

WILDLAND Rx, Inc.

Gold Hill Estates Fire Safe Plan



Signature Page

Gold Hill Estates Home Owners Association

_____ Date

El Dorado County Fire Safe Council

_____ Date

Amador-El Dorado Unit, California Department of Forestry and Fire Protection

_____ Date

Rescue Fire Protection District

_____ Date

Prepared By

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WILDLAND Rx, Inc

Contents

Signature Page 2

Fire Plan Summary 5

Background 5

Fire History 6

Fire Behavior 7

Fire Hazards and Risks 8

General Mitigation Strategies 10

Action Plan 12

Projects in Summary 12

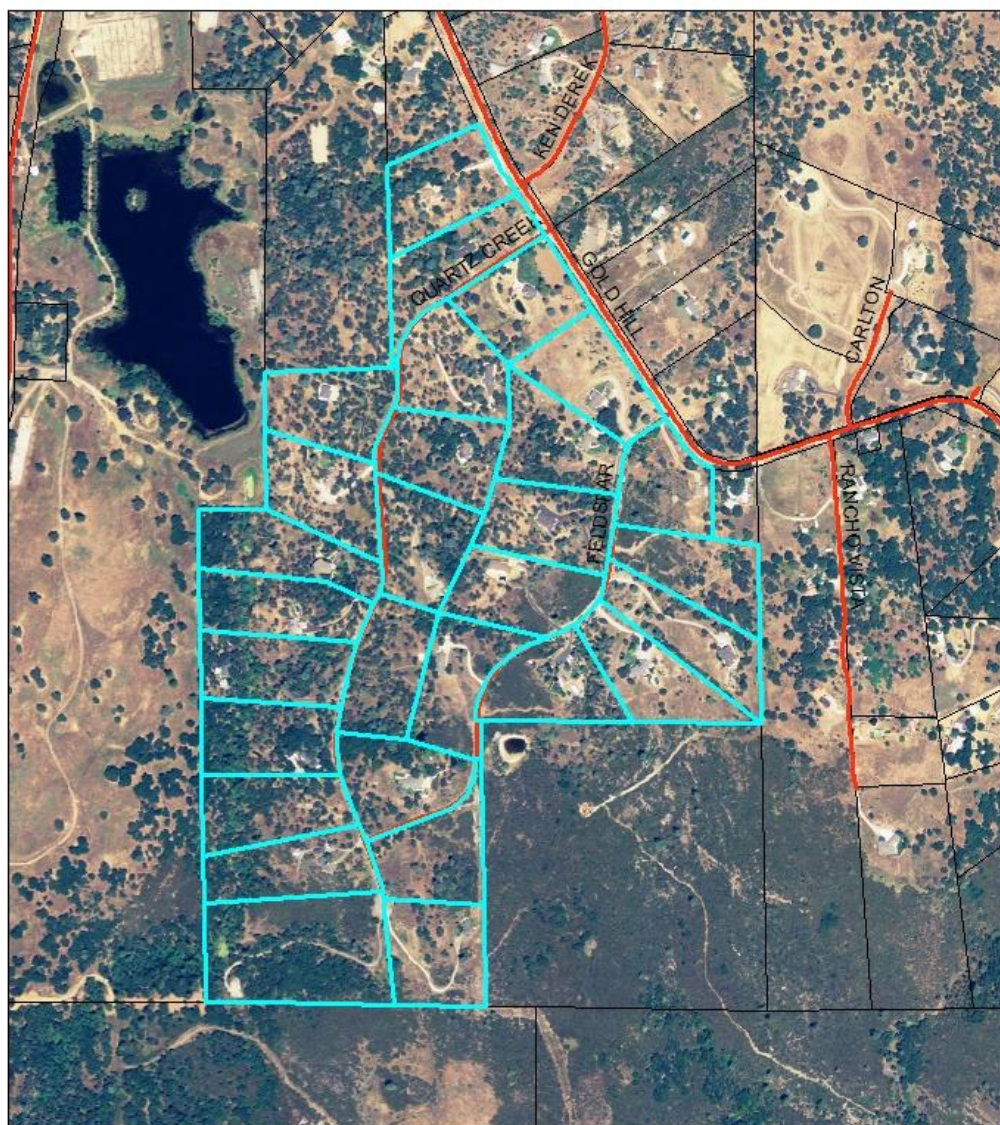
Grant Resources 16

Internet Resources 17

Appendix A: Fire Behavior 18

Appendix B – Specific Detailed Projects 22

Appendix D: El Dorado County Ignitions 29



Gold Hill Estates



Legend

- Roads
- Parcels

0 550 1,100 Feet
1:8,000



Fire Plan Summary

The Gold Hill Estates Fire Plan includes:

A Community Risk Assessment

Develop a community risk assessment that considers the risk of fire ignitions, homes, and essential infrastructure at risk, local preparedness capability and adequacy of evacuation routes, staging areas and firefighter safety.

Establishing Community Priorities and Recommendations

Use the base map and community risk assessment to facilitate a collaborative community discussion that leads to the identification of local priorities for fuel treatment, reducing structural ignitability, and other issues of interest, such as improving fire response and water sources.

An Action Plan and Assessment Strategy

Develop a detailed implementation strategy to accompany the Plan as well as monitoring plan that will ensure its long term success and maintenance.

Background

The Gold Hill Estate is located south of the community of Lotus in the foothills of El Dorado County. The primary vegetation types in the community are oak tree overstory with a grass understory typical of Sierra Mountain foothills along with areas of chaparral primarily Manzanita and chemise brush vegetation. The community is made up of 5 acre parcels sub divided into 30 properties 1 property is 10 acres with 27 homes on 27 lots, with 3 5 acres lots and the 1 10 lot without homes. The lots with homes have large homes and landscaping some of the lots have water service provided by the El Dorado Irrigation District and some have wells.

El Dorado County has a unique wildland fire environment owing to its Mediterranean climate, highly combustible fuels, frequent interface zones, and the complexity of its terrain. Fires burn with much greater intensity in this environment and are more costly and difficult to control creating a greater risk of loss of life, property, and resources.

The CALFIRE Ranger Unit Direct Protection Area (DPA¹) on the west slope of the Central Sierra Mountain Range is experiencing explosive population growth. Most of this growth is occurring outside the incorporated cities the same areas that contain the most hazardous fuels and most difficult terrain. Most of the manmade values at risk from wildfire are also located in these areas.

The fire environment in El Dorado County is conducive to large destructive wildfires as shown by the fire history map. Over 70% of the CDF's DPA contains high to very high hazard fuels (brush and timber). (CALFIRE Amador El Dorado Ranger Unit Fire Plan)

Fire History

El Dorado County over the past twenty years has increased in population and development in the wildland vegetation has placed many additional homes at risk. Small fires often create wildland/urban interface fire protection problems previously only found in the most densely populated areas of southern California. Wildfire ignitions have increased in El Dorado County according the Amador-El Dorado Unit (CAL FIRE) Fire Management Plan.

In 2008 several fires were set by an arsonist in the area one fire of approximately 5 acres was set inside the Gold Hill Estates. That arsonist has been arrested

Fire Behavior

The vegetation and weather in the community can exhibit fire behavior with rapid fire spread and flame lengths that make control by ground resources difficult.

Table 1 General fire behavior by fuel type

Fuel Model (Fire Behavior Prediction Model Number)	Rates of Spread (Feet/Hour)	Flame length (Feet)
Grass Oak Savana(1)	5148	4
Grass Understory (2)	2310	6
Tall Chaparral>6' (4)	4950	19
Light Brush 2' (5)	1188	4
Intermediate Brush Brush (6)	2112	6

Map of Fuel Models and photos are located Appendix A

Fire Hazards and Risks

1. External Fire Threats

The vegetation surrounding the community, the long warm dry summer months, predominate westerly wind pattern, open wildland, and the topography lends to the potential for extreme fire behavior and rapid fire spread from a wild fire threatening the community from the west. A fire had threatened the community in the recent past from the west. The eastern side of the community is made up of large parcels of land with many home constructed on the parcels the terrain is more rolling and the vegetation is primarily oak woodland with a grass understory.

The biggest threat to the community will come from a fire starting along Lotus Road, to the west or in Weber Canyon, to the south and entering the Gold Hill Estates from the west and south. Fire Behavior under typical summer weather can easily result in a wildfire that will quickly become uncontrollable without fuel reduction projects adjacent to the community's western and southern boundary. Bureau of Land management has a large parcel of land to the south of the community that is in need of fuel reduction. This parcel fits into the project recommendations.

2. Roadside Clearing along primary ingress and egress routes:

There are several areas of concern along Quartz Creek and Feldspar of particular concern are the vacant lots along these primary ingress and egress routes. The vacant lots along these roads have not been maintained in a fire safe condition and can potentially make the streets impassable during a wildfire. Some of the occupied lots also need work along the roadside.

3. Vacant Lots

The vacant lots inside the GHE do present a hazard to the homes within the community as well as providing receptors for embers to ignite more fires adding to fire suppression difficulties. Most of them have been poorly maintained and have vegetation that poses a threat to adjoining property owners. These lots should be cleared and maintained in a fire safe condition.

4. Developed Properties:

Many of the homes inside the Gold Hill Estates are constructed of non combustible materials and roofs. This should continue to reduce structure ignitions. Many of the lots with homes constructed appear to meet CALFIRE PRC 4291, however a more in depth survey should be made to insure

compliance with the Public Resources Code. More information on how to protect homes from a wildfire can be found on suggested websites in the "Internet Resources" Section of this report.

5. Water supply Fire Hydrants:

The community has two full service fire hydrants supplied with water from the El Dorado Irrigation District. In order for the entire community to be appropriately protected by a hydrant system more hydrants should be installed but it is recognized that the costs of new fire hydrants may be prohibitive.

6. Fire Fighting Resources:

Structure fire protection is supplied by Rescue Fire Protection district and the community lies within State Responsibility Area and is provided wildfire protection by Cal Fire. The closest ground resources are Rescue Station 81 Gold Hill Station and Sleepy Hollow Station, both El Dorado Fire Protection District Stations, all volunteer stations not covered by round the clock firefighters. The nearest CAL Fire station is Alhambra in Cameron Park. During periods of the summer that the resources may be fighting other fires it is a concern that timely responses to the GHE area may be coming from further away from the area

General Mitigation Strategies

Develop Community Partnerships

The Gold Hill Estates working together with adjoining communities and public agencies such as The El Dorado County Fire Safe Council, Rescue Fire Protection District, and CALFIRE, can find support in accomplishing its goal of a fire safe community. Partnerships can reduce costs and provide tools that will improve fire safety.

Community Defenses

The Rescue Fire Protection District (Rescue Fire) and the California Department of Forestry and Fire Protection (CALFIRE) must be committed to the support and participation, to the extent possible, in the community wildfire protection plan efforts. This support can be in the form of helping the community get the fire safe message to the public as well as provide support for treatments that provide fuel reduction and protection.

CALFIRE and the Rescue Fire Protection District have co-jurisdictional responsibility for the enforcement of Fire Safe Regulations (defensible space), as well as the responsibility for taking a leadership role. This takes a cooperative effort with partners within the community. Those partners are the, Citizen Volunteers, El Dorado County Fire Safe Council (EDCFSC), and trained volunteer defensible space inspectors from the community.

Defensible Space Compliance

The defensible space program should be comprised of three components: education, enforcement, and abatement.

The first step of the program is to develop a cooperative program to do homeowner education late spring early summer 2009 through the Gold Hill Estates Homeowners association. Training and documents for Defensible Space Inspectors, sometimes referred to as LE 38 Inspectors, is provided by EDCFSC defensible space coordinator.

In the spring of 2009 volunteer partners should mail out self inspection forms, which can be acquired from the EDCFSC, to all property owners which will be returned by homeowners. In late spring of 2009 the volunteers will begin targeted inspections, and evaluation of self inspection results. The first home inspections are intended to be educational with emphasis on ground and ladder fuels compliance. It will also be necessary to inspect the vacant lots to determine their threat to adjoining properties or to the evacuation routes. Vacant lots at a minimum should have a 100 foot clearing along the property lines with fuels reduced to within 3 inches of the ground. The vacant lot owners should be encouraged to treat the vegetation on the lots by removing brush and limb up the trees 10 feet from the surface.

Summer and fall of 2009 all partners will participate in second inspections these inspections will be a follow up to the education component to determine if a third inspection will be necessary

Third inspections and possible citations should be completed by CALFIRE qualified personnel if necessary.

Winter 2009 education cycle begins again.

If vacant lots continue to be a problem, consider a weed abatement CC and R. This CCR could be crafted to require compliance or clearing work would be implemented by the Homeowners Association and a lean placed on the property and the lot owner billed for the work.

Action Plan

The following is a list of recommended projects that can reduce the community's wildfire risks and hazards. Some of the projects are located within the GH HOA and some on adjacent private property therefore it is important that the property owners whose property will be treated are brought into the process early to gain their support for the work to be done. It is recommended that the names of the property owners be listed and letters with the proposed projects outlined be sent to them as soon as possible

Projects in Summary

1. Fuel Breaks

- a. **Construction on West** - acquire funds through a grant to finance the construction of a Fuel break along the Western boundary of the GHE that will provide an opportunity for suppression resources to take advantage of a change in fire behavior that will allow for stopping a wildfire from entering the community. This fuel break can be the beginning of a series of fuel breaks that will protect other communities along Gold Hill Road. Develop a series of shaded fuel breaks on the western and southern flank of the boundary for the Gold Hill Estates Home owners' association property. Contact the identified landowners and develop and execute an intensive fuels treatment prescription that will result in a shaded fuel break for the community. Work with the Bureau of Land Management, who has acreage that is just south of the Estates to coordinate efforts for BLM to reduce the hazardous fuels on their property

As the community implements its fuel break construction there will be opportunities for neighboring communities to add to the fuel break for their protection as well. The external threat comes specifically from the west and south from the Weber Creek Canyon and along Lotus Road to mitigate this threat from the west it will require the implementation of a project to reduce the fuels along the western boundary of the Home Owners Association. The treatment will include the construction of a shaded fuel break as shown on the map in Appendix B

2. **Provide roadside hazard reduction** along key ingress and egress routes inside the GHE.

The HOA should mobilize property owners to provide proper defensible space alongside critical roads on their properties.

If voluntary efforts are not successful then contracted services can accomplish this at an estimated cost for roadside hazard reduction is \$2000/acre.

3. **& 4. Clear Vacant Lots / Improve Defensible Space** – To both assist vacant lot owners and developed property owners in improving fire safety, there are a number of projects that can be undertaken including:
 - a. **Chipping /mulching program.** Assist lot owners in the community to meet the State and County standards for fuels treatment by developing a chipping/mulching program.

The Gold Hill Estates Homeowners Association will work with the El Dorado County Fire Safe Council to establish several chipping or green waste dumpster days where the chipper will be exclusively available for the residents or a green waste dumpster provided. A program to help economic disadvantaged or persons with physical limitations has been developed by the El Dorado County Fire Safe Council and can be used by homeowners unable financially or physically to clear their property. The intent is for this to supplement the El Dorado County Fire Safe council chipping and green waste program

Estimated cost for the five chipping days or dumpster delivery is \$3800.

b. Seek funding to strengthen the Defensible Space Program.

The GH HOA will seek \$3000 to enhance the Defensible Space Program which includes the inspection for compliance with California's Defensible Space Program. Various proposals are expected that will enable the program to improve the defensible space situation within the subdivision; for example, the establishment of advisors who would provide door to door education material and compliance inspections.

c. Implement a volunteer program of inspections and education

1. Implement the program described under General Mitigation Strategies above.
2. If this volunteer program is not sufficiently effective and material fire risks remain threatening the community, consider an abatement CC&R change that would involve contract clearing and billing the lot owner. This type of program has been successfully implemented in other communities and homeowner's associations.

d. Explore funding to maintain Fire Hydrants

- a. **Maintain Fire Hydrants-** The property owner's water supply is provided by individual wells and El Dorado Irrigation District. The fire hydrant system and water to the hydrants is supplied by the El Dorado Irrigation District and is critical to effective community interior and exterior fire defenses. The Homeowners Association has a vested interest in their community water delivery system and proposes a partnership to maintain and flow test fire hydrants within the HOA. It is in the interest of fire safety that the HOA contact El Dorado Irrigation District and Rescue Fire Protection District to see to it that an aggressive hydrant maintenance and testing program has been implemented. Future maintenance and testing should be done on a program scheduled basis coordinated by the Fire District.

Cost Estimates for projects

Cost estimates developed as part of this planning effort are based on data from the resource conservation district and costs for similar work in Amador and El Dorado County. Cost estimates vary widely because of fuel loadings, operational constraints, and crew capabilities. The costs are limited to the direct cost of project implementation. These cost estimates do not include offsetting revenue that may be generated by providing commercial products, costs associated with project planning or preparation of environmental compliance reports, or administrative overhead incurred during implementation.

Administrative cost are approximately 20%- 30% of the total project costs if the project is estimated to be \$100,000 for on the ground implementation the administrative costs would be \$30,000. Administrative costs would include environmental documentation, financial administration, project layout and contract administration. The percentage of administrative cost will vary depending on the size of a project and complexity of administration of the contract. Larger projects often have a lower administrative percentage. Lower administrative cost can be achieved by contributed effort by volunteers from the community.

Prescription specific cost estimates.

Fuel Reduction Treatment	Cost per acre	Administrative Costs/environmental documentation
Mastication	\$700 - \$1,600	20%
Prescribed burning	\$400-\$900	25%
Hand Cut and Chip	\$1,350-\$2000+	20%
Pile Burn	\$300 - \$700	20%
Machine Pile	\$185-\$300	25%

More detailed costs are found in the specifically identified projects in Appendix B

Grant Resources

The following is a list of resources for getting grant funding for projects. Keep in mind that grants sometimes have open seasons and that often even when grants are approved the time frame in which they are turned into money may be up to a year. The following are individuals that can help with the process and administration of the grants.

El Dorado County Fire Safe Council

Vicki Yorty of the El Dorado County Fire Safe Council is the primary resource for information on grants and she is the grant coordinator for the County Fire Safe Council through whom all grant request should be funneled. Vicki is the primary contact for all grants weather through the Resource Conservation District or CAL FIRE. All Grants can be managed through the FSC but the primary grants that they manage are grants awarded through the Grant Clearing House managed by the California State Fire Safe council. More information on the Clearing house grants can be found on the internet at [HTTP://firesafecouncil.com](http://firesafecouncil.com). There are listed below the El Dorado County Georgetwon Divide Resource Conservation District and Cal Fire that manage grant programs as well. The El Dorado Fire Safe Council keeps abreast of any other potential sources for grants used for community wildfire protection.

Phone 530-647-1098

edcfiresafe@comcast.net

USDA Resource conservation District

Can provide grant administration and grants to small forest landowners, and watershed grants.

Mark Egbert, District Manager

El Dorado County & Georgetown Divide Resource Conservation Districts
100 Forni Road, Suite A
Placerville, CA 95667

(p) 530-295-5630

Mark.Egbert@ca.usda.gov

CAL FIRE

Can provide grants such as California Forest Improvement Program and Community Assistance Grants, Proposition 40 grant funding

Jan Bray Forester I
CAL FIRE, Amador El Dorado Ranger Unit
530-644-2345
Jan.Bray@fire.ca.gov

Gold Hill Estates

Internet Resources

Additional Information from the Internet:

Board of Forestry Defensible Space Guidelines

www.bof.fire.ca.gov/pdfs/Copyof4291finalguidelines9_29_.pdf

CAL FIRE Home Page

www.fire.ca.gov

Why 100 feet?

www.fire.ca.gov/education_100foot.php

Homeowners Responsibility

www.fire.ca.gov/education_homeowner.php

California Fire Safe Council Home Page: Contains educational material and information on the Grants Clearing house an excellent resource

<http://firesafecouncil.org/>

El Dorado County Fire Safe Council: another excellent resource for information

www.edcfiresafe.org

Firewise Resource a national level organization for information and materials

www.firewise.org

Appendix A: Fire Behavior

Photos of fuel beds from the Gold Hill Estates

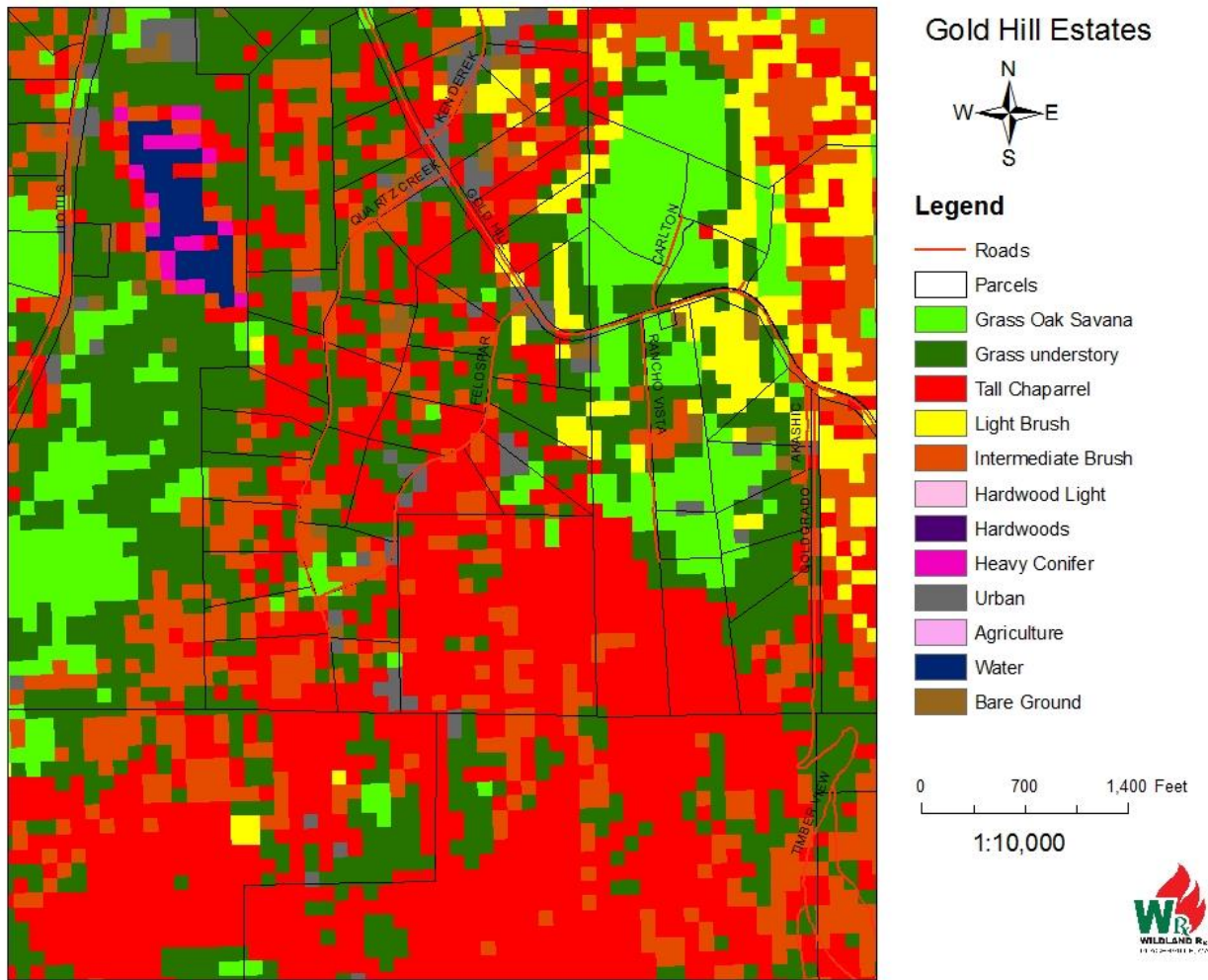


Heavy Chaparral in for ground and grass oak savannah in the back ground



Grass Understory

Figure 1 Fuel model



Fuel Model	Rates of Spread Feet/Hour	Flame length Feet
Short Grass Oak Savannah (1)	5148	4
Grass Understory (2)	2310	6
Tall Chaparral>6' (4)	4950	19
Light Brush 2' (5)	1188	4
Intermediate Brush (6)	2112	6

Appendix B – Specific Detailed Projects

Specific Projects and Prescriptions

Project Title: Gold Hill Estates GHE 1 Date: February 2009

Shaded Fuel Break: GHE1 is a fuel break which will be constructed as linear features of varying width, 200-1,300 feet wide with an average width of 400 feet for a total of 45 acres of treatment on private land and an additional treatment by BLM on BLM Land. The chaparral should be reduced and the tree overstory, where it exists, limbed up or thinned to reduce crown fire potential. The fuel break can be constructed using a combination of the treatments described by the following methods. The object of the treatment is to reduce wildfire rates of spread, fire line intensities and reduce ember production so that fires can be suppressed before they become a threat to structures.

Mastication: The use rubber tired or tracked vehicles to cut, chip, and scatter all shrubs. White fir and cedar should be the priority for tree removal. Trees should be spaced approximately 20 feet between the tree trunks. Brush cover should be reduced by creating a mosaic of treated and untreated shrubs. Openings between shrubs should be twice the height of the shrubs and 50-70% of the shrubs should be treated. Brush that is treated should be cut to the maximum of 6 inches in height. No individual pieces of cut material shall be greater than 4 feet long. All masticated stumps shall be cut to within 6 inches of the ground. No debris shall average more than 6 inches in depth over the entire project area. All cut vegetation will be kept within the unit boundaries. Any cut vegetation falling into ditches, roads, road banks, trails, or adjacent units shall immediately be removed.

Hand Thin and Pile Burn: Hand thinning and pile burning should be accomplished using a ten-person hand crew with chainsaws. Cutting material up to 10"dbh with 20'x20' spacing between leave trees

All dead and down material greater than 3 inches in diameter and up to 14 inches in diameter and all cut material regardless of size shall be piled in piles for burning. Piles shall be constructed compactly beginning with a core of fine fuels and minimizing air spaces to facilitate complete combustion. Piles will be constructed no taller than 5 feet and away from trees to prevent damage when burning. If the areas will not be broadcast burned, then each pile will be lined with fire line. Piles will be covered with water resistant paper a 4'x4' square to cover the fine material in the center of the piles. Costs are based on a fuel break 200 feet wide.

Chipping: Chipping may be used as an alternative to burning. The chips may be removed from the site and converted to energy for other products or scattered throughout the project area.

Identification of Protected Species or Other Critical Resources: Describe any measures that must be taken to protect critical wildlife habitat, historic or culturally sensitive sites, artifacts or other resources, and plant and animal species protected by statute.

Other wildlife habitat, critical species, and cultural resources may be present in the project area and require mitigation measures. Project planning should include implementation of surveys and mitigation measures as dictated by regulatory statutes.

With all environmentally sensitive areas, identification and avoidance during project implementation is important. Should any sensitive resources be found during project implementation, the area should be avoided until the appropriate agencies review the situation.

Project Maintenance Requirements: Brush and understory fuels should be treated with prescribed fire or herbicide application every 5 – 7 years to treat ladder fuels and keep surface fuels at appropriate densities for desired fire behavior.

Other Considerations: Describe any other consideration that must be taken into account to successfully complete this project such as permits, clearances, approvals, etc.

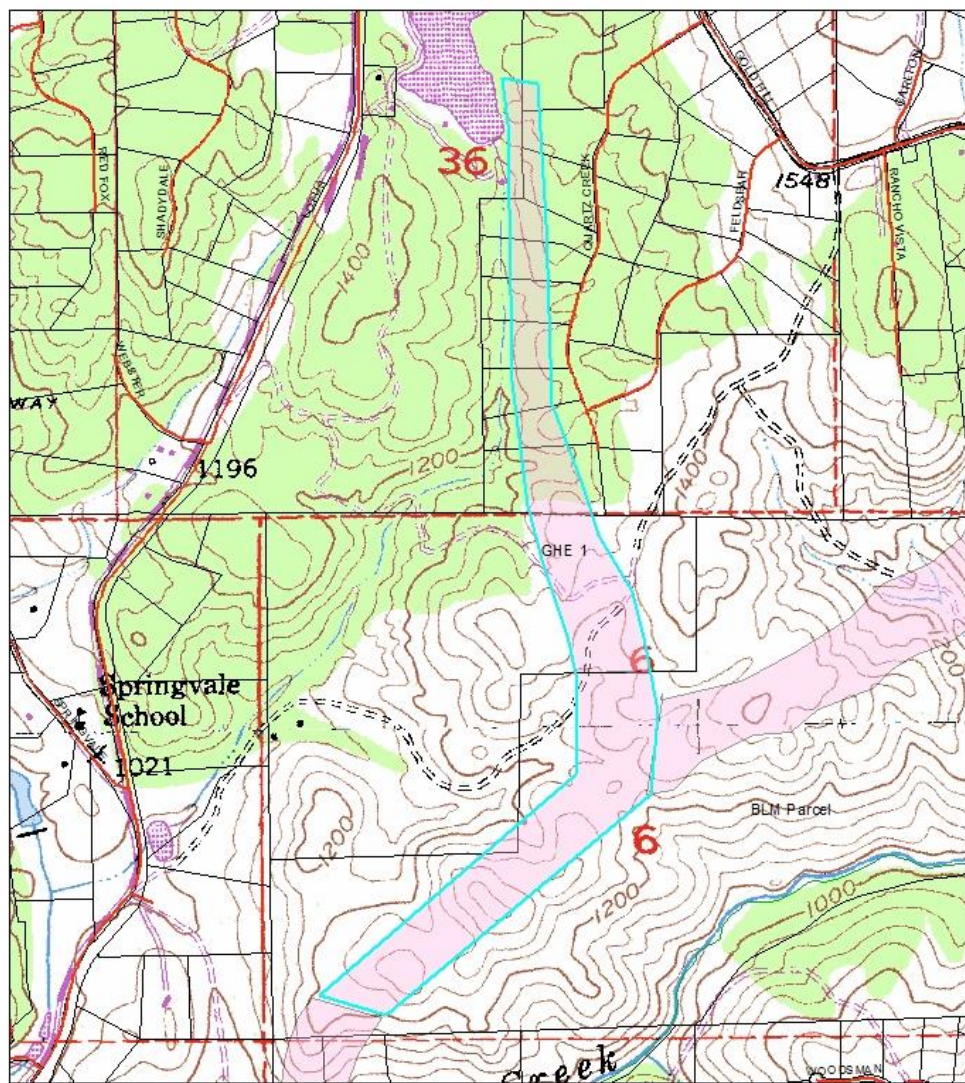
Compliance measures for CEQA, or their functional equivalents will need to be addressed prior to project initiation.

If burning is chosen the appropriate permits must be acquired for the El Dorado County Air pollution Control District and the local CAL Fire

Implementation Cost (approximate, today's cost can vary considerably)

The Treatment cost plus administrative cost includes environmental documents costs as well as cost associated with management of the contract, development and advertisement of the Request for Quote and on the ground project layout. The total costs include Administration of the contract and the environmental documentation. The treatment displayed is for the entire project for each treatment. The project may require a combination of treatments based on accessibility and slope

Treatment	Cost/acre	Total Treatment Cost	Treatment Cost Plus (Administrative Costs and displayed as a %)
Mastication	\$1600	\$72,000	\$86,400 (20%)
Hand Cutting/Chipping or burning	\$2000	\$90,000	\$108,000 (20%)



Gold Hill Estates Fuel Break GHE 1



Legend

- Roads
- Parcels

0 850 1,700 Feet
1:12,000



Map of Fuel Break Project area outlined in blue

Project Title: Gold Hill Estates GHE-2 Date: April 2009

Project Description

Roadside Clearing: Roadside clearing can occur up to 30 feet from both sides of the road. Techniques may include both mowing and/or hand thinning. The object of the treatment is to reduce fuels along the primary roads for safe ingress and egress. This project is located on private property along the entire road system in the community. Approximately 5 acres of clearing

Prescription/Treatment

The treatments prescribed can be implemented based on slope and access considerations when requesting funding. If grass is the dominant roadside vegetation 20 feet should be mowed if brush is the dominate vegetation clearing should be a minimum of 30 feet depending on slope. The distances are for each side of the road edge

Hand Thin and Pile Burn: Hand thinning and pile burning should be accomplished using a ten-person hand crew with chainsaws cutting material up to 6"dbh with 20'x20' spacing between leave trees. All brush cover should be cut and piled. All dead and down material greater than 3 inches in diameter and up to 6 inches in diameter and all cut material regardless of size shall be piled in piles for burning.

Piles shall be constructed compactly beginning with a core of fine fuels and minimizing air spaces to facilitate complete combustion. Piles will be constructed no taller than 5 feet and away from trees to prevent damage when burning. If the areas will not be broadcast burned, then each pile will be lined with fire line. Piles will be covered with water resistant paper or plastic a 4'x4' square to cover the fine material in the center of the piles.

Chipping: Chipping may be used as an alternative to burning. It redistributes forest vegetation that is cut by mechanical thinning or hand thinning. The chips may be removed from the site and converted to energy for other products or scattered throughout the project area.

Mowing: Mowing can be done in areas of small brush or grasses using hand held weed eaters.

Identification of Protected Species or Other Critical Resources: Describe any measures that must be taken to protect critical wildlife habitat, historic or culturally sensitive sites, artifacts or other resources, and plant and animal species protected by statute.

Other wildlife habitat, critical species, and cultural resources may be present in the project area and require mitigation measures. Project planning should include implementation of surveys and mitigation measures as dictated by regulatory statutes.

With all environmentally sensitive areas, identification and avoidance during project implementation is important. Should any sensitive resources be found during project implementation, the area should be avoided until the appropriate agencies review the situation.

Other Considerations: Describe any other consideration that must be taken into account to successfully complete this project such as permits, clearances, approvals, etc.

Compliance measures for California Environmental Quality Act (CEQA), or their functional equivalents will need to be addressed prior to project initiation.

If burning is chosen the appropriate permits must be acquired for the El Dorado County Air pollution Control District and the local CALFIRE Unit.

Implementation Cost (approximate, today's cost can vary considerably)

Treatment	Treatment Cost Per Acre	Total treatment Cost	Treatment Cost Plus Administrative Costs
Hand Cutting/Chipping or burning and/or Mowing	\$1800	\$9,000	\$11,700 (30%)

Project Maintenance Requirements:

The re growth of brush should be treated by hand cutting or the use of herbicides should be applied every 5 – 7 years to keep surface fuels at appropriate densities for desired fire behavior. Grass should be treated annually along roadsides through mowing or herbicides.

Appendix D: El Dorado County Ignitions

