SIERRA LOMA ASSOCIATION

COMMUNITY WILDFIRE PROTECTION PLAN

Prepared by:

Sierra Loma Association

NEVADA DIVISION
OF FORESTRY

SIERRA LOMA ASSOCIATION HOA COMMUNITY WILDFIRE PROTECTION PLAN

THE SIERRA LOMA ASSOCIATION COMMUNITY WILDFIRE PROTECTION PLAN WAS DEVEOLOPED UNDER THE PLANNING GUIDANCE OF THE HEALTHY FOREST RESTORATION ACT OF 2003. THIS COMMUNITY WILDFIRE PROTECTION PLAN REPRESENTS THE EFFORTS AND COOPERATION OF A NUMBER OF ORGANIZATIONS AND AGENCIES THROUGH THE COMMITMENT OF PEOPLE WORKING TOGETHER TO IMPROVE PREPAREDNESS FOR WILDFIRE EVENTS IN SIERRA LOMA ASSOCIATION WHILE REDUCING FACTORS OF RISK. THIS IS A SUPPORTING PLAN TO THE CITY OF RENO HAZARD MITIGATION PLAN AND EMERGENCY ACTION GUIDELLINES.

City of Reno Emergency Manager — Date

TRAV PALMER

City of Reno Fire Department — 5/23/2023 Date

Nevada Division of Forestry State Forester — 6/6/23 Date

Sierra Loma Association — 5/25/2023 Date

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1. INTRODUCTION

The purpose of the Sierra Loma Association Community Wildfire Protection Plan is to protect human life and reduce property loss due to catastrophic wildland fire. The Community Wildfire Protection Plan identifies and prioritizes Wildland/Urban Interface areas within Sierra Loma Association for hazardous fuels reduction treatments and recommends methods for achieving hazardous fuels reductions. In addition, the plan outlines measures for reducing fire danger to the structures throughout Sierra Loma Association and surrounding communities.

The Sierra Loma Association Community Wildfire Protection Plan is a supporting plan to the City of Reno and Washoe County Hazard Mitigation Plan. The Community Wildfire Protection Plan was developed under direction of the Nevada Division of Forestry, City of Reno Fire Department Emergency Services in conjunction with representatives from the following agencies:

- City of Reno Fire Department
- City of Reno
- Washoe County
- USFS/BLM land is not adjacent to this community.

In order to accomplish the goals of the Community Wildfire Protection Plan, community leaders can assist by promoting and adopting the recommendations and strategies of the Firewise USA program, which include encouraging all residents living in the Wildland/Urban interface area to become acquainted with "Firewise USA" mitigation strategies to protect their property from wildfire hazards. In addition, community leaders can promote growth in a sustainable, hazard-free manner by incorporating Fire Mitigation Strategies into existing zoning ordinances, land use planning, and building code standards to ensure development will not put people in danger or increase threats to existing properties.

Sierra Loma Association is a community in Northwest Reno with 196 units. Sierra Loma Association is nestled at the base of Peavine Creek at Lower Peavine Creek Reservoir. The area to the west of the community is vacant land dry reservoir owned by the City of Reno. There are other developed communities surrounding Sierra Loma. These areas are heavily developed multi family residential homes.

As rapid development continues at in Reno with growing numbers of residents, tourists, increased recreational activity daily, the projects listed will focus on proactive mitigation of wildfire hazards including current open space fuel types and planted landscapes in Sierra Loma Association. The community involvement and review involved in the approval of this current document is expected to achieve the requirements for a Community Wildfire Protection Plan [CWPP].

Field assessments were completed, and treatment recommendations developed for implementation over a one-to-five-year planning horizon. Several key goals were identified during the development of this project and include the following:

- Protect lives and property from wildland fire;
- Increase resident and public understanding of living in a fire-adapted ecosystem;
- Raise community awareness of the issues of living in the wildland urban interface of western Nevada and promote support for the recommended measures to reduce wildfire risk;
- Identify and prioritize areas for hazardous fuels reduction treatments; and
- Implement a fire fuels maintenance program.

2.0 Community Descriptions & Natural Environment

2.1 Climatic Factors, Topography & Exposure

Average annual high temperature: 67ºF: Average annual low temperature: 40ºF: Days per year with precipitation 50 days: Annual hours of sunshine: 3483 hours: Average annual precipitation 7.4 inch: Av. annual snowfall: 22 inch

Weather Highlights

Summer High: the July high is around 91 degrees
Winter Low: the January low is 24
Rain: averages 7.4 inches of rain a year
Snow: averages 22 inches of snow a year

Most moisture at Sierra Loma Association falls in the form of snow during the winter months, then transitions to rain in the spring. While spring, summer and fall months are relatively dry with isolated thunderstorms, Reno often experiences "dry lighting" storms. Along with more extensive drought periods noted over the past several years, which stresses vegetation and limited water resources, these climate factors contribute to a higher frequency of wildfire ignitions throughout the year.

Reno is just east of the Sierra Nevada, on the western edge of the Great Basin at an elevation of about 4,400 feet (1,300 m) above sea level. Numerous faults exist throughout the region. Most of these are normal (vertical motion) faults associated with the uplift of the various mountain ranges, including the Sierra Nevada. Peavine Peak is at the northwest corner of the Truckee Meadows and about 3.5 miles (5.6 km) due east of the California state. It forms one of the most dominant geographical features in the Reno/Sparks area. Early prospectors to the mountain discovered wild pea vines growing in the vicinity of Peavine Springs on the northeast flank of the mountain, near Poeville, hence the name. The topography of the hillside and Peavine Creek is descending into the Sierra Loma Association community from Peavine Peak on USFS land north of McCarran Blvd (State Route 659). Sierra Loma Association is built atop Peavine alluvium, most significantly from just west of Lake Park in Northwest Reno and west the University of Nevada-Reno. Above these alluvial deposits, the sediments become coarser and are frequently interspersed with diatomaceous material.

Due to its proximity to the Reno-Sparks area, Peavine is attractive to and popular with all varieties of outdoor enthusiasts. Under the stewardship of the Humboldt-Toiyabe National Forest, many miles of hiking and mountain bike trails have been added, and the varied geography provides a range of challenges. Peavine is also a favorite for off-road vehicles, although access has become increasingly restricted in the past fifteen years from Northwest Reno, due largely to residential building in that area. The HTNF maintains assorted access points across this area on the southwest flank of the mountain, some allowing for motor vehicles, with others designed for pedestrian traffic; access from the east and the north is substantially less regulated.

Mountain to valley wind patterns, particularly on this side of the Sierras, strongly influence fire behavior. The predominant wind direction is downslope from the west and west southwest. These winds and cross valley winds frequently exceed 20 miles per hour. Frequent "Washoe Zephyr" winds are seasonal diurnal winds which occur across western Nevada just east of the Sierras. They blow primarily in the summer from mid afternoon until late in the evening and become quite gusty. As the terrain around Sierra Loma Association is arid, the Washoe Zephyr can lift considerable quantities of dust into the atmosphere. The Washoe Zephyr runs contrary to the usual pattern of diurnal mountain slope winds (upslope daytime, downslope nighttime) and thus its exact mechanism is still being studied. One hypothesis is that the wind is caused by intense heating over the Great Basin during summer afternoons. The heating causes a thermal low to develop which sets up a pressure gradient which induces the wind, pulling cooler air down from the High Sierra.

Fire intensity and spread rate depends on the fuel type and condition [ie] live vs. dead fuels, weather conditions prior to and during an ignition, and the topography. Generally, the following relationships hold between the fire behavior and fuel, weather, and topography:

• Fine fuels ignite more easily and spread faster with higher intensities than coarser fuels. For a given fuel type, the more there is and the more continuous it is, the faster a fire spreads and the higher the intensities. Fine fuels take a shorter time to burn out than coarser fuels.

• Weather conditions affect the moisture content of dead and live vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower the fuel moisture content. Lower fuel moistures produce higher spread rates and fire intensities.

Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity.

• Topography influences fire behavior principally by the steepness of the slope; however, topography and terrain features such as narrow draws and saddles, can influence fire spread and intensity. In general, the steeper the slope, the faster a fire spreads uphill and with greater intensity.

2.2 Home Ignition Zone

Sierra Loma Association is located in a wildfire environment that is similar to most of western Nevada and the Great Basin. It is not a matter of "if" a wildfire will occur, it's when, where, and how intense and severe the wildfire will be. This assessment addresses Sierra Loma Association's wildfire-related characteristics, ignition potential and the community's exposure to wildfire, both in terms of individual homes, and even more so in reference to neighborhoods, associated open space and the community as a whole.

Ignition risks for wildfires fall into two categories: lightning and human caused. Human caused ignitions can come from a variety of sources [i.e.] fires started along highways and roads from burning material thrown out of vehicle windows or ignited during auto accidents, off-road vehicles, arcing power lines, agricultural fires, ditch burning, debris burning in piles or burn barrels, burning matches, target shooting, and fireworks, to name a few.

Small brush fires have sparked near the Reno-Sparks area as early as May of this year. In 2020, over 800 fires burned throughout Nevada. Almost 550 of them were started by humans. Almost 300,000 acres burned last year in the blazes.

Sierra Loma Association has two fuel types: upland sagebrush/bitterbrush with a cheatgrass understory on the north side and a riparian fuel type in Peavine Creek and Lower Peavie Creek Reservoir. The fuels in noted in this area of the ditch are willows, alder, wild rose, mugwart chokecherry, yellow pine, mtn mahogany, bitterbrush ephedra, sage, and rabbit brush. There is a variety of wildflowers and grasses as well.

A house burns because of its interrelationship with the surrounding landscape, the house or structure construction, and its immediate physical surroundings, which is termed the "home ignition zone." To reduce the potential for a home ignition, homeowners should focus on mitigating wildfire's possibility to consume the home. While there are no guarantees, altering a wildfire's path and intensity through vegetation management and fuels reduction can minimize potential loss of life or property. Proactive removal of flammable vegetation adjacent to the home and reducing the volume and density of the vegetation around a structure prevents direct flame contact. Sierra Loma Association homeowners and the Sierra Loma Association Homeowners Association have the ability to take specific actions to protect their homes from wildfire.

2.3 Wildland Fire History & Characteristics

From north of Reno NV, to south of Topaz Lake on the Nevada - California border, western Nevada has experienced numerous, severe wildfires along the eastern slopes of the 52 mile long Carson Range collectively referred to as the "Sierra Front," over the past 42 years. The combination and interaction of topography, weather, vegetation, and periods of drought results in the potential for ignition, both human caused and lightning, has and will continue to result in large wildfire events that exhibit extreme fire behavior. Numerous homes and other structures were saved by emergency responders and a well-designed subdivision.

A majority of these wildfires ignited when conditions are extreme: hot, dry and windy with a high potential for lightning. Consequences are numerous, including loss of life, property loss and lowered property values, high fire suppression costs, economic losses, and lengthy and costly post-fire rehabilitation. Environmental impacts can also be extensive including increased soil erosion, flooding, water quality impacts, loss of wildlife habitat and aesthetics, and overall watershed degradation.

The City of Reno and Washoe County have experienced five (5) catastrophic fires. In 2011 the Caughlin Fire burned and in 2020 the Pinehaven Fire burned. Both of these fires burned up to the edge of neighborhoods just south west of Sierra Loma Association. The burn scar and lack of any vegetation from the previous fires has left a barren landscape with rock on the soil surface and prolific cheat grass. These fires were fast moving and driven by strong winds and destroyed several homes in neighboring communities and forced the evacuation of hundreds more. As many as 500 homes were threatened by these fires that grew to more than two square miles within hours of igniting brush above the neighborhood.

2.4 Community Fuel Types

There are three main vegetation types in the Sierra Loma Association community, including sagebrush/bitterbrush, cheatgrass and rabbitbrush and dead and dying trees and vegetation. The sagebrush/bitterbrush, rabbit brush and cheatgrass types are considered high fuel hazards.

Sagebrush/Bitterbrush
Sagebrush [*Artemisia tridentata*] and Bitterbrush [*Purshia tridentata*] are found all over in lower elevation sites or south- and west- facing slopes where lower levels of precipitation and soil moisture prevail. In terms of wildland fire, the diverse assemblage of native shrubs, grasses, and wildflowers found in these natural sagebrush communities compose the 'fuel' for wildland fires.

If left undisturbed for long periods of time (i.e., 30 to 50 years) without the occurrence of fire to remove or setback shrub density and canopy expanse, the elevated shrub canopy in these native plant communities will increase to the extent where the shrub component will readily carry fire under benign weather and wind conditions. Fuel loading levels occurring in over-mature sagebrush stands can become very high and result in extreme fire behavior when ignition occurs. Selective thinning, trimming and removal of dead woody biomass in these plant communities will help to mitigate wildfire risk over time.

Cheatgrass
A non-native invasive annual grass, Cheatgrass (*Bromus tectorum)* is present throughout the undisturbed shrublands in the community. These highly flammable annual plants increase the wildland fuel hazard exponentially in a wet year with higher-than-normal precipitation. They also pose the risk of replacing the dominant native shrub vegetation with flashy annual grasses and weeds following a wildfire.

3.0 Community Wildfire Fuels Assessment

3.1 Assessment Findings

Nevada Division of Forestry did a Community Risk Assessment on January 19, 2023. The report's Suppression Assessment section included factors on road width and accessibility for ingress and egress; water supply and infrastructure; local response resources and community governance; etc. A total of 21.38 acres of the community was assessed.

The Surrounding Environment Assessment section included factors on vegetation; adjacency to wildlands; defensible space; geographic and topographic features; etc.

Community Wildfire Risk Assessment

Total Assessed Rating

76 - Moderate

Suppression Rating

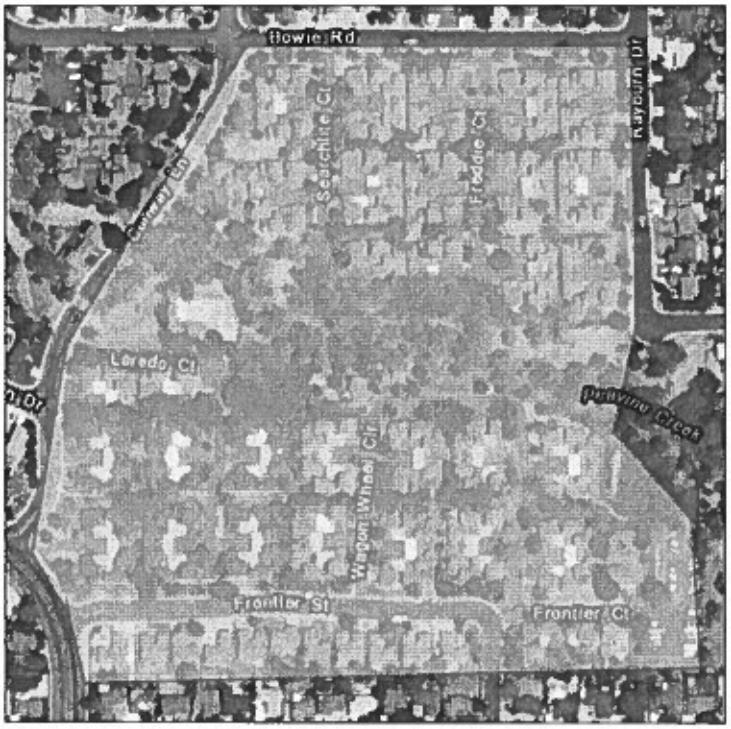
Low Hazard

Surrounding Environment Rating

Moderate Hazard

Structures Rating

Moderate Hazard



Fire Protection District

Reno Fire

Fireshed(s)

City of Reno-Truckee River

Community Information

Latitude	39° 32' 6"
Longitude	-119° 51' 23"
Dwelling Units	196
Size	30.65 acres
Community Type	Residential - Stick-Built
Assessed By:	Kelli Nevills
Assessment Date:	January 19, 2023

SUPPRESSION ASSESSMENT

Ingress and Egress

→ **2 or more roads in/out with NO response/evacuation complexity**

2 or more roads in/out with SLIGHT response/evacuation complexity

2 or more roads in/out with MODERATE/HIGH response/evacuation complexity

One road in and out (entrance and exit is the same)

Recommended Mitigation Strategies

- ☐ Keep community ingress/egress open and maintained (cleared of vegetation)
- ☐ Develop community plan for evacuation routes, safe zones, staging areas
- ☐ If community is gated, develop evacuation plan and ensure emergency responder access
- ☐ Ensure residents know their closest exit in case of emergency
- ☐ Ask Local Fire Department about Ready, Set, Go!

Road Width

Road width is > 24 feet

→ **Road width is > 20 feet and < 24 feet**

Road width is < 20 feet

Recommended Mitigation Strategies

- ☐ Keep shoulders of road clear for emergency vehicle use at all times
- ☐ Consider providing pull-offs every 100 yards

Road Accessibility

→ **Surfaced road**

Non-surfaced road, grade less than or equal to 5%

Non-surfaced road, grade greater than 5%

Non-maintained dirt road

Recommended Mitigation Strategies

- ☐ Ensure that road maintenance plan is in place

Secondary Road Terminus

→ **Roads ends in a cul-de-sac, diameter > 100 feet**

Roads ends in a cul-de-sac, diameter < 100 feet

Dead end roads <200 feet long

Dead end roads >200 feet long

Recommended Mitigation Strategies

- ☐ Maintain unobstructed access into cul-de-sacs
- ☐ Ensure cul-de-sacs are free of vehicles and/or other items

Street Signs

→ **Present throughout, lettering 4 inches high, non-flammable and reflective**

Inconsistent throughout, lettering 4 inches high, non-flammable and reflective

Present or inconsistent but wooden, non-reflective, or lettering less than 4"

Not present

Recommended Mitigation Strategies

- ☐ Keep street signs visible and clear of vegetation and fine fuels

Driveways

→ **Average driveway allows access to homes**

Average driveway restricts access to homes

Recommended Mitigation Strategies

- ☐ Maintain driveway access and clearance

Water Supply

→ **Pressurized hydrants spaced less than 1000 feet apart**

Pressurized hydrants spaced more than 1000 feet apart

Dry Hydrant(s) / Draft available within the community

Other accessible sources within community (pond, lake, etc.)

Water sources located within 4 miles of community (incl heli dip sites)

No water sources in or within 4 miles of the community

Recommended Mitigation Strategies

- ☐ Ensure hydrants and water sources are marked, accessible and properly maintained
- ☐ Keep hydrants clear of obstructions and vegetation

Geographic Features

→ **No notable geographical features present to hinder fire suppression**

Suppression efforts hindered by geographical features (e.g. hazardous terrain)

Recommended Mitigation Strategies

- ☐ Be aware of local geographic features and plan appropriately in the event of a wildfire approaching your area; consider pre-suppression plan

Local Response Resources

→ **5 mi. or less from Agency with Response Authority (Staffed FD)**

5 mi. or less from Agency with Response Authority (Mixed Staff/VFD)

5 mi. or less from Agency with Response Authority (VFD)

> 5 mi. from Agency with Response Authority FD

Recommended Mitigation Strategies

- ☐ Establish and maintain contact with the closest Fire Department; consider pre-suppression plan
- ☐ Be aware of the importance of early detection and reporting of any emergency

Community Organization/Governance

GID present; HAS structure for sustained fire prevention and mitigation

HOA present; HAS structure for sustained fire prevention and mitigation

Municipal govt present; HAS structure for sustained fire prevention and mitigation

GID present; LACKS structure for sustained fire prevention and mitigation

→ **HOA present; LACKS structure for sustained fire prevention and mitigation**

Municipal govt present; LACKS structure for sustained fire prevention and mitigation

Lacks any structure for sustained fire prevention and mitigation

Recommended Mitigation Strategies

- ☐ Work with community to become more proactive towards protecting your life and property against wildfires; Become a Firewise USA® Site
- ☐ Host a Community Education Event at least once a year; Become a Firewise USA® Site
- ☐ Complete Community Risk Mitigation Project(s) as identified by Community Action Plan

SURROUNDING ENVIRONMENT ASSESSMENT

Predominant Vegetation

Light (grass)

→ **Medium (brush)**

Heavy (timber, overgrown sage, Pinyon/Juniper with dead/down, etc)

Extreme / Slash (Any Combination of contiguous Light, Medium, Heavy)

Recommended Mitigation Strategies

- ☐ Consider removal of ladder fuels that allow fire to climb from lower to higher vegetation
- ☐ Trim tree canopies regularly to keep their branches a minimum of 10' from structures and other trees
- ☐ Leave 30 feet between clusters of two to three trees, or 20 feet between individual trees
- ☐ Prune trees 6-10 feet from the ground

Defensible Space

→ **> 75% of homes meet criteria in Zone 0, 1 & 2**

50 to 75% of homes meet criteria in Zone 0, 1 & 2

< 50% of homes meet criteria in Zone 0, 1 & 2 - Light fuels amongst structures

< 50% of homes meet criteria in Zone 0, 1 & 2 - Moderate fuels amongst structures

Fuels heavy/extreme amongst structures & other urban hazards/materials are present

Recommended Mitigation Strategies

- ☐ Be aware of the risks from falling embers in relation to nearby fuels and defensible space
- ☐ Mow lawns regularly
- ☐ Water grass, plants, trees and mulch regularly
- ☐ Create a spacing of 30 feet between tree crowns
- ☐ Create a non-combustible area (zone 0) within 5 feet of your home, using non-flammable landscaping materials
- ☐ Remove dead vegetation from under the deck and within 10 feet of the house; stack firewood away from structures
- ☐ Consider xeriscaping

Structure-to-Structure Ignition

No Possible Structure-to-Structure Ignition

→ **Possible Structure-to-Structure Ignition**

Recommended Mitigation Strategies

- ☐ Work with neighbors to remove/prune vegetation between houses to mitigate structure-to-structure ignition risk; consder non-combustible fencing 5 feet from structure
- ☐ Consider use of sprinkler systems to keep vegetation moisture levels up
- ☐ Replace flammable roofs, siding, soffits, etc. with nonflammable when possible

Slope

→ **Slope 0% - 5%**

Slope 6 % - 10%

Slope 11% - 30%

Slope > 31%

Recommended Mitigation Strategies

☐ N/A

Vegetation on Electric Transmission Lines

No above ground electric transmission lines present

Above ground electric transmission lines are maintained

→ **Above ground electric transmission lines are NOT maintained**

Recommended Mitigation Strategies

☐ Work with NDF and/or local fire protection district to alert electric provider (NVEnergy) of needed line maintenance

Topographical Features

→ **No topographical features adversely affect wildland fire behavior**

Topographical features adversely affect wildland fire behavior (box canyons, chimneys, etc.)

Recommended Mitigation Strategies

☐ N/A

Adjacency to Wildlands

Not adjacent to wildlands with accumulated fuels

→ **Adjacent to wildlands with accumulated fuels**

Recommended Mitigation Strategies

☐ When possible, install firebreaks and reduce fuel loads around community boundary to reduce risk from adjacent wildlands; Work with neighboring land owners

Undeveloped Lots with Restricted Access and/or Not Maintained

→ **Fewer than 10% of lots are undeveloped**

10% to 30% of lots are undeveloped

31% to 50% of lots are undeveloped

Greater than 51% of lots are undeveloped

Recommended Mitigation Strategies

- ☐ Provide Living with Fire/Firewise construction guidelines to developers /owners
- ☐ Consider developing covenant restrictions, if applicable

STRUCTURES ASSESSMENT

Roofing Materials

→ **> 75% of homes have metal, tile or class A asphalt or fiberglass shingles**

50 to 75% of homes have metal, tile or class A asphalt or fiberglass shingles

< 50% of homes have metal, tile or class A asphalt or fiberglass shingles

Recommended Mitigation Strategies

- ☐ Use fire-resistant roofing material such as metal, tile or Class A shingles
- ☐ Inspect for and address gaps in roofing that can expose roof decking or supports
- ☐ Place angle flashing over openings between the roof decking and fascia board

Debris on Roof and/or Gutters

→ **No**

Yes

Recommended Mitigation Strategies

- ☐ Clear branch, leaf-litter and other debris from roof and gutters regularly
- ☐ Prune tree limbs away from roof

Ventilation and Soffits

→ **> 75% of homes have non-combustible ventilation soffits with mesh or screening**

50-74% of homes have non-combustible ventilation soffits with mesh or screening

< 50% of homes have non-combustible ventilation soffits with mesh or screening

Recommended Mitigation Strategies

- ☐ Clean vents to keep them free of debris, allowing them to keep embers out while allowing air flow for ventilation
- ☐ Enclose or box-in eaves with non-combustible materials such as metal, cement board or stucco
- ☐ Install a 1/8 inch metal screen behind roof vents

Siding

→ **> 75% of homes have non-combustible siding**

50-74% of homes have non-combustible siding

< 50% of homes have non-combustible siding

Recommended Mitigation Strategies

- ☐ Keep landscaping materials and vegetation away from combustible siding
- ☐ Create 5-foot non-combustible area (Zone 0) around house
- ☐ Replace with noncombustible siding when possible

Underskirting

> 75% of homes have skirting underneath raised floors/decks

50-74% of homes have skirting underneath

→ **< 50% of homes have skirting underneath**

Recommended Mitigation Strategies

- ☐ Remove combustible vegetation and leaf litter
- ☐ Spread gravel or other non-combustible material under the deck
- ☐ Screen in the bottom of the deck with metal 1/8-inch screening
- ☐ Separate wooden fences from the house with a stone or metal barrier

Wooden Attachments

→ **> 75% of homes have NO Wooden Attachments**

50-74% of homes have NO Wooden Attachments

< 50% of homes have NO Wooden Attachments

Recommended Mitigation Strategies

- ☐ Maintain debris-free decks (e.g. remove ignitable furniture, planters and covering propane grills, especially during high fire danger periods)
- ☐ Consider disconnecting fences from structures, or replacing materials directly attached to structures with fire resistant materials
- ☐ Be aware that wooden attachments can act as a fuse to the structure

Building Setback

→ **Not applicable**

Greater than or equal to 30 feet from slope

Less than 30 feet from slope

Recommended Mitigation Strategies

- ☐ N/A

Propane

> 30 feet from the house and surrounding vegetation maintained

Fewer than 30 feet from the house and/or surrounding vegetation not maintained

→ **N/A**

Recommended Mitigation Strategies

- ☐ N/A

Electric Utilities

→ **Electric Underground**

Electric Overhead drop maintained

Electric Overhead drop not maintained

Recommended Mitigation Strategies

- ☐ Keep vegetation pruned and mowed around electric cabinets
- ☐ Place non-flammable materials (rock, stone) around base of electrical cabinets
- ☐ Plant less flammable bushes and shrubs around electrical cabinets

Non-Combustible Zone 0
> 75% of homes/outbuildings have adjacent 5-ft non-combustible zone
→ **50-74% of homes/outbuildings have adjacent 5-ft non-combustible zone**
< 50% of homes/outbuildings have adjacent 5-ft non-combustible zone
Recommended Mitigation Strategies
☐ N/A

COMMENTS
The homes are garage common walled townhomes. The interior mature landscaping is mostly overgrown scotch pine, juniper and deciduous maples, plums etc. The community backs up to Peavine Creek that is overgrown with dead/dying vegetation creating ladder hazard fuels to the community. This portion of Peavine Creek is owned by the HOA. Due diligence on any maintenance near the creek will be undertaken before any project and approved by Washoe Co. This area is the biggest threat to the community.

Recommended Treatments in Sierra Loma Association:

- Maintain landscape plantings to create a shaded fuel break through tree thinning and pruning on the north side of the community along the Peavine Creek. Reduce cheatgrass with perennial bunch grasses in the fall after herbicide treatment according to Appendices B & C BMPs. Maintain access corridors for emergency response vehicles.
- Initiate discussions with adjacent property owners to design, construct, and maintain a fuel break along western property line. During the interim, seek off-site landowner permission to install a temporary fire break, with a minimal width of 30 feet, per Appendix A BMPs.
- The area to the north and north east is heavily vegetated with limited access. Fuel continuity is continuous and is immediately adjacent to existing development. Thin native vegetation below homes and along drainage channels to create interspaces and break up the continuous fuel bed per Appendix A BMPs. Expand maintenance and ongoing thinning of planted landscape at the bottom of the drainage to improve plant health and reduce fuel loading. Remove dead biomass annually to the extent possible.
- Seed prior to brush treatment with fire resistant grass species, and/or seed interspaces in the fall following treatments per Appendix C BMPs.
- Explore opportunities to improve access to the area including trail construction and/or vehicle access roadways. Future development and/or recreational access should incorporate fuel breaks and access for emergency vehicles.

- The western and southern and is primarily native vegetation that requires thinning to reduce fuel loading and fuel continuity. Masticate and/or hand treat shrubs consistent with topography up to 30 feet laterally.
- Seed prior to shrub cheat grass thinning treatment with fire resistant grass species, and/or seed interspaces in the fall following treatments per Appendix A BMPs.
- Utilize BMPs consistent with visual aesthetics and the riparian vegetation in the channel. Dead and down riparian vegetation should be removed.

Access roads, vehicle roadways and trails are bordered by irrigated landscape plantings. Tree and shrub densities increase overtime as they mature requiring trimming and thinning to maintain fuel loading. Regularly assess understory fuel loading levels and remove fine fuels when continuity is high per Appendix A BMPs. Expand landscape maintenance utilizing BMPs particularly on slopes and within draws or drainages. Remove dead biomass annually.

6.0 Cost Estimates

The costs of mitigation and fuel reduction for the various identified treatment areas are affected by several variables including fuel type, fuel density, slope, surface obstructions (rock) and access. Equipment and labor mobilization can be reduced by keeping the project areas connected and as large as possible.

Current cost estimates average around $6,000 per acre for northwestern Nevada, and include any mixture of the following treatments:
- Mechanical Thinning - Hand Thinning
- Hand Pile & chip
- Mastication
- Chipping [material stays in place]

It is important to note that the above treatment costs are only the costs of actual treatment. Many projects particularly on public lands also have associated costs for planning, resource surveys, environmental analysis, administration, and project management which may raise project costs by 30 to 50 percent.

Table 3. Contractors and Agencies Specializing in Fire Fuels Reduction Projects Vendor

Vendor	Vendor Name	Contact Number
Nevada Division of Forestry	Eric Roussel	775|684.2500
Truckee Meadows Fire Protection District	August Isernhagen	775|326.6071
North Tree Enterprises, Inc.	Michael Armstrong	831|582.3400
Healthy Trees	Tom Henderson	775|224.3827
Reno Green Landscaping	Carrie Owen	775|360.2133

7.0 Conclusions

Sierra Loma Association is well designed providing good access through maintained roadways, access roads, and internal walkways. Reno Fire department has two fire stations located between .8 mile and 2.4 miles of community.
Water sources and fire hydrants meet or exceed criteria for communities of this size and configuration. Structures are well constructed and utilize fire resistant building materials. Public facility, roadways and landscape maintenance is ongoing throughout the year and provides residents with a high quality of life both aesthetically and functionally. While there are never any guarantees, Sierra Loma Association is well positioned to make considerable progress toward

further hardening the community and mitigating wildland fire risk, from a wildfire protection and Firewise Community perspective.

Like the rest of western Nevada and the west itself, Washoe County, NV has seen multiple large wildland fires over the past 50 years and most certainly will experience wildland fire in the future. A worst-case wildland fire scenario that would affect Sierra Loma Association includes:
High west to southwest winds are coupled with extremely low fuel moisture levels in areas with sagebrush | bitterbrush plant communities that result in a rate of fire spread exceeding 30 mph.
Firebrands and embers are picked up and spread up to a mile ahead of the actual flame front, igniting spot fires where they land. Vegetated open spaces in developed residential communities become receptive fuel beds and can quickly spread wildfire throughout the development, threatening homes and infrastructure. Topography and Prevailing westerly winds increase wildfire risks considering the exposure, topography and climatic factors found at Sierra Loma Association.

Fire fuels [aka vegetation] management is an effective measure for Sierra Loma Association's ongoing efforts to reduce the risk of wildfire ignitions and to reduce the intensity and spread of a wildfire should it occur. Effectiveness of any fuels management treatment is directly correlated to the ongoing maintenance of the fuels management treatment. All of the plant communities identified in this document will continue to grow and mature recreating fuel beds that over time become increasingly flammable and receptive to ignitions; however, it is imperative to continue to foster an ongoing commitment by residents and property owners, the Sierra Loma Association HOA, and the Sierra Loma Association community at large to manage their native vegetation open spaces and planted landscapes.

Annual grasses, including cheatgrass, are fine fuels and highly receptive to wildfire ignitions once dry in late spring. Annual grasses are common throughout much of the open spaces, along trails and in disturbed areas, and play a key role in the overall fire hazard risk. Annual grasses require perennial assessment and ongoing treatment and removal to reduce wildfire hazards. It is recommended that shrub communities and planted landscapes be reevaluated every five years with treatments planned and implemented on a regular basis.
Complete elimination of the risk of wildfire is not possible given the multitude of environmental conditions in and around Sierra Loma Association, but active vegetation management greatly reduces risk. The treatment recommendations developed in this assessment report should be considered as way points for the community to continue to re-address and advance its efforts to mitigate wildfire risk. Long-term community safety from wildfire requires a permanent commitment to public education, the enforcement of fire safe guidelines, defensible space, and annual attention to fuels management.

Appendix A
Hand & Mechanical Best Management Practices

Hand Thin, Pile, and Haul

Shrub or Brush Reduction

Hand tools such as weed-eaters, Pulaski's, chainsaws, saws, etc. should be used to remove individual shrubs and reduce the fuel load by creating space between the remaining shrubs equal to approximately twice the remaining shrub height. Creating a mosaic of "shrub islands" and meandering interspaces will result in a natural appearance. Individual desirable shrubs to remain on site should be clearly marked by the Project Manager prior to initiation of work. Care should be taken to avoid cutting or any disturbance within flagged areas that are designated as desirable shrub islands to be retained.

Biomass generated from hand thinning shrubs should be moved to temporary pile locations approved by the Project Manager in preparation for chipping or grinding or removal from the community. Chipped or ground biomass should be immediately blown into chip vans and hauled to designated areas for disposal. Upon completion of chipping and hauling, all paved or concrete surfaces should be thoroughly cleaned to remove all remaining dirt and vegetative litter.

Mechanical Treatments

Mastication

There are two basic types of masticators commonly used that are distinguished by their masticating heads (rotary head and horizontal drum) which are further differentiated by their base machines (integrated or boom-mounted). An integrated masticator is best for small areas with limited access while a boom- mounted masticator works well for larger acreages. Either type of masticator could be used to selectively remove individual shrubs and retain adequately spaced shrub islands. Areas considered for mastication treatment should be evaluated prior to treatment for safe operation of the masticator equipment. Individual desirable shrubs and shrub islands to remain on site should be clearly marked by the Project Manager prior to initiation of work. Care should be taken to avoid cutting or any disturbance within flagged areas that are to remain on site.

Mowing

In larger, gentle terrain sites, with little or no surface rock, and where either the native shrub component is not present, or the existing shrubs are also identified for removal, tractor-mounted blade or frail mowers can be utilized to remove standing understory fuels. While permanent fuel breaks are being constructed, this equipment can also be used to establish a temporary fire break during periods of high weed production and fire risk. Temporary fire breaks should be a minimum of 100 feet in width and can be established either along access points to aid in fire suppression or at developed property lines to provide a defensible space for the purposes of assisting fire suppression measures.

Careful timing of mechanical treatments should include the following considerations.

- Mechanical vegetation treatments should not occur during fire season and should only be done when fuel moisture is high. Sparking can occur if rocks are hit by steel blades or with the masticator.
- Heavy equipment should not be operated under saturated soil conditions.
- Vegetative chips and debris following mechanical treatment typically remain on the ground. However, to the extent this debris can be raked and removed off-site, this added action represents a BPM for temporary fire breaks.

Mulching

Following seeding, disturbed areas exceeding either a 1/2 acre in size or having a width greater than 200 feet, should be mulched to reduce site erosion, dust, and wind-shear damage during the seedling establishment phase. Mulching seeded sites can also aid in soil moisture retention during the seedling establishment period.

The selected mulching treatment will depend on conditions of the individual project site, including soil texture and slope or gradient. Popular mulching methods adapted to conditions in the Sierra Loma Association community are discussed below. Some sites may require an integration of alternative soil mulching methods to obtain site stability. All small-grain straw used onsite as mulch must be certified as weed-free by the originating state.

Small-Grain, Weed-Free Straw Crimping

On flat or gentle terrain with soil textures that allow successful crimping to a depth of 2 – 4 inches, the broadcast of small-grain, certified weed free straw represents a preferred mulching treatment where the method is suited. The straw is loosely blown on the seeded site at a uniform application rate of two dry tons per acre. After straw application, either a slotted disk or regular disk plow (adjusted to a near-vertical disk position) is utilized to crimp or punch the straw into the ground to an effective anchoring depth of 2 to 4 inches. The goal of this mulching treatment
is to have 4 to 6 inches of straw stubble vertically protruding from the soil surface. The distance between plow disks, or the crimped straw mulch rows, should be no greater than 6 to 8 inches. The direction of straw crimping shall be as close to the slope contour as possible.

Hydromulching

Hydromulching represents a commonly used mulching method on flat or gentle terrain with slopes less than 20 percent. This method involves spraying a mixture of reclaimed water, fiber mulch, and tackifier over previously seeded sites. Often a green dye is added to the fiber mix to assist in assuring uniform coverage of the mulch fiber. Application rates in the range of 2,000 to 3,000 pounds of wood fiber and 75 pounds to 100 pounds of tackifier per acre are typical. However, the Manufacturer's installation instructions for the fiber mulch and tackifier must be followed closely to assure proper installation. When this mulching method is used, care should be exercised to not unnecessarily spray and cover existing shrubs and grasses identified for retention with the fiber and tackifier solution.

Weed-Free Straw Plus Netting

An application of small grain, weed-free certified straw, applied at a rate of two dry tons per acre, can be loosely blown on moderate slopes of less than 45 percent and temporary secured in place by commercially available biodegradable netting. Installation and securing of this temporary mulch treatment should closely follow the Manufacturer's recommendations for the selected netting product.

Erosion Control Blank and/or Wattling Products

Temporary soil stabilization of seeded slopes greater than 45 percent require engineered and designed products of which there are many commercial sources. The Manufacturer's specifications should be used to select the engineered mulch product and the Manufacturer's instructions should be relied on to install the selected product.

Appendix B
Herbicide Best Management Practices

Current research indicates the most effective method today to stabilize and initiate the conversion process from cheatgrass-dominated sites to perennial plant species is to first apply a preemergent herbicide treatment that prevents the germination of cheatgrass or similar grasses for a period of 12 to 18 months. During this weed suppression period, the treated area is seeded to establish a competitive stand of adapted perennial grass species. Once the perennial bunchgrass community is established to a density where it can out-compete cheatgrass, the fire-return levels go down, and natural plant succession processes can again proceed to allow the voluntary reintroduction of native shrub species back into the post-treatment plant community.

Preemergent herbicides that have been tested and proven effective in preventing the germination of cheatgrass for a 12-to-18-month period, includes: Plateau, Landmark XP, and Matrix SG manufactured by the BASF Corp., Bayer Corp Science LP, and DuPont, respectively. Other soil active preemergent herbicides made also be available that provides a similar level of cheatgrass control; however, these alternative herbicides have not been as thoroughly tested and reported in their ability to control cheatgrass germination in the environments located in western Nevada.

Use of herbicide products must explicitly follow the Manufacturer's instructions as stated on the EPA registered label, including the specified product application rate. Herbicide application should be performed by a Certified (and bonded) Applicator authorized by the State of Nevada Department of Agriculture. The Contractor must strictly follow ALL recommendations, restrictions, conditions, procedures and precautionary measures as stated on the EPA registered label and the supplemental labeling that addresses use on pasture and rangelands. Applicators and handlers must wear protective clothing as stated on the herbicide label.

If the Manufacturer's label instructions are followed closely, these herbicide products are designed not to clause mortality to existing and established perennial plant species. Accordingly, these products can be applied in areas where preexisting perennial plants are desired to be maintained. Withstanding this flexibility, care should be exercised when using these products for unnecessarily spraying established perennial plants that are identified for retention due to the plant damage that can result under certain conditions.

The application period should be carefully scheduled to occur in the fall, within six (6) weeks before the expected date when the soil freezes, and within two to three (2-3) weeks of normal predicted rainfall of a minimum of ½ inch. This application should not occur prior to October 1.

Since these herbicide products remain active in the soil and preventing new plant germination for a 12-to-18-month period following application, post-treatment seeding is delayed (and the treated ground in left fallow) of one complete year. Post-treatment seeding is instigated the following fall prior to frozen soil conditions. See Appendix C for further BMPs relating to seeding disturbed sites.

Appendix C
Glossary of Selected Wildfire Management Terms

Annual Grass Treatment: The purpose of this treatment is to reduce the volume of flashy fuels associated with annual grass growth (e.g., cheatgrass and Medusahead grass). Fuel reduction can be accomplished by hand or mechanical treatment of plant biomass or herbicide treatment. Preemergent herbicides can be applied near residential areas at the proper rates and following all label instructions to inhibit seed germination. After plants have started growth, mowing or weed-eating and removal of annual grasses before seed maturity reduces the amount of fine-fuels during the summer fire season, limits seed production, and reduces the potential for annual grass germination in the following year.

Defensible Space: Defensible space is defined as a minimum of a 30 foot area around houses and other structures where vegetation has been significantly modified or removed. The purpose of creating defensible space is to reduce the risk of losing homes and other property improvements to wildfire.

Extreme Fire Behavior: 'Extreme' implies a level of fire behavior that ordinarily precludes methods of direct control action. One or more of the following factors are usually involved: high fuel loading, high rate of spread, prolific crowning and/or spotting, presence of fire whirls, and/or strong convection column. Predictability is difficult because such fires often exercise influence on their environment and behave erratically and dangerously.

Fine-Fuels: Fast-drying fuels, generally with a comparatively high surface area to volume ratio, which are less than ¼ inch in diameter and have a time lag of one hour or less. These fuels ignite readily and are rapidly consumed by fire when dry.
Fire Behavior: The manner in which a fire reacts to the influences of fuels, weather, and topography.
Firebrands: Pieces of burning material carried on the wind ahead of an advancing wildfire that, in extreme cases, can ignite spot fires up to a mile removed from the flame front.
Fire Break: A strip of land cleared of brush, trees, and fine-fuels down to the mineral soil.
Fire Frequency: The number of times that fires occur within a defined area and time.
Fire Hazard: Vegetative factors that can affect the intensity and rate a fire spreads as well as urban factors that can facilitate or inhibit public safety and the containment of a fire in an interface area.
Fire Regime: A term used by fire ecologists to describe the recurrence and intensity of fire relative to a specific plant community.
Fire Return Interval (or fire interval): The time period between fires in a defined area, usually at the scale of a plant stand or a small landscape area.
Fire Risk: Potential ignition sources and factors that facilitate ignition of wildfires.
Flashy Fuels: Fuels such as grass, weeds, leaves, pine needles, duff and litter. Flashy or flash fuels ignite readily and are consumed rapidly when dry. Also called fine-fuels.
Fuel Bed: The array and composition of fuels in terms of fuel loading, depth, and particle size in a natural setting.
Fuel Break: Fuel breaks are constructed in strategic locations where a cover of dense, heavy, or flammable vegetation has been permanently modified to a lower fuel volume or reduced flammability. Fuel break construction may include removing, controlling, and replacing highly flammable vegetation with more fire-resistant species. Locating fuels breaks require strategic planning and regular maintenance is required to maintain their effectiveness over the long-term.
Fuel Loading: The amount of fuels present expressed quantitatively in terms of weight per unit area.
Fuel Reduction Treatment: This treatment involves strategically locating blocks of land near or within communities where flammable vegetation has been permanently modified to a lower fuel volume or reduced flammability.
Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that cause a predictable rate of fire spread or difficulty of control under specified weather conditions.
Home Ignition Zone: Coined by Jack Cohen, US Forest Service Fire Scientist, the home ignition zone concept represents the area surrounding a home that rarely exceeds 200 feet in radius distance. The construction and flammability of structures and vegetative fuels within this radial distance largely determines whether a constructed home will survive a wildfire event or not.
Occluded Interface: This condition is usually within communities or cities where there are small islands of wildland fuels such as parks or open space. There is a clear boundary between the community and the wildland vegetation.
Shaded Fuel Break: A shaded fuel break is created by altering surface fuels, and increasing the height of the base of the live crown, and opening the canopy by removing a portion of the woody plants in the treatment area. This type of fuel break spans a wide range of understory and overstory prescriptions. Construction methods include thinning, mechanical biomass removal, and the potential use of prescribed fires.
Wildland-Urban Interface: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels