area (including Forest Ridge) as a "high risk" Wildland/Urban Interface (WUI) area. Past activities such as logging and fire suppression have altered the normal fire regime, stand species, and forest health. Dense, overstocked stands of trees are increasing the fire hazard in the Squilchuck Valley CWPP area. Many stands of ponderosa pine are dominated by trees less than 18 inches in diameter. Pockets of trees are being affected by low level (< .03 to 4.5) trees/acre) infestation by mountain pine beetle and/or fire engraver (DNR GIS; see map on page 10, 2005 CWPP document). Trees often have contiguous crown and adjacent ladder fuels, and continuous tall underbrush also predominates on the landscape."

Beginning in 2007 and continuing into 2011, Forest Ridge subdivision perimeter fuels reduction efforts were led by a consortium of government agencies consisting of Chelan County Fire District 1, DNR and Cascadia Conservation District. The work was funded by a National Fire Plan grant and the work was performed

by licensed foresters. In addition, during this time period neighboring property owners, Scout-A-Vista and MKM Trust, also engaged in similar wildfire fuels reduction work. As a result of these efforts, in 2010 a number of Forest Ridge residents formed Forest Ridge Wildfire Coalition (FRWC), to achieve and maintain designation as a Firewise Community USA affiliate. FRWC has led an important continuous effort to promote wildfire risk reduction through resident wildfire education, fuels removal within the subdivision and the greater Upper Squilchuck Valley area, residential structural risk assessments, and actions to maintain and expand the perimeter fuels break. In addition, promotion of Firewise building materials and landscaping practices as well as the ongoing encouragement to reduce wildfire fuels within and around the subdivision serve to reduce danger to life and property. Mission Ridge Road & Forest Ridge Community residents realize they live in an area of elevated wildfire risk. Being prepared with evacuation plans, a "telephone tree" communication system, and other emergency plans, contribute both to resident safety and supports emergency responders. The Upper Squilchuck valley experienced a level 3 evacuation in 2012 with the Wenatchee Complex/Table Mountain fires, and also a level 1 evacuation in 2013 which provided an opportunity to refine these plans. FRWC will continue to provide leadership in wildfire risk mitigation to the Community .

Mission Ridge Road & Forest Ridge Community

General Community: **Concerns**

Hazard Rating: **High**

Name	Priority	Description
Construction	1	<p>Residential landscaping often does not reflect Firewise recommendations with trees, shrubs, etc. being too close to structures.</p> <p>Firewood and other combustibles such as LP tanks are often under or adjacent to decks or other structural areas.</p> <p>Flammable roofing and siding materials are used for construction on many structures.</p> <p>PUD water is used for continuous structure protection.</p> <p>Property owners often do not utilize Firewise material choices in construction, building maintenance and landscaping.</p>
Forest Ridge subdivision perimeter canopy fuels break	1	<p>Beginning in 2007 through 2011, a 200' wide wildfire canopy fuels break was created around the Forest Ridge subdivision as well as adjacent areas. In 2012, the FRWC Assessments Committee determined need to improve this fuels break.</p>
Preparedness & evacuation planning/safe areas	1	<p>Many homes have inconsistent visible house numbering.</p> <p>All of the Upper Squilchuck Valley area is served by one way in/out roads. Greater public awareness of evacuation plans and safe areas are necessary.</p>
Neighbor outreach	1	<p>Many properties endanger neighboring lots as well as the surrounding area because of owners not following Firewise practices. This is especially a concern with non-resident vacant lot owners who have permitted their undeveloped lots to become overgrown with fuels.</p>
Riparian area concerns	1	<p>Several riparian areas containing dense foliage require the appropriate permitting for needed wildfire fuels reduction in such areas.</p>
Road forest fuels treatment	2	<p>The Community has several areas of excessive vegetation adjacent to roads which require fuels reduction treatment to enable safe emergency exit.</p>

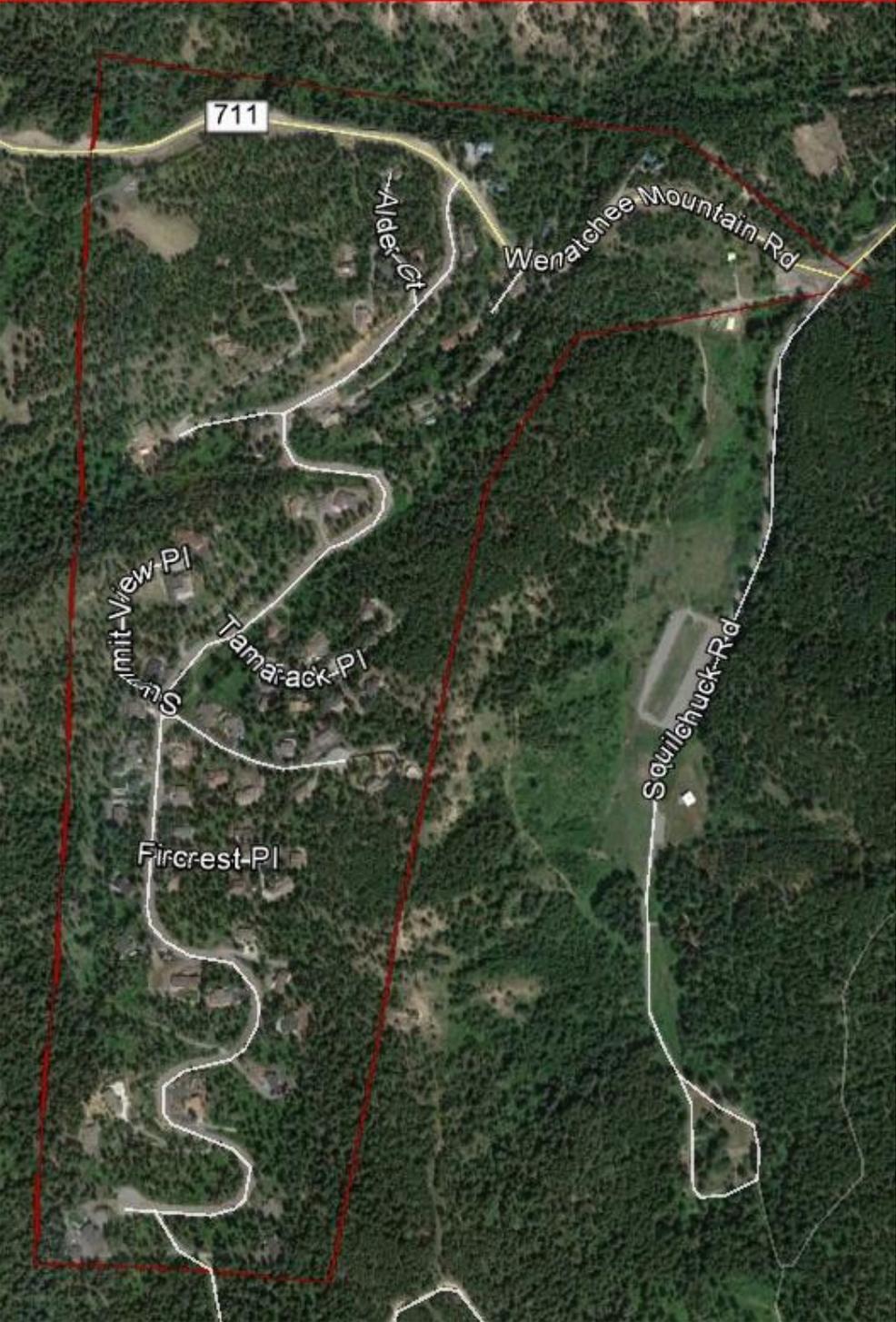
Special Note: The Chelan County Special Needs Registry is a voluntary registry of individuals who are frail, elderly, medically needy, and/or disabled and are not served in or by a residential facility program (i.e. nursing home, retirement apartments, etc.) who would require assistance in the event of an emergency. This registry alerts emergency responders as to a resident's address and gives them the vital information they need to better meet the resident's needs. Participation in the registry is **voluntary** and all information is strictly confidential, used only for emergency purposes. Call 509-667-6863 for more information

Mission Ridge Road & Forest Ridge Community

General Community: Recommendations

Category	Priority	Description
Construction	1	<p>FRWC is supportive of Chelan County government adopting the International Wildland-Urban Interface Code (IWUIC).</p> <p>FRWC encourages the use of Class A flame spread Roofing and 1-hour fire resistant siding.</p> <p>FRWC recommends enclosing or screening open areas below decks to prevent ingress of embers and keep free of flammable materials. FRWC encourages ongoing wildfire and home fire mitigation actions by residents.</p> <p>Locate LP tanks within the defensible space in accordance with the International Fire Code.</p> <p>Chelan County Fire District 1 discourages home owners from developing continuous flowing fire protective systems utilizing PUD water. During a wildfire event, this resource may be needed by firefighters to extinguish structure fires.</p> <p>Employ Firewise home and landscape treatment as described by Cascadia Conservation District's Qualitative Assessment Guidelines affecting specific areas next to and under structures, such as foundation to 30 feet out, 30 feet to 100 feet out and 100 feet to 200 feet out.</p>
Forest Ridge perimeter canopy fuels break.	1	FRWC is committed to the widening of the fuels break to 400 feet and continued future improvements to the break.
Preparedness & evacuation planning/safe areas	1	<p>FRWC encourages the use of reflective blue and white address signs available from Chelan County Fire District 1.</p> <p>FRWC will engage with Chelan County Emergency Management to develop evacuation plans for the community and to identify safe areas. These plans will be communicated to the community via the FRWC website, email, FRWC newsletter and FRWC Firewise Day events which are posted on the FRWC website at: http://frwc.info.</p>
Neighbor out-reach	1	<p>FRWC endeavors to keep residents informed through emails and newsletters.</p> <p>FRWC Assessments Committee will continue to offer free Firewise assessments to supporters.</p> <p>In conjunction with Chelan County Fire District 1, FRWC will continue to compile a community phone-tree and utilize an emergency notification procedure.</p>
Riparian concerns	1	FRWC strives to be permitted to reduce fuel in riparian areas.
Road forest fuels treatment	2	Roads in the community are one way in/out. Road right-of-ways must be made Firewise and maintained for emergency exit. DNR and US Forest Service wildfire crews could possibly be utilized during down times for this purpose.

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Mission Ridge Road/Forest Ridge Community



Pitcher Canyon Community

Drafted by John Lehmkuhl

Number of Structures (approximately)	35
Number of lots (approximately)	Not counted
Utilities Above or Below Ground	Above along county roads, then mainly underground to residences.
General Construction	Mixture of stick-built homes, manufactured homes and mobile homes
Average lot size	A wide range of lots sizes from <1 acre to large parcels with orchards or fields in lower drainage. One large ranch property (Hurd) in the upper drainage.
Home addresses	Inconsistent, reflective and non-reflective.
Dual access Roads	Access primarily is via the main county road, so ingress and egress is either up or down the valley. Rough egress occurs in upper drainage on ranch roads to Dry Gulch and No. 2 Canyon.
Width, Slope and Surface	Main county road is paved. Most driveways are single-lane gravel of gentle grade because of location in the valley bottom.
Predominate wildfire fuel types in area	Nearly 100% light fuels composed mostly of grass and 20% scattered sage and other shrubs in draws. Open ponderosa pine forest occur in upper (south) areas of the basin.
Slopes	The lower drainage area is primarily steep slopes >30% with fairly gentle slopes <20% in the valley bottom. In the upper basin the terrain becomes more gentle to allow for grain or hay fields.
Emergency vehicle turnarounds	Few turnarounds for large fire trucks. Most roads access residences.
Water Supply	PUD, hydrants.
Other Hazards	Debris pile burning near residences and orchards adjacent to wild lands may be a source of wildfire.

About the Community: : This Community is the Pitcher Canyon drainage that diverges from the main Squilchuck drainage and Road about a mile from the city limits. The Community is sited in the lower northwestern part of the Squilchuck drainage and is among the largest geographically in the Squilchuck Valley CWPP area. It occurs in Chelan County Fire District 1. Fire Stations are sited at the bottom of the Squilchuck Rd., about a mile within the city limits, and at the junction of Squilchuck Rd. and Wenatchee Heights Rd.

The Community is characterized as having most residences in the valley bottom and near bottom slopes within

the first mile of entering the canyon from Squilchuck Rd. with adjacent steep grassy and rocky slopes. In the lower area, grassy and rocky slopes rise steeply from the valley bottom about 500 feet.

The upper drainage broadens with considerable diversity of terrain, rising to about 4000' elevation. Vegetation and fuels on in the lower and middle drainage are primarily grass and sagebrush, with occasional brushy draws with tall serviceberry. Open ponderosa pine forest occurs in the upper drainage; most of this forest has been heavily thinned.

Pitcher Canyon Community

General Community: **Concerns**

Hazard Rating: **Low**

Name	Priority	Description
Construction	1	<p>Residential landscaping often does not reflect Fire wise recommendations with trees, shrubs, etc. being too close to structures.</p> <p>Firewood and other combustibles such as LP tanks are often under or adjacent to decks or other structural areas.</p> <p>PUD water may be used for continuous structure protection. Some residences have wells.</p> <p>Property owners often do not utilize Firewise material choices in construction, building maintenance and landscaping. Flammable roofing and siding materials are used for construction on many structures.</p>
Preparedness & evacuation planning/safe areas	1	<p>Many homes have inconsistent visible house numbering.</p> <p>Most of the Pitcher Canyon residences are served by one way in/out roads, but usually less than 50 yards from the county road. Greater public awareness of evacuation plans and safe areas are necessary.</p> <p>Residences adjacent to wildlands may be at risk if wildland fuels are dense or close to structures.</p>

Special Note: The Chelan County Special Needs Registry is a voluntary registry of individuals who are frail, elderly, medically needy, and/or disabled and are not served in or by a residential facility program (i.e. nursing home, retirement apartments, etc.) who would require assistance in the event of an emergency. This registry alerts emergency responders as to a resident's address and gives them the vital information they need to better meet the resident's needs. Participation in the registry is **voluntary** and all information is strictly confidential, used only for emergency purposes. Call 509-667-6863 for more information

Pitcher Canyon Community

General Community: Recommendations

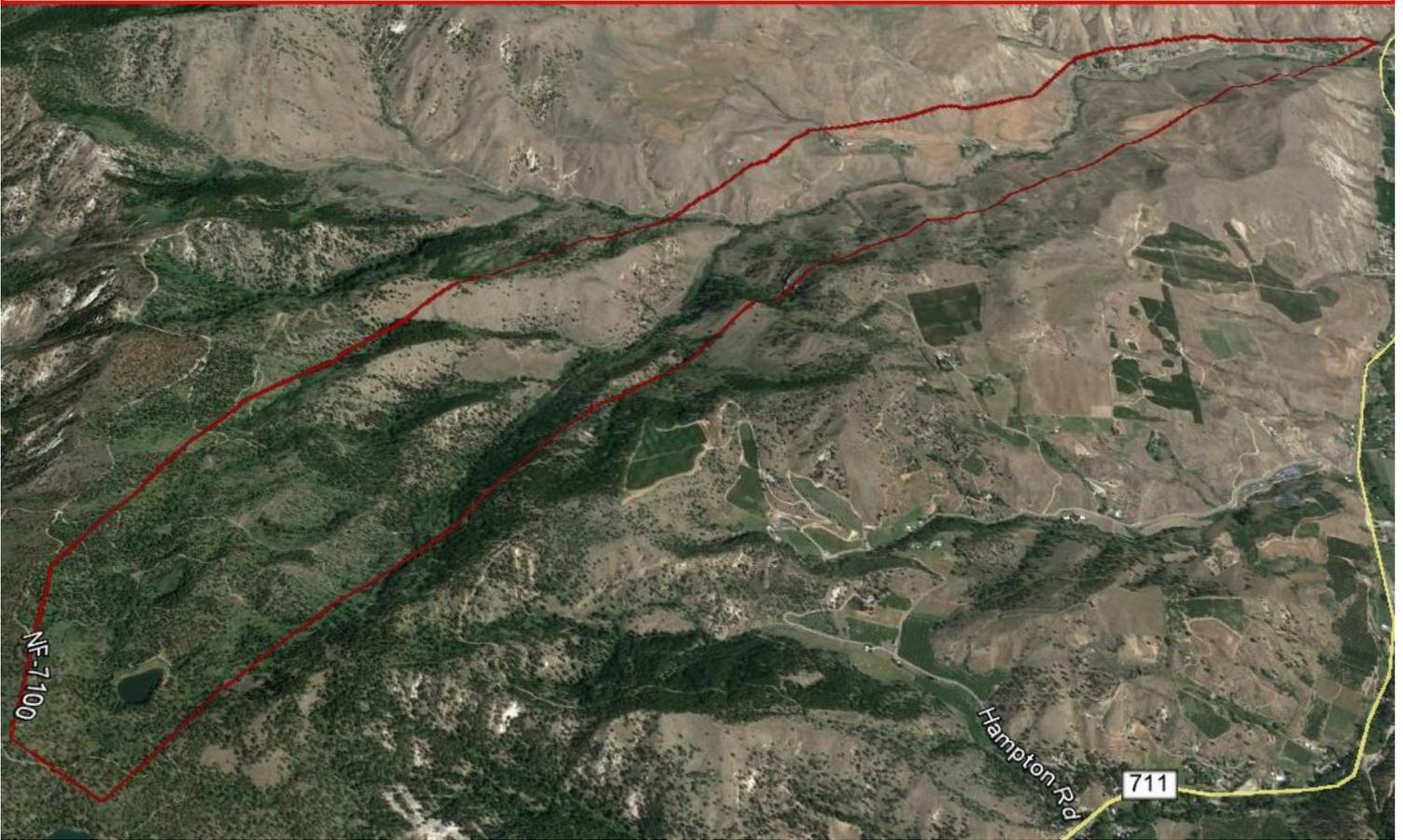
Category	Priority	Description
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Construction	1	<p>Encourage the use of Class A flame spread roofing and fire resistant siding.</p> <p>Recommend enclosing or screening open areas below decks to prevent ingress of embers and keep free of flammable materials. Encourage ongoing wildfire and home fire mitigation actions by residents.</p> <p>Locate residential LP tanks within the defensible space in accordance with the International Fire Code.</p> <p>Chelan County Fire District 1 discourages homeowners from developing continuous flowing fire protective systems (e.g. sprinkler systems) utilizing PUD water. During a wildfire event, this resource may be needed by firefighters to extinguish structure fires.</p> <p>Employ Firewise home and landscape treatment to create a “defensible space” around residences and buildings as described by Cascadia Conservation District's Qualitative Assessment Guidelines and Firewise guidelines (http://www.firewise.org/). These guidelines describe actions within three protection zones near structures: less than 30', 30-100', and 100' to 200'.</p> <p>See Firewise website http://www.firewise.org/ for comprehensive recommendations.</p>
Preparedness & evacuation planning/safe areas	1	<p>Engage with Chelan County Emergency Management to develop evacuation plans for the community and to identify safe areas.</p> <p>Encourage the use of reflective blue and white address signs available from Chelan County Fire District 1.</p> <p>Encourage residents to provide for emergency vehicle access and turnaround on their access roads. In particular, try to ensure multiple points of entry and exit in case of fire blocking one route.</p>

Insurance rating: Adhering to the above recommendations may positively affect the Community's fire insurance rates in the future.

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Pitcher Canyon Community



Wheeler Hill/Wenatchee Heights Community

Drafted by Jerry Holm

Number of Structures (approximately)	Not provided.
Number of lots (approximately)	241
Utilities Above or Below Ground	Mostly above.
General Construction	Mixture of stick-built homes and manufactured homes
Average lot size	A wide range of lots sizes from 1+ acre to large parcels of orchards or fields.
Home addresses	Inconsistent, reflective and non-reflective.
Duel access Roads	Access or egress points are Wenatchee Heights Rd. via Squilchuck Rd. or via Stemilt Loop Rd. Whispering Ridge subdivision is one way in/out via Wenatchee Heights Rd.
Width, Slope and Surface	Main county roads are paved. Most driveways are single-lane gravel.
Predominate wildfire fuel types in area	Estimated: 60% light, 30% medium and 10% heavy grass and scattered sage and other shrubs. Fir, pine and deciduous trees in draws and ridges also surrounding many homes.
Slopes	The area of Wheeler Hill and Whispering Ridge is primarily steep slopes. 40% of area >50% slope, 50% between 10-20% slope and 10% of the area less than 9% slope. Areas accessed off of Jim Smith Rd. and Edgemont Rd. are largely low sloping orchard lands.
Emergency Vehicle Turnarounds	Several intersections provide for vehicle turnaround.
Water Supply	PUD, hydrants throughout Whispering Ridge and Wheeler Hill.
Other Hazards	Steep slopes, grass and shrub lands, with treed gullies and easterly prevailing winds make this area a wildfire concern.

About the Community: The Community has two means of access: From the west, about 4.5 miles south west of the City of Wenatchee via Squilchuck Rd. and then onto Wenatchee Heights Rd. and from the east, by way of Stemilt Loop Rd. Whispering Ridge subdivision is sited in the south west area of the Community and Whispering Ridge Rd. is accessed off of Wenatchee Heights Rd.

The Community is sited within Chelan County Fire District 1. Fire Stations occur at the bottom of the Squilchuck Rd. and at the junction Squilchuck Rd. and Wenatchee Heights Rd.

Steep slopes with abundant grasses combined with treed gullies and ridge tops along with prevailing easterly winds make this area a concern for fast moving wildfire.

Wheeler Hill/Wenatchee Heights Community

General Community: **Concerns**

Hazard Rating: **High**

<p>Construction</p>	<p>1</p>	<p>Residential landscaping often does not reflect Firewise recommendations with trees, shrubs, etc. being too close to structures.</p> <p>Firewood and other combustibles such as LP tanks are often under or adjacent to decks or other structural areas.</p> <p>PUD water may be used for continuous structure protection. Some residences have wells.</p> <p>Property owners often do not utilize Firewise material choices in construction, building maintenance and landscaping. Flammable roofing and siding materials are used for construction on many structures.</p>
<p>Preparedness & evacuation planning/safe areas</p>	<p>1</p>	<p>Many homes have inconsistent visible house numbering.</p> <p>Many of the Community residences are served by one way in/out secondary roads, but those roads then intersect with two way in/out roads. Greater public awareness of evacuation plans and safe areas are necessary.</p> <p>Residences adjacent to wildlands may be at risk if wildland fuels are dense or close to structures.</p>

Special Note: The Chelan County Special Needs Registry is a voluntary registry of individuals who are frail, elderly, medically needy, and/or disabled and are not served in or by a residential facility program (i.e. nursing home, retirement apartments, etc.) who would require assistance in the event of an emergency. This registry alerts emergency responders as to a resident's address and gives them the vital information they need to better meet the resident's needs. Participation in the registry is **voluntary** and all information is strictly confidential, used only for emergency purposes. Call 509-667-6863 for more information

Wheeler Hill/Wenatchee Heights Community

General Community: Recommendations

Category	Priority	Description
Construction	1	<p>Encourage the use of Class A flame spread roofing and fire resistant siding.</p> <p>Recommend enclosing or screening open areas below decks to prevent ingress of embers and keep free of flammable materials. Encourage ongoing wildfire and home fire mitigation actions by residents.</p> <p>Locate residential LP tanks within the defensible space in accordance with the International Fire Code.</p> <p>Chelan County Fire District 1 discourages homeowners from developing continuous flowing fire protective systems (e.g. sprinkler systems) utilizing PUD water. During a wildfire event, this resource may be needed by firefighters to extinguish structure fires.</p> <p>Employ Firewise home and landscape treatment to create a “defensible space” around residences and buildings as described by Cascadia Conservation District's Qualitative Assessment Guidelines and Firewise guidelines (http://www.firewise.org/). These guidelines describe actions within three protection zones near structures: less than 30’, 30-100’, and 100’ to 200’.</p> <p>See Firewise website http://www.firewise.org/ for comprehensive recommendations.</p>
Preparedness & evacuation planning/safe areas	1	<p>Engage with Chelan County Emergency Management to develop evacuation plans for the community and to identify safe areas.</p> <p>Encourage the use of reflective blue and white address signs available from Chelan County Fire District 1.</p> <p>Encourage residents to provide for emergency vehicle access and turnaround on their access roads. In particular, try to ensure multiple points of entry and exit in case of fire blocking one route.</p> <p>To be determined.</p>

Insurance rating: Adhering to the above recommendations may positively affect the Community’s fire insurance rates in the future.

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Wheeler Hill/Wenatchee Heights Community



Halverson & Hampton Canyons Community

Drafted by Jerry Gutzwiler

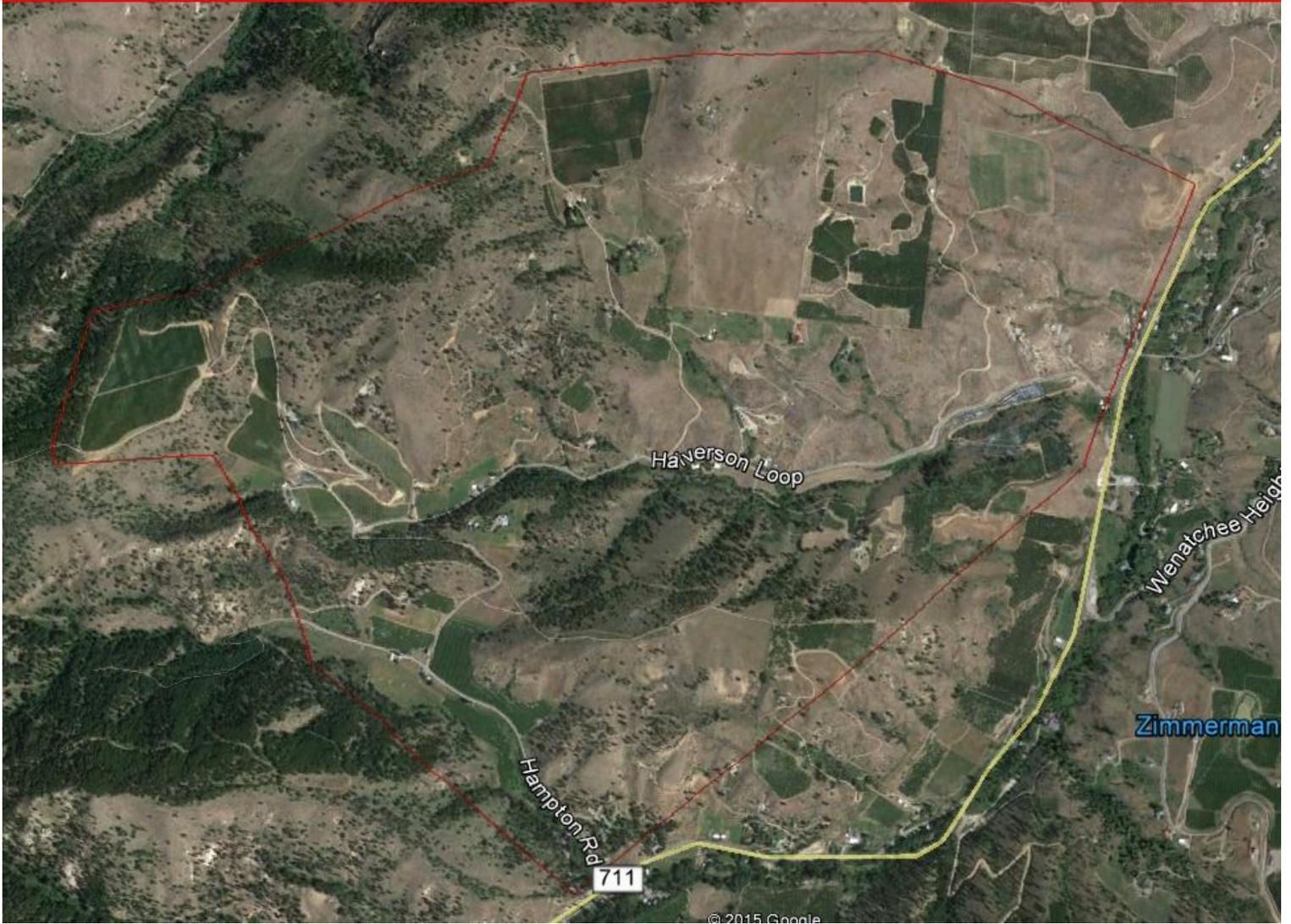
Number of structures (approximately)	21 single family dwellings, most with metal roofing. 2 four-plex condominiums, 31 outbuildings.
Number of parcels, lot size (approximately)	Land parcels vary by owner and range from <1 acre to 680 acres. 8 landowners have cherry orchards totaling over 225 acres.
Utilities above or below ground	Above ground power and fiber optic on county roads, some utilities are buried from the County road to the residence.
Home addresses	Inconsistent reflective and non-reflective signs. Many mail boxes are grouped together and some driveways are without addresses.
Duel access roads	Halverson and Hampton Canyons are joined by a loop road that connects at each end with Squilchuck Road.
Road width, slope and surface	Narrow County maintained loop road is paved.
Predominate wildfire fuel models in area	Estimated: 25% Ponderosa pine/Douglas fir forest (primarily in the southern part of Hampton and western part of Halverson Canyons); 30% mixed open forest/shrub steppe vegetation (in the northern part of Hampton and the southwestern part of Halverson Canyons); 45% grass/shrub steppe vegetation consists of sage and bitterbrush low, woody vegetation and herbaceous vegetation, primarily perennial grasses (exists in the northwest part of Hampton and all of the north and eastern part of Halverson Canyons).
Slopes	Slopes range from flat to >70%. The canyons are steep gradient with no continuous flowing streams.
Emergency vehicle turnarounds	Most homes have areas that can accommodate emergency vehicles.
Water supply	There are no fire hydrants on Halverson Road and Hampton Road has only one fire hydrant near the intersection with Squilchuck Road. Most landowners have access to irrigation water via High Line Ditch, with available water from April-October. Domestic water is provided through private wells.
Other hazards	Wildfire defensibility varies with some parcels at greater risk than others, depending on wildfire fuels, topography and individual initiative.

About the Community: The combined Halverson Canyon and Hampton Canyon Community is approximately 4 to 6 miles southwest of the City of Wenatchee and is within Chelan County Fire District 1. Access to this Community is via Halverson Canyon and Hampton Canyon roads by way of Squilchuck Road, which provides one way in/out access from the CWPP area. The Halverson Canyon and Hampton Canyon Community has not formally assessed the wildfire situation to nearly the depth that the Forest Ridge community has. Although, the wild land project fires during the last three summers in Chelan and Okanogan Counties has definitely raised that awareness of some residents. There are only three residences in this community that have had serious threat from a forest fire.

Although, under the right conditions of high temperature, wind, and low humidity the shrub-step in both of these drainages could produce a very fast-moving fire that could endanger the majority of the buildings in this Community. Without a more in-depth discussion with individual members of this Community, it is difficult to put priorities on the various concerns regarding wildfire dangers. The seeming lack of awareness and concern for wildfire in this Community is primarily because of road access, size of lots and wildfire fuel types. The amount of interest Community members have in the wildfire discussion is driven primarily by the Table Mountain fire of 2012, which had an eastern boundary approximately ½ mile from the nearest residential homes.

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Halverson & Hampton Canyons Community



Appendix 3. “Special Area Descriptions” “Issues & Concerns” Map

1.	Mission Ridge Ski & Board Resort	1-2
2.	Scout-A-Vista	3-4
3.	Squilchuck State Park	5-6

Mission Ridge Ski and Board Resort Special Area*

Authored by Brad Whiting

Number of Structures	5 in the base area, 2 at mid-mountain and 1 at the summit
Size of Resort (approximately)	2,000 acres.
General Construction	Mixture of combustible/noncombustible siding, roofing, decks.
Duel access Roads	One way in/out via Mission Ridge Road and Squilchuck Road and various collector roads.
Road Width, Slope and Surface	Main access to resort by County approved paved road. Within resort is a non-paved service road running from base to summit.
Predominate wildfire fuel types in area	Estimated: 20% basalt rock fields with no fuels, 5% open grass & mixed shrub, 30% small, dense Ponderosa pine & mixed species fir
and	45% heavy timber Ponderosa pine & fir.
Slopes	Estimated: 15% of slopes < 14% grade, 35% 15- 20% grade, 30% 21- 30% grade, 15% 31-40% grade, 5% of slopes > 41% grade.
Emergency Vehicle Turnarounds	Mission Ridge Road ends at resort with parking lot of 400' X 900'.
Water Supply	Private well and snow making reservoir of 17 million gallon cap.
Other Hazards	Access in and out of the area could be compromised by a rapidly moving wildfire northeast of the resort and with an easterly wind.

General Description of the Special Area: The Squilchuck Road to Mission Ridge Road provides access to Mission Ridge Ski Area. Squilchuck Road extends from Mission Street approximately (8) eight miles southwest of Wenatchee, and then another four miles to the Mission Ridge Ski Area. Limited ingress/egress exists to Mission Ridge Ski Area, during the event of a fast moving wildfire; evacuation of the area could be difficult. There is a single lane dirt road that travels through the ski area to the summit access.

Established in 1966, Mission Ridge Ski Area encompasses 2,000 acres of land 12 miles Southwest of Wenatchee. The area operates under a "special use" permit on the Wenatchee National Forrest, as well as a small portion on Washington State Department of Fish and Wildlife lands. Mission Ridge has 4 aerial tramways, 2 service lifts, a large base area lodge, with 6 separate operational buildings in the base area, and a smaller mid mountain lodge. The ski area has a permitted waste and water treatment facilities to accommodate its guests. Each season the ski area is host to 100,000 plus visitors, and is the largest winter recreational tourist attraction in the region.

Current wildfire mitigation activities: The fire hazard for Mission Ridge Ski Area is highly recognized by the permit holders. Prevention and protection are primary goals for the area during the summer months. Current preventative and protective measures include: maintaining a defensible space around company structures, placing roof top sprinklers on key buildings, use of sprinklers around building during the summer months to keep soils saturated, equipping company vehicles with fire extinguishers and fire suppression tools, charging the existing snowmaking system for emergency use, keep the water tender full during the summer, maintaining the portable 300 gallon fire suppression tank, using brush cutters in the vicinity of facility buildings, and

mowing of existing ski runs.

Wildfire mitigation plan:

Overview

Mission Ridge recognizes the hazard and risk presented by wildfire to our operation, and would like to take further steps to protect our business.

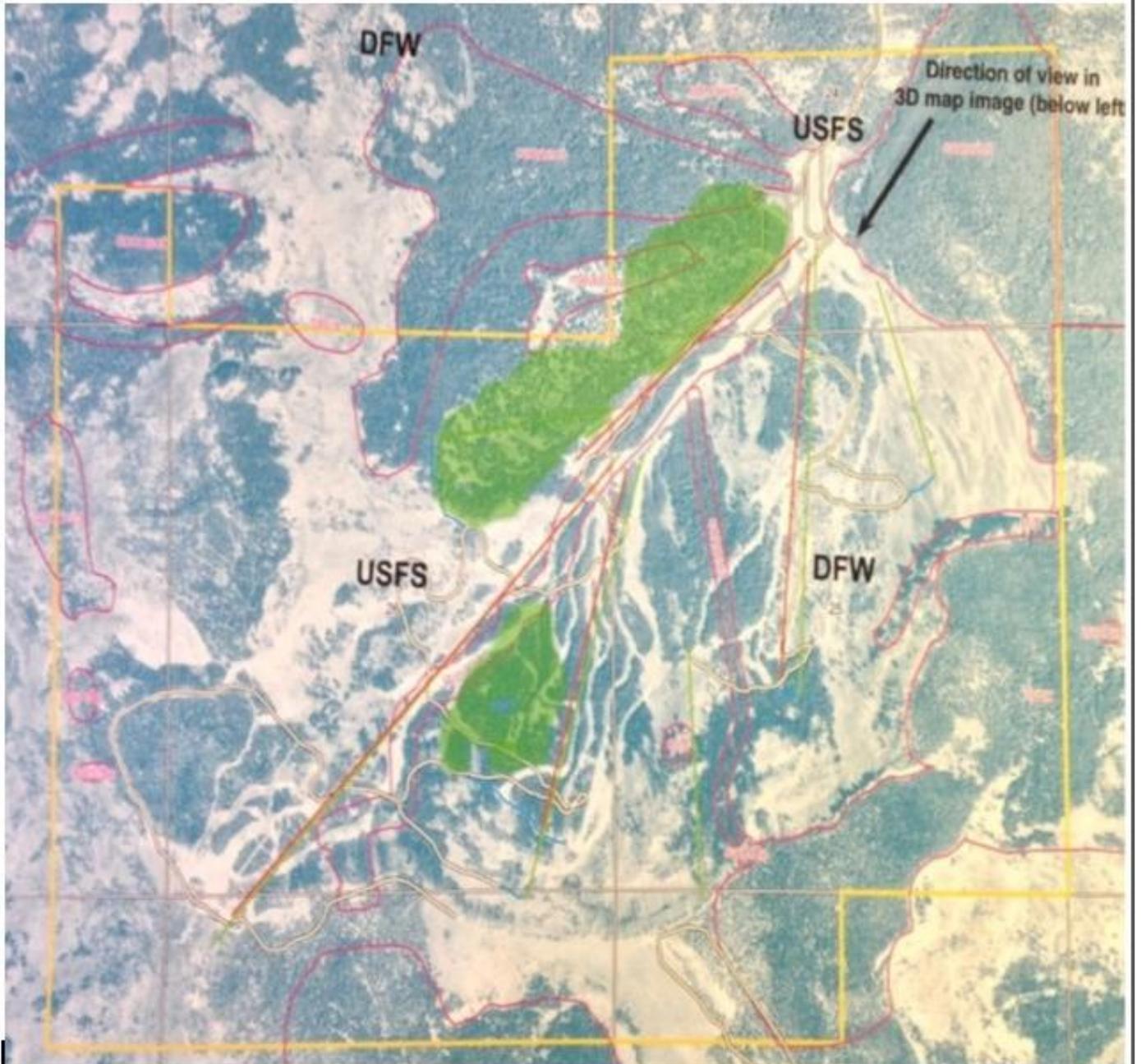
Fuels Reduction and Forest Pest Mitigation

- Create defensible space around all structures and essential infrastructure.
- Thin, limb and clear along existing road easements (starting with the "Central Park" area of the mountain and the Chair 3 zone of "Tumwater to Kiwa").
- Assess and create both internal and perimeter fuel breaks.
- Work with agency landowners to perform fuel reduction strategically across the landscape to minimize the movement and intensity of wildfire across the landscape.
- Work with local landowners, CCFD #1, federal, state and county agencies on continuing dialogue about slash disposal planning and timing.
- Seek out funding sources from different entities to help support the fuel reduction efforts.

* **"Special Areas"** are places within the CWPP study area that could be threatened from wildfire and have a social or economic value this is not based on residential development. Special Areas include recreation areas, such as parks, reservoirs, ski areas, guest ranches, church camps, RV parks and other large acreage recreational camps that have a significant, but temporary population. Also included as Special Area is critical infrastructure such as communication arrays that is vital to the local community.

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Mission Ridge Ski & Board Resort



Proposed thinning and initial fuels reduction areas are highlighted in the green.

Scout-A-Vista Special Area*

Drafted by Jerry Holm

Number of Structures	(7) Including a lodge, care taker residence, cabins, restrooms and miscellaneous outbuildings.
Size of camp	Approx. 182 acres total with about 85 acres for the main Camp
Building Construction	Mixture of combustible/noncombustible materials.
Roads	To Camp entrance: One way in/out via Squilchuck Road. Within the Camp: Parking lot with unpaved roads providing access to some areas of the main Camp.
Predominate wildfire fuel types	Grasses and forbs and light to moderate timber in the main Camp area. The balance of Scout-A-Vista is moderate to heavily timbered of ponderosa pine and mixed species fir with dense brush.
Slopes	Moderate slopes of < 10% in the main Camp areas. The Balance of the Camp has moderate to steep slopes.
Emergency Vehicle Turnarounds	Limited.
Water Supply	Well.
Other	The main Camp area is defined as: From Mission Ridge Road on the north, then extending approx. 1,400 ft to the south, then from Forest Ridge subdivision on the east, to approx. 1,200 ft. to the west..

General Description of the Special Area: Scout-A-Vista is a Boy Scouts of America camp and is located in Chelan County, 10 miles southwest of Wenatchee, up Squilchuck Canyon toward Mission Ridge. It is comprised of approximately 182 acres with some 85 acres being the primary site of Camp activities and location of structural improvements. The structures are located in approximately a 2 acre, mostly grass and lightly treed meadow with < 10% slopes. Most structures are wood framed and sided and have metal roofs. The main Camp area also contains numerous campsites with fire rings and there is also a group campfire/ amphitheater site.

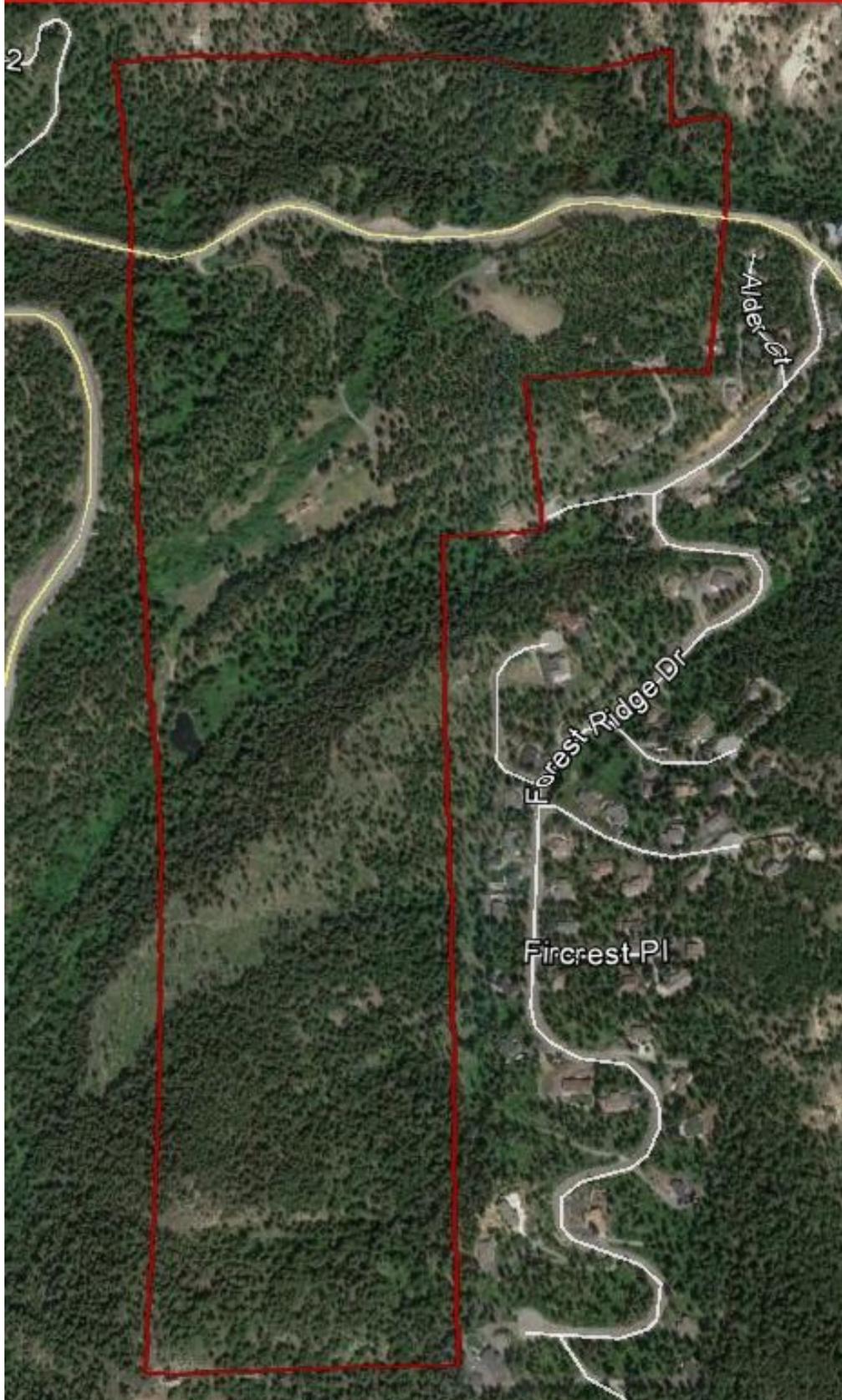
The main Camp area has been selectively logged with much of the ladder and ground wildfire fuels reduced.

Forest Ridge Wildfire Coalition and DNR are engaged in continuing talks with Camp management about wildfire fuels reduction efforts to benefit the entire Squilchuck Valley Area CWPP.

* **“Special Areas”** are places within the CWPP study area that could be threatened by wildfire and are of a social or economic value this is not based on residential development. Special Areas include recreation areas, such as parks, reservoirs, ski areas, guest ranches, church camps, RV parks and other large acreage recreational camps that have a significant, but temporary population. Also included as Special Area is critical infrastructure such as communication arrays that are vital to the local community.

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Scout-A-Vista Special Area



Squilchuck State Park Special Area*

Authored by Andrew Fielding

Number of Structures	Residence, shop building, ski lodge, campground restroom, 2 small ski hill buildings, group camp area.
Size of Park	287.67 acres.
Building Construction	Mixture of combustible/noncombustible materials.
Roads	To Park entrance: One way in/out via Squilchuck Road. Within Park: Paved road and large parking lot with unpaved and utility roads providing access to areas of the Park.
Predominate wildfire fuel types	Steep slopes with grasses and forbs at lower parts of park transitioning into shrubs and forested areas. Fuel reduction projects are ongoing with removing ladder fuels and creating shaded fuel breaks and defensible space.
Emergency Vehicle Turnarounds	Turn around at lower parking lot and at south turn-around circle.
Water Supply	PUD, hydrants and irrigation well.
Other	Park is suitable for, and has been used as, a staging area and helicopter base. Has large paved parking areas and mowed grass areas.

General Description of the Special Area:

Squilchuck State Park is located in Chelan County, 9 miles southwest of Wenatchee, up Squilchuck Canyon toward Mission Ridge. It is comprised of 287.67 acres sitting within a steep sided valley with, developed facilities located in the lower part of the property including parking for 200 cars. During fire season the park is used by day use recreationists (hikers, bikers, and horseback riders), day use rental of the ski lodge (special events) and an overnight group camp. The entrance to the park in one way in/out from Squilchuck Road. The park contains some old logging roads of varying widths and conditions. The park is managed as part of Greater Wenatchee Area by Parks manager Matt Morrison.

Current wildfire mitigation activities: State parks has been involved in fuel reduction and forest health for several years both as part of the coordinated area efforts and as part of internal stewardship projects. Efforts have focused on defensible space and fuel reduction prioritized by proximity to facilities and neighbors.

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Wildfire mitigation plan:

Overview

State Parks recognizes the hazard and risk presented by wildfire to its operation, and the broader community and neighbors. State parks have prioritized this as a focus area for fuel reduction / forest health.

Fuels Reduction and Forest Pest Mitigation

1. Create defensible space around all structures and essential infrastructure.
2. Thin, limb and clear along all entry and access points.
3. Continue to assess and create internal and perimeter fuel breaks and forest health thinning to reduce beetle infestations and wildfire risk.
4. Work with agency landowners to perform fuel reduction strategically to minimize the movement and intensity of wildfire across the landscape. For example: Forest Ridge bordering neighbors.
5. Work with local landowners, CCFD #1, federal, state and county agencies on continuing dialogue about slash disposal planning and timing.
6. Seek out funding sources from different entities to help support the fuel reduction efforts

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Squilchuck State Park Special Area

