WILDLAND Rx, Inc.

Royal Equestrian Estates Fire Safe Plan

Signature Page

Royal Equestrian Estates Home Owners Association

_____ Date _____

El Dorado County Fire Safe Council

_____ Date _____

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

_____ Date _____

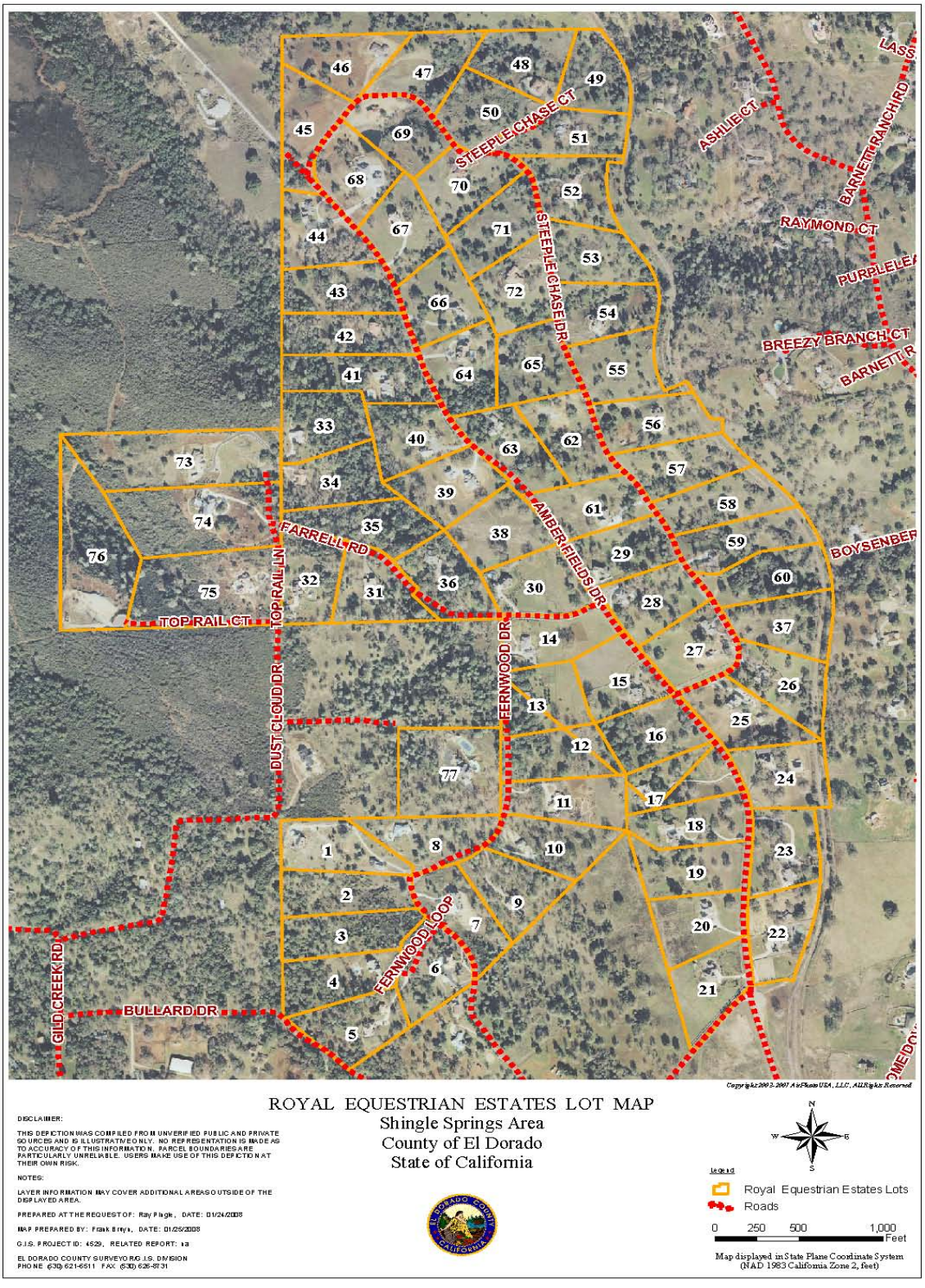
El Dorado County Fire Protection District

_____ Date _____

Prepared By

Barry Callenberger
WILDLAND Rx, Inc

Contents


STEEPLECHASE CT
ASHLIE CT
BARNETT RANCH RD
RAYMOND CT
STEEPLECHASE DR
BREEZY BRANCH CT
BARNETT R
AMBER FIELDS DR
FARRELL RD
TOP RAIL LN
TOP RAIL CT
DUST CLOUD DR
FERNWOOD DR
FERNWOOD LOOP
GILD CREEK RD
BULLARD DR
BOYSENBER
ROYAL EQUESTRIAN ESTATES LOT MAP
Shingle Springs Area
County of El Dorado
State of California
DISCLAIMER:
THIS DEPICTION WAS COMPILED FROM UNVERIFIED PUBLIC AND PRIVATE SOURCES AND IS ILLUSTRATIVE ONLY. NO REPRESENTATION IS MADE AS TO ACCURACY OF THIS INFORMATION. PARCEL BOUNDARIES ARE PARTICULARLY UNRELIABLE. USERS MAKE USE OF THIS DEPICTION AT THEIR OWN RISK.
NOTES:
LAYER INFORMATION MAY COVER ADDITIONAL AREAS OUTSIDE OF THE DISPLAYED AREA.
PREPARED AT THE REQUEST OF: Ray Paige, DATE: 01/24/2008
MAP PREPARED BY: Frank Breyo, DATE: 01/25/2008
G.I.S. PROJECT ID: 4529, RELATED REPORT: na
EL DORADO COUNTY SURVEYO R/G .I.S. DIVISION
PHONE (530) 621-6511 FAX (530) 626-8731
Legend
Royal Equestrian Estates Lots
Roads
0 250 500 1,000 Feet
Map displayed in State Plane Coordinate System (NAD 1983 California Zone 2, feet)

Fire Plan Summary

The Royal Equestrian 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 Royal Equestrian Estates is located south of the community of Shingle Springs 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 77 properties with 59 of the lots with large homes and landscaping each lot has its own well providing water.

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 (DPA[1]) 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.

Latrobe and Shingle Springs are listed in the Federal Register as communities at risk from a wild fire. The community Royal Equestrian Estates is located between these two communities with the same vegetation and hazards as Shingle Springs and Latrobe.

In 1976, before homes were constructed, the entire estates area was burned over by the Quarry Fire which burned a total of 1940 acres. In 2006 the Deer Fire a wildfire started by accident at the EID sewage disposal plant in Marble valley threatened the community from the west burned 71 Acres

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. Appendix A contains some of the Fire Behavior modeling that was done for this project using FARSITE and FLAMMAP two models used by California Forestry and Fire Protection and the US Forest Service for modeling fire behavior and fire effects.

Table 1 General fire behavior by fuel type

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

Map of Fuel Models and photos are in 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 in the bottom of Marble Canyon and entering the REE estates from the west. This conclusion was the result of the fire behavior study (Appendix A) as part of this plan as well as supported by documentation from CALFIRE. 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 boundary.

2. Roadside Clearing along primary ingress and egress routes:

There are several areas of concern along Fernwood, Farrell, Amber Fields, and Dust Cloud, 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.

3. Vacant Lots

The vacant lots inside the REE 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 Royal Equestrian 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 eleven full service fire hydrants supplied with water from the Eldorado Irrigation District with a 63,000 water tank reserve and a waterline to the water tank for back up supply. 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 or new fire hydrants may be prohibitive. The local fire protection district recognizes the short fall in hydrants and recognizes the need for water tenders to deliver water to the engine resources during a fire a water tender is on all dispatches.

6. Fire Fighting Resources:

Structure fire protection is supplied by El Dorado County Fire Protection district and the community lies within State Responsibility Area and is provided wildfire protection by Cal Fire. The closest ground resources are El Dorado Fire Protection District engine on Ponderosa Rd, and CDF/Cameron Park engine station both stations are approximately 15 minutes away both fully staffed year round. During periods of the summer that the resources may be fighting other fires it is a concern that timely responses to the REE area may be coming from further away from the area

General Mitigation Strategies

Develop Community Partnerships

The Royal Equestrian Estates working together with adjoining communities and public agencies such as The El Dorado County Fire Safe Council, El Dorado County 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 El Dorado County Fire Protection District (EDCFire) 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 Eldorado County 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 2008 through the Royal Equestrian 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 2008 volunteer partners will 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 2008 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 2008 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 2008 education cycle begins again.

If vacant lots continue to be a problem, consider an abatement CC and R and contract clearing and bill the lot owner.

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 REE 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 REE 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 south Shingle Road. Develop a series of shaded fuel breaks on the western flank of the boundary for the Royal Equestrian 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.

    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 there are numerous communities along South Shingle Springs that will benefit from an enhanced fuel break above Marble Valley The external threat comes specifically from the west Marble Valley to mitigate this treat 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 280 Acre shaded fuel break as shown on the map in Appendix B

    b. **Community Recreation Trail REE** - The Royal Equestrian Estates has a developed equestrian trail system that follows along much of the outside boundary of the REE. The trail is well defined along the northern, eastern and southern boundary of the community. This trail system if maintained to a width of 10 to 20 feet would provide a very good fuel break in the grass woodland portion of the estates. Through annually maintaining a trail tread to mineral soil of 6 to 10 feet wide with the grass and brush mowed to 10 feet wide on each side of the tread the trail could provide an opportunity for

suppression forces to use the trail as a control line during a wildfire. It is recommended that this trail system be accurately mapped so that local suppression forces would know that it exists and place it into their pre attack planning. Once the trail has been constructed to the specifications and maintained annually it could be part of a fuel break system protecting the community from a wildfire threatening the community from the north, east and south.

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

   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 Royal Equestrian 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 REE HOA will seek $6000 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.

   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.

5. Explore funding to increase the number of Fire Hydrants / Maintain them

a. **Explore Cost / Benefit of installing additional Fire Hydrants** - Develop cost estimate and funding source for increasing the number of fire hydrants located in the community. Further research is required by the HOA into the costs and responsibility for increasing the number of fire hydrants. At present the lack of fire hydrants is recognized by the El Dorado County Fire Protection District and a water tender is dispatched to all reported fires in REE. It has been recognized that the cost of installing Fire Hydrants may be too high to really benefit the community and that the use of water tenders is a good trade off and beneficial to the community.

b. **Maintain Fire Hydrants-** The property owner's water supply is provided by individual wells. The fire hydrant system and water to the hydrants is supplied by the Eldorado 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 Eldorado County 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 Cuncil

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 concervation 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. There are listed below the Eldorado 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

Patrick McDaniel, Forester I
CAL FIRE, Amador El Dorado Ranger Unit
530-647-5288
Patrick.McDaniel@fire.ca.gov

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 excelletn resource for information

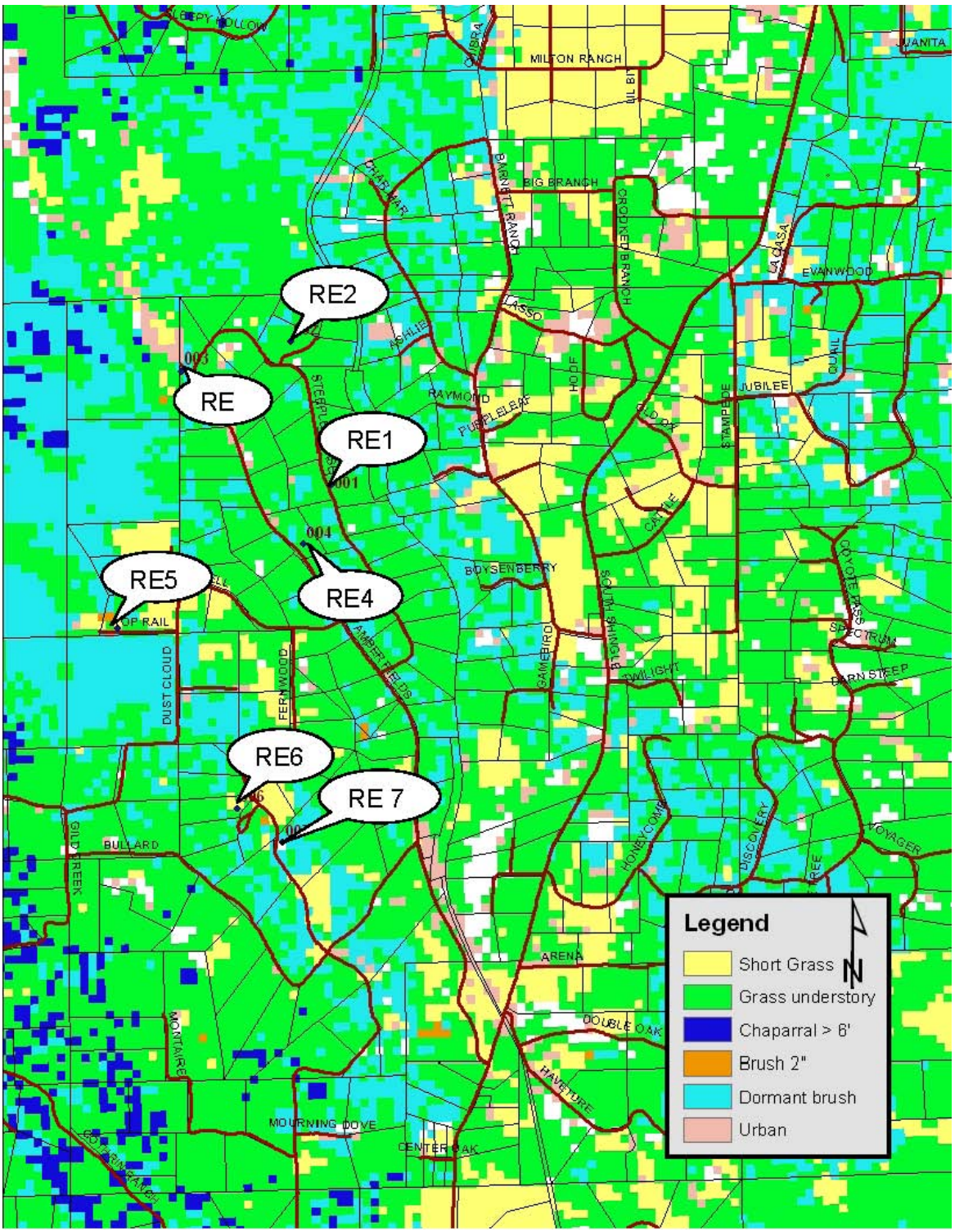
www.edcfiresafe.org

Firewise Resource a national level organization for information and materials

www.firewise.org

Appendix A: Fire behavior

Figure 1 Photo Points and Fuel model



Fuel Model	Rates of Spread Feet/Hour	Flame length Feet	Photo Point
Short Grass (1)	5148	4	
Grass Understory (2)	2310	6	RE 1, RE 3, RE 4
Chaparral>6’ (4)	4950	19	RE 5
Brush 2’ (5)	1188	4	RE 2
Dormant Brush (6)	2112	6	RE 6, RE 7

Figure 2 Photo Point RE 1

Figure 3 Photo Point RE 2

Figure 4 Photo Point RE3

Figure 5 Photo Point RE4

Figure 6 Photo Point RE5

Figure 7 Photo Point RE5

Figure 8 Photo Point RE6

Figure 9 Photo Point RE7

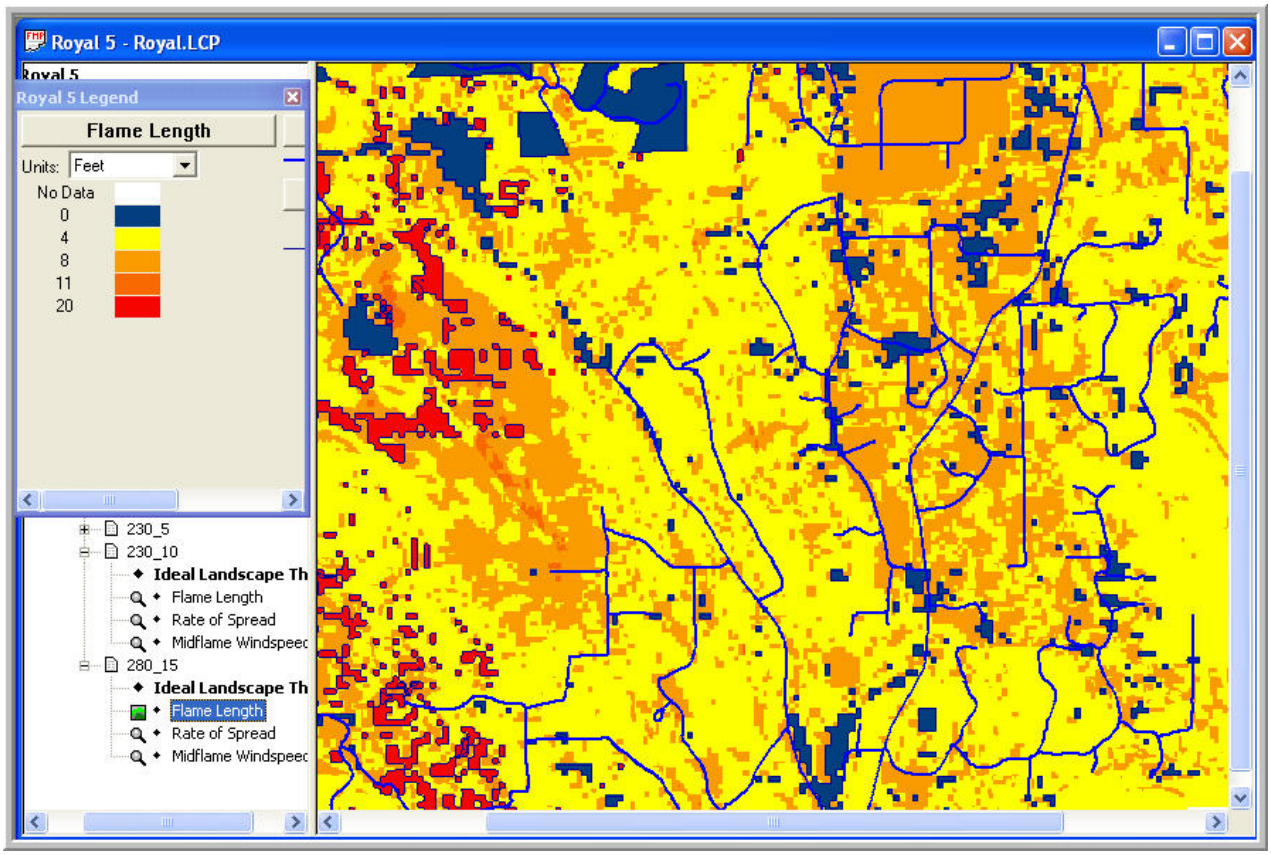


Figure 10- Fire Behavior Modeling FLAMMAP Flame length

The fire behavior modeling was done with a north westerly wind direction and surface wind speed from 2 to 5 miles per hour on a typical late summer day mid August with average temperatures 92 to 95 degrees humidity as low as 15% and an ignition starting around 1:00 PM

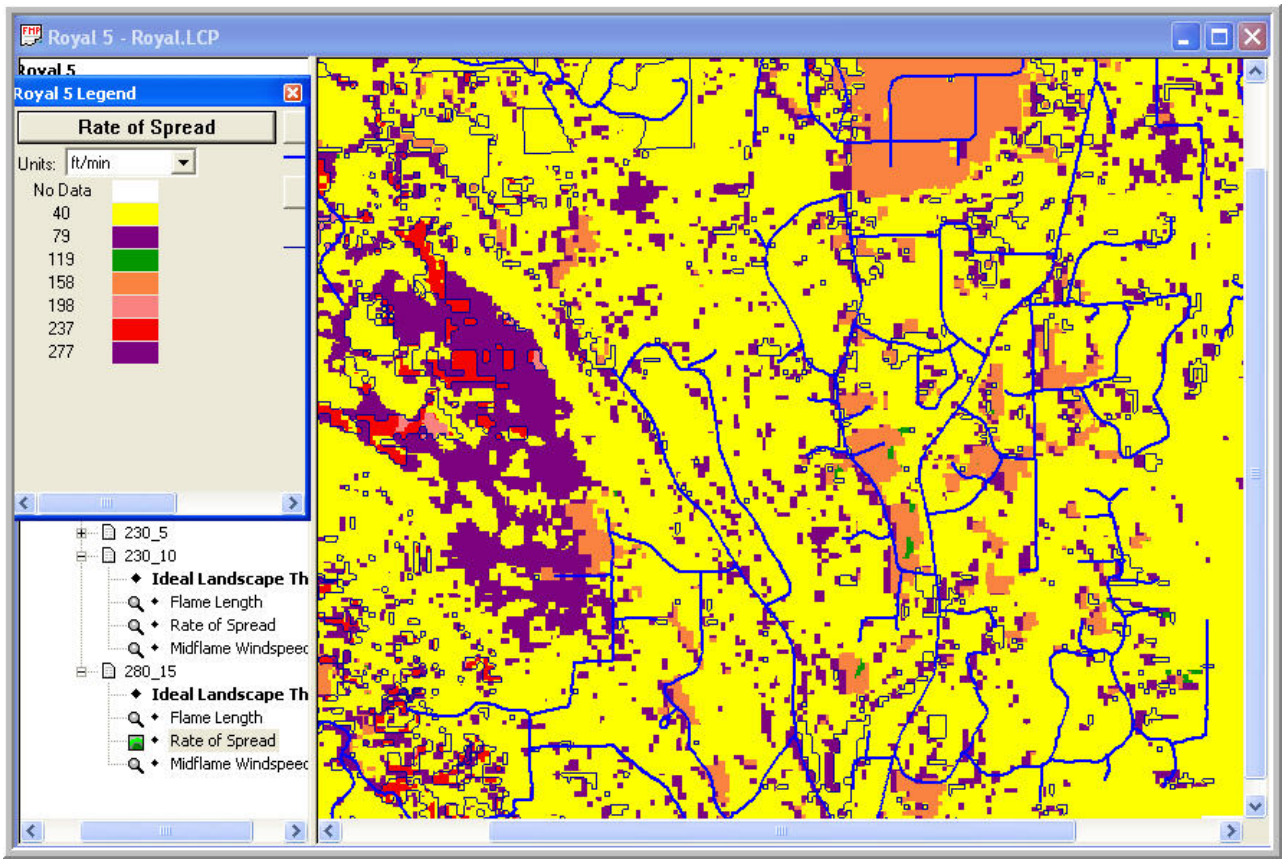


Figure 11 Fire Behavior Flammap Rate of Spread

Fire behavior in terms of Flame length and rate of spread are good indicators of control and containment problems and the western side of REE is threatened with flame lengths and rates of spread that makes it difficult to control with ground resources alone and requires the use of heavy equipment such as tractors and numerous fire engines before a fire reaches the community. Once in the community suppression becomes less difficult but resources are committed to structure protection and fewer resources are available to wildfire suppression. A fuel break to the west of REE as proposed would give suppression resources an opportunity to keep the fire out of the community and prevent the fire from reaching the structures. The high rates of fire spread and long flame lengths are want is modeled by a fire starting in Marble Valley.

Figure 12 Aerial Photo showing the heavy brush vegetation to the west of REE and the primary threat to the community

Appendix B – Specific Detailed Projects

Specific Projects and Prescriptions

Project Title: Royal Equestrian Estates REE 1 Date: April 2008

Shaded Fuel Break: REE1 is a fuel break which will be constructed as linear features of varying width, 200-1,300 feet wide for a total of 280 acres of treatment. 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.

Tractor Piling or Grapple piling: The use of rubber tired or tracked machines to pile slash, brush, and small trees. Where needed trees under 8" DBH will be thinned out to 20' spacing. Most trees over 8" DBH will not be piled. Live oak will be thinned out in many places. Generally Black oak will be left on site protection of desirable residual trees from skin ups and damage is very important. Slash piles shall not be piled near residual tress so when they are burned the piles will not damage trees remaining onsite. Contractor shall create clean piles that are free of dirt and no larger than 15 feet tall and 15 feet in diameter. The piles should be partly covered with a 6'x6' piece of water proof material to allow them to be burned after significant rain fall.

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.

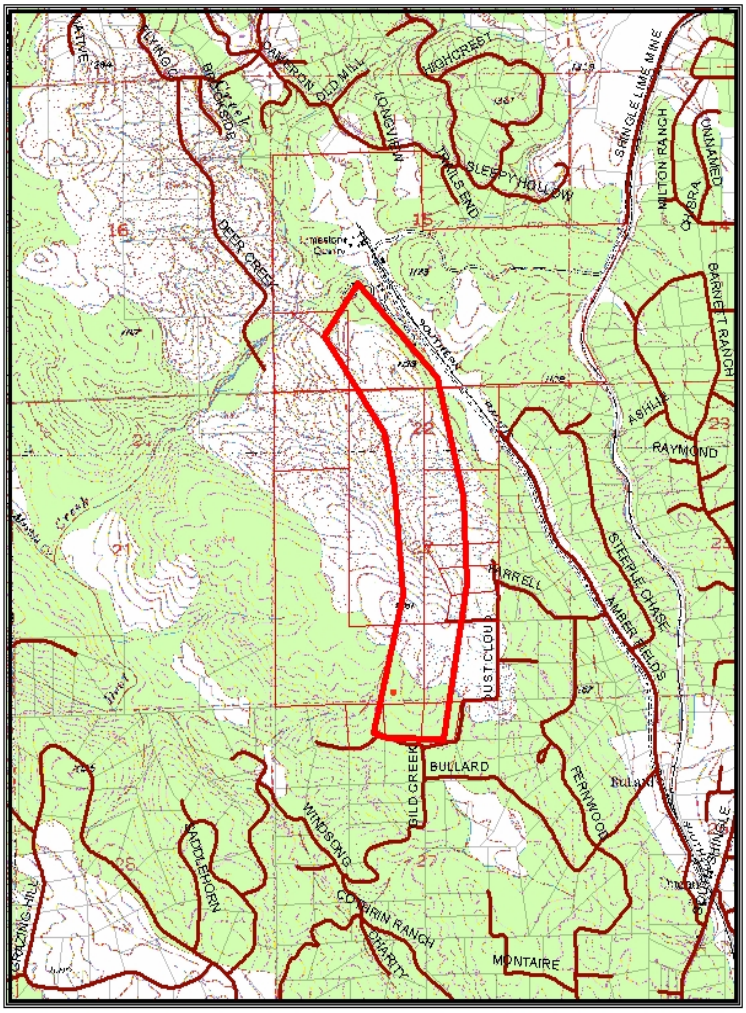
Compliance measures for CEQU, or their functional equivalents will need to be addressed priori to project initiation.

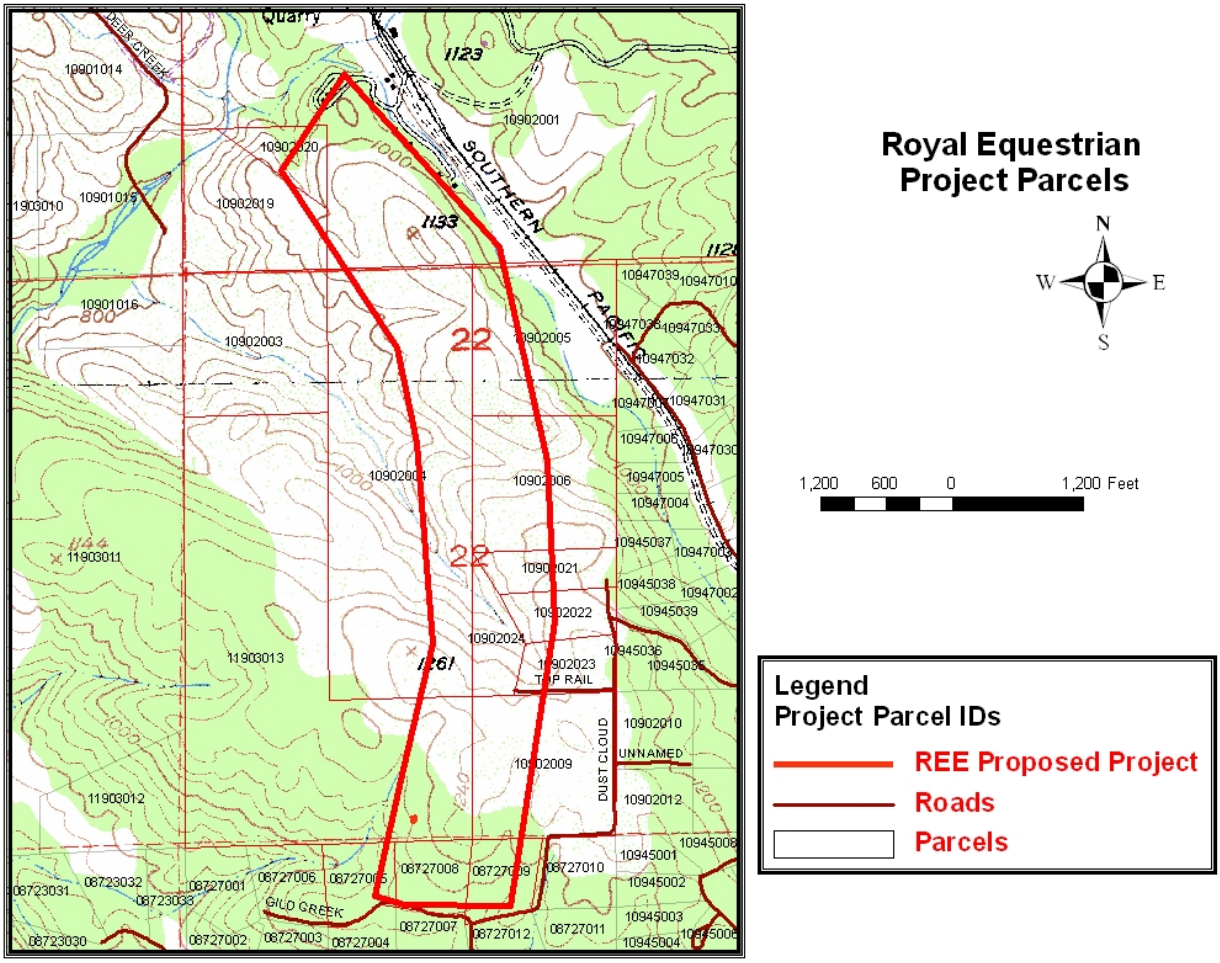
If burning is chosen the appropriate permits must be acquired for the Amador County Air pollution Control District and the local CDF and/or Amador Fire Protection District.

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	$448,000	$537,600 (20%)
Tractor Pile and burn	$1000	$280,000	$350,000 (25%)
Hand Cutting/Chipping or burning	$2000	$560,000	$672,000 (20%)


Royal Equestrian
Project Parcels
N
W
E
S
2,400 1,200 0 2,400 Feet
Legend
Project Parcel IDs
REE Proposed Project
Roads
Parcels
HIGHCREST
SLEEPY HOLLOW
SPRINGLE LIME MINE
MILTON RANCH
UNNAMED
BARNETT RANCH
DEER CREEK
RAYMOND
ASHLEY
STEEPLE CHASE
AMBER FIELDS
FARRELL
BULLARD
WILD CREEK
WINDSONG
SADDLEHORN
CORRIN RANCH
MONTAIRE
FERNWOOD



PRCL_ID for parcels within the Fuel Break

Owners within proposed Fuel Break by Parcel Identification

PRCL_ID	OWNERNAME	OWNERADDR	OWNERCITY	OWNERSTATE	OWNERZIP
08727005	HOPPER RICHARD D	6900 GILD CREEK RD	SHINGLE SPRINGS	CA	95682
08727008	FFIELD JEREMY	1330 EARL DR	RENO	NV	89503
08727009	CAREY WILLIAM F	4560 DUST CLOUD	SHINGLE SPRINGS	CA	95682
10902001	G3 ENTERPRISES INC A DE CORP	502 E WHITMORE	MODESTO	CA	95358
10902003	EL DORADO IRRIGATION DIST	2890 MOSQUITO RD	PLACERVILLE	CA	95667
10902004	G3 ENTERPRISES INC A DE CORP	502 E WHITMORE	MODESTO	CA	95358
10902005	G3 ENTERPRISES INC A DE CORP	502 E WHITMORE	MODESTO	CA	95358
10902006	G3 ENTERPRISES INC A DE CORP	502 E WHITMORE	MODESTO	CA	95358
10902009	HARRIS WILLIAM CARREE	4900 PHILLIP RD	ROSEVILLE	CA	95747
10902010	JOHNSON JEFFREY	52 JACKLIN PL	MILPITAS	CA	95035
10902011	RECCHIA GILBERT A TR	6768 CRYSTAL BLVD	EL DORADO	CA	95623
10902012	BAKER JOHN W	205 FARGO WAY	FOLSOM	CA	95630
10902013	HALL DAVID M	5570 FERNWOOD DR	SHINGLE SPRINGS	CA	95682
10902019	EL DORADO IRRIGATION DIST	2890 MOSQUITO RD	PLACERVILLE	CA	95667
10902021	CHANG YONG GIL	5720 TOP RAIL LN	SHINGLE SPRINGS	CA	95682
10902022	KIM ROBERT JAI	5750 TOP RAIL LANE	SHINGLE SPRINGS	CA	95682
10902023	FEDRIGO DEBORAH A TR	5780 TOP RAIL LN	SHINGLE SPRINGS	CA	95682
10902024	HARDESTY KEN	4661 GRAZING HILL CT	SHINGLE SPRINGS	CA	95682
10945035	SHEPPARD JAMES	5344 FARRELL RD	SHINGLE SPRINGS	CA	95682
10945036	KOESTER JENNIFER A	5801 TOP RAIL LN	SHINGLE SPRINGS	CA	95682
11903013	MARBLE VALLEY COMPANY LLC	4525 SERRANO PARKWAY	EL DORADO HILLS	CA	95762

Project Title: Royal Equestrian Estates REE-2 Date: April 2008

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. One particular area of concern is the vacant lots along Fernwood, Farrell, Amber Fields, and Dust Cloud, all along evacuation routes. Approximately 10 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 50 feet should be mowed if brush is the dominate vegetation clearing should be a minimum of 100 feet depending on slope.

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 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 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 priori 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)

Appendix C Treatment	Treatment Cost Per Acre	Total treatment Cost	Treatment Cost Plus Administrative Costs
Hand Cutting/Chipping or burning and/or Mowing	$1800	$18,000	$23,400 (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 C Fire Behavior Modeling

The following is a description of the fire behavior tools and models that were used to analyze fire behavior for the area in and around the Royal Equestrian Estates

FARSITE

FARSITE is a fire behavior and growth simulator for use on Windows computers. It is used by Fire Behavior Analysts from the USDA FS, USDI NPS, USDI BLM, and USDI BIA, and is taught in the S493 course. FARSITE is designed for use by trained, professional wildland fire planners and managers familiar with fuels, weather, topography, wildfire situations, and the associated concepts and terminology.

What is FARSITE?

FARSITE is a fire growth simulation model. It uses spatial information on topography and fuels along with weather and wind files.

FARSITE incorporates the existing models for surface fire, crown fire, spotting, post-frontal combustion, and fire acceleration into a 2-dimensional fire growth model.

FARSITE runs under Microsoft Windows operating systems (Windows 98, me, NT, 2000, and XP) and features a graphical interface.

FARSITE users must have the support of a geographic information system (GIS) to use FARSITE because it requires spatial landscape information to run.

FIREFAMILY Plus

FireFamily Plus is a Windows program that combines the fire climatology and occurrence analysis capabilities of the PCFIRDAT, PCSEASON, FIRES, and CLIMATOLOGY programs into a single package with a graphical user interface

FLAMMAP

FlamMap is a fire behavior mapping and analysis program that computes potential fire behavior characteristics (spread rate, flame length, fireline intensity, etc.) over an entire FARSITE landscape for constant weather and fuel moisture conditions.

• FlamMap software creates raster maps of potential fire behavior characteristics (spread rate, flame length, crown fire activity, etc.) and environmental conditions (dead fuel moistures, mid-flame wind speeds, and solar irradiance) over an entire *FARSITE* landscape. These raster maps can be viewed in FlamMap or exported for use in a GIS, image, or word processor.

• FlamMap is not a replacement for *FARSITE* or a complete fire growth simulation model. There is no temporal component in FlamMap. It uses spatial information on topography and fuels to calculate fire behavior characteristics at one instant.

FlamMap is widely used by the USDI National Park Service, USDA Forest Service, and other federal and state land management agencies in support of fire management activities. It is designed for use by users familiar with fuels, weather, topography, wildfire situations, and the associated terminology. Because of its complexity, only users with the proper fire behavior training and experience should use FlamMap where the outputs are to be used for making fire and land management decisions.

Appendix D: Eldorado County Ignitions