

2020 Colorado Front Range Landscape Restoration Initiative

Proposal Overview

The *2020 Colorado Front Range Landscape Restoration Initiative* requests CFLRP funds to sustain ongoing restoration treatments that provide long-lasting ecological, social, and economic benefits across 3.1 million acres covering parts of the Arapaho-Roosevelt (AR) National Forests (NF) and the Pike-San Isabel (PSI) NF along the Front Range in Colorado. Developed collaboratively by the nationally recognized Front Range Roundtable, this proposal will facilitate restoration treatment of approximately 150,000 high-priority acres on National Forest System (NFS) lands that will complement future treatments of 45,000 acres of non-federal lands.

Forests within the Colorado Front Range CFLRP boundary are characterized by high wildfire hazard potential and forest structure that is denser and more uniform than historic norms, as a result of long-term fire exclusion. Conditions such as these increasingly threaten human health and well-being and critical ecosystem services throughout the region. Through strategic placement of treatments, we plan to restore historic fire regimes, including low intensity wildland fires, with goals of reducing risks to the ecosystem and communities and lowering suppression costs. Restoring Colorado's Front Range forests is critical for protecting communities and municipal watersheds, which supply drinking water to over 4.5 million residents, from the impacts of catastrophic fire.

Map 1. 2020 Colorado Front Range CFLRP Proposal. a) Overview; b) Close up of AR NF projects, years 1-4 and years 5-10; c) Close up of PSI NF projects, years 1-4 and years 5-10

Map 2. Wildfire Hazard Potential. Much of the landscape is classified by 'high to very high' potential for large, severe wildfires. These areas have a higher probability of experiencing torching, crowning, and other forms of extreme fire behavior.

Map 3. Fire History. Recent wildland fires greater than 1,000 acres.

Map 4. Communities at Risk. Across thirteen counties within this proposal boundary, there are currently 66 Community Wildfire Protection Plans (CWPP) and nearly 80,000 structures potentially affected.

Map 5. Drinking Water Importance. This watershed index of surface drinking water importance displays much of the proposal boundary as high value.

Landscape Boundaries

Colorado's Front Range is an expansive urban corridor that accounts for over 75% of the state's total population and is forecasted to have continued rapid growth in the future. Our proposed project boundary thus includes the national forest lands that border this urban corridor, from the Wyoming border in the north to Pueblo in the south. Forests are a primary reason for why people live, work, and play along the Front Range. However, the increasing occurrence of large and severe wildfires since 1996 illustrates the high societal costs of wildfires in Front Range forests. The primary outcome we seek is a landscape resilient to wildfires in ways that protect homes, reduce the risk of large-scale forest loss, provide firefighters with safe and effective management options, and protect the water supply of over 4.5 million people. Achieving this outcome would sustain the diversity of ecological goods and services that support the lives, recreation, and investments of Front Range residents. This project will utilize the experience and on-the-ground accomplishments of the prior CFLRP (2010-2019) to trend the Front Range forests towards landscape-scale restoration. We will use wildland fire Potential Operational Delineations (PODs) as a guiding framework for strategically locating a suite of mechanical/manual thinning, prescribed fire, and managed wildfire treatments. To restore the ecological process of fire to these forests, efforts must take place at an extensive landscape scale. Therefore, we are expanding the 2010 Colorado Front Range CFLRP project boundary especially to the South to include the Wet Mountains (southwest of Pueblo). This area is the southernmost part of the Front Range and is at the same high risk and potential societal cost of wildfire as central and northern Front Range. This area has under gone many wildfires in the last 10 years including the 2018 Spring Creek Fire, the third largest fire in Colorado history, and subsequent post-fire flooding that further impacted the area.

Priority landscape for treatment within a broader perspective

Over its ten years, the Colorado Front Range CFLRP delivered on its goal of treating more than 31,000 acres (with CFLRP funding) within a 1.5 million acre landscape. Over the course of the project, we learned a lot about restoration at the stand scale and we recognize the need to move to the next level of landscape-scale restoration. Our work moving forward is now informed by new scientific products and operational concepts, and will leverage ongoing investment from external partners, including water utilities, in forest restoration and a new commitment to work with the state of Colorado under the 2019 Shared Stewardship Memorandum of Understanding (MOU).

The watersheds of the Front Range of Colorado are critically important to the residents who live, work, and recreate in and around the municipalities of Fort Collins, Boulder, Denver, Aurora, Castle Rock, Colorado Springs, and Pueblo, among others. These watersheds also provide clean water to four downstream states and five military installations. Large-scale wildfires and declining forest health have negatively impacted these water supplies through flooding, erosion, and sedimentation. For the past decade, partnerships with water providers alone have generated nearly \$40 million in non-federal contributions to fund forest restoration treatments on national forests. Continued funding from CFLRP will complement these ongoing investments, and support the proactive, strategic actions necessary to protect existing investments to safeguard water supplies, protect communities within the Wildland Urban Interface (WUI), and protect critical water infrastructure. Strategic investments will also protect wildlife habitat and safeguard recreation opportunities vitally important to Colorado's economic health and stability. In partnership with the State under the Shared Stewardship Strategy (MOU 2019), collaborative and cross-boundary management can achieve landscape outcomes desired by all.

Economic, Social, and Ecological Context

Socioeconomic Condition - The 2020 Colorado Front Range CFLRP boundary covers 3.1 million acres that support the economy and livelihoods for millions of people residing in the thirteen counties¹ encompassed by this proposal. Nearly 900,000 acres of the Front Range Ponderosa pine and dry mixed-conifer forests are classified as wildland-urban interface (WUI) (Liu *et al.* 2015), which includes 80,000 structures (Caggiano *et al.* 2016). Over the next 30 years, projections suggest that construction will result in an additional 450,000 acres of WUI along the Front Range (Liu *et al.* 2015). According to the National Visitor Use Monitoring surveys (USFS 2016), the AR and PSI NFs receive over 10 million site visits annually. With median spending valued between \$30-\$100/party, these forests provide recreational opportunities worth hundreds of millions of dollars. Additionally, these forests contain source water, storage, and conveyance facilities for domestic, industrial, and agricultural water providers along the Front Range and numerous downstream ecosystems, communities, and economies.

A series of fire events have demonstrated what the risks are to the social and economic values along the Front Range. From 1996 to 2014 multiple large scale fires impacted Front Range forests and communities, with nearly 700,000 acres burned. Three of these fires resulted in loss of life, destroyed 950 homes, and resulted in sedimentation and damage to water supplies. Denver Water continues to dredge storage reservoirs impacted by the Buffalo Creek and Hayman Fires, with expenses totaling \$27.7 million to date. In-stream water quality effects, especially nitrogen loading, have been surprisingly long-lived following wildfire (Rhoades *et al.* 2017).

The high concentration of socioeconomic values-at-risk have led to considerable efforts around forest restoration among a diverse group of stakeholders. For example, there are 66 Community Wildfire Protection Plans (CWPPs) in place throughout our proposed CFLRP boundary, which seek to reduce wildfire risk at community levels. Funding through CFLRP will provide a foundation to engage with current stakeholders, and expansion to new stakeholders, partnerships, and forest product markets.

Vegetation Condition - Restoration activities will focus primarily on the 1.2 million acres of Ponderosa pine and dry-mixed conifer forests found in the project footprint. The historic fire regime of these forest types is characterized by frequent (1-35 years) low-to-moderate severity fire with patches of high severity (Addington *et al.* 2018). Given the fire frequency it is likely many fire return intervals have been missed and resulted in over dense stands. A broad scientific and socio-political consensus has concluded many of the recent fires are uncharacteristically large and severe, primarily due to overly dense stands. Evidence of the ecological risks posed by recent and projected future wildfires is the lack of Ponderosa pine regeneration following recent fires (Chambers *et al.* 2016; Rother and Veblen 2016); this trend in Colorado mirrors the lack of post-fire Ponderosa pine regeneration across the western United States (Stevens-Rumann and Morgan 2019; Davis *et al.* 2019). Also, climate change is expected to bring warmer temperatures, longer wildfire seasons, increases in disease and insect outbreaks, and drought to

¹ The counties are: Boulder, Clear Creek, Custer, Douglas, El Paso, Fremont, Gilpin, Huerfano, Jefferson, Larimer, Park, Pueblo, and Teller.

the Front Range (*Addington et al.* 2018). Combined, these factors represent a significant threat to the long-term sustainability of Front Range forests and the ecological services they provide.

Wildlife - Colorado's Front Range forests are home to 145 species of fish and wildlife, from wide-ranging charismatic species such as bald eagle and bighorn sheep, to lesser known endemic and sensitive species, such as Abert's squirrel, greenback cutthroat trout (federally listed as Threatened), Northern Goshawk, Pawnee montane skipper, and Preble's Meadow Jumping Mouse (federally listed as Threatened). This proposal covers over 536,000 acres that provide essential habitat to threatened, endangered or otherwise imperiled wildlife species. Another 454,000 acres provide important habitat for mule deer and elk and other economically important species. The uncharacteristic large, stand-replacing fires that have occurred in the Front Range over the last 15 years threaten the sustainability of the forest and the species that depend on it.

Watershed Condition - Front Range forests provide drinking water to millions of residents and support agriculture, industrial production, recreation, and habitat for aquatic life. Within the project boundary there is significant municipal infrastructure, including 86 water intakes, nearly 400 reservoirs, and 18 transbasin diversions. Colorado's Statewide Forest Resource Assessment reveals that 67% of these watersheds are at high risk to damage from post-fire erosion and sediment deposition (CSFS 2009). Based on the Watershed Condition Framework (WCF), approximately 40% of the watersheds in this proposal were rated properly functioning, while 52% are 'Functioning-At-Risk' and 8% are 'Impaired'. The Front Range CFLRP efforts from 2010-2019 have substantially improved watershed conditions. This proposal overlaps with three WCF priority watersheds, which all have Watershed Restoration Action Plans in place.

Insects and Disease - From 1996 through 2010's, Colorado experienced a severe mountain pine beetle (*Dendroctonus ponderosae*) outbreak that resulted in high levels of mortality across 3.4 million acres. Infestations in Ponderosa, limber and bristlecone pine continue at low levels along the Wet Mountains. At higher elevations along the Front Range, Spruce Beetle (*Dendroctonus rufipennis*) continue to impact spruce forests with severe outbreaks in portions of this project footprint in Larimer and Custer County (CSFS 2018).

Invasive Species - Large, high-severity wildfires on the Front Range have resulted in the spread of damaging invasive plant species, such as cheatgrass and knapweed, which established in the post-fire environment. Restoration treatments that reduce the risk of wildfire will benefit the overall forest ecology by reducing the establishment and spread of invasive species.

Roads and Trails - The primary road infrastructure is sufficient for project implementation; however, some temporary roads will be needed to remove biomass from the forest. Existing roads will require maintenance to provide for access for biomass removal and to improve drainage. Best management practices will be used to reduce road impacts.

In summary, if restoration efforts do not continue, the vegetative conditions along the Front Range landscape would remain at risk from large-scale uncharacteristic fires, as well as insect and disease outbreaks. Taking no action presents a higher risk of loss to adjacent communities, including catastrophic impacts to economic, social, and ecological resources, including major infrastructure and water supply.

Landscape Strategy and Proposed Treatments

Desired Conditions - The overarching desired condition on this landscape are forests that are ecologically appropriate and socially acceptable, posing less of a threat to people and the environment, and fostering the sustainability of key forest values, such as water supply and quality. Forest structure will closely approximate the natural range of variability whenever possible, following the science-based principles outlined in the *Principles and practices for the restoration of Ponderosa pine and dry mixed-conifer forests of the Colorado Front Range* (Addington *et al.* 2018) and incorporating climate change vulnerability (Rice *et al.* 2018). Priorities such as reducing wildfire risk exposure to communities and watersheds may dictate a treatment regime that departs from ecological principles in some instances. Specific desired conditions include:

- A diverse landscape mosaic with forest composition and structure that reflects variation in topography and underlying moisture gradients.
- Landscape diversity that provides for natural disturbances, such as fire, that are within the natural range of variability and are socially acceptable.
- Forest stands that exhibit fine-scale heterogeneity in structure and tree spatial patterns.
- Landscape and stand-scale heterogeneity that provide diverse habitats for wildlife.
- Watersheds that are stable and hydrologic processes that are intact.

To achieve desired conditions, the proposal will not include the establishment of permanent roads and will decommission all temporary roads constructed to carry out the strategy. Trails will be minimally affected.

Strategy - Our strategy will employ a variety of tools, partners, and collaborative decision mechanisms to effectively move this landscape to a more resilient condition. The collaborative group's strategy moving forward incorporates several advances that have occurred since the beginning of the initial CFLRP project. Signed in 2019, the Shared Stewardship MOU between the USFS and the State of Colorado will be utilized to enable an all-lands collaborative approach that will effectively respond to the challenges of working across boundaries.

Another new tool that will be used to guide restoration treatments will be Potential Operational Delineations (PODs). This is a strategic pre-fire planning tool that uses a combination of local expertise and advanced spatial analysis. PODs identify the safest and most effective control lines used to contain a wildfire and can assist in integrating land management objectives and incident response. Collaboratively developed PODs provide the opportunity for a robust process to answer a variety of questions surrounding suppression difficulty, resources at risk, ecological benefits of fire, fire management strategies, and hazardous fuel reduction project planning. Specifically, PODs will be used to identify smaller areas within the larger project area where mechanical or manual treatments can be located to maximize the use of prescribed fire and managed fire to achieve desired conditions across large contiguous areas consistent with mixed-severity fire regimes characteristic of Front Range ponderosa pine/dry mixed-conifer forests, while also minimizing risk to life and highly-valued assets. Incorporating PODs will provide a

strategic landscape analysis and prioritization framework that heretofore has been missing in Front Range forest landscape restoration and wildfire risk mitigation.

Proposed acres treated through this proposal (all fed/non-fed lands):

Fiscal Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Non-CFLR funds Restoration Acres	5,000	7,000	17,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500
Additional Acres with CFLR	2,000	3,000	4,000	4,000	4,000	4,000	4,000	6,000	6,000	6,000
Total Restoration Acres	7,000	10,000	21,500	21,500	21,500	21,500	21,500	23,500	23,500	23,500

In the first four years, the primary focus will be treatments on NFS lands that are currently NEPA cleared, or have decisions pending within the next two years. Treatments will focus on areas with collaborative mutual benefits, partner funding, or are priorities for multiple organizations that have the ability to leverage adjacent work for larger-scale outcomes and provide support to local economies. Treatments within these areas will utilize both mechanical/manual thinning methods and prescribed fire, with an emphasis on increasing the use of prescribed fire. Of the acres treated on NFS lands in a given year, at least 50% of the treatment area will be achieved by prescribed fire. Mechanically prepared strategic areas using PODs will increase over time, with the goal to achieve a 3:1 ratio of prescribed fire to mechanical treatments across the landscape. Cost effectiveness of mechanical removal treatments will be improved by promoting forest products that have a Front Range market. Restoration treatments are expected to increase forest resilience to climate change by creating landscape diversity in forest structure and composition, and enabling more options for climate adaptation. CFLRP will provide overarching structure and long-term support over a sufficient scale to integrate a series of ongoing restoration efforts along the Front Range and help managers leverage sources of funding. A variety of tools such as stewardship agreements, Good Neighbor Agreements, will be used for cross-boundary work. There will also be an effort to bring under-represented areas along the Front Range such as the Wet Mountains, into the collaborative arena.

Our proposal intersects with several complementary landscape restoration efforts. These include a Joint Chiefs’ Landscape Restoration project on the AR called the Northern Front Range Collaborative Watershed Resilience Project, a “Forests to Faucets” partnership with Denver Water on the AR and PSI, a 2015 National Cohesive Wildland Fire Strategy Initiative that coalesced into the Upper South Platte Partnership to enhance community wildfire preparedness west of the Denver metro area that has spent over \$3 million on Federal and non-Federal lands to improve watershed conditions. Lastly, three Rocky Mountain Restoration Initiative proposals within the CFLRP boundary were submitted in the fall of 2019. The initiative is taking the groundbreaking approach of tasking a diverse group of partners from across Colorado to identify important landscapes, shared interests and potential strategies to make transformational changes in the health and resiliency of the ecosystem. Over 125 federal, state, local, private and non-profit partners came together to identify the highest-priority landscapes across Colorado, of which the Central Front Range Upper South Platte and Arkansas Headwaters on the PSI were identified as 2 of the top 3 priorities in the state in terms of risk to forests, water, and people.

Wildfire Risk Reduction

The report, “*Living with fire: protecting communities and restoring forests*” produced by the multi-stakeholder Front Range Roundtable in 2006 defined a multi-pronged strategy to reduce long-term wildfire risk across lower montane forests and associated WUI communities. The report remains our strategic blueprint with a key finding that mechanical, manual, and prescribed fire methods across the lower montane forested landscape can achieve both ecological restoration and community protection goals (FRRT 2006). Between 2002 and 2018, approximately 350,000 acres have been treated, however, land managers, forest restoration stakeholders, and communities are increasingly recognizing that reducing wildfire risk over the long-term requires more fire on the ground through more prescribed burning, and managed wildland fire for resource benefit. One benefit is that more acres will be treated because of reduced per-acre treatment costs, as prescribed and managed fire tend to have lower unit costs than mechanical/manual treatments. Using the wildfire hazard potential (WHP) assessment by the USFS - Fire Modeling Institute (Dillon *et al.* 2015), acres were prioritized around water provider infrastructure protection initially, followed by collaboratively determined areas of concern.

The challenge of having the right types of fires at the right times in appropriate places is being met through collaborative spatial fire planning using the Potential Operational Delineations (PODs) framework (Caggiano 2019; O’Connor *et al.* 2016). Since fall 2018, the AR and PSI fire staffs, and their state, local, and community-based fire response partners have collaboratively developed PODs. These geographic units represent opportunities for effectively managing a wildland fire under different fuel, weather, and fire behavior scenarios, thereby providing fire responders a broader range of fire management options other than full suppression. This collaborative planning has been particularly instructive at forecasting the types and levels of fire management capacities required to manage long-term wildfire risk across the complex landownerships and fire response jurisdictions along Colorado’s Front Range. The PODs are also being used to identify priority areas for vegetation treatments that can simultaneously reduce fuel loads and, restore forest structures consistent with natural fire regimes.

During fire events, the intent is for incident management teams to integrate PODs with the Wildland Fire Decision Support System to identify a range of fire responses, depending on fire weather and fuel conditions, location of past fires and treatments, and values-at-risk. The AR used PODs on small fires during the 2019 fire season and is looking to institutionalize PODs deployment for the long-term. Similar needs and opportunities exist for the PSI, as they learn from other forests that have successfully utilized PODs to manage complex fires to achieve firefighter safety, community protection, and resource benefit goals. Post-fire, PODs are intended to be used as a monitoring, learning, and adaptive management framework.

PODs can also be beneficial for community outreach, engagement, learning, and adaptive management. These activities are being piloted by the Northern Colorado Fireshed Collaborative (NoCo) on the AR and the Upper South Platte Partnership on the PSI. PODs also have the opportunity to be a platform for revising CWPPs and link fuel treatments, fire responses, and community mitigation practices across jurisdictions.

Benefits to Local Communities

The strategy for ecological restoration and wildfire risk reduction described in this proposal moves us toward a desired socioeconomic state that is broadly accepted by community residents and elected officials. Our desire is to increase Colorado's Front Range WUI resiliency to wildfires, resulting in reduced risk to life/property, and increase communities' acceptance and preparedness of the inevitability of fires through PODs and CWPPs.

A primary group of beneficiaries of our landscape restoration strategy are the region's water providers. Large urban water providers, such as Denver Water, Aurora Water, Colorado Springs Utilities, Pueblo Water, and Fort Collins Utilities, derive their source water from Colorado Front Range forested watersheds and also have storage reservoirs, intake facilities, and conveyance systems at risk of damage or loss from large, severe fires. Between 2010 and 2019 initiatives between local water providers and government partners, have resulted in nearly \$100 million being invested in restoration. Through work as the Watershed Health Investment Partnership, water providers anticipate another \$100 million will be spent over the next ten years to improve watersheds. Ultimately, millions of Colorado residents benefit from clean water, produced and delivered at reasonable prices for domestic, agricultural and industrial water uses.

The project also benefits local fire and forest management jurisdictions with the application of new landscape-scale planning frameworks and technologies, such as PODs, that allow for greater collaborative prioritization of restoration and community protection treatments, and for increased coordination of capacity-building and capacity-sharing across fire responders and managers.

For local communities, the desire is to create growth in forest product businesses through wood utilization, which requires a specific labor force to extract and process these resources. It is expected that local mills and other forest product businesses may directly benefit from this project and products to market should increase over time, serving the general population.

Lastly, several specific metrics for benefits to communities will be addressed by this proposal:

- Enhance community sustainability:
 - Maintain/increase number of workers employed by the project area each month, season, or year
 - Maintain/increase acceptance of frequent, low intensity wildfire or prescribed fire
- Improve or maintain quality of life:
 - Maintain or increase the number of jobs/shifts/amount paid to workers
 - Maintain/increase acres protected from fire through creation of defensible space, fuel breaks, and other fuels reduction projects
- Improve capacity for collaboration:
 - Maintain/increase extent to which different perspectives are represented
 - Maintain/increase the quality and timeliness of communication among all project partners
 - Maintain/increase partner contributions (in kind time/funding) committed to shared project goals
 - Maintain/increase perceived benefits of restoration activities

Utilization of Forest Restoration Byproducts

Much of land in Colorado and its Front Range is federally owned (70% statewide) and for this reason, the wood products industry is greatly dependent upon actions set forth by agencies (Richardson 2016). CFLRP funding would provide one long-term certainty about a sufficient supply of material that would help the national forests and industry partners leverage these efforts. Utilization of forest restoration byproducts presents a challenge in the Front Range, where there is a market for large diameter trees and less a market for the small-diameter material that makes up a significant share of expected restoration byproducts. To address these challenges the Forests will continue to work with industry to develop alternative uses of material removed from restoration treatments.

To promote utilization, restoration treatments will utilize a variety of small and large diameter material, estimating removal of approximately 148,000 CCF on NFS lands over the 10-year CFLRP period. Several recent studies of utilization capacity have highlighted the opportunities and persistent challenges in the project area, in terms of both overall mill capacity and capacity to specifically process large and small-diameter materials. A study conducted by the Colorado State Forest Service identified over 110 wood producer and contractor businesses in the Colorado Front Range geography (Richardson 2016) that use large and small diameter material. A recent capacity study on the PSI indicates several smaller sawmills in area, produce other products (e.g., firewood, posts, animal bedding, or pellets) in addition to lumber. This product diversification has augmented their capability to use smaller trees (Simmons *et al.* 2019).

The Forests will take advantage of a healthy fuelwood market along the Front Range to move material. Over the last 10 years over 50,000 cords of fuelwood have been removed from restoration treatments in the CFLRP area. Additionally, opportunities are expanding in the biomass power generation and bio char markets. Our strategy includes expanding communication with Boulder and Gilpin Counties, which both utilize biomass boilers but have not previously used restoration materials from the AR. Newer mills, like the one in Blanca, CO near the Wet Mountains, and re-tooling existing mills to better accommodate restoration byproducts would provide additional capacity. The USFS Wood Innovations Grant and the Colorado Wood Utilization and Marketing Program (CoWood) provide additional funding opportunities to support these efforts.

Partners expect to build on successes to address persistent challenges in utilization of small-diameter material, particularly in a setting with a relatively urban and diverse economy. The utilization situation discussed here exemplifies the concurrent complexity and potential associated with collaborative forest restoration in this landscape. The ecology of this area, as well as its management history over the past century, has left an abundance of small-diameter trees that prove challenging to utilize. While the Front Range has not consistently maintained a high-capacity wood products industry, the proximity to Colorado's population centers suggests substantial opportunities for local market growth. A sustained investment in forest restoration through CFLRP, and increased collaboration, would allow partners to further realize this potential.

Collaboration

The Front Range Roundtable is composed of more than 60 governmental, non-governmental, and research organizations and has formed the backbone of collaborative engagement regarding forest restoration and community wildfire risk mitigation since 2004. With the 2010-2019 Colorado Front Range CFLRP, a self-selected focus group of both Roundtable members and new participants formed the Landscape Restoration Team (LR Team) to carry out the collaborative implementation functions of the CFLRP. These functions included developing, implementing, and revising the multiparty monitoring strategy, engaging in adaptive management reviews, and tracking CFLRP implementation. Organizations represented on the LR Team include: Denver Water, Aurora Water, Colorado Forest Restoration Institute at Colorado State University, Colorado Parks and Wildlife, Colorado Springs Utilities, county parks and open space managers, local residents, The Nature Conservancy, The Wilderness Society, Forest Service, and Natural Resource Conservation Service. We have identified gaps in representation and plan to expand the collaboration to better incorporate the Colorado State Forest Service, county planners, fire protection/responders, forest products/timber industry operators and producers, residents from a broader range of local communities, and the US Fish and Wildlife Service. We recognize barriers to collaboration include limited time and funding or perhaps conflicting needs to participate in on-going meetings for various causes. Nevertheless, this effort is committed to inclusivity and outreach.

The LR Team has met monthly or semi-monthly over the past ten years and is professionally facilitated by a third-party. There are no formal guidelines for membership or decision rules, but the focus is on Data and Monitoring, Treatments and Project Design, Partnerships and Outreach, as well as Planning and Process. Sub-groups have been convened to work through specific issues, such as defining desired conditions at multiple spatial scales; developing a science basis for historic forest structures and fire regimes; developing a collaborative implementation framework; developing landscape metrics and analytical techniques; and compiling and analyzing monitoring data.

In addition to collaboratively-developed documents synthesizing available scientific knowledge and agreement regarding these topics, many LR Team members were co-authors of the General Technical Report, “Principles and practices for the restoration of Ponderosa pine and dry mixed-conifer forests of the Colorado Front Range” (RMRS-GTR-373) (Addington *et al.* 2018) that currently functions as the foundational document (and proud accomplishment) for planning, designing, monitoring, and adaptively managing forest restoration programs of work and projects. The LR Team was also instrumental in collaboratively developing strategies and recommendations for the Upper Monument Creek (UMC) Project, a 68,000-acre CFLRP stewardship project on the PSI. The UMC is a model upon which this proposal builds for continued collaborative landscape-scale restoration planning, implementation, and adaptive management along Colorado’s Front Range.

Multi-party Monitoring

The LR Team collaboratively developed and has been implementing a multiparty monitoring strategy that corresponded to the initial Front Range Collaborative Forest Landscape Restoration project, FY10-19 (Barrett *et al.* 2017). The team and strategy provides the foundation upon which multiparty monitoring for the current proposal will be deployed and adapted to address this project's goals and objectives. A detailed monitoring plan will be developed to address key monitoring questions and methodologies based on levels of funding.

Our current multiparty monitoring group consists of representatives from the US Forest Service, academics, non-profits, state agencies, the Rocky Mountain Research Station, local water providers, and the public. Currently, the Front Range monitoring plan evaluates restoration impacts on forest structure and composition, understory plant communities, wildlife, spatial heterogeneity at both the stand and landscape scale, economic impacts and contributions, wood utilization, and levels of collaboration. The current monitoring group and plan provides a foundation for more refined monitoring as restoration continues on the Front Range.

Given our increasing ability to use prescribed fire as a management tool, we would like to further engage fire personnel as well as recreational groups in our refining of desired conditions and monitoring strategies. With new insight from these parties, we would like to further refine our monitoring program to emphasize understanding the short- and long-term effects of prescribed fire as it relates to from land managers. By directly engaging fire personnel and working with them to determine relevant questions regarding prescribed fire, we hope to build interest not only in the development of CFLRP projects, but also in our monitoring program and results. Similarly, by reaching out to recreational groups we hope to build a program that learns about the conflicting needs of recreationists and restoration practices to improve outcomes over time.

Since our current monitoring group has a diverse representation and long-standing relationships, we are well poised to work together through the key roles of the monitoring process. We feel the development and refinement of desired conditions is a collaborative process in which all parties should be involved. With line officer involvement we can better understand local management questions to help build and refine our monitoring program. We also have local expertise to conduct specialized data collection and analyses such as research staff at CFRI for forest structure, composition, spatial, and fire effects analyses, plant ecologists at RMRS for understory analyses, and wildlife biologists at the Bird Conservancy of the Rockies.

We will continue our adaptive management process, which includes presenting monitoring results to the entire group early in the summer, and conducting site visits to evaluate treatment outcomes to provide feedback for future prescriptions. Finally, our monitoring group has a long history of engaging diverse stakeholders throughout the Front Range to build trust. Not only are members of the multiparty monitoring group also active in other collaborations throughout the state, but our engagement with the larger Front Range Roundtable connects us to a diverse set of stakeholders throughout the Front Range, including the timber industry and non-profits that add tremendous value to the landscape restoration dialogue throughout the Front Range.

Readiness to Implement Strategy

The Front Range CFLRP is uniquely poised to implement a variety of restoration treatments. Currently there are over 188,000 acres of NEPA-ready projects and another 160,000 acres of NEPA-pending projects as part of this CFLRP proposal. The AR and PSI will continue to work with collaborators to develop a continuous pipeline of NEPA-ready projects over the next several years. Projects are generally aligned with Forest Plans, though Forest Service staff may consider Forest Plan amendments as needed.

<i>Forest</i>	<i>NEPA-Ready (acres)</i>	<i>NEPA-Pending (acres)</i>
Arapaho-Roosevelt NF	57,062	78,500
Pike-San Isabel NF	131,171	81,700

Currently the AR and PSI utilize several tools to accomplish forest restoration objectives. These include Good Neighbor Agreements (GNA), Integrated Resource Timber Contracts, Integrated Resource Service Contracts, service contracts, force account (internal FS labor) projects, as well as traditional timber sales. GNA agreements are currently underway on the AR, with the PSI engaged in discussions with CSFS. Future plans will include utilizing Stewardship Agreements and Wyden Amendment agreements to further the flexibility of authorities. The major water utilities, like Denver Water, Aurora Water, Colorado Springs Utilities and Pueblo Water, who are collaborative funders, are currently funding implementation projects with plans to expand. Economics, resource constraints, social license, and urgency are all considerations in choosing which tools or combination of tools to utilize to treat the landscape.

Unit Capacity and Project Funding

The AR and PSI have successfully completed work under CFLRP since 2010, in which capacity was increased on both Forests to manage this workload. While there has been turnover during the last 10 years, both Forests are in position to take on another CFLRP with the capacity that currently exists. As other concurrent Forest Service initiatives are obtained, such as RMRI, capacity will need to increase accordingly, particularly prescribed burning capacity, which will help create more efficiencies for CFLRP accomplishments. Fire organizations are dynamic when planning and implementing prescribed burning, and it is anticipated that agency capacity will increase, particularly with other funding initiatives that are received in this landscape.

The first ten years of work under CFLRP position the forests to achieve efficiencies moving forward. The tens of thousands of acres treated in the first ten years have prepared much of the landscape for prescribed burning, which will allow for efficient landscape level restoration. In the first three years of this proposal, implementation of NEPA ready projects will continue. At the same time, a NEPA pipeline will continue to be built to sustain the level of work through CFLR and partner funding, while capitalizing on monitoring results.. Treatment costs are expected to remain flat or slightly increase over the first three years. By 2023, as mechanical and prescribed fire treatments become fully integrated, treatment costs are expected to slightly decrease as projects shift to a 3:1 prescribed fire to mechanical treatment distribution. In the final six years, cost per acre of restoration treatment is expected to continue to decrease. Key factors for reduced costs include a transition to more prescribed burning, more dollars available for implementation versus planning, increased partner funding sources, and efficiencies gained through the Shared Stewardship MOU.

This CFLRP is dependent on Forest Service appropriations and MOU partner contributions (e.g. Denver Water, Colorado Springs Utilities) that will continue into the foreseeable future. If funding is not reauthorized beyond 2023, the Colorado Front Range CFLRP collaborative is poised with a potential transition strategy. Discussions about the future of the program have taken place in detail over the past year through its own initiative called the Sustainable Collaboration Operation Plan (SCOOP). The plan provides a system by which monitoring and treatments could proceed at various funding scenarios. With reduced or diminishing funds, consensus among the group is that the work will be focused on prescribed fire and any mechanical/manual thinning will be focused on reducing hazardous fuels to set up a prescribed burn. Continued monitoring was determined to be a critical activity. SCOOP also addresses diversifying funding sources within the Forest Service's budget and outside sources, like exploring watershed protection funds, or Colorado Prescribed Fire Council's "burn beyond borders". The USFS and stakeholders have a lot of momentum and desire to maintain existing treatments. We are optimistic that funding could be found from other programs, and are committed to creative ways to meet landscape restoration objectives.

ATTACHMENT A: Project maps

ATTACHMENT B: Planned Treatments spreadsheet

ATTACHMENT C: Utilization of Forest Restoration Byproducts spreadsheet

ATTACHMENT D: Collaborative membership spreadsheet

ATTACHMENT E: Letter of commitment developed and signed by all collaborative members

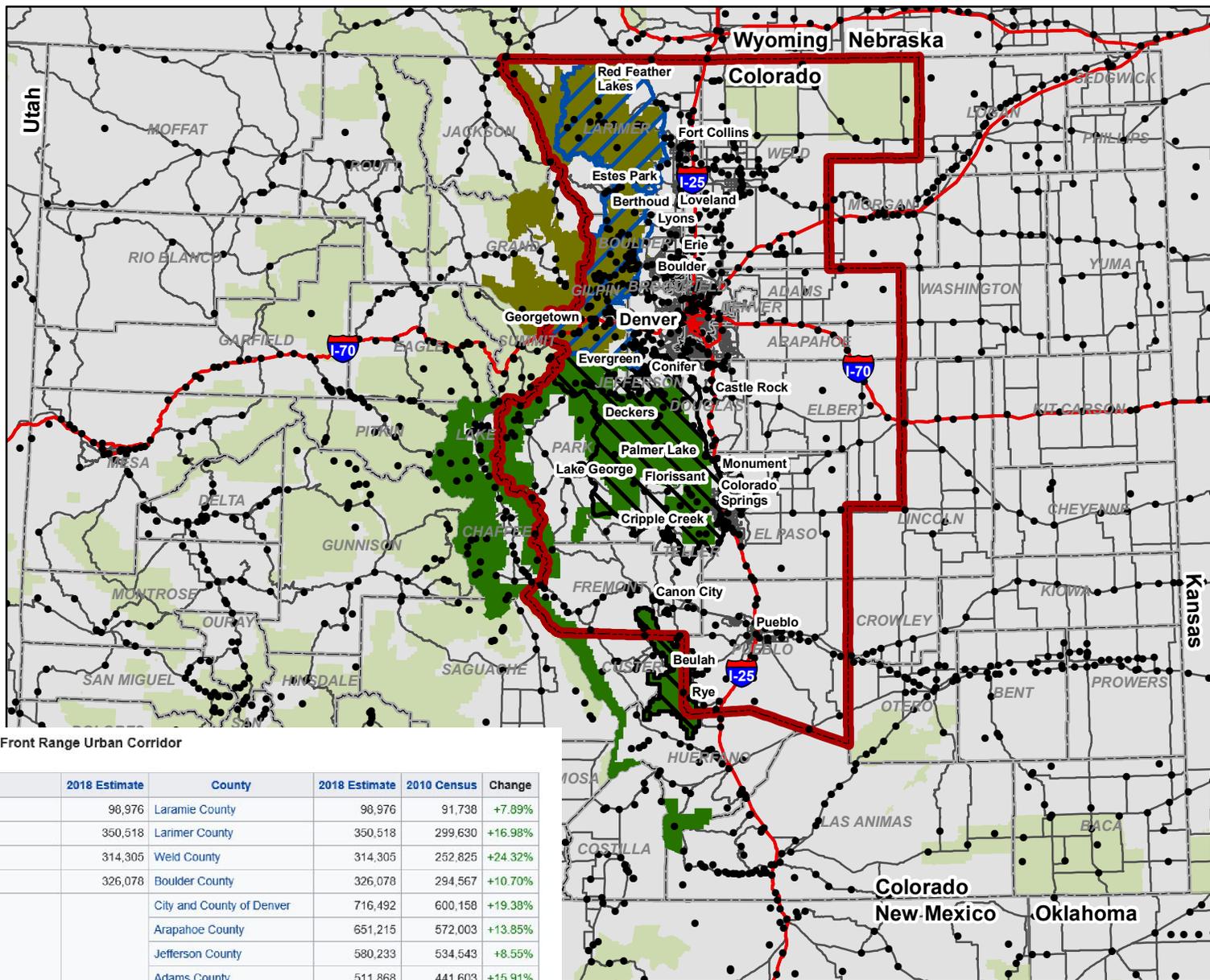
ATTACHMENT F: Project funding spreadsheet

ATTACHMENT G: Letter of commitment signed by Forest leadership

ATTACHMENT H: References

Collaborative Forest Landscape Restoration Program (CFLRP): Colorado Front Range Urban Corridor

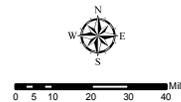
- Cities/Towns
-  Colorado Front Range Urban Corridor
-  Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
-  Pike and San Isabel National Forests Proposed CFLRP Boundary
-  Arapaho and Roosevelt National Forests
-  Pike and San Isabel National Forests
-  National Forests/Grasslands



*Table includes information from the U.S. Census Bureau and the U.S. Office of Management and Budget

The Front Range Urban Corridor

Region	CBSA *Core Based Statistical Area	2018 Estimate	County	2018 Estimate	2010 Census	Change
Southeast Wyoming	Cheyenne, WY Metropolitan Statistical Area	98,976	Laramie County	98,976	91,738	+7.89%
	Fort Collins, CO Metropolitan Statistical Area	350,518	Larimer County	350,518	299,630	+16.98%
	Greeley, CO Metropolitan Statistical Area	314,305	Weld County	314,305	252,825	+24.32%
	Boulder, CO Metropolitan Statistical Area	326,078	Boulder County	326,078	294,567	+10.70%
North Central Colorado	City and County of Denver	716,492		600,158		+19.38%
	Arapahoe County	651,215		572,003		+13.85%
	Jefferson County	580,233		534,543		+8.55%
	Adams County	511,868		441,603		+15.91%
	Douglas County	342,776		285,465		+20.08%
	City and County of Broomfield	69,267		55,889		+23.94%
	Elbert County	26,282		23,086		+13.84%
	Park County	18,556		16,206		+14.50%
	Clear Creek County	9,605		9,088		+5.69%
	Gilpin County	6,121		5,441		+12.50%
South Central Colorado	Colorado Springs, CO Metropolitan Statistical Area	738,939	El Paso County	713,856	622,263	+14.72%
			Teller County	25,083	23,350	+7.42%
	Cañon City, CO Micropolitan Statistical Area	48,021	Fremont County	48,021	46,824	+2.56%
	Pueblo, CO Metropolitan Statistical Area	167,529	Pueblo County	167,529	159,063	+5.32%
Total		4,976,781		4,333,742		+14.84%

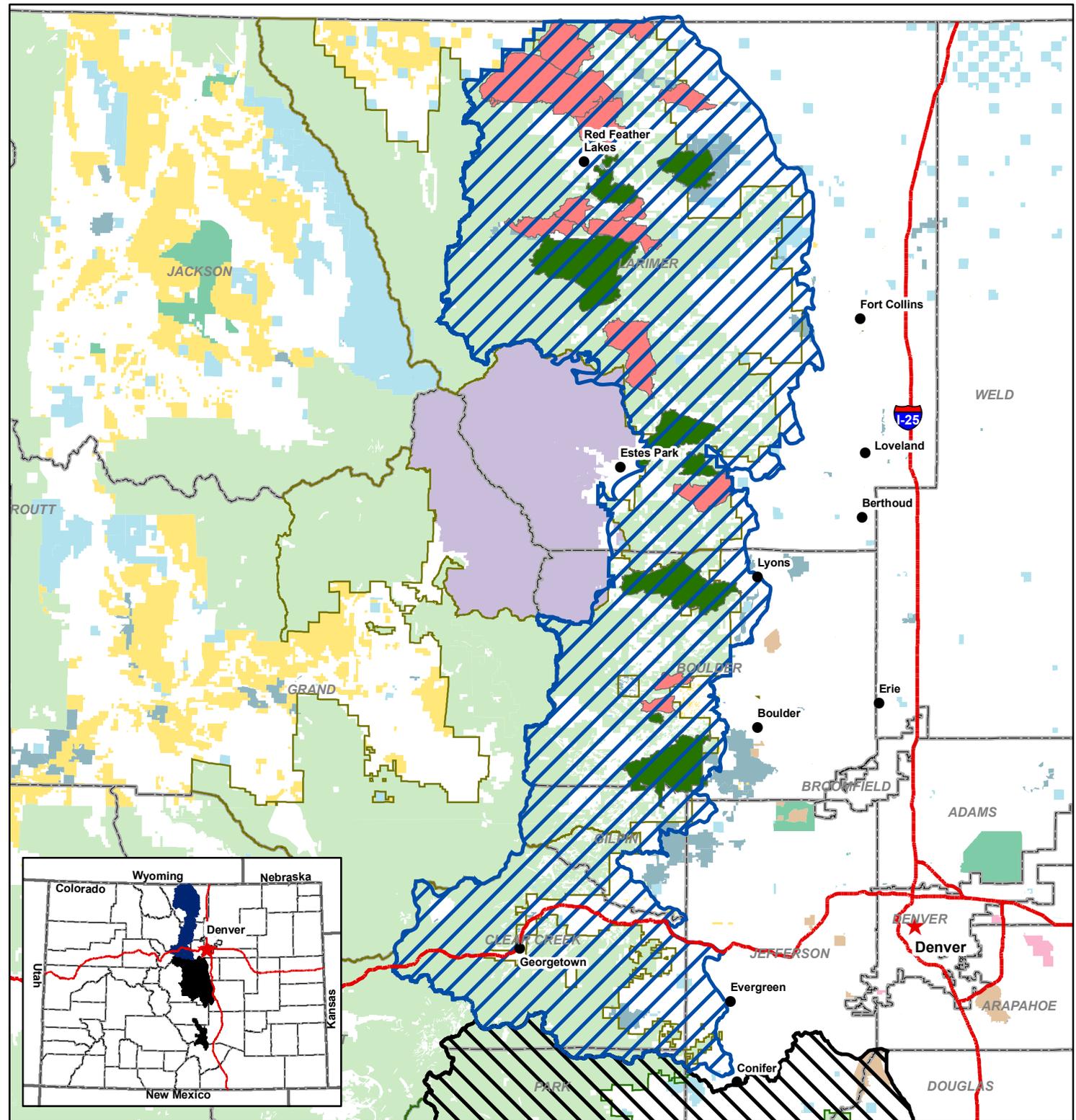


Map Disclaimer: This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cimarron & Comanche NG, Pueblo, CO. (719) 553-3400.



Collaborative Forest Landscape Restoration Program (CFLRP): Arapaho and Roosevelt National Forests Planned Projects

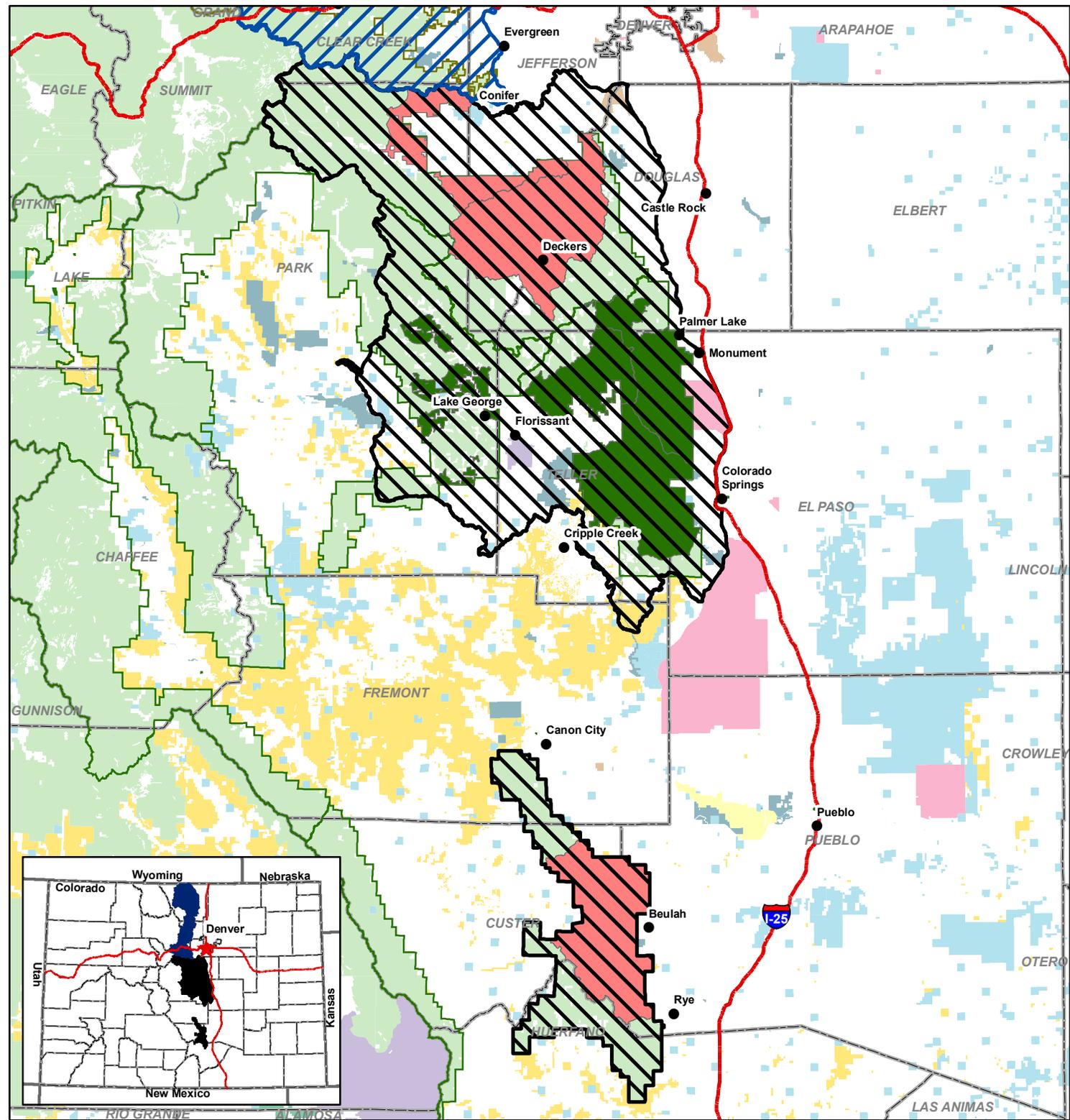
- Planned Project Locations for Years 1-4
- Planned Project Locations for Years 5-10
- Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
- Pike and San Isabel National Forests Proposed CFLRP Boundary
- Arapaho and Roosevelt National Forests
- Pike and San Isabel National Forests
- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- Military Reservation
- National Grasslands
- National Park Service
- Other Federal
- Private
- State
- State, County, City, Areas
- US Fish and Wildlife Service
- US Forest Service



Map Disclaimer. This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cimarron & Comanche NG, Pueblo, CO. (719) 553-1400.

Collaborative Forest Landscape Restoration Program (CFLRP): Pike and San Isabel National Forests Planned Projects

- Planned Project Locations for Years 1-4
- Planned Project Locations for Years 5-10
- Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
- Pike and San Isabel National Forests Proposed CFLRP Boundary
- Arapaho and Roosevelt National Forests
- Pike and San Isabel National Forests
- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- Military Reservation
- National Grasslands
- National Park Service
- Other Federal
- Private
- State
- State, County, City; Areas
- US Fish and Wildlife Service
- US Forest Service

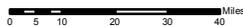
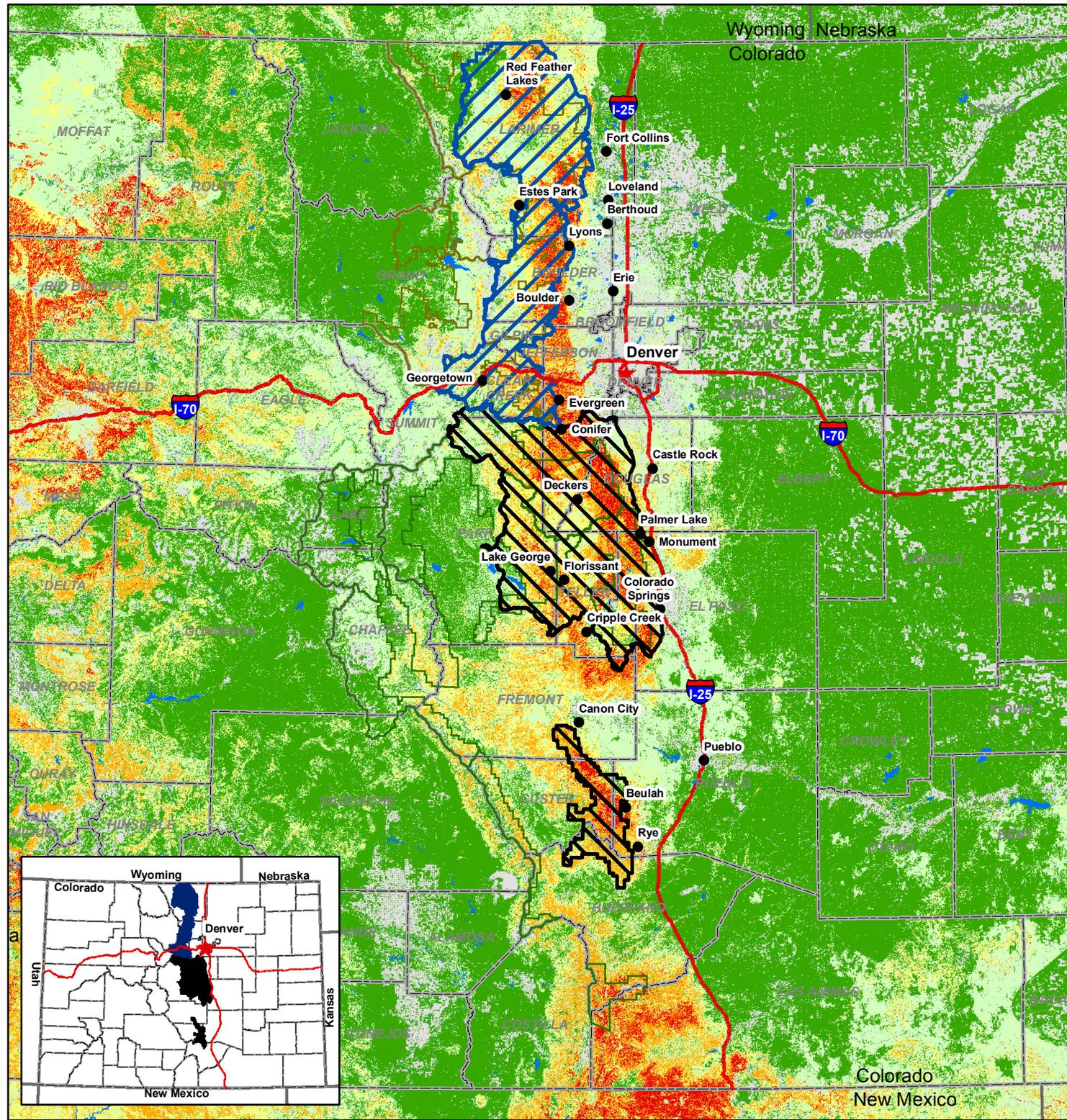


Map Disclaimer. This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cmaron & Comanche NG, Pueblo, CO. (719) 553-1400.

Collaborative Forest Landscape Restoration Program (CFLRP): Wildfire Hazard Potential (WHP)

(WHP data credited to USDA Forest Service, Fire Modeling Institute)

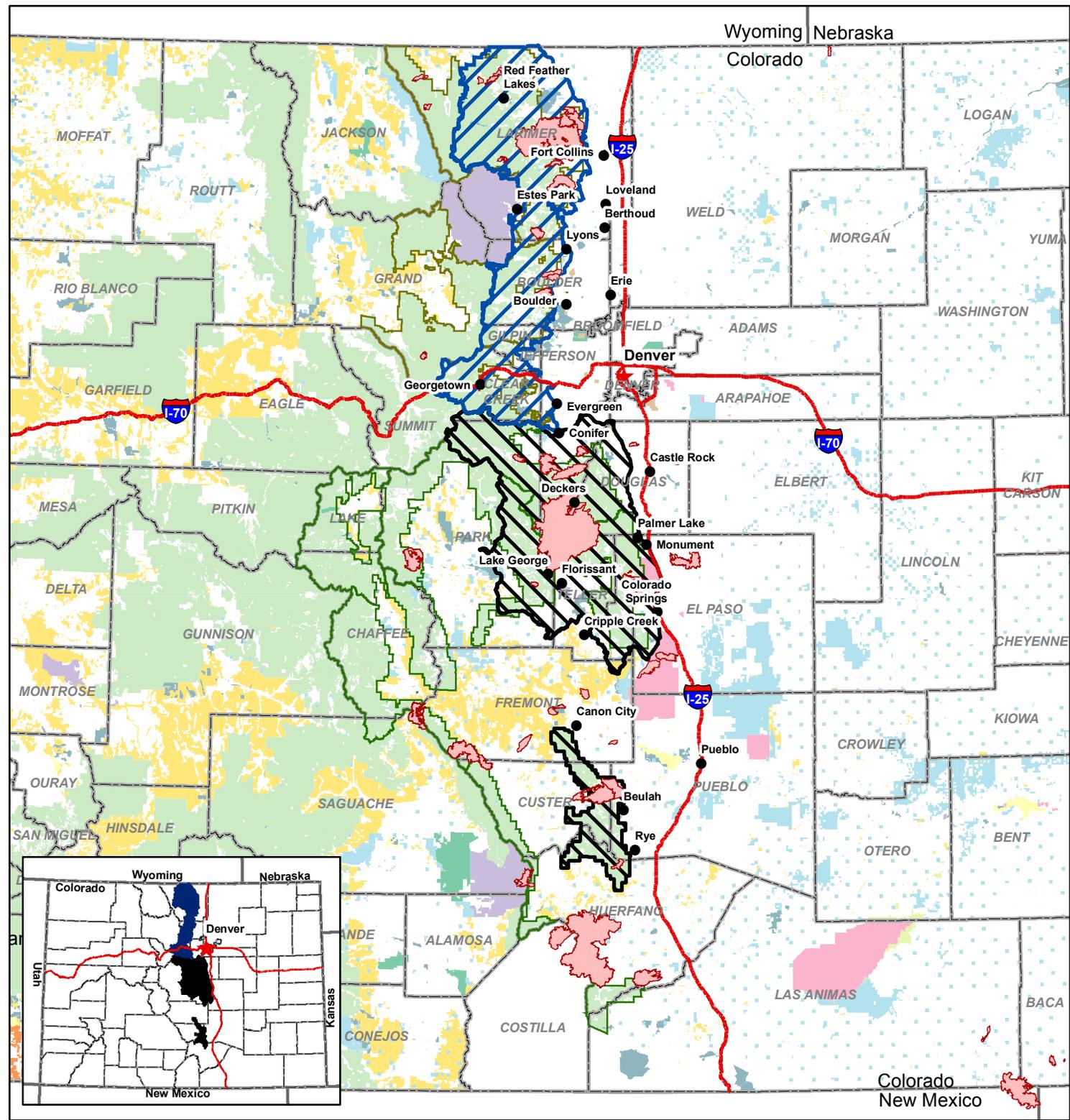
-  Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
 -  Pike and San Isabel National Forests Proposed CFLRP Boundary
 -  Arapaho and Roosevelt National Forests
 -  Pike and San Isabel National Forests
- Wildfire Hazard Potential (2018)**
-  1: Very Low
 -  2: Low
 -  3: Moderate
 -  4: High
 -  5: Very High
 -  6: Non-burnable
 -  7: Water



Map Disclaimer. This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cimarron & Comanche NG, Pueblo, CO. (719) 553-1400.

Collaborative Forest Landscape Restoration Program (CFLRP): Large Fire History

- Large Fire History (1000+Acres)
- Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
- Pike and San Isabel National Forests Proposed CFLRP Boundary
- Arapaho and Roosevelt National Forests
- Pike and San Isabel National Forests
- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- Military Reservation
- National Grasslands
- National Park Service
- Other Federal
- Private
- State
- State, County, City; Areas
- US Fish and Wildlife Service
- US Forest Service

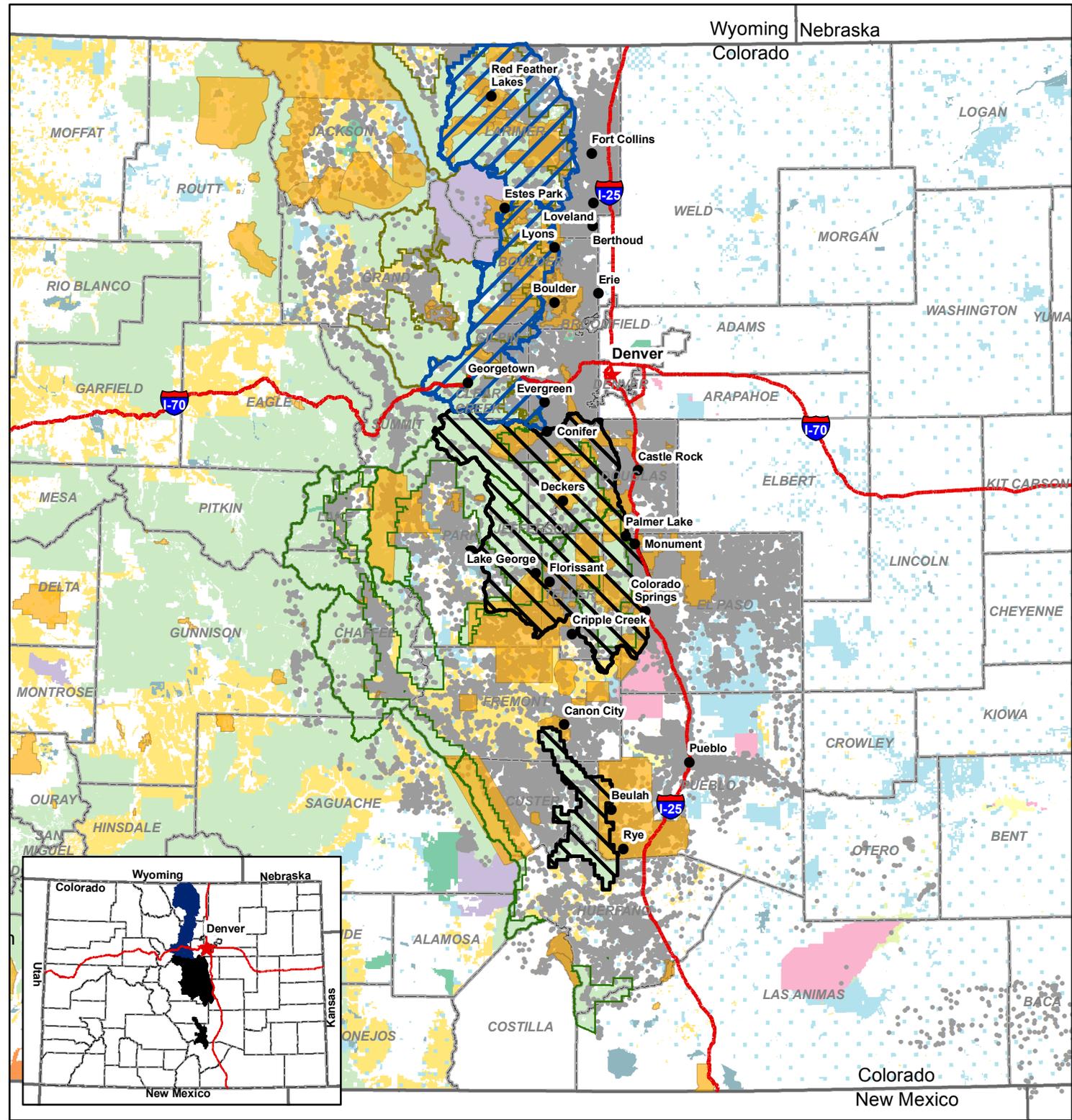


Map Disclaimer. This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cimarron & Comanche NG, Pueblo, CO. (719) 553-1400.

Collaborative Forest Landscape Restoration Program (CFLRP): Structures and Community Wildfire Protection Plans (CWPP)

(CWPP data credited to the Colorado State Forest Service, in conjunction with stakeholders and cooperators compiled the data.)

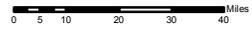
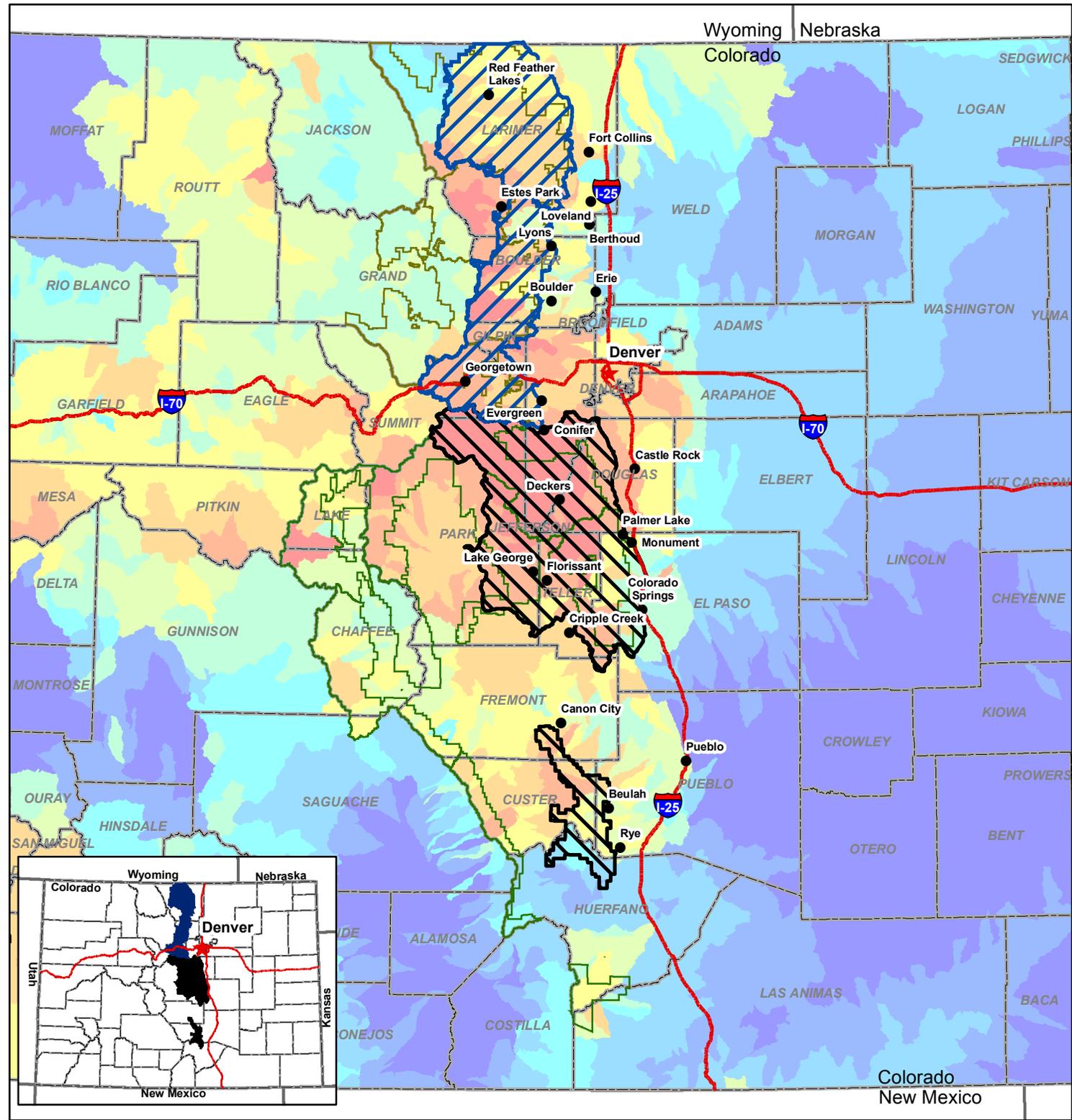
- Structures in Surrounding Counties (2016 data)
- CWPP Community
- ▨ Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
- ▨ Pike and San Isabel National Forests Proposed CFLRP Boundary
- ▭ Arapaho and Roosevelt National Forests
- ▭ Pike and San Isabel National Forests
- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- Military Reservation
- National Grasslands
- National Park Service
- Other Federal
- Private
- State
- State, County, City, Areas
- US Fish and Wildlife Service
- US Forest Service



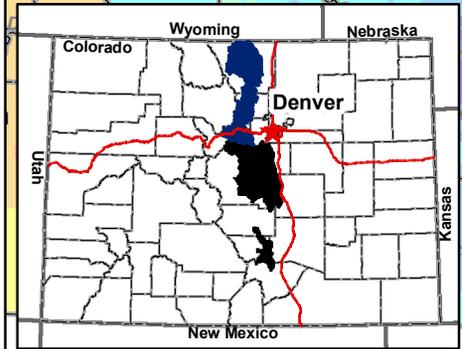
Map Disclaimer. This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cimarron & Comanche NG, Pueblo, CO. (719) 553-1400.

**Collaborative Forest Landscape Restoration Program (CFLRP):
Drinking Water Importance**
(Data credited to Colorado State Forest Service)

-  Arapaho and Roosevelt National Forests Proposed CFLRP Boundary
 -  Pike and San Isabel National Forests Proposed CFLRP Boundary
 -  Arapaho and Roosevelt National Forests
 -  Pike and San Isabel National Forests
- Drinking Water Importance**
-  1 Lowest
 -  2
 -  3
 -  4
 -  5
 -  6
 -  7
 -  8
 -  9
 -  10 Highest



Map Disclaimer. This map is intended to depict physical features as they generally appear on the ground and may not be used to determine title, ownership, legal boundaries, legal jurisdiction, including jurisdiction over roads or trails, or access restrictions that may be in place on either public or private land. Obtain permission before entering private lands, and check with appropriate government offices for restrictions that may apply to public lands. Lands, roads and trails within the boundaries of the National Forest may be subject to restrictions on motor vehicle use. Obtain a Motor Vehicle Use Map, or inquire at the local Forest Service Office for motor vehicle access information. Natural hazards may or may not be depicted on the map, and land users should exercise due caution. This map may not be suitable for navigation. For more information, contact the Pike & San Isabel NF, Cimarron & Comanche NG, Pueblo, CO. (719) 553-1400.



CFLRP proposals are not expected to include ALL of the core treatment types below in their strategy - highlight those treatments that are core to your stated treatment objectives. Note that there are options to use "other" in this table.

Estimated treatments should include all planned treatments in the proposed CFLR landscape, regardless of landownership type. Provide an estimate of the % you expect to occur on NFS lands in column J, and list the other landownership types where you expect treatments to occur, if

Core Restoration Treatment Types	Please briefly fill in additional background information for the prompts below	Year 1*	Year 2	Year 3	Year 4	Years 5-10	TOTAL	Key treatment objectives	Estimated % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
Hazardous Fuels Reduction (acres)		7,000	10,000	21,500	21,500	135,000	195,000	restoration, fuels mitigation	76	other Federal, State, County, private
Mechanical Thinning (acres)		2,000	3,000	4,000	4,000	24,000	37,000	restoration, fuels mitigation	95	State, private
Prescribed Fire (acres)		5,000	7,000	17,500	17,500	111,000	158,000	restoration, fuels mitigation	76	other Federal, State, County, private
Other (acres)							0			
Wildfire Risk Mitigation Outcomes - Acres treated to mitigate wildfire risk		7,000	10,000	21,500	21,500	135,000	195,000	restoration, fuels mitigation	76	other Federal, State, County, private
Wildfire Risk Mitigation Outcomes - WUI acres	WUI designation from Colorado State Forest						0			
Invasive Species Management (acres)		400	400	600	600	3,600	5,600	noxious weed suppression	100	
Native Pest Management (acres)							0			
Road Decommissioning (miles)							0			
Road Maintenance and Improvement (miles)		5	10	10	10	60	95	watershed improvement		
Road Reconstruction (miles)							0			
Trail Reconstruction (miles)							0			
Wildlife Habitat Restoration (acres)		750	1,000	1,500	1,500	9,000	13,750	habitat improvement	100	
Crossing Improvements (number)							0			
In-Stream Fisheries Improvement (miles)							0			
Lake Habitat Improvement (acres)							0			
Riparian Area Improvements (acres)							0			
Soil and Watershed resources enhanced or maintained (acres)		500	750	1,000	1,000	6,000	9,250	watershed improvement	100	
Priority watersheds moved to improved condition class (number)							0			
Stand Improvement (acres)		2,000	3,000	4,000	4,000	24,000	37,000	restoration, fuels mitigation	100	
Reforestation and revegetation (acres)		500	500	500	500	3,000	5,000	watershed improvement	100	
Timber Harvest (acres)**	Sales are primarily ground-based timber	1,000	1,500	2,000	2,000	12,000	18,500	restoration, fuels mitigation	95	State, County, private
Rangeland Vegetation Improvement (acres)										
Abandoned Mine Reclamation/Remediation										
Other										
Other										

*Assume funding requested for Year 1 will be allocated in February 2020 at the earliest

**Note that timber volume produced from the treatment is estimated in a separate attachment - Attachment C.

CFRLP Proposal Attachment C: Utilization of Forest Restoration Byproducts

**Note that acres treated includes all acres treated within the CFLRP boundary. However, the projected annual harvested volume is only for NFS lands.*

Fiscal Year	Estimate of acres awarded annually that will generate restoration byproducts	Total projected annual harvested volume (ccf) from NFS lands	Expected percentage commercially utilized* from NFS lands
2020	1000	8000	95
2021	1500	12000	95
2022	2000	16000	95
2023	2000	16000	95
2024	2000	16000	95
2025	2000	16000	95
2026	2000	16000	95
2027	2000	16000	95
2028	2000	16000	95
2029	2000	16000	95
TOTALS:	18500	148000	950
	<i>Estimated % of TOTAL acres accomplished on NFS lands:</i>	95	
	<i>Estimated % of TOTAL acres accomplished on other landownerships within the CFLRP boundary:</i>	5	

*Commercially utilized refers to the volume you expect to sell across all product classes (sawtimber, biomass, firewood, etc.)

Collaborative Member / Partner Name	Organizational Affiliation	Was this person involved in proposal development?	Primary Issue Category	Second Issue Category	Third Issue Category	If "other," briefly describe
Rob Addington	The Nature Conservancy	Yes	Environmental	Fire Ecology	Watershed	
Greg Aplet	The Wilderness Society	Yes	Environmental	Wilderness	Fire Management	
Cory Ashby	US Forest Service, PSICC	Yes	Federal	Forest Products	Environmental	
Tony Auciello	Jefferson County Open Space	Yes	County	Community Development	Fire Management	
Kevin Barrett	Colorado Forest Restoration Institute	Yes	Research	Fire Ecology	Fire Management	
Mike Battaglia	US Forest Service, RMRS	Yes	Federal	Research	Fire Ecology	
Teagan Blakey	Magnolia Forest Group	Yes	Environmental	Wildlife	Fire Management	
Jenny Briggs	US Geological Survey	Yes	Federal	Watershed	Research	
Peter Brown	Rocky Mountain Tree-Ring Research	Yes	Research	Environmental	Fire Ecology	
Cheyenne Brown	Colgate University Student	Yes	College/University	Environmental	Fire Ecology	
Mike Caggiano	Colorado State University	Yes	College/University	Fire Ecology	Environmental	
Jeff Cannon	Colorado Forest Restoration Institute	Yes	Research	Fire Ecology	Environmental	
Marin Chambers	Colorado Forest Restoration Institute	Yes	Research	Fire Ecology	Environmental	
Tony Cheng	Colorado State University	Yes	College/University	Fire Ecology	Environmental	
Michelle Connelly	Coalition for the Upper South Platte	Yes	Environmental	Watershed	Fire Management	
Casey Cooley	Colorado Parks & Wildlife	Yes	State	Wildlife	Environmental	
Marc Dettenrieder	Teller County	Yes	County	Fire Management	Environmental	
Jennifer DeWoody	US Forest Service, PSICC	Yes	Federal	Environmental	Fire Ecology	
Marla Downing	US Forest Service, ARP	Yes	Federal	Fire Ecology	Environmental	
Carol Ekarius	Coalition for the Upper South Platte	Yes	Watershed	Environmental	Fire Ecology	
Deanna Engelmann	US Forest Service, PSICC	Yes	Federal	Fire Ecology	Environmental	
Jonas Feinstein	Natural Resources Conservation Service	Yes	Federal	Fire Ecology	Environmental	
Jeff Gainey	US Forest Service, PSICC	Yes	Federal	Fire Ecology	Environmental	
Jim Gerleman	US Forest Service, PSICC	Yes	Federal	Fire Ecology	Forest Products	
Eric Howell	Colorado Springs Utilities	Yes	Watershed	Fire Management	other	Drinking Water
Joe Huck	US Forest Service, PSICC	Yes	Federal	Fire Ecology	Environmental	
Chad Julian	Private citizen	Yes	Environmental	Fire Management	Community Development	
Joe Sean Kennedy	US Forest Service, PSICC	Yes	Federal	Fire Management	Fire Ecology	
Kathleen Krebs	Clear Creek County	Yes	County	Fire Ecology	Environmental	
David Laskey	Sugarloaf Fire Protection District	Yes	Fire Management	Fire Ecology	Environmental	
Lyle Laverty	Society of American Foresters	Yes	Forest Products	Environmental	Fire Management	

Jason Lawhon	US Forest Service, R2	Yes	Environmental	Fire Ecology	Environmental	
Larry Lempka	Little Thompson Watershed Coalition; Big Thompson Conservation District	Yes	Watershed	Fire Management	other	Drinking Water
Mike Lester	Colorado State Forest Service	Yes	State	Forest Products	Environmental	
Megan Lowell	US Forest Service, R2	Yes	Federal	Forest Products	Environmental	
Oscar Martinez	US Forest Service, PSICC	Yes	Federal	Fire Management	Environmental	
Madelene McDonald	Denver Water	Yes	other	Watershed	Environmental	Drinking Water
Mike McHugh	Aurora Water	Yes	other	Watershed	Environmental	Drinking Water
Kevin McLaughlin	US Forest Service, ARP	Yes	Federal	Fire Ecology	Forest Products	
Ken Morgan	Colorado Parks & Wildlife	Yes	State	Wildlife	Environmental	
Andy Perri	Denver Mountain Parks	Yes	Tourism	Recreation (non-motorized)	Environmental	
Brad Piehl	JW Associates	Yes	Environmental	Fire Ecology	Watershed	
Joe Reale	City of Westminster	Yes	Environmental	Fire Ecology	Environmental	
Kathleen Roman	Landowner	Yes	Other	Environmental	Fire Management	
Tanner Scott	Student (Oregon State University)	Yes	College/University	Environmental	Fire Ecology	
Samantha Sherwood	Aurora Water	Yes	Utility	Other	Fire Management	Drinking Water
Nick Stremel	Boulder County Parks and Open Space	Yes	County	Environmental	Community Development	
Rick Truex	US Forest Service, R2	Yes	Federal	Fire Ecology	Environmental	
Diana Trujillo	US Forest Service, PSICC	Yes	Federal	Fire Management	Environmental	
Susan Wagner	Magnolia Forest Group	No	Environmental	Fire Ecology	Watershed	
Monte Williams	US Forest Service, ARP	Yes	Federal	Fire Management	Environmental	

January XX, 2020

Jennifer Eberlien
Acting Regional Forester
U.S. Forest Service, Rocky Mountain Region
1617 Cole Blvd.
Lakewood, CO 80401

Dear Ms. Eberlien:

We are pleased to support a proposal submitted by the Front Range Roundtable Landscape Restoration Collaborative for funding made available through the U.S. Forest Service's Collaborative Forest Landscape Restoration Program (CFLRP). As you know, Colorado's Front Range forests are extremely susceptible to high intensity wildfires which pose a serious threat to human and environmental values in the region. If approved, CFLRP funding will facilitate the treatment of 150,000 acres of National Forest lands to protect communities, restore watersheds, improve habitat, and create jobs along the Colorado Front Range.

The 2020 CFLRP proposal was developed by the Landscape Restoration Team of the Front Range Roundtable, a diverse, regionally based forest collaborative that has been working together for over 10 years. The Roundtable includes representatives from local, state and federal land management agencies, non-governmental organizations, local governments, water providers and others engaged in community and watershed protection through forest restoration.

The Front Range CFLRP has been a high priority landscape for multiple organizations and has received funding from a variety of sources over the past 10 years through partnerships and CFLRP. This 2020 proposal includes nearly 45,000 additional acres of adjacent non-federal lands for treatment through important partnerships with Denver Water and Colorado Springs Utilities, among many others. Strategic landscape scale restoration is vital for protecting communities and critical municipal watersheds from the impacts of catastrophic wildfire.

Thank you for your full and fair consideration. Investment in the restoration of Colorado's Front Range forests is a wise investment to avoid the devastating impacts of high-severity wildfires and to encourage ecological, economic and community sustainability.

Sincerely,

Rob Addington
Forest and Fire Program Director
The Nature Conservancy, Colorado Chapter

Paul Branson
Wildfire Mitigation Program Manager
Huerfano County

Peter M. Brown, Ph.D.
Director
Rocky Mountain Tree-Ring Research

Christina Burri
Watershed Scientist
Denver Water

Tony Cheng
Director
Colorado Forest Restoration Institute, and
Professor
Forest & Rangeland Stewardship Dept.,
Colorado State University

Carol Ekarius
Executive Director
Coalition for the Upper South Platte

Paula Fornwalt
Research Ecologist
USDA Forest Service,
Rocky Mountain Research Station

Randal R. Johnson
Fire Marshal
Larkspur Fire Protection District

Michael B. Lester
State Forester and Director
Colorado State Forest Service

Chelsey Nutter
Executive Director
Arkansas River Watershed Collaborative

Jessica Olson
Executive Director
Left Hand Watershed Center

Andy Perri
Program Manager,
Forestry and Natural Resources
Denver Mountain Parks

Jennifer Peterson, Ph.D.
Executive Director
Rocky Mountain Field Institute (RMFI)

Stefan Reinold
Senior Forestry Resource Specialist
Boulder County Parks and Open Space

Brandt Ryder
Science Director
Bird Conservancy of the Rockies

Complete the table below and respond to the question at the bottom of the tab.

For 2010 Project extensions, fill in the annual funding request for the number of years requested for the extension (up to 10)

Fiscal Year 1*	Funding Planned/Requested
Partner fund contributions on NFS lands	\$2,000,000
Partner in-kind contributions on NFS lands	\$50,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$20,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$1,500,000
Total non-CFLRP funding for NFS lands	\$3,570,000
CFLRP Funding Request	\$3,000,000
Total CFLRP funding for NFS lands	\$3,000,000
Partner fund contributions on non-NFS lands	\$300,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
Total non-CFLRP funding for non-NFS lands	\$350,000

***Assume funding requested for Year 1 will be allocated in February 2020 at the earliest**

Fiscal Year 2	Funding Planned/Requested
Partner fund contributions on NFS lands	\$2,000,000
Partner in-kind contributions on NFS lands	\$50,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$2,000,000
Total non-CFLRP funding for NFS lands	\$4,100,000
CFLRP Funding Request	\$4,000,000
Total CFLRP funding for NFS lands	\$4,000,000
Partner fund contributions on non-NFS lands	\$300,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
Total non-CFLRP funding for non-NFS lands	\$350,000

Fiscal Year 3	Funding Planned/Requested
Partner fund contributions on NFS lands	\$1,500,000
Partner in-kind contributions on NFS lands	\$50,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$2,500,000
Total non-CFLRP funding for NFS lands	\$4,100,000
CFLRP Funding Request	\$4,000,000
Total CFLRP funding for NFS lands	\$4,000,000
Partner fund contributions on non-NFS lands	\$300,000
Partner in-kind contributions on non-NFS lands	\$50,000

USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
Total non-CFLRP funding for non-NFS lands	\$350,000

Fiscal Year 4	Funding Planned/Requested
Partner fund contributions on NFS lands	\$2,000,000
Partner in-kind contributions on NFS lands	\$50,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$2,000,000
Total non-CFLRP funding for NFS lands	\$4,100,000
CFLRP Funding Request	\$4,000,000
Total CFLRP funding for NFS lands	\$4,000,000
Partner fund contributions on non-NFS lands	\$300,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
Total non-CFLRP funding for non-NFS lands	\$350,000

Fiscal Years 5-10	Funding Planned/Requested
Partner fund contributions on NFS lands	\$12,000,000
Partner in-kind contributions on NFS lands	\$300,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$300,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$12,000,000
Total non-CFLRP funding for NFS lands	\$24,600,000
CFLRP Funding Request	\$24,000,000
Total CFLRP funding for NFS lands	\$24,000,000
Partner fund contributions on non-NFS lands	\$1,800,000
Partner in-kind contributions on non-NFS lands	\$300,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
Total non-CFLRP funding for non-NFS lands	\$2,100,000

Please provide an **estimate of any funding needed for NEPA and environmental compliance** in support of the CFLRP Project. You may copy/paste the response to the Tier 1 template and/or elaborate with additional details as needed. *NOTE: CFLN can only be used for implementation and monitoring (not planning).*

(Response)

ATTACHMENT G – Forest Leadership Letter of Commitment

The signature(s) below on the Tier 2 proposal reflects the Forest Supervisor(s) awareness of the eligibility, implementation, and monitoring requirements for the Collaborative Forest Landscape Restoration Program (CFLRP), as described in [the Application Process Overview and Criteria for Tier 2 document](#).

Forest Supervisor name(s): Monte Williams (ARP) and Diana Trujillo (PSICC)

I support this CFLRP proposal and the commitment required should the proposed project be selected, including continued collaboration through project implementation.

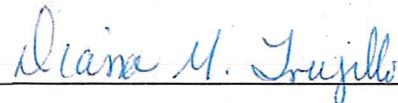
Signature(s) (electronic or scanned):

Arapaho and Roosevelt National Forests, Pawnee National Grassland:

 1-10-2020

Monte L. Williams

Pike and San Isabel National Forests, Cimarron and Comanche National Grasslands:



Diana M. Trujillo

JAN - 9 2020

ATTACHMENT H: References

- Addington, R.N., G.H. Aplet, M.A. Battaglia, J.S. Briggs, P.M. Brown, A.S. Cheng, Y. Dickinson, J.A. Feinstein, P.J. Fornwalt, B.M. Gannon, C.W. Julian, K.A. Pelz, C.M. Regan, J. Thinnis, R. Truex, J.L. Underhill, and B. Wolk. 2018. Principles and practices for the restoration of ponderosa pine and dry mixed-conifer forests of the Colorado Front Range. General Technical Report. RMRS-GTR-373. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. pp 1-129.
<https://www.fs.fed.us/rmrs/publications/principles-and-practices-restoration-ponderosa-pine-and-dry-mixed-conifer-forests>.
- Barrett, K. and T. Cheng. 2018. Front Range Roundtable Status of Knowledge. Colorado Forest Restoration Institute. CFRI-1803. <https://cfri.colostate.edu/publications/>
- Barrett, K. J., P.M. Brown, J. Clement, J.B. Cannon, B. Wolk, and A.S. Cheng. 2017. Front Range Roundtable Collaborative Forest Landscape Restoration Project: 2017 ecological, social, and economic monitoring plan. CFRI-1705. In *Fort Collins, CO*. Colorado Forest Restoration Institute, Colorado State University. https://cfri.colostate.edu/wp-content/uploads/sites/22/2017/10/2017_FR_CFLRP_Monitoring_Plan_Typeset.pdf.
- Battaglia, M., B. Gannon, P. Brown, P. Fornwalt, T. Cheng, and L. Huckaby. 2018. Changes in forest structure since 1860 in ponderosa pine dominated forests in the Colorado and Wyoming Front Range, USA. *Forest Ecology and Management*. 422, 147-160. doi: 10.106/j.foreco.2018.04.010.
- Caggiano, M.D. 2019. Collaboratively engaging stakeholders to develop Potential Operational Delineations. Report No. CFRI-1908. Fort Collins, CO: Colorado Forest Restoration Institute, Colorado State University. <https://cfri.colostate.edu/publications/>
- Caggiano, M.D. 2017. Front Range Roundtable 2016 interagency fuel treatment database: Technical report prepared by the Colorado Forest Restoration Institute. CFRI-1701. Fort Collins, CO: Colorado Forest Restoration Institute, Colorado State University. <https://cfri.colostate.edu/wp-content/uploads/sites/22/2017/10/FRRT-Fuel-Treatment-Database-Technical-Report-1701-03202017.pdf>.
- Caggiano, M. D., W.T. Tinkham, C. Hoffman, A.S. Cheng, and T.J. Hawbaker. 2016. High-resolution mapping of development in the wildland-urban interface using object-based image extraction. *Heliyon* 2:e00174 [online]. DOI: 10.1016/j.heliyon.2016.e00174.
- Cannon, J.B., B.M. Gannon, Z. Wurtzebach, A.S. Cheng. 2019. Report on potential application of landscape-scale analyses for assistance with Forest planning. Colorado Forest Restoration Institute. CFRI-1910. <https://cfri.colostate.edu/publications/>
- Cannon, J.B., K.J. Barrett, B.M. Gannon, R.N. Addington, M.A. Battaglia, P.J. Fornwalt, G.H. Aplet, A.S. Cheng, J.L. Underhill, J.S. Briggs, and P.M. Brown. 2018. Collaborative

- restoration effects on forest structure in ponderosa pine forests of Colorado. *Forest Ecology Management*. 424, 191-204. doi.org/10.1016/j.foreco.2018.04.026
- Cannon, J.B. and K.J. Barrett. 2016. Front Range CFLRI Monitoring: Progress, Outcomes, and Recommendations. Colorado Forest Restoration Institute. CFRI-1603. <https://cfri.colostate.edu/publications/>
- Chambers, M.E., P.J. Fornwalt, S.L. Malone, and M.A. Battaglia. 2016. Patterns of conifer regeneration following high severity wildfire in ponderosa pine-dominated forests of the Colorado Front Range. *Forest Ecology and Management* 378:57-67. <http://dx.doi.org/10.1016/j.foreco.2016.07.001>.
- Cheng, A.S., A.K. Gerlak, L. Dale, and K.M. Mattor. 2015. Examining adaptability of collaborative governance in public ecosystem management: insights from the Front Range Roundtable, Colorado, USA. *Ecology and Society* 20 (1):35 (<http://dx.doi.org/10.5751/ES-07187-200135>).
- Clement, J. M., and A.S. Cheng. 2011. Using analyses of public value orientations, attitudes, and preferences to inform national forest planning in Colorado and Wyoming. *Applied Geography* 31 (2):393-400.
- Colorado State Forest Service (CSFS). 2019. *Community Wildfire Protection Plans*. [cited November 29, 2019]. Available from <https://csfs.colostate.edu/wildfire-mitigation/community-wildfire-protection-plans/>.
- Colorado State Forest Service (CSFS). 2018. Report on the Health of Colorado's Forests. <https://csfs.colostate.edu/csfspublications/#1554914170400-7fe759f4-5a5d>
- Colorado State Forest Service (CSFS). 2016. *Five-Year Strategic Plan: 2016-2020*. Colorado State University, Fort Collins, CO, 12 pp.
- Colorado State Forest Service (CSFS). 2009. *Forest Action Plan: Colorado Statewide Resource Assessment - Foundation for Strategic Discussion and Implementation of Forest Management in Colorado*. Colorado State University, Fort Collins, CO, 96 pp. <https://csfs.colostate.edu/forest-action-plan/>
- Davis, K.T., S.Z. Dobrowski, P.E. Higuera, Z.A. Holden, T.T. Veblen, M.T. Rother, S.A. Parks, A. Sala, and M.P. Maneta. 2019. Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration. *Proceedings of the National Academy of Sciences* 116 (13):6193-6198. <https://www.pnas.org/cgi/doi/10.1073/pnas.1815107116>.
- Dillon, G.K., J. Menakis and F. Fay. 2015. [Wildland Fire Potential: A Tool for Assessing Wildfire Risk and Fuels Management Needs](#). pp 60-76 In Keane, R. E.; Jolly, M.; Parsons, R.; and Riley, K. Proceedings of the large wildland fires conference; May 19-23, 2014; Missoula, MT. Proc. RMRS-P-73. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 345 p.

- Front Range Roundtable (FRRT). 2006. Living with Fire: Protecting Communities and Restoring Forests. Findings and Recommendations of the Front Range Fuels Treatment Partnership Roundtable.
http://www.treefarmer.com/images/Front%20Range%20Roundtable_2006_recommendations.pdf
- Gannon, B., Y. Wei, L.H. MacDonald, S.K. Kampf, K.W. Jones, J.B. Cannon, B.H. Wolk, A.S. Cheng, R.N. Addington, and M.P. Thompson. 2019. Prioritizing fuels reduction for water supply protection. *International Journal of Wildland Fire* 28 (10) 785-803.
<https://doi.org/10.1071/WF18182>
- Huayhuaca, C. 2016. Collaborative Watershed Assessment: A Profile of the Upper South Platte Partnership. Fort Collins, CO: Colorado State University, Colorado Forest Restoration Institute. <https://cfri.colostate.edu/wp-content/uploads/sites/22/2017/10/2016-USPP-Final-Report-2016.pdf>.
- Kaufmann, M., T. Veblen, and W. Romme. 2007. Historical fire regimes in ponderosa pine forests of the Colorado Front Range, and recommendations for ecological restoration and fuels management. Colorado Forest Restoration Institute.
<https://cfri.colostate.edu/publications/>
- Liu, Z., M. C. Wimberly, A. Lamsal, T. L. Sohl, and T. J. Hawbaker. 2015. Climate change and wildfire risk in an expanding wildland–urban interface: a case study from the Colorado Front Range Corridor. *Landscape Ecology* 30:1943-1957. DOI: 10.1007/s10980-015-0222-4.
- Memorandum of Understanding (MOU). 2019. *Shared Stewardship Strategy*. State of Colorado and USDA Forest Service, Rocky Mountain Region. Denver, CO.
- Morici, K., B. Wolk, J.B Cannon, B.M. Gannon, R.N. Addington. 2019. Ecological Monitoring Report for Peaks to People Water Fund Demonstration Sites. Colorado Forest Restoration Institute. CFRI TB-1901. <https://cfri.colostate.edu/publications/>
- O'Connor, C.D., D.E. Calkin, and M.P. Thompson. 2019. Engaging the fire before it starts: A case study from the 2017 Pinal Fire (Arizona). *Wildfire* 28 (1):14-18.
- O'Connor, C.D., M.P. Thompson, and F. Rodriguez y Silva. 2016. Getting ahead of the wildfire problem: quantifying and mapping management challenges and opportunities. *Geosciences* 6(3):35.
- Rhoades, C., S. Miller, T. Covino, A. Chow, and F. McCormick. 2017. Stream water quality concerns linger long after the smoke clears: learning from Front Range fires. *Colorado Water* March/April:22-26. <https://www.fs.usda.gov/treesearch/pubs/55536>.
- Rice, J.R., L.A. Joyce, C.R. Regan, D. Winters, R. Truex. 2018. Climate Change Vulnerability Assessment of Aquatic and Terrestrial Ecosystems in the U.S. Forest Service Rocky Mountain Region. General Technical Report. RMRS-GTR-376. Fort Collins, CO: US

- Department of Agriculture, Forest Service. Rocky Mountain Research Station. 216p.
<https://www.fs.usda.gov/treearch/pubs/56392>
- Richardson, E. 2016. Spatial component for the decision support systems of Colorado's forest products industry, with a case study on northern Colorado sawmills. Master of Science Thesis. Department of Forest and Rangeland Stewardship. Colorado State University, Fort Collins, CO.
- Rother, M.T., and T.T. Veblen. 2016. Limited conifer regeneration following wildfires in dry ponderosa pine forests of the Colorado Front Range. *Ecosphere* 7 (12):e01594. 10.1002/ecs2.1594.
- Schoennagel, T., T.T. Veblen, and W.H. Romme. 2004. The interaction of fire, fuels, and climate across Rocky Mountain forests. *BioScience* 54 (7):661-676.
- Scott, J.H., M.P. Thompson, D.E. Calkin. 2013. A wildfire risk assessment framework for land and resource management. General Technical Report. RMRS-GTR-315. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 83 p.
https://www.fs.fed.us/rm/pubs/rmrs_gtr315.pdf
- Simmons, Eric A, Morgan, Todd A., Hayes, Steven W., Rymniak, Luke, 2019. Timber Use, Processing Capacity and Capability within the Pike-San Isabel National Forest Timber-Processing Area. Forest Industry Research Program-University of Montana.
- Stevens-Rumann, C.S., and P. Morgan. 2019. Tree regeneration following wildfires: a review. *Fire Ecology* 15:15. <https://doi.org/10.1186/s42408-019-0032-1>.
- USDA Forest Service (USFS). 2016. U.S. Forest Service National Visitor Use Monitoring survey results: national summary report for data collected FY2012 through FY2016. Washington, DC: US Department of Agriculture, Forest Service.
<https://www.fs.fed.us/recreation/programs/nvum/pdf/5082016NationalSummaryReport062217.pdf>.
- Williams, E. and J. Cannon. 2019. Upper South Platte Partnership Ecological Resilience Monitoring. Colorado Forest Restoration Institute. CFRI-1902.
<https://cfri.colostate.edu/publications/>