

PROPOSED TREATMENT

Executive Summary

The **Colorado Front Range Landscape Restoration Initiative** requests Collaborative Forest Landscape Restoration funds to accelerate ongoing restoration treatments that provide long-lasting ecological, social and economic benefit across a 1.5 million-acre landscape covering parts of the Arapaho and Roosevelt and Pike and San Isabel National Forests in Colorado. This proposal, developed collaboratively by the nationally recognized Front Range Roundtable, would facilitate additional treatment of approximately 32,000 high-priority acres on National Forest System (NFS) lands within the Roundtable's designated 800,000-acre restoration zone and will be enhanced by existing and future treatments on adjacent federal and non-federal lands. A large portion of the 800,000 acre restoration zone is within the wildland urban interface and will be the focus of the 32,000 acres of treatment (see Map 1).

More than 70 percent of the forests within this proposal exhibit a high to very high degree of ecological departure from historic norms and are susceptible to uncharacteristic high intensity wildfire and insects and disease. These conditions increasingly threaten human health and well-being, as well as critical ecosystem services throughout the region. Through strategic placement of treatments, we plan to restore historic fire regimes, including low intensity wildland fires, with a goal of reducing risks to the ecosystem and communities and lowering suppression costs. Much of the area is deemed critical for protecting communities and municipal watersheds (which supply drinking water to over 75 percent of Colorado's population) from the impacts of catastrophic fire.

We are requesting \$37 million over the next 10 years to carry out this initiative. The value of the treatments will be further leveraged by the anticipated treatment of nearly 100,000 additional acres on Federal lands and 65,000 acres on adjacent non-federal lands. In prioritizing treatment areas, this proposal emphasizes locations where community protection, watershed restoration, and habitat improvement goals could be accomplished concurrently with ecological restoration. We anticipate these treatments will significantly improve the resilience of these forests in the face of climate change.

In the past 10 years, five of the largest wildland fires recorded have occurred within the project area, including the 138,000-acre Hayman wildfire in 2002. The 2002 wildfires cost the Colorado economy hundreds of millions of dollars. Opportunities for job creation, business support and development, and meaningful biomass utilization are emphasized in the design and implementation of treatments. The effectiveness of our treatments will be monitored through a robust multi-party monitoring protocol designed and implemented in partnership with the Colorado Forest Restoration Institute (CFRI).

Landscape Context and Condition

The ten counties in the Front Range include 4.2 million acres of forestland. Within this area, the Front Range Roundtable collaboratively identified 1.5 million acres on all ownerships that are a high priority for treatment to restore ecological resilience or to increase community protection from wildfire. A restoration zone consisting of approximately 800,000 acres of lower montane comprised of ponderosa pine and Douglas-fir, has been identified as being in need of ecological restoration and is the focus of this proposal. Lands within the

restoration zone are primarily National Forest System lands comprising approximately 400,000 acres or 50 percent of the high priority restoration area.

Since 1860, human activities including urban development, fire suppression, timber harvest, and grazing, have changed these Front Range forests. Based on LANDFIRE data, 629,000 acres (88 percent) within the Roundtable restoration zone are highly or very highly departed from their historic range of variability. Thousands of acres of dense, homogeneous forest now characterize landscapes that once sustained a complex mosaic of forest density, size and age. As a result, these landscapes are highly susceptible to uncharacteristically large and severe wildfires as well as large scale insects and disease outbreaks.

The values at risk from wildfire in proposal area are tremendous. The Colorado State Forest Service's recently completed Statewide Forest Resource Assessment, identified 2 million people, 881 communities and more than 700,000 homes within the entire proposal area. There are also 4.2 million acres of forested watershed that are essential to drinking water supply, 65% of which are at high risk to post-fire erosion. In addition to water supply, several other components of critical Front Range community infrastructure are at risk from large-scale wildfire, including evacuation routes, power transmission lines, gas pipelines and communication towers.

While this proposal is focused on the Colorado Front Range, the landscape to be treated is an important component of the larger Headwaters landscape that is the source of the Platte, Arkansas, Rio Grande, and Colorado Rivers and provides water to more than 33 million people. The Headwaters forests have been significantly impacted by a multi-year mountain pine beetle epidemic resulting in the mortality of approximately 3.6 million acres of lodgepole pine. The Rocky Mountain Region of the Forest Service has also initiated a Headwaters Restoration proposal focused on improving forest health on the White River, Medicine Bow and Routt, Arapaho and Roosevelt, and Pike and San Isabel National Forests. Communities and place-based collaborative groups within Colorado and Southern Wyoming are developing a shared vision and common strategy to protect and restore the Headwaters landscape. If funded, the Colorado Front Range Landscape Restoration Initiative would establish a foundation for launching the larger Headwaters Restoration effort.

Restoration and Treatment Strategy

This proposal is based on a collaboratively designed ecological restoration strategy to return Front Range ponderosa pine forests to a condition that reduces the threat of catastrophic fire; increases forest resilience to fire, insects, disease, drought, and climate change; and provides sustainable vegetation and watershed conditions, wildlife habitat, and community needs. The desired long-term outcome is a 1.5 million acre landscape with dramatically lower wildfire risk while enhancing desirable ecosystems and community attributes. Two documents are the basis of our restoration strategy: *Living with Fire: Protecting Communities and Restoring Forests- Findings and Recommendations of the Front Range Fuels Treatment Partnership Roundtable* which provides for the landscape level restoration strategy, and *Historical Fire Regimes in Ponderosa Pine Forests of the Colorado Front Range, and Recommendations for Ecological Restoration and Fuels Management* by Kaufmann et al which outlines the ecological restoration needs of the lower montane zone.

Through this proposal, we anticipate direct treatment of an additional 22,000 of high-priority acres on NFS lands (Table 1). A strong foundation for these projects has been established through 95,000 acres of completed restoration treatments within and adjacent to the restoration zone.

Table 1: Acres treated through this proposal

Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Non-CFLR Restoration Acres	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Additional Acres with CFLR	1,000	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400
Total Restoration Acres	6,000	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400

Treatments funded by this proposal will be strategically placed to maximize timely implementation and benefit on the ground. The first three years of treatment will focus on areas within the Roundtable's restoration zone where: 1) National Environmental Policy Act (NEPA) review is complete; 2) complementary work has already occurred or is underway and can be leveraged for a larger-scale outcome; 3) both ecological and community protection priorities can be simultaneously addressed; 4) work by non-federal partners on adjacent lands will complement management on federal lands; and/or 5) opportunity exists to create jobs and support local economies.

National Environmental Policy Act reviews and decisions are complete to treat 180,000 acres on NFS lands within the Roundtable's 1.5 million acre area, including 100,000 acres within the restoration zone. The Forest Service will complete planning and NEPA review for additional acres that build progressively on these core treatment areas as implementation of NEPA-ready projects is underway. Implementation will occur on areas still requiring NEPA decisions in the later years of this proposal. Project implementation will initially focus on mechanical treatments, emphasizing biomass utilization opportunities, complemented by prescribed fire. We anticipate that later years will see increased use of prescribed fire as mechanical treatments reduce initial fuel levels. Prescriptions will be scientifically based and tailored to address site-specific conditions. Old growth conditions will be protected and enhanced consistent with the historic range of variability. No permanent roads will be constructed and any temporary roads will be obliterated. Best Management Practices (BMPs) and low impact management techniques will be used to minimize the potential for any detrimental ecological effects.

Emphasis will be placed on using the Long-term Stewardship Contract (LTSC) recently awarded on the Arapaho and Roosevelt and Pike and San Isabel National Forests for project implementation. The contract requires the forests to provide a minimum of 4,000 acres of treatment per year, which is in addition to treatment areas included in this proposal. To complement the LTSC, project managers will also use other tools such as service contracts, force account, AmeriCorps partnership and both the Good Neighbor and Wyden Amendment authorities which allow for treatment across federal and non-federal ownership boundaries.

Detailed Implementation for Years 1-3

During years 1-3 of this proposal, implementation will build on areas within each forest where multiple agency and partner priorities overlap and considerable investment has already occurred. This will ensure that proposal dollars are used in a way that leverages available resources and maximizes outcomes on the ground.

The focus of work on the Arapaho and Roosevelt National Forests in the first three years will be in Boulder County where much of the forested landscape consists of the lower montane ponderosa pine forest emphasized in the Roundtable's priority restoration zone. This area is characterized by substantial intermingling of private and public lands and is a high priority for community protection. An estimated 20,000 Boulder County homes

are located within the National Forest boundary and several thousand are immediately adjacent. Nine Community Wildfire Protection Plans (CWPP) have been completed within the County, demonstrating significant public support for forest management. Over the past 5 years, more than 10,000 acres have been treated to reduce hazardous fuels and restore ecological conditions in this area. Key partners in these treatments include Boulder County, the City of Boulder, the Colorado State Forest Service and private landowners. A recent assessment led by Denver Water and other water providers identified 27 Zones of Concern within Boulder County where treatment is needed to reduce wildfire related risks to municipal water supply. Many of these zones occur in the lower montane forests that are also a priority for this proposal. In addition to the restoration, risk reduction and partnership opportunities in Boulder County, there are also several options for biomass utilization. Examples include the existing woody-biomass boiler system at the County Open Space and Transportation Complex; the conversion of the Boulder County Jail to a similar system, expected to be online in 2011; the Peak to Peak sort yard initiative and the potential conversion of Xcel Energy's Valmont coal-fired power plant.

The Woodland Park Healthy Forest Initiative (WPHFI) area will be the focal area for work on the Pike National Forest. WPHFI started as a community-demonstration project through the Front Range Roundtable in late 2008. The WPHFI landscape covers approximately 63,500 acres, primarily lower montane ponderosa pine and mixed conifer, in northeast Teller County, all of which fall within the Roundtable's priority areas for restoration and hazardous fuels reduction. Approximately 27,000 acres of the project area are NFS lands; the remaining 36,500 acres include 127 subdivisions and the City of Woodland Park, with approximately 4500 households. All of the treatments on NFS and private lands will reduce hazardous fuels and restore the lower montane characteristics.

Key partners in WPHFI include Teller County, the City of Woodland Park, Colorado State Forest Service, Pike National Forest, the Coalition for the Upper South Platte (CUSP), Colorado Forest Restoration Institute (CFRI), and private landowners. WPHFI has also worked with Colorado Springs Utilities to increase the potential for marketing woody biomass for energy production.

In 2009, WPHFI treated 4,600 acres (3,200 Pike/1,400 private) and completed a new community wildfire protection plan (CWPP) that helps guide work for the next ten years. Colorado State Forest Service, CUSP, and the private landowners have contributed non-federal funds and in-kind services to complete this work.

In the past 10 years, Denver Water has treated over 15,000 acres of their lands within the proposal area and plans to treat an additional 7,300 acres in the next 10 years. In addition to treating their own property, Denver Water plans to provide funding to treat NFS lands in the Strontia Springs watershed, one of their critical watersheds, north of Woodland Park.

Monitoring and Measures of Success

Multiparty ecological monitoring will rely on the collaborative platform of the Front Range Roundtable and will be managed by CFRI, which was established through the Southwest Forest Health and Wildfire Prevention Act of 2004.

ECOLOGICAL CONTEXT

Forests in the lower montane life zone of Colorado's Front Range are dominated by ponderosa pine, with Douglas-fir also present or co-dominant in many locations. Since 1860, human activities such as timber harvest, grazing, fire suppression and urban development have been significant catalysts for change in these forests, with the result being dramatically increased forest densities (200 to 400 trees per acre), tremendous homogeneity in terms of age and size class across the landscape, and an overall lack of understory vegetation and patchy openings. Based on national LANDFIRE data, 88 percent (629,000 acres) of the restoration zone are highly to very highly departed from their historic range of variability leading to uncharacteristic, high severity wildfires.

In its 2006 report, *Living with Fire: Protecting Communities and Restoring Forests*, the Front Range Roundtable identified restoration of ponderosa pine forests in the lower montane life zone (6,000 – 8,000 ft) as its highest ecologically-based priority. The stated goal of this restoration is to return the ecological structures and processes associated with these forests to their historic range of variability. Because ecosystem structure and processes naturally change over time, the Roundtable recommended areas be restored to reflect a historic range of ecological structures and processes rather than targeting a single snapshot in time.

The recommended focus on restoration of lower montane ponderosa pine forests is based, in part, on an analysis conducted on behalf of the Roundtable by three leading Colorado forest restoration scientists: Merrill R. Kaufmann, Thomas T. Veblen and William H. Romme. This analysis is documented in a 2006 paper published by the CFRI and titled *Historical Fire Regimes in Ponderosa Pine Forests of the Colorado Front Range, and Recommendations for Ecological Restoration and Fuels Management*. Through this analysis, Kaufmann, Veblen and Romme identified the Front Range's lower montane life zone as the area where science most clearly supports the need for active ecological restoration.

Current and Desired Conditions

Thousands of acres of dense, homogeneous forest now characterize lower montane landscapes that once sustained a complex mosaic of forest density (averaging 40 to 50 trees per acre), size and age. As a result, these landscapes are highly susceptible to insects, disease and wildfire at uncharacteristically large scales and severity. This vulnerability has been further increased by periodic drought, changing climate and the movement of a decade-long bark beetle epidemic from Colorado's High Country into the Front Range. While relatively frequent surface fires used to be the norm for this life zone, dense ladder fuels are now capable of carrying fire into the forest canopy, resulting in unnaturally severe crown fires. The Front Range's eight largest wildfires in the past century, including the record-setting 2002 Hayman Fire, have all occurred during the last 15 years. High severity, stand replacing wildfires threaten the sustainability of lower montane ponderosa pine forests which regenerate very slowly and sometimes not at all if the seed source is compromised.

The purpose of ecological restoration treatments implemented through this proposal will be to substantially decrease the density of ponderosa pine and Douglas-fir in the lower montane favoring ponderosa pine, create a more diverse age structure. Treatments would increase meadows, patchiness and herbaceous understory across the landscape while maximizing ponderosa pine old growth. These treatments will result in lower severity wildland fires, increased resistance to insects and disease, reduced threats to communities and watersheds, and

improved habitat for fish and wildlife species. These more resilient forests will also have increased capacity to adapt to the impacts of a changing climate.

Benefits to Fish, Wildlife and Imperiled Species

The Front Range Roundtable's restoration zone contains at least 536,000 acres of forest that provide essential habitat to threatened, endangered or otherwise imperiled wildlife species. Another 454,000 acres provide important habitat for game and other economically important species. The majority of these species are adapted to survive the patterns of fire frequency, season, size and severity that characterized their habitat in pre-settlement times. The uncharacteristic large, stand-replacing fires that have occurred in the Front Range over the last 15 years threaten the sustainability the forest and the species that depend on it. Although forest thinning can have short-term negative effects to some wildlife species, restoring the landscape to a more historic range of conditions and reducing the potential for stand-replacing, high severity wildfire will have an overall positive impact on the majority of species.

Colorado's State Wildlife Action Plan designates ponderosa pine forests as a high-priority habitat – the only forest type to be so designated. Twenty-eight of the state's Species of Greatest Conservation Need rely on ponderosa pine forests as their primary habitat. On the Front Range, the federally-listed Pawnee montane skipper is of particular concern and will directly benefit from the proposed restoration treatments. This threatened species is restricted to the Upper South Platte watershed, an area of focus for this proposal, where it inhabits ponderosa pine forests in which blue grama grass and prairie gayfeather (*liatris spicata*) are found in the understory. Long-term monitoring of skipper populations indicates they respond negatively to widespread stand-replacing fire, but positively to restoration treatments. Other listed species, the threatened Preble's meadow jumping mouse and greenback cutthroat trout will benefit through reduced risk of high intensity wildfire.

Benefits to Water Quality and Watershed Function

Front Range forests provide public drinking water to more than two-thirds of the State's population and support a variety of other uses including agriculture, industrial production, recreation, and habitat for aquatic life. The watersheds contain the necessary components for the water supply and delivery infrastructure, including 86 source water intakes, nearly 400 municipal supply reservoirs, and 18 transbasin diversions.

Colorado's Statewide Forest Resource Assessment reveals that 67 percent of these forested watersheds are at high risk to damage from post-fire erosion and sediment deposition. High severity fires impact forest soils by removing the protective layer of leaves, twigs, branches and needles, exposing mineral soil and sometimes facilitating the formation of hydrophobic soils (a waxy, water-repellent layer) that dramatically amplifies the rate of runoff. Significant precipitation following high severity fires can and has impacted water systems through rapid surface runoff, flash floods laden with sediment, ash and debris, and harmful chemicals, and serious alteration and destruction of aquatic habitat.

As an example, the watersheds and water supply infrastructure essential to Denver and surrounding cities experienced tremendous damage as a result of several severe wildfires including the 1996 Buffalo Creek Fire,

the 2000 Bobcat and Hi Meadow Fires, and the 2002 Hayman Fire. The cost for Denver Water to address sedimentation and loss of water storage from three wildfires in one major reservoir will exceed \$30 million.

Strategic forest restoration treatments in this proposal that reduce the threat of high-severity wildfire and subsequent post-fire watershed damage will provide tremendous benefit to Front Range watersheds and water users. Denver Water recently completed three watershed assessments which identify 36 Zones of Concern along the Front Range where treatment is needed to reduce the risk of uncharacteristic wildfire and associated post-fire erosion and sedimentation in municipal water supplies. Since many of these zones of concern occur in the lower montane forests that are a priority for this proposal, Denver Water has committed to investing resources in support of restoration treatments.

Mitigation of Insects and Disease

Currently Colorado is experiencing a large-scale mountain pine beetle epidemic. Since 2006 there has been a substantial increase in acreage on the Front Range infested with mountain pine beetle, including a 50% (300,000 acre) increase between 2008 and 2009. Initially the majority of infested trees were lodgepole pine, but there has recently been an increasing infestation of ponderosa pine. The restoration treatments proposed will reduce ponderosa pine density and create a more diverse age structure increasing the resistance of the trees in the lower montane zone to mountain pine beetle.

Invasive Species

Large, high-severity wildfires on the Front Range often result in conditions that are conducive to the spread of damaging invasive plant species. Noxious and other weeds invade when ground cover is lost and organic soil material is volatilized. The Pike and San Isabel National Forest is expending significant resources to eradicate or contain noxious weeds, including cheatgrass and knapweed, that established in the post-fire environment and have caused the native vegetation to struggle. Restoration treatments that reduce the risk of wildfire will benefit the overall health of Front Range forests by reducing the opportunity for establishment and spread of invasive plants and by promoting the health of diverse native plant communities.

Treatment of Roads and Trails

The primary road infrastructure is sufficient for project implementation; however, some temporary roads will be needed to remove biomass material. All temporary roads will be obliterated after treatment. Some existing system roads will require increased maintenance to provide for access for biomass removal and to improve drainage. System roads that are no longer needed for overall management would be decommissioned or obliterated. In addition, road and trail realignment and restoration will occur to address erosion and sedimentation concerns. Best management practices are used to reduce the ecological impact of roads and benefit hydrologic function.

COLLABORATION

The Colorado Front Range Landscape Restoration Initiative is the product of the Front Range Roundtable which is a diverse regionally-based forest collaborative that has been working together consistently for more than six years. Active collaboration on Front Range forest management began with the Front Range Fuels Treatment Partnership (FRFTP) which was established in the wake of Colorado's record-setting 2002 wildfire season. The FRFTP is composed of state and federal agencies committed to increasing the scale and pace of hazard fuel reduction and ecosystem restoration along the Front Range. In 2004, these governmental entities joined with local elected officials, land managers and a wide range of interests groups to form the Front Range Roundtable.

The current membership of the Roundtable includes a diverse group of stakeholders, ranging from federal and state agencies to local governments, NGOs, and private business representatives. The founding members of the Roundtable specifically identified and invited a broad range of participants in order to ensure that subsequent recommendations and implementation would be as widely supported as possible.

Between 2004 and 2006, the Roundtable membership worked through a rigorous, science-based process to identify 1.5 million acres in need of treatment to protect communities and restore ecosystems. Of these acres, approximately 400,000 are needed for both community protection and ecological restoration; 700,000 are needed primarily for community protection; and 800,000 acres are needed primarily for ecological restoration. The Roundtable also developed a suite of ten recommendations to guide participants in pursuing political, social and economic changes that would facilitate effective treatment of the priority acres over a 40 year time period. These recommendations and the process used to develop them are captured in the Roundtable's 2006 report, *Living with Fire: Protecting Communities and Restoring Forests*.

Since 2006, the Roundtable's notable accomplishments have served to:

- Facilitate treatment on 58,000 acres of federal and almost 40,000 acres of non-federal land.
- Increase state and federal funding for treatment of Front Range forests by more than \$7 million.
- Establish new tax incentives for fuel reduction and defensible space on private lands;
- Create a centralized, on-line information database for incentive and cost-share programs available to landowners and communities;
- Enable local governments to better support forest management through the establishment of Forest Improvement Districts and community slash and mulch sites;
- Successfully encouraged a long-term, landscape-scale stewardship contract in the two Front Range National Forests;
- Promote increased use of safe and effective prescribed fire through a statewide Prescribed Fire Council and the establishment of voluntary standards for practitioners of prescribed fire on non-federal lands;
- Facilitate increased engagement and investment by water providers in managing Front Range forests through the establishment of a new bonding authority that enables them to raise funds for priority forest and watershed projects;
- Assist insurance providers with educating policy holders in the wildland urban interface; and
- Implement the Woodland Park Healthy Forest Initiative.

Proposal Development

The full Roundtable membership discussed the opportunity presented by the Colorado Front Range Landscape Restoration Initiative and determined that this new program is ideally suited to facilitate significant accomplishment toward our land management objectives. After reviewing the CFLRP criteria, the Roundtable

felt it would be most appropriate for our proposal to focus on National Forest System lands within the approximately 800,000 acres identified as in need of ecological restoration across the Front Range. Most treatments within this restoration zone will be further leveraged by complementary management conducted by other federal and non-federal partners on adjacent priority lands within the larger 1.5 million acres Roundtable landscape.

The Roundtable membership further recommended that our proposal emphasize the following in identifying specific treatment areas:

- Areas where relevant treatment has already occurred or is underway and can be leveraged for a larger-scale outcome (e.g. Woodland Park, Front Range Long Term Stewardship Contract).
- Areas where multiple ecological objectives can be accomplished, including habitat enhancement, watershed improvement, and invasive species mitigation.
- Areas that are consistent with existing Community Wildfire Protection Plans (CWPPs) or otherwise offer opportunities for complementary treatment on adjacent ownerships.
- Areas where hazardous fuels reduction/fire mitigation can be done in conjunction with CWPPs.
- Areas where opportunities exist to create jobs and support local economies through biomass utilization.

Using these criteria, the Executive Team analyzed the Roundtable's restoration zone and made an initial recommendation about where treatment should start and how it should progress across the larger landscape during the ten-year proposal time frame. A task force was chartered to work out the details of the full proposal. Participants in this task force included: Boulder County, Teller County, Denver Water, the Coalition for the Upper South Platte, the Colorado State Forest Service, The Nature Conservancy and the U.S. Forest Service. The full Roundtable reviewed and approved the proposal on April 23, 2010.

Numerous letters of support have been received. The proposal has the support of the Governor, Congressional members, County Commissioners, and non-government organizations.

Multiparty Monitoring

The Roundtable is working with the CFRI to develop and implement a monitoring protocol for the Front Range Long-Term Stewardship Contract that was recently awarded on the Pike and San Isabel and Arapaho and Roosevelt National Forests. If this proposal is approved, the Roundtable and CFRI will work together to design and implement a more robust multi-party monitoring protocol that emphasizes tracking of ecological outcomes.

The stakeholder process will begin the summer of 2010 and will identify the monitoring goals, indicators to measure change, data collection methods, and how/when data will be collected. In addition, an initial assessment will be conducted to establish in more detail the vegetation types and mixes involved, the terrain, and types of treatments considered. Multiparty monitoring plan will be developed and partners will begin data collection within the first 12 months of receiving funding. Data will be collected in years 1, 2, 3, 5, 10, and 15. Total estimated cost of developing and implementing the multiparty monitoring over the 15 years between \$380,000 and \$500,000.

WILDFIRE

Current vegetation conditions in the proposal area are conducive to large-scale uncharacteristic wildfires that threaten communities, infrastructure watersheds and ecological values. There are tens of thousands of residences within or immediately adjacent to the proposal area. Our forests have changed and are continuing to change. Where we once had open stands of ponderosa pine with grass growing underneath, we now have dense, overstocked stands of trees, a situation that demonstrates unhealthy conditions and represents an ecosystem that is out of balance. Wildfires are behaving with greater fire intensity and becoming larger than previous historical records. The 2002 Hayman Fire provides a vivid example of the immediate and long-term devastation wildfire can cause in this landscape. The fire burned almost 138,000 acres, destroyed over 600 structures, and clogged municipal water systems with sediment. Even today, recovery efforts are still ongoing. An estimate made by the Western Forestry Leadership Coalition in its 2009 report, *The True Cost of Wildfire in the Western U.S.*, establishes the total cost of the Hayman Fire, including direct, indirect, and restoration, at \$207 million. An investment in proactive hazardous fuels reduction and restoration will greatly reduce the risk of this kind of damage and associated costs from uncharacteristic catastrophic wildfires in the future.

To restore the lower montane system and address these uncharacteristic wildfires, treatments must be implemented through strategic placement and at a relatively large scale to significantly affect risk. These treatments will involve removing ladder fuels and reducing continuous tree canopy where severe fire hazard exists and community protection goals overlap. Consequently, reducing the likelihood of uncharacteristic, stand-replacing wildfires in these forests will result in desirable low intensity wildland fires.

Historically, the fire regime in the lower montane zone had frequent, low intensity wildland fires. Due to intermingled land ownership and smoke concerns, it may be difficult to allow unplanned wildland fires to burn unimpeded. However, “resistance to control” will be significantly lowered and consequently, initial attack success will be significantly improved with these treatments. Prescribed fire will be applied over time and at set intervals to protect the investment. Treatments using low intensity prescribed fires are more characteristic of ponderosa pine forests and will be used to maintain restored conditions. Prescribed fire is not only being used as a tool on federal lands, the Colorado State Forest Service, the Nature Conservancy, and the Coalition for the Upper South Platte all have trained fire crews who are using fire to treat state, local government, and private lands within the Front Range. Lastly, the Colorado Department of Public Health and Environment (the state’s air quality agency) has participated in the Roundtable and is working with all agencies to broaden the application of prescribed fire as a management tool.

Another key component to reducing uncharacteristic wildfires is treatments on lands adjacent to NFS lands. Following the adoption of the Healthy Forest Restoration Act, Front Range counties and communities actively began adopting CWPPs. Almost one hundred CWPPs are in place or in process of development across the ten counties of the Front Range. The Forest Service utilizes the CWPPs to prioritize treatments on NFS lands. Communities have also begun active implementation of restoration and fire mitigation treatments that complement Forest Service treatments. For example, the Woodland Park Healthy Forest Initiative completed treatment on 1,600 acres of private lands in the last year.

There are tens of thousands of homes in the Wildland Urban Interface within the proposal. Most of the treatments included in this proposal will serve to reduce the wildfire hazard and reduce wildfire management

costs. As a result of treatments, we will increase the likelihood of suppressing fire with initial attack. Millions of dollars and many homes will likely be saved if even one Hayman-type fire is caught in initial attack.

In an effort to validate our proposed strategy, we modeled 22,000 acres of potential treatments to estimate reduced long-term wildfire management costs. We have used a fire simulation application (FlamMAP) that models fire intensity under user-defined conditions. Through the analysis, current and future conditions with and without treatments are evaluated to estimate the effects of proposed treatments. The primary use of FlamMAP is in project planning and computes potential fire behavior characteristics over an entire landscape for given weather and fuel moisture conditions.

Results of the analysis projected the altered fire behavior conditions, displayed in Table 2 as a result of our proposed treatments. This table shows the percentages of no fire, surface fire, passive crown fire and active crown fire before and after fuel treatments in the 22,000 acre area. The table shows a significant increase in surface fire and decrease in crown fire in the treated areas, which is the desired result and is more indicative of the fire behavior that we would expect in the project area.

Fire Behavior Predictions		Alternative	
		Untreated Fuels	Treated Fuels
Fire Potential	No fire	3.20%	3.20%
	Surface	62.60%	90.70%
	Passive crown fire	33.70%	6.00%
	Active crown fire	.50%	.10%

As a result of the proposed treatments, the chance of an uncharacteristic and very costly catastrophic wildfire is reduced with an increased likelihood of lower intensity surface wildfires occurring in the proposal area.

Surface fires do not require the same suppression response or have the same cost per acre. As an example, the Hayman fire cost approximately \$42 million to suppress. Determining cost savings as a result of these treatments is difficult. The fire modeling, as displayed above, implies increased suppression efficiency during initial/extended attack because of a higher percentage of surface fires. Suppression cost savings associated with the treatments is evident when compared to the potential for a Hayman type wildfire with suppression costs of \$42 million. The prevention of even one wildfire of this magnitude clearly indicates the value of the proposed \$22 million dollar investment

UTILIZATION

Utilization of material cut as part of treatments will be a high priority with this proposal. Although timber quality and the associated values are low, there are ample opportunities and new markets being created along Colorado's Front Range to utilize biomass being removed from the treatments. Colorado Springs Utilities is currently reworking one their electricity plant to co-fire with biomass and estimate they could use up to 100,000 tons per year once the project is up and running. It would utilize a significant portion of the biomass being removed associated with this proposal.

In addition to the Colorado Springs utilities, there are many other existing companies currently utilizing biomass in the area. The likely uses of wood removed via restoration treatments include production of dimension and structural lumber, fencing boards, post and poles, pulp chips, wood fuel pellets, hog-fuel (for energy), animal bedding, landscape mulch, bark and soil amendments. Markets include processing facilities such as Intermountain Resources (sawmill); Woodland Park Pellet Mill; Scots/Miracle Grow; Fairplay School (wood heating); Hartsel Sort Yard; Raton Post & Pole Mill; Aquila Power Plant; Pittington Lumber; Longview Fiber; Morgan Timber Products; Renewable Fiber; Confluence Energy; and Rocky Mountain Pellet.

An estimated 458,000 green tons of wood will be removed over the 10 year period. The value of removed material is estimated to be \$1.35 per green ton. The value of this wood is estimated to be \$618,000 (458,000 green tons x \$1.35 per green ton = \$618,300). This \$618,000 value translates to nearly 900 acres of additional restoration treatment using an average contract cost of \$700/acre.

Due to transportation costs, utilization often costs more than leaving material on the ground. Despite the initial higher cost, biomass removal reduces the costs associated with additional fuel reduction treatments such as chipping or burning and, in the case of burning, can reduce smoke management concerns.

A range of restoration treatments will be utilized over the 10 year life of this project. Volume and type of wood removed during restoration treatment will vary from round-wood to chips. It is estimated that an average of 28 green tons per acre (20 tons saw timber and non-saw timber and 8 tons of tops and limbs) for a total of 308,000 green tons over 10 years will be removed on the Pike and San Isabel National Forests. On the Arapaho and Roosevelt National Forests an average of 25 green tons per acre (18 tons saw timber and non-saw timber and 7 tons of tops and limbs) for a total of 150,000 green tons will be removed over 10 years.

A range of species and products will be removed during restoration treatments. The predominant specie in the lower montane forest type is ponderosa pine (90%) with minor associated species being Douglas-fir (5 to 10% occurring on the PSI) or lodgepole pine (5 to 10%). The average DBH is 10 inches for ponderosa pine, 8 inches for lodgepole and 9 inches for Douglas-fir. The average tree height is 45 feet for ponderosa and lodgepole pine and 55 for Douglas-fir. Products will include sawlogs (ponderosa pine >10 inch DBH; lodgepole pine >7 inch DBH; Douglas-fir >8 inch DBH), non-sawlogs (ponderosa pine 5-9.9 inch DBH; lodgepole pine 5-6.9 inch DBH; Douglas-fir 5-7.9 inch DBH) and biomass (all species 1 to 5 inches DBH).

INVESTMENTS

Over the past eight years, the Rocky Mountain Region of the Forest Service has made substantial investments to reduce wildland fire risk and restore ecosystems with an average along the Colorado Front Range of \$13 million per year. The Region will continue to invest \$3-4 million annually over the 10 year period in addition to the any CFLR funding. Non-federal investments both inside and outside the proposal area are estimated to be over \$2 million per year, primarily from the Colorado State Forest Service, Denver Water, Boulder County, the City of Boulder, Teller County, the community of Woodland Park, the Coalition for the Upper South Platte, and private landowners. In addition, Denver Water plans to invest \$1 million dollars annually for restoration treatments on National Forest System lands.

The Pike National Forest, in cooperation with National Forest Foundation, Vail and other non-profits are also working in to restore a portion of the Hayman fire that burned with high intensity. Significant effort is taking place and several million dollars of federal and non-federal funds are being spent to restore severely damaged riparian areas, side slopes and ephemeral drainages in the West Creek and Trail Creek watersheds. Activities include re-establishing riparian vegetation, in-channel streambank stabilization, reforestation, and road and trail realignment and restoration to address sedimentation and erosion.

This proposal will provide for increased restoration treatment in lower montane forests along the Front Range of Colorado. Approximately 32,000 additional acres would be treated with wood products removed from approximately 25,000 acres over the 10-year period. This is in addition to the 40,000 acres of treatment already included in the Front Range Long Term Stewardship Contract (FRLTSC). The proposed treatments will result in approximately 666,000 tons of biomass being removed with an estimated value of \$900,000. The Arapaho and Roosevelt and Pike and San Isabel National Forests will primarily utilize the recently awarded FRLTSC to implement the proposal. By using this long-term contract, acres treated and product removal can be increased. The benefits of FRLTSC will be enhanced by increasing the sustainable supply of wood products and restoration treatments on the Front Range. The value of the material removed could become retained receipts in the FRLTSC to fund restoring another 900 acres.

Future restoration costs will be decreased by increasing wood supply and restoration treatments in a sustainable manner allowing markets and employment to be improved. The FRLTSC has improved utilization within the first year of the contract and the expectation is for markets to continue to improve. Improved markets will result in better prices for wood products, savings to the government for treatment costs, and increased area of restoration treatments. If markets improve and result in a cost savings of \$50/acre, the 32,000 acres treated over a ten year period would translate to a total cost decrease of \$1.6 million or allow additional restoration.

Increasing the restoration by 32,000 acres over a ten year period in this proposal would result in additional employment in the “woods activities”, increased wood processing capacity and employment, and indirect support and service employment. The proposal would require an additional three “sides” of logging personnel and equipment and additional wood processing jobs. Each “side” employs approximately eight people and is typically composed of a feller buncher, two skidders, a log loader, a chipper, and 2-3 log trucks.

Processing an additional 666,000 green tons of wood will require additional processing capacity. Assuming a log truck or chip van carries 25 tons of wood, the proposal would result in 26,000 truckloads of forest product. A conservative estimate is one additional employee will be needed for processing for every 10 truckloads of wood per day. To process the 26,000 truckloads of wood at a rate of 10 loads per day, there will be a need for up to ten full-time employees. The combined logging and processing employment would be expected to create 34 additional jobs as a result of the proposed treatments. Employment would be supported for the duration of the proposal or 10 years. If each job has an associated salary of \$35,000 per year, then \$1,190,000 of income will be

added to the economy each year of the proposal. The economic multiplier effect would create additional benefits to the local economies.

Employment and training opportunities could be offered to local private, nonprofit, and/or cooperative entities. The Coalition for the Upper South Platte is working with local industry to provide training and employment opportunities around Woodland Park. Other cooperatives include Colorado Restoration Cooperative, a locally based coop established to help small business removing and utilizing biomass. In addition, the Forest Service will continue to provide workshops to small businesses on the federal contracting process. Colorado Forest Restoration Institute is part of Colorado State University and will be assisting in developing and implementing the multi-party monitoring strategy. They will employ students from CSU, CU, and other universities to assist in gathering data.

FUNDING ESTIMATE Tables 3-12

Table 3: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2010 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2010 Funding Type	Dollars/Value Planned
FY 2010 Funding for Implementation	\$3,018,000
FY 2010 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$0
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$28,000
6. Other (specify)	\$0
FY 2010 Total (total of 1-6 above for matching CFLRP request)	\$3,028,000
FY 2010 CFLRP request (must be equal to or less than above total)	\$1,000,000
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2010 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

Table 4: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2011 to match funding from the Collaborative Forested Landscape Restoration Fund	
Fiscal Year 2011 Funding Type	Dollars/Value Planned
FY 2011 Funding for Implementation	\$4,046,000
FY 2011 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$56,000
6. Other (specify)	\$0
FY 2011 Total (total of 1-6 above for matching CFLRP request)	\$4,056,000
FY 2011 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2011 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2011 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

Table 5: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2012 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2012 Funding Type	Dollars/Value Planned
FY 2012 Funding for Implementation	\$4,046,000
FY 2012 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$56,000
6. Other (specify)	\$0
FY 2012 Total (total of 1-6 above for matching CFLRP request)	\$4,056,000
FY 2012 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2012 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2012 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,000,000

Table 6: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2013 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2013 Funding Type	Dollars/Value Planned
FY 2013 Funding for Implementation	\$4,046,000
FY 2013 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$56,000
6. Other (specify)	\$0
FY 2013 Total (total of 1-6 above for matching CFLRP request)	\$4,056,000
FY 2013 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2013 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2013 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

Table 7: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2014 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2014 Funding Type	Dollars/Value Planned
FY 2014 Funding for Implementation	\$4,046,000
FY 2014 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$56,000
6. Other (specify)	\$0
FY 2014 Total (total of 1-6 above for matching CFLRP request)	\$4,056,000
FY 2014 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2014 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2014 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,000,000

Table 8: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2015 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2015 Funding Type	Dollars/Value Planned
FY 2015 Funding for Implementation	\$4,046,000
FY 2015 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$56,000
6. Other (specify)	\$0
FY 2015 Total (total of 1-6 above for matching CFLRP request)	\$4,056,000
FY 2015 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2015 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2015 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

Table 9: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2016 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2016 Funding Type	Dollars/Value Planned
FY 2016 Funding for Implementation	\$4,046,000
FY 2016 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$56,000
6. Other (specify)	\$0
FY 2016 Total (total of 1-6 above for matching CFLRP request)	\$4,056,000
FY 2016 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2016 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2016 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,000,000

Table 10: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2017 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2017 Funding Type	Dollars/Value Planned
FY 2017 Funding for Implementation	\$4,074,000
FY 2017 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$84,000
6. Other (specify)	\$0
FY 2017 Total (total of 1-6 above for matching CFLRP request)	\$4,084,000
FY 2017 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2017 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2017 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

Table 11: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2018 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2018 Funding Type	Dollars/Value Planned
FY 2018 Funding for Implementation	\$4,074,000
FY 2018 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$84,000
6. Other (specify)	\$0
FY 2018 Total (total of 1-6 above for matching CFLRP request)	\$4,084,000
FY 2018 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2018 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2018 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

Table 12: Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2019 to match funding from the Collaborative Forested Landscape Restoration Fund

Fiscal Year 2019 Funding Type	Dollars/Value Planned
FY 2019 Funding for Implementation	\$4,074,000
FY 2019 Funding for Monitoring	\$10,000
1. USFS Appropriated Funds	\$3,000,000
2. USFS Permanent & Trust Funds	\$0
3. Partnership Funds	\$1,000,000
4. Partnership In-Kind Services Value	\$0
5. Estimated Forest Product Value	\$84,000
6. Other (specify)	\$0
FY 2019 Total (total of 1-6 above for matching CFLRP request)	\$4,084,000
FY 2019 CFLRP request (must be equal to or less than above total)	\$4,000,000
Funding off NFS lands associated with proposal in FY 2019 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2019 Funding Type	Dollars Planned
USDI BLM Funds	\$0
USDI (other) Funds	\$0
Other Public Funding	\$500,000
Private Funding	\$1,500,000

FUNDING PLAN

Regional Forester's Plan

The Pike and San Isabel and Arapaho and Roosevelt National Forests are the two highest priority forests for the region's hazardous fuels allocation. The high priority is due to the large Wildland Urban Interface and critical watersheds with highly erodible soils on these two administrative forests.

As a result of uncharacteristic wildfires in 2002, the Rocky Mountain Regional Forester and Colorado State Forester directed the Forest Supervisors of the Pike and San Isabel National Forests and Arapaho and Roosevelt National Forests and the State District Foresters to rapidly increase the rate of hazardous fuels reduction and ecosystem restoration along the Front Range of Colorado. This led to the creation of the Front Range Fuels Treatment Partnership. To provide for this rapid acceleration of treatments the Rocky Mountain Regional Leadership Team created the Accelerated Watershed Restoration Projects or AWRP. AWRP assured increased funding would be provided to the two National Forests for hazardous fuels reduction and restoration. AWRP has led to increased funding for the Front Range with on average \$12 to \$13 million dollars being committed to the two Forests and over \$1 million for the Colorado State Forest Service. The Regional Forester is committed to maintaining a high level of regional funds to the Colorado Front Range landscape for restoration consistent with CFLRP.

In 2004, the Front Range Roundtable was formed, which collaboratively prioritized restoration and fuels treatment areas and continue to encourage increased funding for treatments. In 2009, the Pike and San Isabel NFs and Arapaho and Roosevelt NFs joined together to develop, award and implement the 10-year Front Range Long-term Stewardship (FRLTSC) project. The Regional Forester has committed funding to meet the 4,000 acre minimum treatment acreage in the FRLTSC will be available. To assure that the FRLTSC and this Collaborative Forest Landscape Restoration project will continue to be successful the Rocky Mountain Region will continue to provide funding to the two National Forests and Colorado State Forest Service as it has for the past 8 years under the Front Range Fuels Treatment Partnership and AWRP. This will ensure that both Forests will be able to utilized CFLRP funds received for ecological restoration treatments. The Region has also committed to providing up to \$100,000 for multiparty monitoring.

Other Funding

Several non-federal management agencies and landowners plan treatments that will complement the treatments on NFS lands with this proposal. The landowners or management agencies currently implementing treatments include: Denver Water Board, the City of Boulder, Boulder County, Teller County, the Community of Woodland Park, the Coalition for the Upper South Platte, and the Colorado State Forest Service. Combined these entities will spend a minimum of \$1.5 million dollars to restoration and fire mitigation activities.

Landscape Strategy

Attached is a map that displays key information associated with the proposal, including the landscape to be treated, the identified Roundtable restoration zone, and approximate treatment locations.

The Front Range Roundtable's 2006 "Living with Fire: Protecting Communities and Restoring Forests- Findings and Recommendations of the Front Range Fuels Treatment Partnership Roundtable" which provides for the landscape level restoration strategy that is the basis for this proposal is available at:

www.frftp.org/docs/report.pdf

“Historical Fire Regimes in Ponderosa Pine Forests of the Colorado Front Range, and Recommendations for Ecological Restoration and Fuels Management” by Kaufmann et al which outlines the ecological restoration needs of the lower montane zone is available at: www.frftp.org/docs/pipo.pdf