



# **Neighborhood Wildfire Protection Plan**

26 August 2007

This edition of the Majestic Park Homeowners Association has been reviewed and approved by the Directors of the Association

26 August 2007

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Teller County

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Northeast Teller FPD

## **Area Description**

Majestic Park is a subdivision of about 570 acres directly adjacent to the west boundary of the City of Woodland Park. It is comprised of 16 lots, each of about 35 acres. The subdivision's west boundary is shared with the Pike National Forest. Like the adjacent National Forest Area, Majestic Park is very densely forested in mixed conifer (primarily Ponderosa Pine and Douglas Fir), with steep terrain and limited access.

The community has one way in and one way out. Roads are often steep and narrow. Driveways are often long and steep, and many have tight curves. Access may be difficult with larger structural engines. The homes are all of new construction, usually stucco, and have class A roofs. The Northeast Teller Fire Protection District main station in Woodland Park is less than one mile away from the entrance gate.

## **Plan Structure.**

This Neighborhood Wildfire Protection Plan (nWPP) is the compilation of other less formal plan documents that preceded it over the five year period that Majestic Park Subdivision has pursued a cooperative wildfire mitigation plan. Many of the project tasks summarized by this plan have already been specified in previous project plans and have actually been completed.

This nWPP document is intended to tie together the various Majestic Park plan elements including those that have been completed and those that are planned for the future into one nWPP that is consistent in structure with the overall CWPP for our community – the Teller County Wildfire Protection Plan first published by the Teller CWPP Commission in 2004.

Since this nWPP is a logical extension to the Teller CWPP –the contents of that guiding document are not repeated here. Accordingly, the reader needs to review the Teller CWPP to place this nWPP in the proper context.

Additionally, since many of the nWPP project tasks in this document have already been completed they are presented here as a historical summary of those tasks rather than a specification for the future.

## **Threat basis**

The Teller County Community Wildfire Protection plan included a science-based study of relative risk areas in the region. One area stood out as the highest-risk area not only in Teller County but likely one of the highest risk areas in the central Rocky Mountain Region.

The CWPP Commission rated risk as the likelihood of catastrophic fire combined with concentrations of assets-at-risk. The area identified as Priority-Zone-1 in the study received that designation because of the proximity of extreme-risk forest area directly adjacent to and upwind from the City of Woodland Park.

Majestic Park occupies almost a square mile lying directly between Priority Zone 1 and the City. Majestic Park received the most-extreme rating in the Teller CWPP ratings of subdivisions. Accordingly, mitigation within Majestic Park protects not only the 16 tracts in the subdivision but the adjacent City of Woodland Park. The subdivision is a critical link in the “corridor” of extreme hazard forest lying to the west of the city.

## **Project Background**

### **Hayman Fire Inspires Awareness**

The Hayman fire of 2002 occurred at the time that development was just beginning in Majestic Park. Most property owners were unaware of the risk of wildfire when they purchased lots and began development. The 2002 fire season dramatically changed their awareness.

In 2003 several residents began a cooperative effort to better understand the risk situation and possible ways to deal with it. The stages of increasing awareness of threat levels and awareness of the challenges of threat mitigation are reflected in the subdivision mitigation plan that is outlined below.

### **Cost Effective Solutions**

Several realities quickly became clear to the people working on mitigation solutions in Majestic Park.

First, they became aware that risk reduction is in fact possible by carefully applying fuels reduction and other actions.

Second, it became clear that this subdivision and others like it have a special challenge not present in many areas. Specifically, it is clear that an effective fuels reduction plan must apply to the entire 35 acres of each tract – not just to protecting structures. That is because a large portion of the value of these properties lies not just in the structures but also in their location on large beautiful forested tracts. A treatment method that concentrates solely on defensible space for homes would not adequately meet the needs of the community. It raises the possibility that in certain wildfires, a house could be saved but be left surrounded by the devastating results of catastrophic fire. Even though the structures survived, overall property values in that scenario could be lowered by 40% to 60% with no insurance reimbursement possible. Economic analysis of this dilemma implied that mitigating the wild fire hazard over the entire forest would best protect the values—economic and other values—cherished by the community

Third, a big problem arose right away – the cost of fuels treatment on large tracts in a residential setting was found to be very expensive. Typically fuels reduction of the kind needed here cost more than \$6,000 per acre. Worse, there were almost no services providers who could do that kind of work even at the high prices.

Accordingly, concurrent with early planning and some limited work on defensible space projects, a great deal of research went into finding fuels treatment technology that was appropriate to the residential setting and yet affordable.

## **Master Plan**

A subdivision-wide plan to deal with the extreme wildfire threat was initiated in 2003 but developed over a period of about one year spent on education, research, consultation with experts, and discussion amongst subdivision property owners.

### **Consultation with CSFS**

The Colorado State Forest Service assisted the sub-division's project leaders in understanding what needed to be done and how. This was a challenging phase. Owners were initially slow to recognize the seriousness of the threat. Education was needed. But, ironically, increased awareness of the threat came with the reality that cost effective treatment methods were not available.

### **Presentations for HOA**

The CSFS presented briefings to Home Owners Association Annual Meetings in May of 2003 and 2004. Foresters from the CSFS made multiple trips to Majestic Park to help outline fuels treatment requirements and work on possible methods to use on the large tracts.

The project leaders developed additional material for presentation to property owners to highlight the threat levels and special dilemma of treating large residential tracts. This included economic analysis of alternative mitigation strategies.

### **Priorities and Strategy**

During this period a strategy emerged for how to proceed against the threat. The strategy included several key elements.

#### **Cooperative Plan.**

It was clear that if one property owner performed good fuels reduction on his property his overall risk level would be only marginally reduced if his adjacent neighbor did nothing. Accordingly it was decided that any worthwhile effort must address the subdivision as a whole and in fact include the areas on the boundaries of the subdivision – including the adjacent National Forest.

#### **Large-Area treatment**

The community determined that its needs would best be met by incorporating the principles of defensible space into larger scale fuel breaks. Larger scale projects lowered

the per acre cost of mitigation, protected the community at large, and improved the overall forest health. Accordingly, the emphasis was on treatment projects that affected the overall subdivision and protected not only homes but also the valuable forest surrounding them.

### **Fire Behavior**

Prevention of wildfires was quickly seen to be practically impossible. The dramatic difference however, in the destructiveness of catastrophic crown fire vs. ground fire was clear to the planners. Accordingly there was an emphasis on treatment methods not to prevent or stop wildfire, but that instead could encourage an approaching catastrophic fire to “lie down” and transition to ground fire behavior.

### **Priority Scheme**

Since a comprehensive mitigation effort could not be done at all at once, a multi-year project strategy emerged. Parallel efforts were followed. Specifically, individual property owner projects to take advantage of “low hanging fruit” were encouraged and several homeowners responded by working on the immediate opportunities to establish defensible space. On a community-wide basis simple measures to improve access and preparedness were taken.

Larger, more effective projects were launched at the same time in parallel with the simpler measures. These however, took much longer to plan and finance and so progressed to the execution stage later.

## **Master Plan Strategy**

Besides the individual fuels treatment projects done and paid for by the respective landowners, a second major initiative addresses projects that cross multiple tracts and that are planned and managed by the HOA under a master plan for mitigation. Projects under this plan are paid for by the HOA - in some cases with financial assistance from grants.

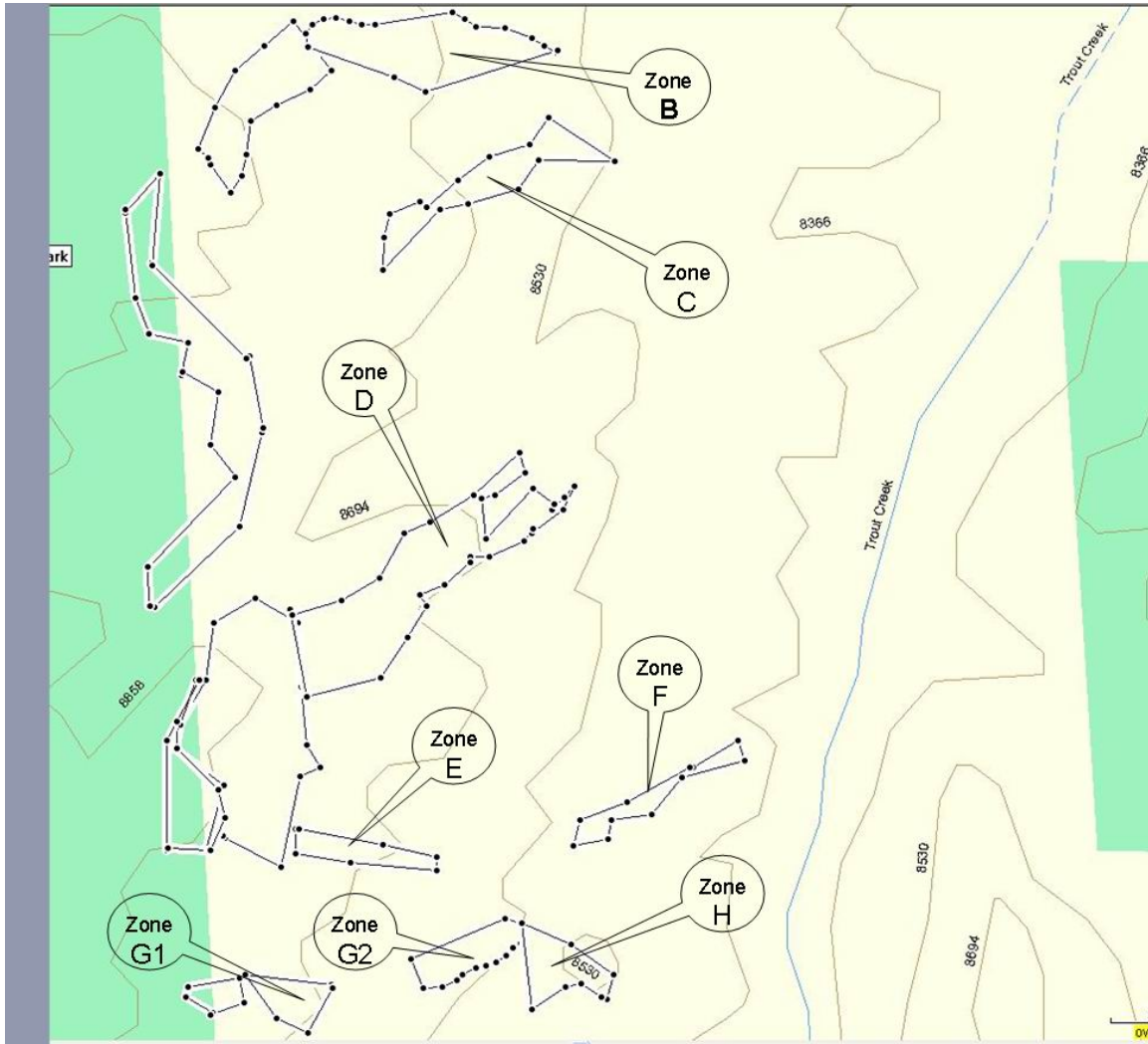
All of the grant applications have been sought in support of the single master plan for strategic mitigation work in the subdivision. The master strategic plan is based on the use of a *Shaded Fuel Break Strategy* throughout the subdivision.

Much of the terrain in Majestic Park is extremely steep and rocky and hence very inaccessible for any large scale fuels treatment project. There is however, a ridge line along the west boundary and there are five intersecting ridge lines extending in “fingers” from west to east. These ridge areas are an excellent place to perform fuel-break thinning.

The ridges are accessible and hence have a manageable treatment cost. They are good places for fire response teams to attack a wildfire. They are accessible to fire crews and fire behavior is likely to transition to manageable ground fire on these treated ridge lines.

Accordingly, the strategy for doing subdivision-wide fuels treatment in Majestic Park is to install shaded fuel breaks along each of these ideally-located ridge tops.

The map below shows the treatment areas for all phases of the strategic plan in Majestic Park.



This map is a topographic map of the subdivision. The zones shown were plotted using GPS location fixes at the exact location of zone boundary markers placed on-site by the HOA project manager.

The following Table summarizes the zones.

Zone	Acres	Status
Burns	10.59	Completed Jun 2006

FB-A	7.81	Completed Dec 2005
FB-B	2.15	Completed Dec 2005
FB-C	0.64	Completed Dec 2005
FB-D	0.19	Completed Dec 2005
<b>Backbone Fuel Break Total</b>	<b>21.38</b>	
Ridge-A	3.88	Completed May 2007
Ridge-B	5.16	Completed May 2007
Ridge-C	3.2	Completed May 2007
Ridge-D	8.51	Completed May 2007
Ridge-E	1.4	Completed May 2007
Ridge-F	1.35	Completed May 2007
Ridge-G1	1.28	Completed May 2007
Ridge-G2	1.77	Completed Aug 2007
Ridge-H	1.81	Completed Aug 2007
<b>TOTAL Fuel Break Acreage</b>	<b>60.53</b>	

## Project Phases

### Project Phase I – Preparedness

**Start Date: January – 2004**

#### Phase I Goal:

The purpose of this phase was to start building awareness amongst property owners and perform some basic tasks that could improve preparedness for responding to a wildfire occurrence.

#### Tasks:

##### Home access survey by FD

HOA representatives met with the Chief of the NE Teller Fire District and discussed at some length, the particular characteristics for fire response in Majestic Park, the Chief's recommendations for overall access improvement, and a plan for individual driveway access survey.



A written summary was prepared and sent by email to all residents along with notification that the FD would be entering each property to survey access and preparedness issues.

On conclusion, another email to each resident summarized recommendations for improving fire response capability. Residents were advised on specific defensible space problems and given pointers on providing easy access to outside water sources, improving driveway alignment, and signage.

### **Presentations**

The Colorado State Forest Service was scheduled into two successive annual HOA meetings to deliver a comprehensive presentation on fire safety, defensible space, preparedness, etc.

### **Street Signs**

Metal posts with metal street signs were purchased by the HOA to mark the main street intersections within the subdivision. (The entire subdivision has private roads so no county-provided signs were in place).

### **House Signs**

At the Chief's recommendation, the HOA purchased standardized night-reflective house number signs for every driveway. These were installed at each driveway on metal posts in locations that were conspicuous and not likely to be obscured by snow.

### **Gate Information**

The subdivision entrance has an electrically operated automatic security gate. The local fire department, ambulance service, law enforcement, gas company, electric company, and the emergency dispatcher were notified in writing of a special gate code they could use to open the gate at any time. Additionally, the FD personnel were shown how to open the gate if it was found inoperable.

## **Phase II – Defensible Space Projects**

**Start Date: June – 2004**

### **Phase II Goal:**

This phase started in June 2004 but is intended to continuously improve and maintain defensible space for individual structures. Individual owners are responsible for their own defensible space projects, but the HOA provides resources to assist. Assistance includes planning advice, reference to experts and contractor services, and use of a slash disposal area within the subdivision.

Extensive defensible space projects have been completed at the following tracts:

<b>Tract</b>	<b>Comment</b>	<b>Completed</b>
8	All 35 acres mechanically thinned to firewise standards.	Oct 2004
9	About 20 acres mechanically thinned to firewise standards. Defensible space around structures.	Sept 2005
7	About 5 acres mechanically thinned to firewise standards. Defensible space around structures	Sept 2005
6	About 6 acres mechanically thinned to firewise standards. Extensive fuels reduction in access route.	June 2006
10	About 4 acres mechanically thinned to firewise standards. Extensive fuels reduction in access route.	June 2006
<b>40</b>	<b>TOTAL Individual Tract Acreage</b>	

### **Phase III – Grant Applications**

**Start Date: June – 2004**

#### **Phase III Goal:**

The Goal of this phase is to seek financial assistance for large cross-tracts projects that have strategic value to overall risk reduction in the subdivision and threatened areas outside the subdivision including the City of Woodland Park.

#### **Activities:**

Activity consists of researching potential sources of financial assistance and then writing the grant applications and related documentation to seek funding.

Five separate major grant applications have been assembled and submitted. Two have resulted in funding that was used to execute strategic projects.

### **Phase IV – Fuel Break Backbone**

**Start Date: June 2005**

#### **Phase IV Goal:**

This was the first subdivision-wide (strategic) fuels reduction project performed in Majestic Park. Its purpose was to construct a “backbone” shaded fuel break along the

entire mile-long west boundary of Majestic Park that is shared with the National Forest. This area of the National Forest lies within Priority Zone – 1 identified in the Teller CWPP.

### **Project Highlights:**

Probably the highest risk source in Majestic Park is a catastrophic wildfire advancing from the adjacent National Forest area and entering Majestic Park. Accordingly this backbone treatment zone was given the highest priority in the strategic treatment plan.

A shaded fuel break about 300 feet wide and about 5,000 feet long was constructed at the west boundary of the subdivision. The National Forest fence line is the west edge of the treatment area. The backbone zone crosses four different tracts in Majestic Park.

The treatment method was mechanical mastication using a special machine with a very large “Fecon<sup>TM</sup>” head that grinds all material into relatively fine mulch and spreads it on the ground. The result is a high quality finish.



The Fuel Break area was thinned aggressively. The largest ponderosa pines and aspens were left in place. All ladder fuels and smaller trees were removed. Canopy spacing of 20 feet or greater was achieved.

The photo below illustrates the typical appearance before and after treatment in the Backbone Zone. It is easy to see the National Forest Boundary by contrast in vegetation density on the left (treated) vs. right (National Forest area).



## **Phase V – Ridge Lines Fuel Break**

**Start Date: Sep 2006**

### **Phase IV Goal:**

The purpose of this phase is to add fuel break areas along all of the ridge lines that extend from the backbone treatment zone.

### **Location Analysis**

A major effort in this project was to lay out treatment zones. The primary criterion for locating the zones was achieving maximum effectiveness. Other considerations were avoiding areas not accessible to the masticating machinery, achieving compatibility with home sites, and providing accessibility from main roads both for the treatment equipment and later for fire crews.

The boundaries of each zone were analyzed then marked on site. Each marker was located with coordinates using GPS. The resulting points are what appear on the topographic map above.

The GPS coordinates also gave accurate acreage measurements that were used as the basis of contract negotiation with the contractor.

### **Funding**

This project was funded on a 50% cost sharing basis by the HOA and a grant administered by the CSFS. Treatment costs of about \$500 per acre were achieved.

## **Phase VI – Maintenance and Future Projects**

The areas treated by individual property owners are also maintained by them. The HOA offers assistance as noted above.

The areas within the Fuel Breaks will be maintained by the HOA. Maintenance is expected to be rather simple and minimal cost. A primary consideration is maintaining good access to each area that can be used by fire crews.

The forest does not remain static over time, so maintenance of the fuel breaks is a high priority. Trees grow or die, and new vegetation grows when the forest canopy is opened. All these can compromise the effectiveness of a fuel break. A yearly maintenance schedule will be followed. Each year, preferably before the start of fire season, the fuel breaks will be inspected. Any dead or dying trees will be removed and additional pruning will be done as necessary. Some snags (large, dead trees) may be left for wildlife habitat. No more than three snags per acre should remain and these should be widely spaced. Large amounts of deadfall will be removed from the ground. As with snags, some isolated deadfall may remain for wildlife habitat. Ladder fuels—particularly newly sprouted shrubs—will be removed.

At five year intervals, fuel breaks will be evaluated for any additional tree removal to maintain an open canopy. Trees that will be considered for removal will be those that have become overtopped by adjacent dominant trees.

At ten year intervals, fuel breaks will be evaluated for conifer regeneration, and regeneration will be thinned to maintain the effectiveness of the fuelbreak. Not all of the young conifer will necessarily be removed so that the age and species diversity necessary to maintain a healthy forest will be maintained. Conifers will be thinned to preserve an effective spacing of trees within the fuel break. Preferred leave trees will be ponderosa pine due to their greater resistance to fire. If Douglas-fir, spruce, or other more fire prone conifers are selected as leave trees, crown separation of ten to fifteen feet will be maintained.

Retention of healthy stands of aspen will be a goal of the maintenance program, and existing stands of aspen will be preserved and new sprouts will be encouraged. Aspen are not prone to crown fires, are aesthetically pleasing to homeowners, and are beneficial wildlife habitat. Most conifer regeneration will be removed from aspen stands to prevent eventual shading out of the aspen. At the discretion of the landowner and the Majestic Park HOA, decadent aspen stands may be regenerated.

In the future, landowners will be encouraged to continue thinning for fire mitigation and forest health improvement. Priorities will be :

- Further improvement of access throughout the subdivision
- Opening a second emergency access road for the subdivision
- Treatment of steep overdense areas in the most critical locations

The Subdivision will continue to maintain a “slash dump” site. This is located within the subdivision in an open area that used to a gravel quarry. The material is burned at that site when conditions are favorable. (Proper permitting and supervision is of course, applied for slash burning. )

## **USFS Projects**

As noted above, the major source of wildfire threat to Majestic Park is its proximity to the National Forest on the west boundary. Accordingly, Majestic Park has provided input to the Wildfire Mitigation Commission and directly to the USFS to encourage fuels treatment in the National Forest in Priority Zone 1.

Progress on Priority Zone 1 has been excellent. The USFS planners have been responsive and have re-aligned their priorities to schedule major treatment projects in Priority Zone 1. The Skelton Ridge project is the most notable and is treating over 300 acres of dangerous forest.

## Conclusion

The multi-year effort to reduce wildfire risk in Majestic Park has been quite successful. The overall hazard rating within the subdivision has been reduced substantially.

The parallel fuels reduction conducted by the USFS in Priority Zone 1 has further reduced the hazard to Majestic Park.

Both efforts have had a major effect on the hazard to the City of Woodland Park that was posed by the “danger corridor” to the west of the city.

Continued maintenance efforts will continue. Additionally further defensible space projects will be supported by the HOA.

We believe that the largest opportunity for hazard reduction has been done with the recent completion of Phase V. We believe that the emphasis should now be on maintenance and continual gradual improvement of the defensible space profile of individual properties. Some additional larger scale projects may be undertaken including establishing “safety zones” and further treatment of remaining over-dense areas.