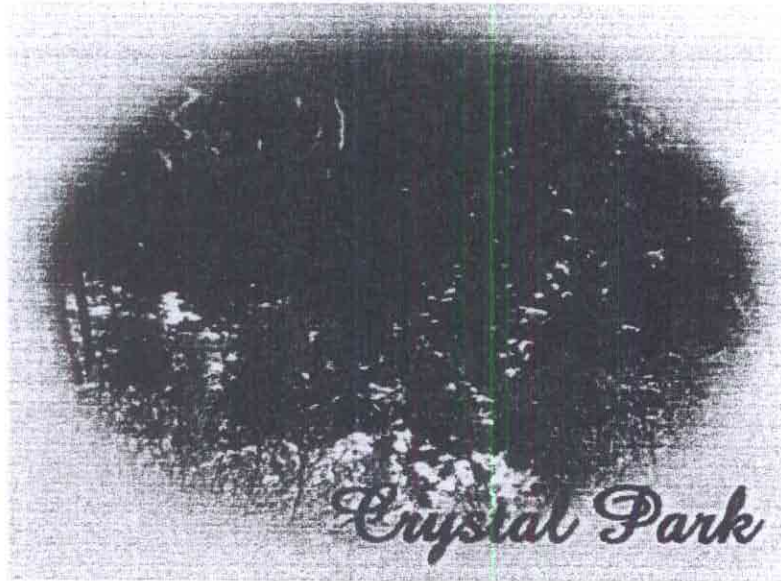

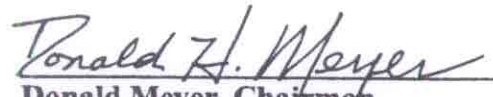


**Crystal Park Community Wildfire Protection Plan
July 27, 2006**

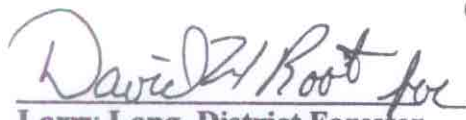


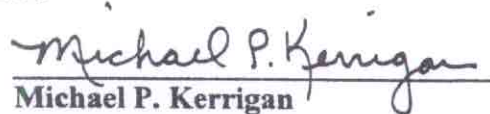
Approval


Kathryn Eddy, President
Crystal Park HOA


Donald Meyer, Chairman
Crystal Park Metro District

Concurrence


Larry Long, District Forester
Colorado State Forest Service


Michael P. Kerrigan
District Fire Management Officer,
Pikes Peak Ranger District
United States Forest Service


Sallie Clark, Chairperson
Board of County Commissioners
El Paso County

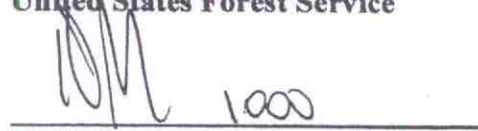

Keith Buckmiller, Fire Chief
Manitou Springs Volunteer Fire
Department

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Community Wildfire Protection Plan (CWPP) for Crystal Park Home Owners Association (CPHOA)

Introduction and Overview

CWPPs are authorized and defined in Title I of the "Healthy Forests Restoration Act" (HFRA) which was signed into law in late 2003. The act emphasizes community planning by extending a variety of benefits to communities with wildfire protection plans in place. Stated clearly, a CWPP is now a requirement for obtaining Federal wildfire mitigation grants. It may also provide access to other potential grants for improved safety in the urban-wildland interface.

The CWPP will belong to Crystal Park, but, at a minimum HFRA requires that local government, local fire authority and a state forestry representative agree to the plan. In addition, the HFRA requires that the plan be developed through collaboration with a wide variety of local organizations and interest groups. As such we have put together a task force with representatives from Crystal Park, U.S. Forest Service, Colorado State Forest Service, El Paso County Forest and Weed Control, Manitou Fire Department, El Paso County Sheriffs Department, and the County Commissioners. After a number of meetings, we have developed a plan for consideration by Crystal Park members. Maps have also been developed to illustrate these possibilities and guide the Park through implementation of the plan that the members of Crystal Park choose.

The overarching goals of any CWPP are to protect lives first, homes second, and everything else third. The major concerns about Crystal Park from a fire management point of view are the steep terrain and the fact that it is a "one way in, one way out" community. A considerable portion of the Park is covered with Gambel Oak which is highly flammable and indicates dry South-facing slopes. Rapid communication in the Park is also lacking. Since our first priority is to protect lives, the major recommendations in order of priority are as follows.

1. An "inverse callback" system could be used to simultaneously alert residents to impending danger, evacuation requirements, etc.
2. Shelter-in-place buildings strategically placed where residents could gather and muster while a fire passes over.

The second priority is protection of homes and other structures in the Park. The following recommendations are presented in order.

1. A Crystal Park Volunteer Fire Department (being arranged separately).
2. Evaluation of structures and property for wildfire survival.
3. Targeted thinning/treatment of property in order to get maximum protection within our limited budgets.

Timing and funding for implementation of the plan have not been discussed, although some suggestions have been made. Some parts of the CWPP may be implemented quickly and inexpensively, while other parts, such as forest and brush thinning, may take years. The CWPP will provide the basis for setting implementation priorities.

Community Wildfire Protection Plan for Crystal Park Home Owners Association

General Introduction

The overarching goals of any CWPP are to protect lives first, homes second, and everything else third. The purpose of this CWPP is to address the specific concerns affecting Crystal Park as they relate to wildfire management. Factors contributing to the wildfire risks include, but are not limited to the Park's steep terrain, significant amounts of Gamble oak, and the fact that it is a "one way in, one way out" community. This document attempts to deal with these issues. The CWPP represents a comprehensive program for the protection of life and property in Crystal Park within budget constraints. Timing for implementation or how this project will be funded has not been explicitly presented, although some suggestions for both are made in this document. Timing for efforts such as evaluating properties and structures can probably be done relatively quickly (over the course of several months). Thinning of the forest will probably take years. Funding these endeavors will be discussed and managed via the CPHOA. The CWPP document will provide better opportunities for obtaining grants for wildfire mitigation, fire protection, etc.

Important results from this undertaking will be the education of Crystal Park residences about the risks of wildfire and how they can be reduced, both by individual and CPHOA actions. We should have a much better understanding of where to put our limited resources so that residents in Crystal Park can live here in relative safety. It is almost certain that we will develop a more cohesive community with methods of communication that will effectively and quickly alert residents in times of danger – something that is currently lacking.

Location, Terrain, Vegetation, etc.

Crystal Park is located on the USGS Manitou Springs Quadrangle. The approximate center point of the park is at 38°50' N latitude and 104°55' W longitude. The park's size is almost 2,000 acres and occupies parts of sections 7 and 8, most of 17, all of 18, and a quarter of 19 in R67W and about one quarter of section 13 in R68W. The elevation varies from about 6,700 to almost 9,000 feet above sea level.

Crystal Park lies within the watersheds of Sutherland and Ruxton Creeks. The terrain consists of steep mountains in the lower and middle sections and a park like area in the upper section surrounded by steep mountains (see next paragraph). Many of the South-facing slopes are vegetated with Gamble Oak, particularly in the lower elevations. Many of the higher, North-facing slopes are densely covered with mixed conifers, often dominated by Douglas Fir. The remainder is mostly a mixed forest of Ponderosa and Limber Pine, Douglas and White Fir, Aspen, and numerous species of scrubs. There is, relatively speaking, little open grassland.

Crystal Park Road was among the first roads into the Front Range, and, after many incarnations has become what it is today. The PUD allows 360 memberships with each membership being entitled to a lot of approximately 0.7 acres and a one family residence. The final total number of houses will probably be slightly less than 360 due to some houses being on multiple lots. Given the size of the lots, about 80% of Crystal Park consists of common (community) property with about 24 miles of road for access to the residences. There are currently over 200 houses. The Park can conveniently be described as subdivided into lower, middle, and upper sections with most of the houses being in the lower and upper sections. The lower section lies between the main gate and Neeper Valley Road; the middle section between Neeper Valley Road and the switchbacks; and the upper section above the switchbacks. The lower section is relatively densely populated with almost all of the residents being full time. In the upper park roughly half of the houses are occupied year around; the rest being occupied anywhere from a few days/year to half the year. The middle park is only sparsely populated with most of the houses lying along Crystal Park Road.

Hazards Mapping

Hazards maps are the heart of the CWPP process. Hazards mapping of Crystal Park should show us where our problems are and indicate the priorities for solving them. The El Paso County Forest and Noxious Weed Control Manager is putting the maps together with assistance the U.S. Forest Service (USFS) and the Colorado State Forest Service (CSFS). There will be several maps with related information grouped on them for ease of reading. They will ultimately provide the following information.

- Roads indicating major and secondary along with slope orientation (South facing vs. North facing).
- Houses/structures: location, risk category, residents of special concern
- Cistern locations and new cistern recommendations
- Helicopter pad locations (there needs to be scheduled maintenance of pads)
- Shelter-in-place locations (see ingress/egress section below)
- Vegetation types, simplified to show four types: grass, brush (mostly oak), pine, and mixed conifer.
- Treated (thinned) areas
- Hazardous areas, e.g. unpredictable fire areas, "chimneys", previous fires
- Areas of large stands of diseased trees
- Watersheds

First Priority: Ingress/Egress and Communication Problems

It is certainly possible that evacuation orders will be given to Park members in advance of a wildfire threatening the community so that the Park could be safely evacuated. The recommendations in this section are for cases in which there has not been advanced warning. One of the major difficulties that Crystal Park faces is our "one way in, one way out" situation. Another is that of communication to residents and accounting

for them when there is an impending fire or other disaster. Our first concern in an emergency is to protect lives. Therefore, the CWPP recommends that the following be implemented. Priorities are as shown, but much of the work will be carried out simultaneously or as funds for a particular issue becomes available.

1. Develop an "inverse callback" system for early alert and evacuation of Crystal Park residents in case of fire. It may be possible to modify the call box at the gate to accomplish this. El Paso County is installing an Emergency Notification System which may obviate Crystal Park need to install a callback system.
2. It is unlikely that the "one way in, one way out" problem can be solved by finding other routes out of the park. Therefore, building "shelter-in-place" buildings is recommended. The approach here is not to evacuate, but build metal insulated buildings so that residents could shelter while the fire moves through. These buildings would be stocked with water, emergency food and first aid provisions. This approach is highly supported by the emergency agencies. It also allows better accounting for residents in an emergency. If the problem of fuel storage at the maintenance yard can be solved, the maintenance building can be used for the entire upper park. The location of a second shelter in place building needs to be identified in the lower park. Residents of the middle park will be assigned to go to one or the other depending on their location. As a generalization, people will need to remain in the shelters for hours as the fire passes through and not days. The goal would be to have neighbors "take care of each other" in the sense that we communicate with neighbors so we know who is in the park if there is an emergency.
3. Carry out Community training days so that Park members will know what to do in an emergency. In this regard a new member of the Park has suggested an "all hazards" approach to disaster planning. While the CWPP plan focuses predominately on wildfire, this approach would help families design their individual disaster plans.
4. Crystal Park has two helicopter pads. It is conceivable that there are some residents who should be evacuated by helicopter. It is clearly not possible to evacuate everyone in this way, but those who should be so evacuated need to be identified, their residence located on the maps and evacuation plans well established. At one time Fort Carson had indicated a willingness to do this. We need to determine if that is still the case and formalize plans.
5. The helicopter pads could also be used to bring in equipment and firefighters in the event of a fire, particularly if the main road is blocked. We already have an agreement with the U.S.F.S. that they may draw water from the pond during a fire emergency that is inside or outside of the Park. Colorado Springs Utilities has placed red balls on the power lines so that they are visible to pilots.
6. In the past it was recommended that residents hike out of the Park in an

emergency. However, sending people out of the park through dense forests in a wildfire situation is strongly discouraged. Another problem is that it will be difficult to account for those who hiked out. A central phone number needs to be provided for residents to muster if they have hiked out.

Second Priority: Reducing the Risk to Property

The next major issue is how to reduce the risk to homes and residents in the park. This effort includes location of fire cisterns and how we fight fires if they occur. We will also make houses more survivable with a combination of evaluation of houses for survivability in a wildfire, selective thinning of the vegetation, and construction design of homes for fire resistance.

Fire Protection

Currently the Manitou Volunteer Fire Department is the first responder in the case of fire in the Park with backup from the El Paso County Wildland Fire group. The Crystal Park Metro District has supplied road signs on all roads and has purchased fire cisterns which have been placed strategically around the park. It is also park policy that if residents want to purchase a cistern, park maintenance will bury it. The locations of all cisterns are shown on the hazards maps. Establishment of a Crystal Park Volunteer Fire Department is being pursued separately from this plan, but will be integral to its implementation. They are both complimentary functions. While this effort is not an explicit part of the CWPP, it is mentioned here for completeness and its obvious importance.

Evaluation of Structures and Survivable Space

Subdivisions such as Crystal Park should evaluate individual structures and their **survivable** space thereby allowing hazards ratings to be done on individual properties. It is important to notice that the word survivable has been substituted for defensible. Defensible implies, during a fire, firefighters can maneuver so as to “defend” a structure from the fire. Survivable implies that that property has been treated such that a structure will survive a fire **without** someone there to defend it. Thus, survivability of the property/structure is the standard by which properties should be judged. The ultimate goal would be to recommend that all properties and structures be brought to a survivability standard through a combination of homeowners’ and Crystal Park efforts (see section on Fuels Treatment and Thinning below).

The assessment of properties will be done with the owners’ permission by trained members of Crystal Park. Assessment ideally should be a joint effort between members of the Forestry Committee and the Site and Architectural Committee. There are a number of sources from which training can be obtained. These include the Colorado State Forest Service, the Red Cross, and the Pikes Peak Wildfire Partners (PPWP). The CWPP evaluation goal is to make Crystal Park and all of its residents safe. An evaluation

form from another community has been modified for this purpose and is attached as an Appendix I

The Crystal Park Site and Architectural Committee requires that roofs be "A" rated for fire protection. El Paso County Regional Building now requires that the wildfire mitigation plan be completed before a Certificate of Occupancy is issued. However, the lot sizes in Crystal Park are relatively small so that much of the defensible (or survivable) space is in common areas where Regional Planning cannot require it to be done. Crystal Park supports defensible space projects in common areas by individuals, and, in fact, the survivability approach may dictate it. Defensible space projects support fuels treatment and thinning described next.

General Methods for Setting Risk Priorities

The CWPP encourages individual homeowners to treat and manage their defensible space. For 2006 the Forestry Committee will continue its work of thinning along the main road as stated in the Wildfire Mitigation Grant application. Such thinning will continue but at a reduced priority since the CWPP process strongly urges communities to direct most of their effort toward thinning around values at risk. In Crystal Park's case, most of this effort will be directed toward thinning around homes. In order to accomplish this, priorities need to be defined so as best to allocate limited resources. We will also assess whether there are areas where fuel breaks could be developed, particularly in the middle portion of the park. Following is the most hazardous areas by vegetation type.

1. Gamble Oak areas on South- and West-facing slopes
2. Pine on South- and West-facing slopes
3. Mixed conifers on North-facing slopes.

In all cases the steeper the slope the more dangerous. It should be emphasized that this is relative risk. All fuel types require some sort of hazards mitigation. It cannot be assumed, for example, that living on a North-facing slope implies safety; such a situation may be quite dangerous.

The hazards maps will allow quick identification of both vegetation type and steepness. Within vegetation groups the individual house evaluations will allow ranking of risk to houses. Unless there are homes with unusually high risk within vegetation type, fairness dictates that a lottery be used to determine priority. Clearly stakeholder (Crystal Park residents) involvement and understanding is extremely important.

Fuels Treatment and Forest Thinning

Most of what follows is a summation of Crystal Park CWPP meetings and a meeting between CPHOA and the USFS on May 1, 2006. It is strongly suggested by the USFS that Crystal Park should direct its work toward protecting structures. This includes

what the Park pays to have done via outside Sawyers, what is done by the Forestry Committee, and what individual park members do. In fact, all of the discussion was directed toward the goal of survivable structures.

The priority order should be south and west facing slopes because south facing slopes get the most sun and the predominant wind direction is westerly which dries west-facing slopes. Gamble Oak is the most dangerous followed by pine-covered slopes. North facing slopes of mixed conifer, possibly dominated by Douglas Fir, while important, maintain the most moisture and tend to be less flammable. Again, this is a relative statement and is not meant to imply that these slopes are safe; fire mitigation work is quite important on these slopes as well. Obviously, the steeper the slopes, the more dangerous the fire risk becomes.

On level ground, flames tend to reach to 1.5 times the height of the vegetation, and increases to 3 times the height on 45 degree slopes. The goal for treatment of slopes that are predominately covered by Gamble Oak is to develop "oak islands". The oak will be completely removed around these islands such that fire will drop to the ground. The cleared areas should be designed with the wind direction in mind such that fire will move away from the structure. Since our oak tends to average 4-6', a cleared area 20' wide (and not straight for esthetic reasons) should drop flames to ground for almost all slope conditions in the Park. In order to keep oak from growing back we should spray herbicide (Garlon 3A or other) on the cut within 3 minutes of cutting.

For conifers, the approach is to take ladder fuels off to a height of 8-10' (or less than 1/3 of green leaf area for small trees). Ladder fuels are lower branches that can conduct fire into the crown of a tree. Trees should be thinned such they are 20-30' apart and without crowns touching. Clumps of three or four trees can be left if adequate space is created around the clump. This should amount to a basal area of 40-60 sq ft/acre. In the case of mixed conifer and spruce the basal area can be 60-80 sq ft/acre.

Scattering the slash as we have been doing is an excellent way to handle it if it cannot be chipped. Removing cut wood from slopes is a good idea, but should not take priority from evaluating and protecting houses. In all cases, diseased vegetation should be removed first. Relatively speaking, standing dead trees (after needles have fallen) are less dangerous than live trees. The surface to volume ratio is what is important. Needles (alive or dead) have a huge surface to volume ratio.

Funding and Available Grants

The CWPP was initiated because it is a prerequisite for wildfire mitigation grants. As the process has developed, it has become clear that the process is more important than grants. It will ultimately lead to a safer, more responsive, and communicative community. Nevertheless, grants are going to be extremely important in making all (or parts) of this happen. The CWPP allows a focused effort toward competing for grants for specific projects so that the odds of obtaining grants will be greater. As a result, the CWPP represents a discriminator for the Park that other communities may not have. It

highlights the Park's willingness to form partnerships with organizations charged with wildfire mitigation, risk reduction and wildfire response in an increasingly competitive environment. The Park should also consider how it can increase funding for wildfire protection from within (see below).

There may be several ways to increase funding within CPHOA. Of course, this would mean higher costs for members which may or may not be offset by lower homeowners insurance. For example, one method is to raise money through increased taxes via the Metro District. A more acceptable approach could be through a separate "line item" in the CPHOA annual budget. Members could vote for or against the line item separately from the budget. To put this in perspective, an extra \$10/month/membership dedicated to wildfire mitigation would raise an extra \$43,200/year. Clearly such proposals must be approved by the members of Crystal Park.

Summary and Conclusions

This document along with the accompanying hazards maps are meant to provide a framework for fire mitigation in Crystal Park. It is a living document designed to be modified as needed. It will also provide a vehicle for receiving funding. At the very least it should provide for a more cohesive community with methods of communication that will effectively and quickly alert residents in times of danger – something that is currently lacking.

Appendix I

Crystal Park Homesite Wildfire Assessment Checklist

Location Information

Name of Owner _____
 Address _____
 Latitude _____ Longitude _____
 Estimated slope below house: _____ degrees
 What direction is the slope facing? _____

**Forest Type:
Closure**

Canopy

_____ Gamble Oak	Dense	Medium	Open
_____ Ponderosa Pine	Dense	Medium	Open
_____ Douglas-fir or Spruce	Dense	Medium	Open
_____ Mixed Conifer	Dense	Medium	Open
_____ Aspen			(Does not apply)

Dense: Most tree branches in contact. Few openings in canopy
 Medium: Approximately 50% of branches in contact
 Open: Few branches in contact. Some clumped trees, but most trees are isolated from other trees.

Access and Signage

What is the driveway length, measured from road? _____ ft
 What is the narrowest driveway width? _____ ft
 What is the lowest driveway overhead clearance? _____ ft
 Is the residence clearly visible from road? YES NO
 Is the address for residence clearly displayed? YES NO
 If yes, is the address visible from road? YES NO
 If sharing driveway, does the address indicate the driveway fork? YES NO N/A
 Is residence driveway entrance clearly addressed? YES NO
 Is there a turn-around capable of handling an engine? YES NO

Hazards

Is there a propane tank? YES NO
 If yes, is it at least 30 feet from any structure? YES NO
 If yes, is it buried? YES NO
 Is there 10 feet of clearance around propane tank? YES NO

Is the electrical shut off on the outside of residence? YES NO
Identify any other hazards known to exist on this property. _____

Roof

Are there branches overhanging the roof? YES NO
Are there branches within 10 feet of chimney? YES NO
Does chimney have screen or spark arrester? YES NO
Are the roof and gutters clear of leaves and debris? YES NO
What type of roofing? wood shingle metal

Yard

Are wood piles at least 30 feet from all structures? YES NO
Are wood piles uphill from structures? YES NO
Where are gas and electric utilities? above ground underground
Are there combustible materials against house? YES NO
How far away is nearest water source (cistern, stream, etc)? _____
If propane is used, where is the shutoff valve _____

Construction

Does the home have above ground deck or balconies? YES NO
If yes, are they enclosed? YES NO
Are there combustible items underneath? YES NO
Are there trees within 10 feet of the deck? YES NO
Are tree limbs overhanging the deck? YES NO
Are there outbuildings on the premises? YES NO
What is the siding material on the residence? _____

Additional comments or information. _____

Appendix II

MAPS



RESOLUTION NO. 06-335

BOARD OF COUNTY COMMISSIONERS
COUNTY OF EL PASO, STATE OF COLORADO

RESOLUTION TO APPROVE THE CRYSTAL PARK COMMUNITY WILDFIRE
PROTECTION PLAN

WHEREAS, pursuant to §§30-11-101(1)(e), and 30-11-107(1)(e), C.R.S., the Board of County Commissioners of El Paso County, Colorado has the legislative authority to manage the concerns of El Paso County when deemed by the Board to be in the best interests of the County and its inhabitants; and

WHEREAS, Title I of the Healthy Forests Restoration Act (HFRA) authorizes the Secretaries of Agriculture and Interior to expedite the development and implementation of hazardous fuel reduction projects on federal land managed by the U.S. Forest Service or Bureau of Land Management when certain conditions exist; and

WHEREAS, the Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects and places priority on treatment areas identified by communities in a Community Wildfire Protection Plan (hereinafter "CWPP"); and

WHEREAS, the Crystal Park Home Owners Association is the first community in unincorporated El Paso County to complete a CWPP; and

WHEREAS, this CWPP, which is attached hereto as Exhibit A, requires approval of the local government; and

WHEREAS, El Paso County, the U.S. Forest, the state forest services and the Manitou Springs Volunteer Fire Department have worked collaboratively in assisting Crystal Park in the development of a CWPP; and

WHEREAS, the Board having reviewed the plan, has determined that the CWCP will benefit the community by having wildfire protection plans in place and the Board supports the plan as presented by the Crystal Park Home Owners Association.

NOW, THEREFORE, BE IT RESOLVED, that the Board of County Commissioners of El Paso County, Colorado, hereby approves the Crystal Park Community Wildfire Protection Plan;

DONE THIS 21st day of September, 2006, at Colorado Springs, Colorado.

RECEIVED

SEP 27 2006

El Paso County
Environmental Services Dept

ATTEST:

By: *[Signature]*
Deputy Clerk to the Board

BOARD OF COUNTY COMMISSIONERS
EL PASO COUNTY, COLORADO

By: *[Signature]*
Sallie Clark, Chair