North Yuba Forest Partnership Collaborative Forest Landscape Restoration Program Project

Tier 2 Proposal

2020

Tahoe and Plumas National Forests

Region 5 – Pacific Southwest Region

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Figure 1. Fisheye photograph of untreated stand in the Yuba Project, which is in the NYFPP area. Photo by USFS.

Proposal Overview

Project Map

The North Yuba Forest Partnership Project (NYFPP) area is an hour and a half drive from both Sacramento and Reno and just over three hours from the San Francisco Bay Area. The North Yuba River watershed, located in the northern Sierra Nevada in California, provides clean water for homes, communities, businesses, and ecosystems within the watershed and beyond. This extends to agriculture in California's Central Valley, fisheries in the San Francisco Bay, and municipal water supplies throughout the State. Not only is the water used for human consumption, agriculture, and hydroelectric power, it also supports aquatic and riparian habitats and a host of recreational activities. Given this watershed's regional importance (see Forests to Faucets layers), residents, agencies, and non-profit organizations recognize an urgent need to address its high to very high wildfire hazard potential (see Wildfire Hazard Potential layer, version 2018 classified). Furthermore, large areas are currently occupied by dense stands of smaller-sized, less resilient trees that are more susceptible to insects, disease, and drought (see Insect and Disease Mortality layers). A large, severe wildfire or widespread insect or disease infestation would have long-term catastrophic consequences for communities, forests, air, soils, water, habitats, recreational opportunities, and local and downstream economies.

Landscape Boundaries

The NYFPP encompasses a total of approximately 356,000 acres. The Forest Service administers and manages approximately 265,000 acres (75 percent) of this landscape. The landscape boundaries were selected for a mix of ecological, emergency preparedness, and economic reasons. The perimeter of the landscape is inclusive of and extends beyond the hydrological boundary of the North Yuba River watershed, allowing for large-scale restoration of the entire drainage and adjacent areas that influence it. The southern portion of the landscape boundary extends beyond the watershed boundary to include the Pliocene Ridge Road, which serves as an important ingress/egress route in the event of a wildfire. Restoration planning at this scale provides important cost-saving efficiencies as it can take considerable time and resources to plan restoration projects and complete environmental compliance, even for smaller-sized Forest Service projects. This landscape is uniquely positioned for restoration planning and implementation at a large scale for two main reasons. First, high-quality, spatially explicit research provides the scientific foundation for restoration planning within this landscape. This includes a completed landscape-specific historic range of variability (HRV) and departure data to quantitatively inform the planning effort. In addition, another effort, co-led by the Forest Service and The Nature Conservancy to be completed in summer 2020, will use spatial and survey data to provide a timber supply assessment, forest structure and composition assessment, biodiversity assessment, and resilience metrics for this landscape. Second, this watershed is a high priority for restoration for both the Forest Service and committed stakeholders. Partners are working together to collaboratively plan, collectively finance, and cooperatively implement restoration work in this landscape. Financing restoration activities through a Forest Resilience Bond uniquely allows this partnership to more efficiently capture matching funds from downstream stakeholders, embodying the Secretary's vision of Shared Stewardship while accelerating the pace and scale of implementation.

Shared Restoration Opportunities and Stewardship

The NYFPP builds on the foundation of partnership-focused projects already underway in the Yuba River watershed and across the Sierra Nevada. Recognizing that community safety and forest health are complementary and interrelated, the Forest Service and other public and private stakeholders are acting together to increase the pace and scale of forest restoration. NYFPP goals are to improve and restore forest health and resilience, reduce the risk of high-severity wildfire, protect and secure water supplies, and protect communities from the effects of high-severity wildfire and climate change. Regionally, the North Yuba River watershed has been identified as a priority area for the Sierra Nevada Watershed Improvement Program (WIP), which is a large-scale restoration program organized and coordinated by California's Sierra Nevada Conservancy and the Forest Service to restore the health of California's primary watersheds and create resilient communities. The North Yuba Forest Partnership partners have recently signed a Memorandum of Understanding (MOU) to recognize and formalize their commitment to work together to implement forest restoration and fuels reduction treatments on National Forest System lands across this landscape (See Attachment H). Partners have committed time, funding, and resources to the success of this effort. In addition, the NYFPP is nested within the broader Tahoe-Central Sierra Initiative (TCSI), a collaborative partnership covering 2.4 million acres spanning the Tahoe and Eldorado National Forests and the Lake Tahoe Basin Management Unit. TCSI is focused on accelerating implementation of ecologically sound forest restoration at large-landscape scales, developing wood products and biomass utilization infrastructure to support a forest restoration economy, and exploring innovative process, investment, and governance tools. Other ongoing efforts to promote resilience in this landscape include the work of the Fire Safe Councils in Yuba and Sierra Counties and cooperative efforts with neighboring industrial forest land owners.

Figure 2. Photograph of the community of Downieville during the Downieville Classic Mountain Bike Race and Festival held in late July to early August. Recreational visitors drastically increase the area's population bringing critical revenue to local communities along with additional fire risk and complications for safe ingress and egress in the event of wildfire. Photo by Sierra Buttes Trail Stewardship.

Economic, Social, and Ecological Context

Social and Economic Context

This landscape lies in the backyards of the communities of Nevada City, Grass Valley, North San Juan, Camptonville, Dobbins, Oregon House, Downieville, Sierraville, Sierra City, La Porte, and Strawberry Valley with homes and communities peppered throughout the forest landscape. It also includes the North Yuba Recommended Wild and Scenic River; Yuba River Scenic Byway; numerous campgrounds, resorts, and cabins; river rafting and fishing opportunities; hiking and equestrian trails, including over 40 miles of the Pacific Crest National Scenic Trail; mountain biking trails including those used for the famous Downieville Classic Mountain Bike Race; and snowmobiling and skiing opportunities. The upper reaches of the area offer high mountain scenery, with the prized Sierra Buttes as its centerpiece. The NYFPP's proximity to urban areas, combined with its year-round attractive recreation opportunities, draws hundreds of thousands of visitors annually with heavy recreational use during the fire season. In addition to providing scenic and recreational opportunities, the landscape has a rich array of natural and cultural resources. This area is within Nisenan tribal lands with trade and hunting grounds that overlap with the Washoe and Maidu Tribes. The area has an extensive history of mining, timber extraction, and grazing associated with California's Gold Rush, beginning in the 1850s, and there are numerous valuable, historic sites dating back to this period. The landscape is the source of clean drinking water for millions of people in California and provides habitat for rare and endangered fish and amphibian species, irrigation water for agriculture, recreational waters for boating and fishing, and hydroelectric power.

Local communities of North San Juan, Camptonville, Downieville, Sierra City, and Bassets are identified as low-income communities[i]. Residents depend on outdoor recreation and tourism, as well as natural resources management for their livelihoods. The destruction of Paradise, CA, just 70 miles away, from the 2018 Camp Fire has heightened widespread support for fuels reduction and forest restoration work. Communities in this forested landscape lie within High and Very High Fire Severity Zones according to the California Department of Forestry and Fire Protection (CAL FIRE) and the Wildfire Hazard Potential map. The safety of residents and firefighters are at high risk due to the potential for extreme fire behavior and blocked ingress and egress routes. This project will advance the Yuba County Foothills Community Wildfire Protection Plan and the Sierra County Community Wildfire Protection Plan by implementing prioritized hazardous fuels treatments. Without action, a wildfire in this landscape could result in economic losses to entire communities; loss of highly valued recreation opportunities; a lack of basic services, including clean water, not only locally but also for downstream users extending to the Central Valley and San Francisco Bay Area; and could result in losses of life.

Ecological Context

The NYFPP area is laced with steep, rugged canyons and is mostly forested (90 percent of the area), with some of the most productive forestland in the United States. Steep, remote portions of the watershed currently contain some of the northern Sierra's highest quality old growth forests. Sierra mixed conifer is the most common forest type with red fir occurring at the higher elevations. Areas of aspen, chaparral, riparian flora, and meadow systems are interspersed throughout the landscape. Due to the high growth capacity and biodiversity of this area, it

provides habitat important to several protected and sensitive wildlife and plant species, including approximately one-third of the known, resident California spotted owls on the Tahoe National Forest. It also contains habitat for protected yellow and red legged frogs and supports streamflow for downstream populations of spring run Chinook salmon, steelhead, sturgeon, Sacramento splittail, and other protected species.

Based on fire modeling conducted by the Forest Service and CAL FIRE, the area includes some of the highest risk areas in California for high-severity fires that could degrade remaining old forest. Likewise, the Watershed Condition Framework identifies most of smaller watersheds within this landscape as "functioning at risk." The primary indicators resulting in this classification are riparian and aquatic habitat, water quality, roads and trails, departure in fire regime, and wildfire hazard and risk. The NYFPP's current fire regime is highly departed[ii]. For thousands of years low- and mixed-severity wildfires occurred frequently across the landscape, shaping both species composition and forest structure[iii]. These fires reduced surface and ladder fuels, often reburning areas before forest fuels could excessively accumulate and provided important ecosystem benefits. The landscape has been significantly altered in the last 150 years by placer and hydraulic mining, logging, grazing, and fire exclusion. Over the past century, an emphasis on wildfire exclusion has removed fire's historic ecological role, resulting in extensive areas of overly dense forest stands that are more susceptible to wildfire, insects, disease, and drought. Pine and oak, which are more fire resilient, have been replaced by less resilient tree species (fir and cedar), heightening the risk of severe disturbances. Areas of the landscape that have burned in recent decades have burned at mostly higher severity. Existing unnaturally high tree densities and heavy fuel loading increases the probability of large, stand-replacing fire, which could significantly reduce forested habitat and cause sedimentation into water supplies. Moreover, forest conditions that lead to current wildfire risk could be further exacerbated by extreme drought, like the recent 2012-2016 event, and bark beetle infestations with related tree mortality.

The NYFPP has an extensive road network, covering approximately 1,800 miles, portions of which are threatening watershed function and aquatic habitat due to improper road location, surfacing, and/or drainage. The NYFPP includes over 140 meadows, covering approximately 2,400 acres. Meadows and associated riparian and wetland areas contain upwards of 90% of the biodiversity found within forests, function as groundwater storage basins, and provide refugia for wildlife. These habitats are highly susceptible to damage from high intensity fires; however, low intensity fires can benefit these ecosystems. Fire exclusion along with other changes to the hydrology, including historic mining and roads, has allowed conifers to encroach into meadows, aspen stands, and riparian areas degrading conditions in these areas and increasing the risk to long-term survival. A large-scale disturbance, such as a severe wildfire, would further exacerbate conditions by resulting in additional overland water flow. In addition, an intense wildfire burning through the landscape's over 700 historic mine sites would threaten water quality as subsequent erosion could release sediment, heavy metals, and mercury, historically used to process gold, into tributaries to the North Yuba River. Finally, over 700 identified acres in this landscape are currently infested with invasive weeds, which displace native vegetation and habitat, and can create ladder and flashy fuels, placing forested areas at greater risk to wildfire.

Figure 3. Photograph of the Rubicon River Canyon approximately 50 miles to the southeast of the NYFPP area which burned in the 2014 King Fire and resulted in more than a 30,000 acre patch of high severity fire leaving the entire Rubicon Canyon and neighboring hillsides deforested and prone to landslides, sedimentation into the Rubicon and American Rivers, and decimating forested habitat for more than a century to come. In addition to similar concerns for impacts to water quality and habitat, the North Yuba River Canyon contains homes, communities and up to tens of thousands of visitors on a given day during the fire season. Photo by USFS.

Landscape Strategy and Proposed Treatments

Desired Conditions and Strategy

Prior to mid-1800s Euro-American settlement, the Sierra Nevada landscape exhibited a high degree of resilience to major ecological change[iv]. Hence, understanding the range of ecological conditions that occurred in the NYFPP area prior to Euro-American settlement is a powerful tool for informing desired ecological conditions. This project is uniquely positioned to utilize the results of a recent, site specific study identifying historic range of variation (HRV) for the Upper Yuba River watershed[v]. The HRV study uses a disturbance succession model to quantify the pre-Euro-American settlement range of variability for vegetation composition and structure, based on estimates of fire return intervals, historic fluxes in climate, and natural tree senescence. In addition to quantifying the resilient envelope of changing forest structure and composition over time, the study also defines the area's current departure from HRV, thereby quantifying the gap between current and desired ecological conditions.

The HRV study results indicate that the current landscape successional stage composition is dramatically departed from modeled historic conditions. Today's landscape contains much more forested area in larger, continuous patches of early- and mid-successional stages and much less forested area in the late-successional stage. In addition, depending on the cover type and successional stage, the current canopy cover is substantially greater when compared to the HRV. Importantly, the study highlights wildfire's prevalence during the historical reference period (1550 – 1850), contrasting sharply with the fact that fire has been excluded from most of this landscape for the past century. Fire also produced early seral conditions, expressed as gaps

and openings in the forest, resulting in a wider diversity of habitat types important for biodiversity and resilience to severe disturbances, and which are currently lacking across much of the landscape.

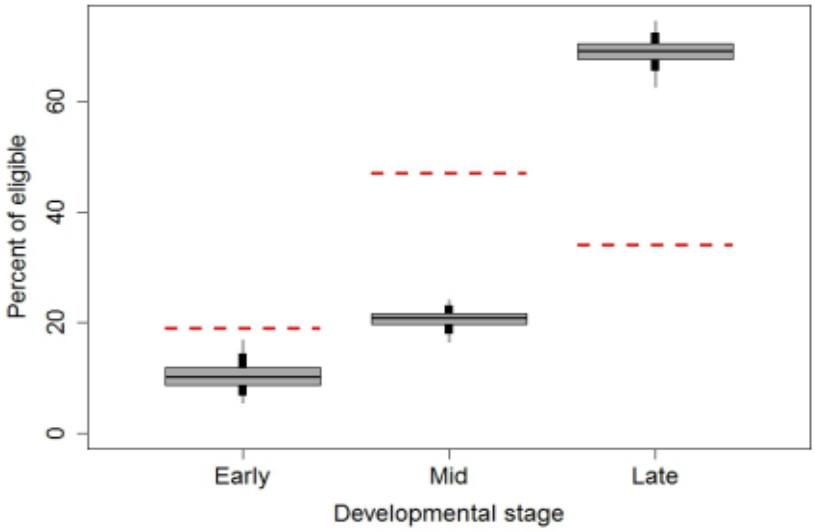

Figure 4. HRV and current departure for distribution of developmental stages. Boxes represent the interquartile range (25th-75th percentiles) of the HRV; the median is the dark horizontal line in the middle of the box. Thick, solid vertical lines represent the 5th-95th percentiles of the HRV, and the thin, grey vertical extensions represent the full range of the simulated HRV. Dashed, red horizontal lines represent the current condition of the landscape. From Gen Tech Rep RMRS-GTR-385.

The treatment strategy will also be informed by a resource assessment for the 2.4 million-acre TCSI landscape, which includes the NYFPP area. This analysis (expected in summer 2020) is being developed by the TCSI Science Foundation, a joint effort led by The Nature Conservancy and the Forest Service's Pacific Southwest Research Station. The assessment looks at forest structure; fire hazard and risk; focal species; biodiversity; carbon stocks; and drought resilience, and defines the departure of current conditions from desired, resilient conditions. The assessment will identify the pace, scale, and prioritization of landscape-scale restoration most likely to be successful at improving forest structure, decreasing high-severity fire risk, improving habitat for focal species and biodiversity, storing carbon, and improving drought resilience.

The NYFPP landscape is in dire need of active restoration. Using the historical resilience envelope provided by the HRV study, the partnership is in an excellent position to set quantitative, measurable goals for increasing forest resilience to severe disturbances, including wildfire, insects, diseases, and drought. The HRV and TCSI results will serve as a guidepost, with projected climate change incorporated, to produce a landscape resilient to anticipated mid-century conditions. In the Wildland-Urban Interface (WUI) and along ingress/egress routes, treatment will be driven predominantly by the goals of reducing flame lengths and providing for strategic safety zones, evacuation routes, and control lines for effective wildfire response. In habitat for protected species, the goal will be to maintain and enhance important habitat conditions, for example old forest characteristics important to the California spotted owl.

To guide proposed actions on this landscape, over the next six months a spatially explicit integrated risk and opportunity map will be prepared, using a well-developed methodology[vi]. The map will display strategic areas, natural resources, and human-built assets in the NYFPP,

occupied protected species habitats, meadows, wetlands, ingress/ egress routes, etc. Stakeholders will collaboratively rank strategic areas, resources, and assets (SARAs) based on uniqueness/rarity/endemism, legal requirements, and critical infrastructure, and then model how SARAs could be affected by potential wildfire intensities. In some cases, fire is more likely to benefit the resource, while in other cases it is likely to have a negative impact. This effort will highlight areas at highest risk from high intensity fire as well as the areas that could most benefit from fire under certain conditions. This information, together with HRV and TCSI data and the community wildfire protection plans, will be used to develop site-specific treatment prescriptions and a phased treatment plan that accounts for operability constraints, regulatory restrictions, and the economic cost of treatment and value of forest byproducts.

The NYFPP centers on ecologically-based forest management, which seeks to reduce the risk of uncharacteristic, high-intensity wildfire by promoting forest conditions that are more resilient to drought, climate change, and other disturbances. Restoration treatments will shift species composition, landscape patterns, and forest stand heterogeneity to conditions expected under a frequent fire regime and changing climate while also protecting and restoring a natural hydrologic regime, watershed health, and native biodiversity. This strategy emphasizes the key ecological role that low- to moderate-intensity, beneficial fire provides to fire-dependent conifer forests in the northern Sierra Nevada. Prescribed fire and ecologically-based forest thinning, in addition to other treatment activities will be used to accomplish restoration goals (see Appendix B).

Forest resilience focused treatments will include mechanical and aerial thinning of commercial and noncommercial sized trees, hand thinning, fuel break creation and maintenance, pile burning, and prescribed fire. Treatments will be designed to improve residual tree health by reducing stand densities and surface and ladder fuels while promoting tree species and habitat characteristics important for wildlife. While many areas of the NYFPP have too many trees, many of the regenerating trees in this landscape are also the wrong species to achieve a resilient forest. Reforestation will reestablish desired, resilient species compositions by promoting space and conditions for regeneration of pine and oak and planting pines including rust resistant sugar pine (developed in response to a non-native host that decimated sugar pine in this landscape) in openings and a mix of species in currently monoculture plantation to increase heterogeneity of forest stands and resilience to native and non-native pests. Steep slopes will be thinned using methods to reduce or eliminate ground disturbance or treated exclusively with prescribed fire and/or naturally ignited wildfire managed for resource benefits. Meadow, riparian, and wetland restoration actions will focus on restoring hydrologic function through restoration of stream channels and drainage patterns. Road and drainage work will reduce stream sedimentation and improve hydrologic function. Existing roads needed for project operations and other access will be maintained, improved, or reconstructed to reduce risk to “functioning at risk” watershed conditions. Unneeded and unauthorized roads will be decommissioned to improve soil and watershed conditions. Early detection and control and elimination of non-native, invasive species will be conducted using a variety of treatment methods.

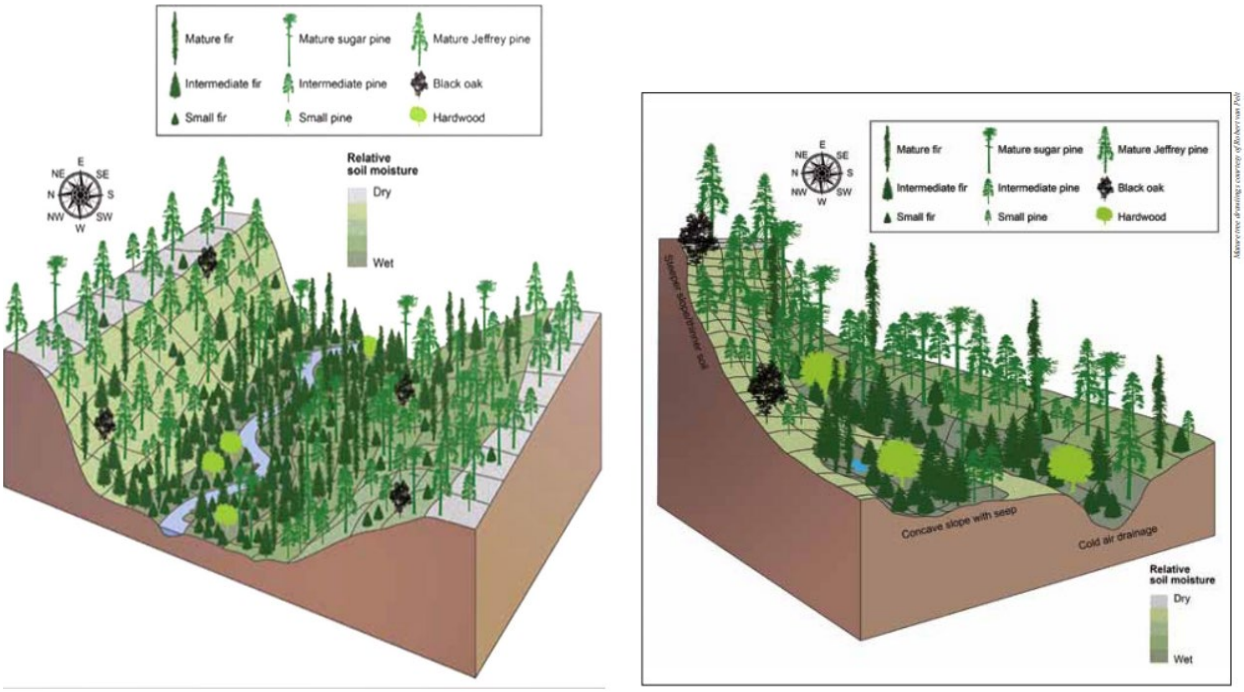

Figure 5. Landscape and stand level strategies for resilient forest structure and composition that have been identified as guides for ecologically-based forest management in the Sierra Nevada mixed conifer Forest. From Gen Tech Rep PSW GTR-237[vii]

Wildfire Risk Reduction Strategy

The strategy for reducing long-term wildfire risk focuses on increasing landscape resilience to uncharacteristic wildfire (and other severe disturbance effects). The strategy utilizes a three-pronged approach to managing and reducing risk of devastating wildfires. The first component aims to reduce fuels along ingress and egress routes to promote safer evacuation of residents and the recreating public in the event of wildfire. The second is to create shaded fuel breaks along key geographic features, such as roads and ridgetops, to contain high-severity fires as they occur. The third component is to treat the broader landscape contained within and between the fuel breaks to reduce fuels and enhance forest resilience to severe disturbances, particularly uncharacteristic wildfire effects. This third component will utilize the findings of the HRV and TCSI Studies, combined with future climate predictions, to design treatments aimed at developing a landscape resilient to anticipated mid-century climate conditions. The strategy will be accomplished on the ground with prescribed fire and ecologically-based thinning to reduce current fuel loads to safer levels and reintroduce fire as a natural ecological process.

The overall strategy will reduce wildfire management costs in the landscape in several ways. It will improve ingress/egress routes, thereby improving access for first responders to wildfire incidents and providing staging areas and anchor points for suppression activities, such as back burning. The strategy will decrease fuel loads in the WUI, which will improve the efficacy of protecting communities, businesses, and infrastructure in the event of a wildfire. Additionally, the strategy will alter future wildfire behavior by reducing fuel loads, reducing forest stand densities, and enhancing forest structure heterogeneity. Each of the strategy's three components will mitigate risks associated with future wildfires, decrease the cost of fighting fire, and increase the ability of local communities to withstand wildfire.

Prescribed fire work (including burn plan development and burn crew staffing) will be accomplished by a combination of Forest Service staff, qualified partner staff (e.g. TNC issues its own red cards and follows National Wildfire Coordinating Group (NWCG) guidelines), and qualified contractor staff. The Nature Conservancy (TNC) holds a Master Participating Agreement with the Forest Service and is already planning and implementing prescribed fire projects in collaboration with the Forest Service on the Tahoe National Forest.

An existing MOU with neighboring land managers (Sierra Pacific Industry) has facilitated cross ownership planning and implementation of fuel breaks within the NYFPP area, thereby increasing efficiencies. Fire safe councils in Sierra and Yuba Counties are working with communities and property owners to design and implement complementary treatments on private lands. An existing Master Stewardship Agreement between the Tahoe National Forest and Sierra County further improves efficiency by facilitating cross ownership implementation of fuels reduction projects in the area. Finally, Caltrans is planning for cross-boundary fuels reduction projects along State Highway 49 in the NYFPP area.

The Partners will maintain an open dialogue through public meetings, websites, field tours, and direct engagement. Additionally, the Tahoe National Forest is working with partners to amend the Forest Plan to allow naturally-ignited (lightning-caused) wildfires under appropriate conditions to be managed for resource benefits. If adopted, the proposed amendment, which is underway, will be integrated into the landscape strategy.

Figure 6. Example of a Sierra Nevada mixed conifer stand immediately after thinning on the Tahoe National Forest. This stand was thinned to improve forest health, reduce ladder fuels, and improve stand resilience, while maintaining important habitat features for wildlife use. Using a thinning strategy that favors creating clumps, gaps, and individual trees to create resilience, this type of thinning prescription favors larger, fire resilient pines and removes shade tolerant, less resilient fir and cedar. This treated stand is immediately more resilient to a wildfire under most conditions and creates opportunities for use of prescribed fire in the near future to complete treatment objectives and maintain low fuel conditions for the next several decades. Photo by USFS.

Benefits to Local Communities

Forest and watershed health in the NYFPP area, of which nearly 70% is managed by the Forest Service, are vital to the communities within the landscape as well as to surrounding and downstream users and beneficiaries. Downieville, with a population of approximately 3,000, serves as the seat of Sierra County and is imbedded in the NYFPP area. In addition, the NYFPP area encompasses several other communities and receives hundreds of thousands of annual visitors. Communities and visitors within and adjacent to this rural landscape are currently at-risk due to forest conditions that increase the risk of wildfire, drought, insects, and disease. A wildfire or other high mortality event in this area is highly likely to impact essential services, such as ingress and egress, water, power and communications infrastructure, along with impacting income from recreation and could result in unacceptable losses of life.

Given the steep topography and high fire risk, project planning efforts are being based on strategic placement and spatially explicit treatments, with a high priority given to at-risk communities, emergency response, and evacuation access routes. With successful implementation of the NYFPP, the communities of Downieville, Camptonville, Sierra City and others would be better protected in the event of a wildfire with safer ingress and egress along State Highway 49 and County and Forest roads, and additional capability for firefighters to actively engage fires in a safe and effective manner. The benefits to the communities from strategic fuels reduction activities are expected to save residences, businesses, and lives in the event of a large-scale wildfire as well as protecting water quality that serves local as well as millions of downstream users.

Project investments would support local economic opportunities and employment as a by-product of undertaking ecologically-based forest management as well as further efforts to develop a community driven process to build local, livable wage jobs. Meeting NYFPP goals would increase economic activity in the local communities by supporting the local forest products industry as well as the burgeoning biomass energy industry. Local communities are dependent upon the landscape for forest related jobs, recreation, and the legacy of generations who are strongly connected to the forest. There are hundreds of local jobs associated with forest management and wood processing facilities, including a 20-megawatt biomass facility in Loyalton, CA and a smaller biomass facility being planned for the community of Camptonville, CA that would be positively impacted by this project. (See Utilization of Forest Restoration Byproducts Section Below.) In addition to supporting jobs associated with forest management treatments, the NYFPP would help maintain existing economies supported by recreation by protecting desirable recreation conditions that draw large numbers of visitors into the area annually.

Furthermore, this project supports the community collaboration process by continuing to invest in a partnership that has come together to address landscape forest and watershed management issues. The North Yuba Forest Partnership is increasing the political and social support for proactive forest restoration and management, which serves as an example model of success that can be used to expand restoration activities beyond the boundaries of this project.

Most Relevant Key Metrics for Benefits to Communities

Enhance community sustainability:

☒Maintain or increase the number of workers employed by the project area each month, season, or year

☒Maintain or increase the number and diversity of wood products that can be processed locally

☒Maintain or increase the number and/or size of contracts offered each year to do restoration work

☒Maintain or increase the percentage of contracts awarded that go to local contractors

☒Maintain or 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 or increase acres protected from fire through creation of defensible space, fuel breaks, and other fuels reduction projects

☒Maintain or increase fuels reduction acres in relation to areas considered to be at highest risk from wildfire

Improve capacity for collaboration:

☒Maintain or increase extent to which different perspectives are represented

☒Maintain or increase the quality and timeliness of communication among all project partners

☒Maintain or increase the partner contributions (in kind time and funding) committed to shared project goals

☒Maintain or increase perceived benefits of restoration activities

Figure 7. Mountain biking on the Lavezzola Creek Trail within the NYFPP area. Photo credit Jeff Barker.

Utilization of Forest Restoration Byproducts

This project will play an integral role in developing and sustaining a sustainable forest products industry throughout the NYFPP landscape and beyond. Historically, the area supported an extensive logging industry which steeply declined in the latter part of the 20th century due to changes in management emphasis. Today there is a strong demand to create a new forest products and biomass industry to support projects that restore forest health and protect key habitats and communities through ecologically-based forestry.

A primary target to achieve forest health and fuels reduction treatments in the NYFPP is the reduction of small diameter trees in this landscape. Material removed during thinning can be utilized in a variety of ways including sawlogs, biomass energy, pellets, and other wood products. Current infrastructure in the surrounding area includes both sawmills and bioenergy facilities. Timber harvest of merchantable sawlogs from the NYFPP area will support existing sawmills in the region, including Sierra Pacific Industries in Quincy, Lincoln, and Oroville, CA and the Trinity River Lumber Company in Oroville, CA. These existing facilities are the primary log purchasers for timber harvests in the area and are sustained in part by timber harvest on the National Forest. Depending on market conditions, additional forest restoration byproducts can be sold to a variety of existing bioenergy facilities, including Loyalton Biomass in Sierra County, Rio Bravo Rocklin in Placer County, Honey Lake Power Company in Lassen County, and Wheelabrator Shasta in Shasta County. However, the haul costs associated with these facilities are substantial; as restoration efforts scale up, the area will benefit from local sawmill and bioenergy facilities to process forest restoration byproducts.

A unique opportunity exists in this area as the Camptonville Community Partnership (CCP), a rural non-profit and a partner in the NYFPP, is set to expand byproduct utilization here. CPP is working to develop the Forest Biomass Business Center (FBBC), a local, community-scale 5-megawatt forest biomass-to-energy facility and other wood products-based businesses. In building the FBBC, CCP aims to create local, livable wage jobs while reducing the wildfire threat by making electricity from woodchips derived from sustainable forest treatments. The development of forest health projects alongside biomass utilization infrastructure will support multiple environmental and socio-economic benefits within the NYFPP area. CCP is actively engaged with a diversity of partners to develop the FBBC and has support from the Governor's Office of Planning and Research, Sierra Nevada Conservancy, Sierra Business Council, Yuba Sutter Economic Development Corporation, Yuba One Stop, and Rural County Representatives of California. CCP and their partners are in the final stages of planning and development of the FBBC, with construction expected to begin in 2020. The FBBC will begin stockpiling biomass feedstock 1-2 years prior to the expected operation date in early 2023. Long-term feedstock contracts are currently being drafted to enable the sale of biomass byproducts from forest restoration efforts to the FBBC beginning in 2021. Approximately 13 full-time jobs will be created to operate and maintain the bioenergy facility and up to 14 additional jobs will be created to process and transport feedstock. For perspective, the unemployment rate in Camptonville is 8.8%, or 52 unemployed local residents. Jobs created by the CCP facility will cut this rate by more than half (down to approximately 4%).

Collaboration

The North Yuba Forest Partnership is a diverse collection of entities that all agree on the importance of a healthy and resilient watershed and have come together around a common purpose to plan, finance, and implement a restoration plan for the area. While each partner has individual interests for participating, the shared goals are to 1) improve and restore forest health and resilience; 2) reduce the risk of high-severity wildfire; 3) protect and secure water supplies; and 4) support the development a local restoration economy that can create sustainable jobs working to protect the forest. Presently, the group is made up of nine diverse partners who have signed the MOU and is supported by additional entities who are in alignment with the goals of the partnership (See Attachment D). Partners include Forest Service, Sierra County, Nevada City Rancheria, National Forest Foundation, The Nature Conservancy, the South Yuba River Citizens League, a local environmental non-profit, Camptonville Community Partnership, a local non-profit focused on building a community-owned biomass facility, Blue Forest Conservation, an innovative financing non-profit, and Yuba Water Agency. Other participants include Sierra Pacific Industries, State agencies, non-profit environmental groups, industry representatives, and recreation groups.

The impetus to collaborate was born out the increasingly tragic fire seasons in the Sierra Nevada that each year claim lives, destroy property, and damage forest ecosystems. The possibility of another catastrophic fire in this area is a real concern for all who live, work, and recreate in the area. The partnership is motivated to proactively take action so that when a wildfire burns in this area it can be managed for both community safety and natural resource benefit. Two successful partnership-style forest restoration and fuels reduction projects (now both in the implementation phase) helped cement working relationships and establish the partnership-style model of restoration. Both existing projects, the French Meadows Project on the American River Ranger District and the Yuba Project on the Yuba Ranger District, rapidly progressed through the planning process, drew on innovative sources to fund the work, and are being accomplished in the spirit of Shared Stewardship with the Forest Service working hand in hand with the partners.

The partnership consists of a Steering Committee (all MOU signatories), which advises on overall strategic direction and can stand up working groups based on partnership needs. There are currently five working groups that report to the Steering Committee: the planning team, the science integration team, the finance team, the communications team, and the stakeholder outreach team. To date we have made decisions through dialogue, have agreed to address disagreement directly, proactively provide alternatives if needed, and endeavor to reach consensus. Past disagreements have been resolved through discussion and acknowledgment in the meeting notes of the dissenting entity's viewpoint. Two watershed coordinators have been hired by a partnering group and are in place to facilitate collaborative efforts.

In addition to the formalization of goals and intent to collaborate expressed in the MOU and individual partner contributions to implementation work, we as partners have secured planning funding, totaling nearly $500,000, have contracted to develop a landscape-scale proposal to assess risk and opportunities for restoration, and are in the process of integrating high-quality datasets into project design. Partners co-authored the CFLRP proposal, will work hand in hand on project planning, and stand ready to implement the restoration work (See Attachment E).

Figure 8. Partnership field visit in 2019 to review implementation of the Yuba Project on the Tahoe National Forest and discuss landscape restoration opportunities. Photo credit: Yuba Water Agency.

Multi-party Monitoring

The partnership is committed to monitoring restoration effectiveness and the impact of treatments on ecosystem, community, and economic benefits over short and long timescales. To provide a strong basis for successful multi-party monitoring, partners are leveraging previous and ongoing work that different partners have undertaken to monitor restoration success in the NYFPP landscape and beyond. Many of the partners bring an extensive background in both implementation effectiveness and ecological monitoring. Additionally, all of the partners are committed to incorporate broader research goals and understand the importance of integrating monitoring outcomes into adaptive management approaches.

The NYFPP is a large-scale effort that sits within the TCSI landscape, which will provide data products that researchers can use to evaluate the project over time and at different spatial scales. The partners will evaluate the restoration strategy employed, namely how effective the HRV and TCSI data are at deriving potential desired future conditions and planning future management actions, as described in the landscape strategy section of this proposal. These products will help boost the monitoring component by providing measurable indicators to assess current conditions, establish goals and objectives, refine desired conditions and develop management actions, which are essential in developing a multi-party monitoring plan.

Several monitoring efforts are underway by Blue Forest Conservation, the South Yuba River Citizens League, and University partners to better understand the ecological, social, and economic benefits of forest restoration actions. Blue Forest Conservation is leveraging recently developed remote sensing techniques to monitor changes in hydrology over the North Yuba River watershed for a minimum of 5 years. Changes in stream runoff due to forest ecosystem disturbance (e.g. restoration, drought, fire) are being evaluated using spatial precipitation estimates (PRISM), and forest vegetation evapotranspiration estimates[viii]. A historical analysis (1984-2018) of water balance components was completed in November 2019 as part of a USEPA & US Endowment for Forestry & Communities Healthy Watersheds Consortium grant.

The South Yuba River Citizens League, with funding from the CA Wildlife Conservation Board, will integrate results from the remote sensing work to monitor changes in forest composition and structure, streamflow, and groundwater levels, within and adjacent to two meadows within the project area where thinning is anticipated in 2020 and stream restoration is proposed. Since 2018, researchers from the University of British Columbia and Lancaster University, through a 5-year grant from the Social Sciences and Humanities Research Council of Canada, have been studying how the Forest Resilience Bond will increase the pace and scale of forest restoration on public lands, and its implications for how forests are valued and managed. To date, over 30 entities that operate or are stakeholders in the NYFPP have been interviewed.

Continued and expanded involvement from university researchers, stakeholders, and the public will be key to a successful landscape scale multi-party monitoring plan. The partners will also integrate citizen science into the monitoring plan. The South Yuba River Citizens League has had success integrating citizen science into its restoration program in this area to increase both understanding of the forest landscape and community support. Data from all monitoring activities will be permanently stored on accessible web platforms.

Readiness to Implement Strategy

Project planning efforts are consistent with the Tahoe and Plumas National Forest Plans as amended by the 2004 Sierra Nevada Forest Plan Amendment. NEPA analysis for 14,000 acres was recently completed for the Yuba Project. The Yuba Project and other recent NEPA decisions in this landscape include thousands of acres of priority fuels reduction, watershed, habitat and forest health improvement activities that are awaiting implementation contingent on funding with needs totaling more than $35 million (See Attachment I for NEPA Ready and Planned Activities and Associated Cost Estimates). NEPA analysis is currently underway for another 20,000 acres of critical forest health and fuels reduction treatments, including treatment in high priority WUI areas in the Trapper Project. A decision expected in early 2020 on this project. Additional NEPA analysis opportunities are being evaluated to streamline planning and decisions across the remaining 210,000 National Forest acres and project planning is proceeding.

In addition to experienced Forest Service staff and contractors, the Forest Service is working with partners to expand capacity for planning and implementation. A combination of contracts, force account work, and agreements will be used to implement the NYFPP. An existing Master Stewardship Agreement with the National Forest Foundation is in place and is currently being used to implement the $4.6 million Yuba Project Forest Resilience Bond, which includes $4 million of partner commitments from the Yuba Water Agency and State agencies, including $2.6 million from the California Climate Investment Program. Nationally, the Forest Service holds a Master Participating Agreement with The Nature Conservancy (TNC) for prescribed fire activities, which has allowed TNC to cooperatively implement prescribed fire work on the Tahoe National Forest (TNF). The TNF has also recently signed a Master Stewardship Agreement with Sierra County and is developing one with the Nevada Irrigation District. Additional Master Stewardship Agreements exist for Region 5 and are being evaluated to expand partnership capacity as needed. Additional grants are being pursued as opportunities arise.

Figure 9. Prescribed fire on the Tahoe National Forest reduces fuel accumulations and provides ecological benefits. Photo by USFS.

Unit Capacity and Project Funding:

Key Forest Service staff that will engage with this project are the District and Forest leadership, District resource specialists involved in project planning and implementation, Forest level staff that help plan and oversee the program of work, and province ecology staff which will oversee monitoring efforts. These roles will be managed over time by District and Forest Leadership to ensure that NYFPP activities are adequately identified and supported by the Forest Program of Work. Work of Forest and District staffing are presently prioritized in a 10-year plan which focuses on improving the condition of priority watersheds and includes the NYFPP. A mixture of permanent and temporary employees will be used to oversee the increased pace and scale of work associated with this project and to coordinate with partners. Partners are helping to expand planning and implementation efforts through additional staffing contributions.

The Forest Service has been actively engaging with partners to plan and implement projects within the NYFPP area, with a history of partners providing support for project management, planning, and implementation in a true shared stewardship model. A recent internal analysis by Region 5 found that the funding and capacity provided by partners was approximately $3 for every $1 of appropriated funds. Implementation of the 15,000-acre Yuba Project in this area is largely financed by the Forest Resilience Bond (FRB) through Blue Forest Conservation with funding from the Yuba Water Agency and the State of California for $4.6 million dollars. The FRB financing has allowed the National Forest Foundation to compress the implementation schedule to just 4 years, as compared to an expected 10 year implementation schedule, by making all funding immediately available to the National Forest Foundation. Another forest restoration project, the 28,000-acre French Meadows Project, is a partnership effort between TNF, The Nature Conservancy, Sierra Nevada Conservancy, and others. Like the Yuba Project, partners funded most of the planning and implementation costs and are working collaboratively with TNF to implement thinning and prescribed burning restoration activities. Partners are ready to apply their learning from the Yuba Project and French Meadows to scale their collaboration to plan and implement restoration work across the NYFPP area. To support collaborative capacity, a partner, South Yuba River Citizens League, recently hired two skilled

watershed coordinators to facilitate the work of the partnership funded by the California Department of Conservation and Yuba Water Agency. Additionally, South Yuba River Citizens League and the TNF have brought over $700,000 to the NYFPP area for meadow and aspen restoration work over the last three years and intend to continue these efforts into the future.

CFLRP funding will accelerate treatment within this landscape. However, whether the CFLRP funding lasts until FY2023 or persists for the full period, restoration work will continue to be achieved through a combination of allocated funding, partner funding and support, and efforts to secure State and private funding. Blue Forest Conservation has committed to continue to work in the NYFPP area through the Forest Resilience Bond and The Nature Conservancy is committed to further its commitments by making significant contributions to both the large-scale planning process and implementation efforts. Federal and non-federal investments anticipated over the life of the project are identified in Attachment F. The key sources of non-Forest Service contributions include the Forest Resilience Bond and associated matching funds from stakeholder commitments, California Climate Investment Program Funding, California Department of Fish & Wildlife funding, and private foundation support.

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USDA United States Department of Agriculture

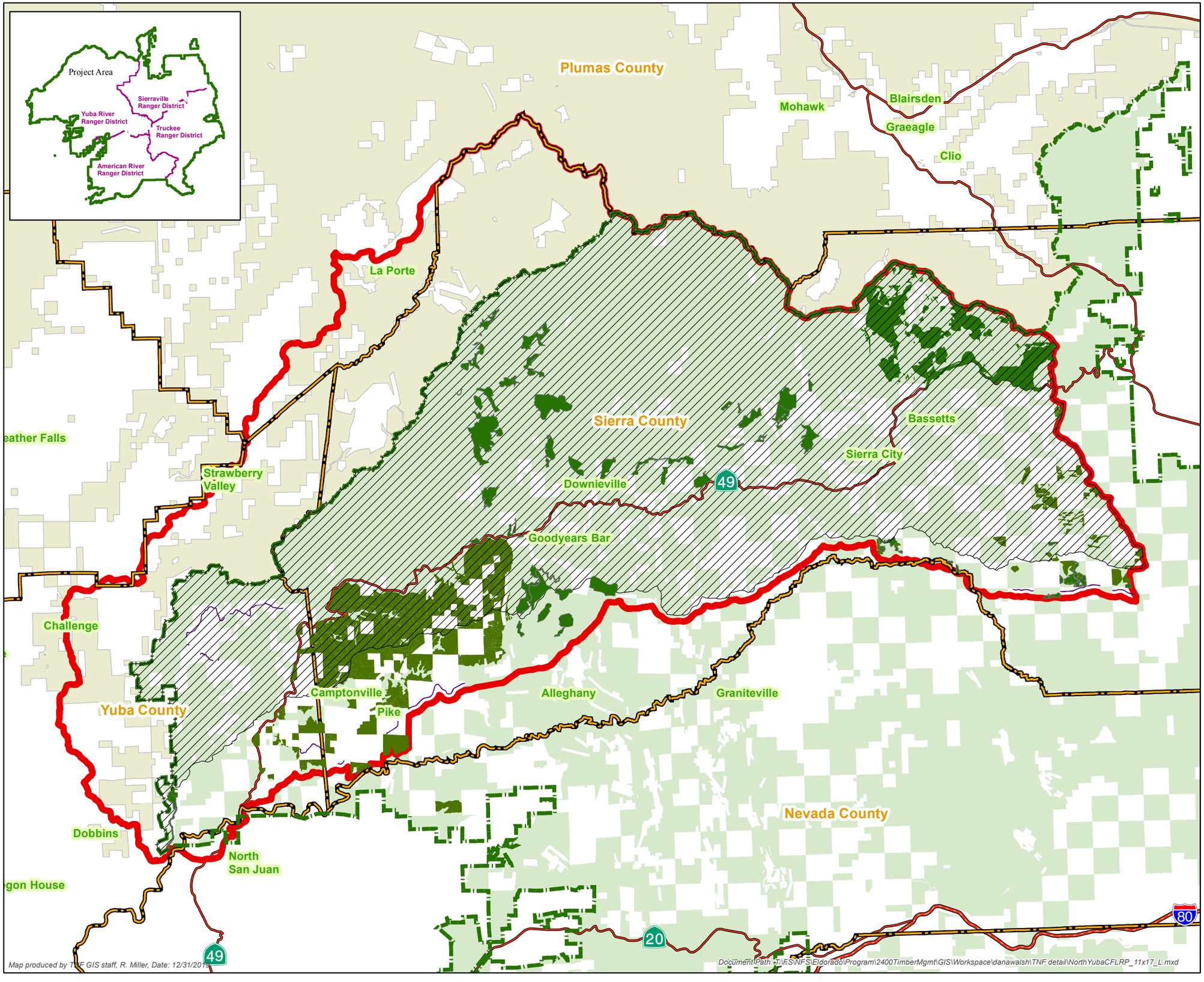
North Yuba CFLRP

- Forest Boundary
- CFLRP Project Boundary
- Currently Planned Projects
- Future Partership Project Planning Area
- City
- County
- Pliocene Ridge Road
- Interstate and US Highway
- State Highway
- Tahoe NF
- Non-FS
- National Forest - Plumas

N

Note: The USDA Forest Service, Tahoe N.F. uses the most current and complete data available. GIS data and product accuracy may vary. The lines and areas represented on this map are only approximate and their actual location on the ground may vary. This information may be updated, corrected, or otherwise modified without notification.

Forest Service
Tahoe National Forest
Yuba River Ranger District



Map produced by TNF GIS staff, R. Miller, Date: 12/31/2015

Document Path: T:\FS\NFS\Eldorado\Program\2400TimberMgmt\GIS\Workspace\danawalsh\TNF detail\NorthYubaCFLRP_11x17_L.mxd

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

Estimated treatments should include all planned treatments in the proposed CFLR landscape, regardless of landownership type. Provide an estimate of

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)	Includes all fuels reduction associated treatment identified below	1,425	9,025	13,175	13,300	107,300	144,225	Reduce surface and ladder fuels to mitigate wildfire effects and to allow for safe and effective wildfire management.	85%	Private lands
Mechanical Thinning (acres)	Based on the Tahoe National Forest 10 year program of work and partner contributions. Includes commerical and non-commerical timber harvest, mastication, and piling with machinery.	775	8,000	12,000	12,000	100,000	*132,775*	Reduce stand densities and ladder fuels to promote desired species composition and structure. Improve resilience of residual stands to disturbance. Enhance the growth and survival of individual trees and stands to develop desired structures including old forest habitat.	85%	These acres include private industrial forest lands managed by Sierra Pacific Industries and Soper Wheeler treated in coordination with the Forest Serivce and Partners to create cross boundary fuel breaks, and private homeowner parcels treated in cooperation with the county Fire Safe Councils.
Prescribed Fire (acres)	Based on a reasonable burn window estimate. Additional burning may be possible with favorable burn windows, but this is very weather dependent.	500	775	875	800	4,800	*7,750*	Reduce surface fuels sufficiently to moderate fire behavior during most weather conditions. Allow for beneficial ecological processes provided by fire in this ecosystem.	100%	
Other (acres)	Hand thinning and hand piling in areas where mechanical treatment is not feasible.	150	250	300	500	2,500	*3,700*	Reduce surface fuels sufficiently to reduce wildlife effects and allow for more safe and effective wildfire management. Improve resilience of areas to disturbance.	100	
Wildfire Risk Mitigation Outcomes - Acres treated to mitigate wildfire	All hazardous fuels treatments are expected to meet this criteria	1,425	9,025	13,175	13,300	107,300	*144,225*	Reduce surface and ladder fuels sufficiently to reduce wildlife effects and allow for more safe and effective wildfire management. Improve forest resilience.	85%	Private lands
Wildfire Risk Mitigation Outcomes - WUI acres	WUI treatments are critical to meeting the strategy for community resilience objectives in this area.	800	2,000	9,000	2,500	40,000	*54,300*	Reduce surface and ladder fuels sufficiently to reduce wildlife effects and allow for more safe and effective wildfire management. Improve forest resilience.	70%	Private lands
Invasive Species Management (acres)	Invasive plant removal using manual and chemical methods of treatment.	100	100	250	300	1,200	*1,950*	Control and eliminate non-native, invasive plants to benefit habitat, hydrologic function, and wildfire behavior.	95%	Private lands
Native Pest Management (acres)	All mechanical thin areas are designed to improve forest health through the improvement of residual tree health and resilience.	765	3,450	6,750	5,050	25,250	*41,265*	Reduce the potential for native insect and disease resulting in unacceptable mortality that impacts ability to meet management objectives for these areas.	90%	Private lands
Road Decommissioning (miles)	Currently identified treatments, likely to increase with additional planning over the next few years.		4	4	4	15	*27*	Soil and watershed improvement. Reduction in sedimentation, improvement in water quality and aquatic habitat.	100%	
Road Maintenance and Improvement (miles)	Currently identified treatments, likely to increase with additional planning over the next few years.	40	50	50	50	250	*440*	Road and water quality improvement. Reduction in sedimentation, improvements in water quality and aquatic habitat.	85%	Private lands

Road Reconstruction (miles)	Currently identified treatments, likely to increase with additional planning over the next few years.	10	20	20	20	100	*170*	Access for recreation and water quality improvement. Reduction in sedimentation, improvements in water quality and aquatic habitat.	95%	Private lands
Trail Reconstruction (miles)		1	3	3	3	15	*25*	Access and water quality improvement. Reduction in sedimentation, improvements in water quality and aquatic habitat. Improved access for treatment feasibility and public use.	100%	
Wildlife Habitat Restoration (acres)		1,575	9,175	13,325	13,450	87,700	*125,225*	Improve the resilience of wildlife habitat for a variety of species, including protected species with niche habitat needs. Increase the diversity of conditions within habitat types. Improve foraging by increasing understory diversity within overly dense stands.	100%	
Crossing Improvements (number)		2	4	4	4	20	*34*	Improve instream habitat and allow for aquatic organism passage. Upgrade culvert size at crossings where current size is likely to result in failure and hydrologic issues.	100%	
In-Stream Fisheries Improvement (miles)	Aquatic organism passage and culvert upsizing	2	4	4	4	20	*34*	Improve instream habitat and allow for aquatic organism passage. Upgrade culvert size at crossings where current size is likely to result in failure and hydrologic issues.	100%	
Lake Habitat Improvement (acres)							*-*			
Riparian Area Improvements (acres)	Currently identified treatments, likely to increase with additional planning over the next few years.	150	150	150	150	400	*1,000*	Meadow and aspen enhancement. Improved wildlife and	100%	
Soil and Watershed resources enhanced or maintained (acres)	Currently identified treatments, likely to increase with additional planning over the next few years.	-	80	80	90	200	*450*	Improved meadow hydrology and soil condition.	100%	
Priority watersheds moved to improved condition class (number)						2	*2*	Improve the condition of identified priority watersheds in the area by reducing risk of uncharacteristically high severity wildfire, improving hydrologic function, and reducing sedimentation from unmaintained roads.	100%	
Stand Improvement (acres)		715	3,400	6,700	5,000	25,000	*40,815*	Increase the health and vigor of residual trees and stands to improve forest health, create conditions more resilient to disturbance, and improve growing conditions to develop old forest habitat where appropriate.	90%	Private lands.

Reforestation and revegetation (acres)		-	-	-	200	1,000	*1,200*	Increase resilience by increasing species diversity within older, single species plantations and establishing pine and rust resistant sugar pine regeneration in targeted openings created in non-plantation stands where natural regeneration of these species has been impaired through ingrowth of shade tolerant tree species.	100%	
Timber Harvest (acres)**	The majority of harvest identified is ground based (~65%), however treatment of steep-slopes using cable, tether logging, and helicopter is critical to meet the landscape restoration strategy (~35%). Treatment on steep slopes is currently conservative in terms of acres identified, however could expand based on success in upcoming projects.	775	3,450	6,750	6,000	31,300	*48,275*	Reduce stand density and ladder fuels in an economic manner to achieve forest health and fuels reduction objectives.	92%	Private lands
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 treated annually that will generate restoration byproducts	Total projected annual harvested volume (ccf) from NFS lands	Expected percentage commercially utilized* from NFS lands
2020	775	7,000.00	85
2021	3450	20,000.00	85
2022	6750	40,000.00	85
2023	6000	30,000.00	85
2024	5250	30,000.00	85
2025	5250	30,000.00	85
2026	5250	30,000.00	85
2027	5250	30,000.00	85
2028	5200	30,000.00	85
2029	5100	30,000.00	85
TOTALS:	48275	277,000.00	850
	Estimated % of TOTAL acres accomplished on NFS lands:	92%	
	Estimated % of TOTAL acres accomplished on other landownerships within the CFLRP boundary:	8%	

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

Forest Service staff representative(s) working with collaborative:
(Please provide list of key staff): **Eli Ilano, Laurie Perrot, Dave Fournier, Lon Henderson, Dana Walsh, Dotrick Wilson, Becky Estes, Sherry Reckler, Christina Liang, Joe Flannery**

Collaborative Member/Partner Name	Organizational Affiliation (if applicable)	Was this person involved in proposal development?	Primary Issue Category	Second Issue Category	Third Issue Category	If "other," briefly describe
Andrew Salmon	South Yuba River Citizens League (SYRCL)	Yes	Environmental	Watershed	Wildlife	
Angel Hertslet	The Nature Conservancy	Yes	Environmental	Wildlife	Fire Ecology	
Shelly Covert	Nisenan of the Nevada City Rancheria	No	Tribal	Watershed		
Matt Millar	National Forest Foundation	Yes	Environmental	Forest Products	Fire Ecology	
Willie Whittlesey	Yuba Water Agency	No	Utility	Watershed	Community Development	
Paul Roen	Sierra County	Yes	County	Community Development	Tourism	
Cathy Leblanc	Camptonville Community Partnership	Yes	Community Development	Forest Products		
Zach Knight	Blue Forest Conservation	Yes	Environmental	Research	Other	Environmental Restoration Financing
Eric Sweet	Sierra Pacific Industries	Yes	Forest Products	Fire Management		
Mandy Beatty	Sierra Buttes Trail Stewardship	No	Recreation (non-motorized)	Community Development	Tourism	
Stevan Andrews	Yuba Watershed Protection and Firesafe Council	No	County	Fire Management	Community Development	
Lisa Worthington	Cal Trans	No	State	Fire Management		
Shannon Hayes	Sierra Streams Institute	No	Environmental	Watershed	Wildlife	
Sue Britting	Sierra Forest Legacy	No	Environmental	Fire Ecology	Wilderness	
Gary Fildes	Yuba County RCD	No	County	Community Development	Environmental	
Paul Violet	Soper Wheeler Company	No	Forest Products	Fire Management		
Steve Garcia	CA Dept. of Forestry and Fire Protection	No	State	Fire Management		
Laurie Oberholtzer	Sierra County Land Trust	No	Environmental	Watershed	Wildlife	
Julie Fair	American Rivers	No	Environmental	Watershed		
Trina Cunningham	Mountain Maidu Indians of Genesee Valley	No	Tribal	Watershed		
Joe Griggs	Robinson Timber	No	Forest Products	Fire Management		

CFLRP Advisory Panel
US Forest Service, FM
1400 Independence Ave., SW
Mailstop Code: 1103
Washington DC 20250-1103

January 3rd, 2020

Dear CFLRP Federal Advisory Panel,

As partners and supporters of the North Yuba Forest Partnership, we are writing to express our endorsement of the North Yuba Forest Partnership CFLRP proposal being submitted by the Tahoe and Plumas National Forests in Region 5. This partnership, catalyzed by the success of the Yuba Project, began working together in 2018 to integrate a science based, landscape scale forest health and resiliency project across the North Yuba River watershed. This team of diverse agencies, non-profits, counites, and a tribal group signed an MOU in 2019 that dedicates the partnership to continuing to plan and implement forest and watershed health within the North Yuba watershed. The Forest Service and the members of the partnership have committed to restoring this landscape and have been planning and implementing forest and watershed health projects together for several years.

Each entity involved in the partnership has leveraged each other's strengths over the last year, creating a solid foundation in collaborative decision making, shared leadership, and funding to start planning a project that covers 356,000 acres of steep and densely forested terrain, of which the Forest Service administers and manages approximately 75%.

Partnership MOU Signatories:

Blue Forest Conservation developed the Forest Resilience Bond (FRB) to address the need for investment in forest health on public and private lands across the Western U.S. while building the market for conservation finance. The partnership is leveraging this innovative funding mechanism to provide up-front financing for planning and implementation, thus accelerating restoration work and developing essential public-private partnerships to realize non-monetary watershed benefits.

Camptonville Community Partnership has been working with communities in the Yuba River watershed for almost 20 years to deliver a variety of local programs, including, the development of the Camptonville Forest Biomass Business Center (FBBC). The FBBC will build local, livable wage jobs and reduce wildfire threat by making electricity from wood chips derived from sustainable forest methods. The partnership is leveraging CCP's network and expertise to drive community support for forest health work in the watershed and provide an essential final piece of the mechanical thinning puzzle.

The **National Forest Foundation** works throughout the Sierra Nevada to increase that pace and scale of forest restoration, promote sustainable recreation, restore functioning aquatic ecosystems, and link science and action with community. NFF has taken the lead on implementing approximately 5,690 acres of forest health work on the Yuba Project, a pilot project in the most upstream reaches of the North Yuba River watershed. The partnership is leveraging this national organization as the primary implementation partner for all projects originating out of the NYFP.

The **Nevada City Rancheria Nisenan Tribe** are Indigenous to the Yuba River watershed where they have lived for countless generations prior to contact and long before the Gold Rush. Forest health and management has always been central to the wellbeing of the Nisenan people. The Tribe's ability to navigate and manage resources was critical in living a sustainable, rich life within these watersheds. The Tribe brings their Traditional Ecological Knowledge to guide planning and implementation processes, as well as local capacity to enhance community education, cultural connection, and implementation work.

Sierra County's highest priorities include reducing wildfire risk, enhancing forest and watershed health through implementation of fire resilient treatments, and protecting its rural communities. With nearly 70% of its land ownership in National Forests, the County is devoted to supporting efforts to advance an effective pace and scale of treatments in the North Yuba River watershed. Sierra County's recent Master Stewardship Agreement with Tahoe National Forest has increased flexibility to work collaboratively on restoration activities. The partnership is leveraging the County's local knowledge and community support throughout the planning and implementation phases.

The **South Yuba River Citizens League**, USFS Region 5 2017 Partner of the Year, has been working on watershed health and streamflow (FERC) projects in the North Yuba River for over a decade. The partnership is leveraging the expertise of this local watershed-based organization to project manage the planning and implementation phases of this project, facilitate meetings, and fundraise through grant writing.

The Nature Conservancy is deeply involved in numerous collaborative forest restoration projects, fire learning projects and many other direct partnership efforts to expand conservation and restoration of National Forest System lands. The partnership is leveraging their work to model forest conditions through the Tahoe Central Sierra Initiative, their commitment to developing forest treatments that are ecologically sound, and as a key meeting facilitator for the partnership.

Yuba Water Agency is committed to the sustainable management of water resources throughout the Yuba River watershed for flood risk reduction and reliable water supply, enabled through hydropower generation, in support of the environment and quality of life for the communities. The partnership is leveraging this local government agency's expertise and commitment to the sustainable management of water resources to fund planning and implementation work as well as develop broad government and community support.

<u>Supporters</u>:

Sierra Nevada Conservancy is a California state agency focused on building local relationships to support state environmental goals. SNC's strong partnerships throughout the Sierra Nevada Region have built an excellent track record of deploying bond funds efficiently, thereby increasing the pace and scale

of forest and watershed restoration. The financial support pledged by SNC is critical in supporting the planning phase of this project.

Sierra Pacific Industries owns and manages over 2 million acres of timberland. SPI is committed to managing its lands in a responsible and sustainable manner to protect the environment while providing quality wood products and renewable power for consumers.

If you have questions about this letter of commitment or about the North Yuba Forest Partnership, please contact Andrew Salmon, Forest Health Watershed Coordinator, South Yuba River Citizens League, andrew@yubariver.org, 530-265-5961 x230

Regards,

Zach Knight
Co-founder and Partner
Blue Forest Conservation

Melinda Booth
Executive Director
South Yuba River Citizens League

Cathy LeBlanc
Executive Director
Camptonville Community Partnership

David Edelson
Forest Program Director
The Nature Conservancy

Marcus Sellig
Vice President, Field Programs
National Forest Foundation

Willie Whittlesey
Assistant General Manager
Yuba Water Agency

Shelly Covert
Tribal Council Spokesperson
Nevada City Rancheria Nisenan Tribe

Angela Avery
Executive Officer
Sierra Nevada Conservancy

Paul Roen
Chair, 3rd District Supervisor
Sierra County

Eric Sweet
Tahoe District Manager
Sierra Pacific Industries

North Yuba Forest Parnership

Fiscal Year 1*	Funding Planned/Requested
Partner fund contributions on NFS lands	$1,387,500
Partner in-kind contributions on NFS lands	$482,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	$75,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	$2,885,000
Total non-CFLRP funding for NFS lands	$4,829,500
CFLRP Funding Request	$4,000,000
Total CFLRP funding for NFS lands	$4,000,000
Partner fund contributions on non-NFS lands	$0
Partner in-kind contributions on non-NFS lands	$1,500
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	$0
Total non-CFLRP funding for non-NFS lands	$1,500

****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	$5,387,500
Partner in-kind contributions on NFS lands	$433,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	$400,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	$1,645,000
Total non-CFLRP funding for NFS lands	$7,865,500
CFLRP Funding Request	$4,000,000
Total CFLRP funding for NFS lands	$4,000,000
Partner fund contributions on non-NFS lands	$10,000
Partner in-kind contributions on non-NFS lands	$5,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	$0
Total non-CFLRP funding for non-NFS lands	$15,000

Fiscal Year 3	Funding Planned/Requested
Partner fund contributions on NFS lands	$6,100,000
Partner in-kind contributions on NFS lands	$434,000
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	$1,570,000
Total non-CFLRP funding for NFS lands	$8,404,000
CFLRP Funding Request	$4,000,000
Total CFLRP funding for NFS lands	$4,000,000
Partner fund contributions on non-NFS lands	$10,000
Partner in-kind contributions on non-NFS lands	$5,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	$0
Total non-CFLRP funding for non-NFS lands	$15,000

Fiscal Year 4	Funding Planned/Requested
Partner fund contributions on NFS lands	$5,100,000
Partner in-kind contributions on NFS lands	$419,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	$250,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	$1,550,000
Total non-CFLRP funding for NFS lands	$7,319,000
CFLRP Funding Request	$4,000,000
Total CFLRP funding for NFS lands	$4,000,000
Partner fund contributions on non-NFS lands	$250,000
Partner in-kind contributions on non-NFS lands	$5,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	$0
Total non-CFLRP funding for non-NFS lands	$255,000

Fiscal Years 5-10	Funding Planned/Requested
Partner fund contributions on NFS lands	$30,000,000
Partner in-kind contributions on NFS lands	$2,496,000

Goods for Services or Revenue from GNA to be applied within CFLRP landscape	$1,500,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	$7,600,000
Total non-CFLRP funding for NFS lands	$41,596,000
CFLRP Funding Request	$24,000,000
Total CFLRP funding for NFS lands	$24,000,000
Partner fund contributions on non-NFS lands	$20,000
Partner in-kind contributions on non-NFS lands	$5,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	$0
Total non-CFLRP funding for non-NFS lands	$25,000

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).*

The Partnership is actively pursuring funding to complete NEPA and environmental compliance. At present, partners have secured $200,000 from the Sierra Nevada Conservancy, have written a grant to California Department of Fish and WIldlife for $698,122, and has asked but not secured an additional $200,000 from Yuba Water Agency. In addition, the partnership has secured nearly $200,000 in support for staffing the planning process, with additional inkind support estimated at nearly $100,000 per year. Additional Forest Service Salary and staff time and partner in kind contributions and funding will be needed to support planning efforts for new projects within the CLFRP area. This is estimated at an additional $7 million dollars.

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. Prior CFLRP evaluations have highlighted the importance of leadership intent and support for CFLRP strategy implementation and a commitment to continued collaboration through project implementation and monitoring. The signature(s) below is/are taken to reflect the unit(s)' support for and commitment to the CFLRP project as outlined in the Tier 2 proposal.

This proposal supports priority work on these Forests and in the region, for both the Forest Service and multiple partners. The proposal contains priority watersheds, which we have focused improving the condition of in the Forest program of work and out year plan. The project landscape has been identified as at a high to very high risk of losing important ecosystem services, ecosystem functions, and threatens the loss and viability of communities in the event of a wildfire if not actively managed and restored. We are committed to collaborating and working with partners to increase the health and resilience of this landscape. Because of the importance of and risk to this area we have been actively working with partners to expand the capacity of the National Forest to quickly plan and implement effective, meaningful work in this landscape. Selection of this area as a CLFRP area would further build on and enhance those successes and make a meaningful and lasting impact in this landscape.

Forest Supervisor name(s)

Unit name (s)

Forest Supervisor Signature(s) (electronic or scanned)

Eli Ilano

Tahoe National Forest

Chris Carlton

Plumas National Forest.

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MEMORANDUM OF UNDERSTANDING
by and among
THE NATURE CONSERVANCY, SOUTH YUBA RIVER CITIZENS LEAGUE, YUBA WATER AGENCY, NATIONAL FOREST FOUNDATION, BLUE FOREST CONSERVATION, CAMPTONVILLE COMMUNITY PARTNERSHIP, NEVADA CITY RANCHERIA NISENAN TRIBE, and SIERRA COUNTY
and
THE USDA, FOREST SERVICE
TAHOE NATIONAL FOREST
Regarding the
NORTH YUBA FOREST PARTNERSHIP

This MEMORANDUM OF UNDERSTANDING ("MOU") is hereby made and entered by and between The Nature Conservancy ("TNC"), South Yuba River Citizens League ("SYRCL"), Yuba Water Agency ("Yuba Water"), National Forest Foundation ("NFF"), Blue Forest Conservation ("Blue Forest"), Camptonville Community Partnership ("CCP") Nevada City Rancheria Nisenan Tribe, Sierra County, and the United States Department of Agriculture ("USDA"), Forest Service, Tahoe National Forest ("U.S. Forest Service"), hereinafter referred to as a "Party" or "the Parties."

The North Yuba River watershed is located in California's northern Sierra Nevada and includes approximately 312,960 acres of land, of which 241,000 acres of land is managed by the U.S. Forest Service. The watershed includes significant forest habitat, is an important source of water to downstream users, supports high biodiversity, includes numerous communities, and offers excellent opportunities for recreation and human enjoyment.

Many forests in the North Yuba watershed are unhealthy. They are overstocked with small trees and brush and at risk of high-severity wildfire due to fire suppression and historic timber harvesting practices, exacerbated by climate change. As a result, communities and infrastructure within the watershed are at significant risk. Forests once characterized by large, widely-spaced trees and beneficial, low-to-moderate severity fire are now dominated by non-fire resilient stands of vegetation ranging from dense thickets of small trees and brush to overstocked forests with significant ladder fuels. This greatly increases the likelihood of destructive wildfire causing significant damage to human communities and watershed health. In addition, many homes and communities have been built within and near the forests, making it challenging in some locations to protect lives and property from high-severity wildfire and to allow the use of prescribed fire or managed wildfire as a management tool. Recognizing that community safety and forest health are complementary and interrelated, the Forest Service and other public and private stakeholders (including but not limited to private landowners) are acting together to reduce wildfire risk and protect communities, but the pace and scale of such activities need to be significantly increased given the geographic scope and severity of the problem.

In consideration of the foregoing recitals and their respective agreements set forth below, the Parties agree as follows:

I. PURPOSE

The purpose of this MOU is to document the commitment of the Parties to cooperate, communicate and work together to promote healthier, more resilient forests within the North Yuba River watershed. Specifically, the Parties are interested in developing and implementing a forest restoration and fuels reduction project for Forest Service lands within the North Yuba watershed (the "Project"), in coordination with private landowners and other stakeholders.

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The principal goals of the Project are (1) to improve and restore forest health and resilience, (2) to reduce the risk of high-severity wildfire, (3) to protect and secure water supplies, and (4) to protect communities from the effects of high-severity wildfire and climate change. While this MOU does not obligate any Party to commit funds or take any specific actions, the Parties intend to develop specific agreements to address funding, resource sharing, and other commitments to advance the Project.

II. STATEMENT OF MUTUAL BENEFIT AND INTERESTS

The mission of the U.S. Forest Service is to sustain the health, diversity, and productivity of the nation's forest and grasslands to meet the needs of present and future generations. This mission includes all aspects of forest management to include watershed health and community safety for the economic and social benefit of the American people.

The Nature Conservancy (TNC) is a private, non-profit corporation incorporated in the District of Columbia and devoted to conserving the lands and waters on which all life depends. TNC has significant scientific and management expertise through the dedicated efforts of its diverse staff, including more than 600 scientists, located in all 50 U.S. states and more than 70 countries. TNC is deeply involved in numerous collaborative forest restoration projects, fire learning projects and many other direct partnership efforts to expand conservation and restoration of National Forest System lands.

South Yuba River Citizens League (SYRCL) has a mission to unite the community to protect and restore the Yuba River watershed. Through this work SYRCL has worked for 36 years to bring the community together to work on large watershed issues such as new dam proposals, water quality, restoration, and forest health. Today, SYRCL has an annual budget of $2.1 million that supports an Executive Director, Science Director and four science staff, a Development Team, an Outreach Team, a Finance Manager, and is home to the Wild and Scenic Film Festival. SYRCL works on large-scale restoration projects throughout the Yuba River watershed through its science-based restoration program.

The Yuba Water Agency (Yuba Water) is a local government agency. Yuba Water is committed to the sustainable management of water resources throughout the Yuba River watershed for flood risk reduction and reliable water supply, enabled through hydropower generation, in support of the environment and quality of life for the communities. Healthy forests are critical to a healthy watershed. Yuba Water is increasingly concerned with the escalating threat of wildfires due to its impact on communities and on water supply and water quality. Yuba Water is working collaboratively on several initiatives to reduce the risk of catastrophic wildfires and make the Yuba Watershed one of California's first sustainable, actively managed watersheds.

The National Forest Foundation (NFF), chartered by Congress, engages Americans in community-based and national programs that promote the health and public enjoyment of our 193-million-acre National Forest System. Through the efforts within its Tahoe Headwaters Treasured Landscape, the NFF supports projects that increase the pace and scale of forest restoration, promote sustainable recreation, restore functioning aquatic ecosystems, and link science and action with community.

Blue Forest Conservation (Blue Forest) has a mission to develop financially sustainable solutions to environmental challenges. Founded in 2015, Blue Forest developed the Forest Resilience Bond (FRB) to address the need for investment in forest health on public and private lands across the Western U.S. while building the market for conservation finance. The goal of the FRB is to address extreme wildfire risk in forests while promoting healthy,

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fire and climate resilient landscapes that are ecologically functional, protect source watersheds, and provide economic and environmental security to rural and urban communities. The FRB seeks a modest return for investors of restoration projects through innovative funding models such as pay-for-success and cost-sharing contracts. Collaborative support of projects through the FRB are based on the ecological and economic benefits of healthy forests to landowners, land managers, state and local governments, federal agencies, water agencies, and other stakeholders. Blue Forest is exploring how public-private partnerships can accelerate restoration work and realize non-monetary watershed benefits. These non-monetary benefits that advance the public (rather than private) good are of critical importance and have prompted the development of the FRB conservation finance partnership model.

Camptonville Community Partnership (CCP) is a rural non-profit located in the Sierra Nevada foothills of Yuba County, CA. CCP works with the community to deliver a variety of local programs. As such, CCP is working to develop the Forest Biomass Business Center (FBBC) through a community-driven process to build local, livable wage jobs and to reduce wildfire threat by making electricity from wood chips derived from sustainable forest methods. CCP is actively engaged with a diversity of project partners to develop the FBBC including the project site landowner, the Yuba Watershed Protection & Fire Safe Council, local, state and federal natural resource agencies including the Sierra Nevada Conservancy, Tahoe National Forest and Plumas National Forest, elected government officials, tribal representatives, regional environmental organizations including SYRCL, industrial timberland owners and operators, peer forest bioenergy projects, the National Forest Foundation, Blue Forest Conservation, the University of California Cooperative Extension, the Yuba Sutter Economic Development Corporation, Yuba County, Rural County Representatives of California, and the Governor's Office of Planning and Research.

Nevada City Rancheria Nisenan Tribe: The Nisenan are Indigenous to the Yuba River watershed where they have lived for countless generations prior to contact and long before the Gold Rush. Despite countless attempts to assimilate the Tribe, the Nisenan continue to exist as a Tribal unit, strive to express their ancient culture and seek connections with the landscape. Protecting Sacred sites within the Tribes territorial landscape is of extreme importance, as is community education and the reclamation of all aspects of Nisenan culture. The Tribe is governed by a Tribal Council and is further supported by the 501c3 CHIRP (California Heritage: Indigenous Research Project). The Nevada City Rancheria is recognized on the Native American Heritage Commissions list of State recognized Tribes. Forest health and management have always been central to the wellbeing of the Nisenan people. The Tribe's ability to navigate and manage resources was critical in living a sustainable, rich life within these watersheds; now is the time to rethink and relearn what a similar relationship could look like for us today. The Tribe believes it has something of value to bring to this conversation today as we all navigate climate change and reestablish our relationships with the land. For more information visit nisenan.org.

Sierra County includes the headwaters of the North Yuba River and has a critical role in participating in the North Yuba Forest Partnership. Sierra County's land use program, as expressed through the County General Plan, affords a maximum level of protection to scenic resources, wildlife and fisheries, water supply and quality, sustainable agriculture, forest and watershed health, air quality, and cultural and historic resources. The County has a specific code provision supporting resource industries including agriculture, mineral extraction, and timber-forest products and is equally committed to supporting and enhancing tourism and outdoor recreation. The County land ownership pattern shows nearly 70 percent National Forest System Lands shared between the Tahoe, Plumas, and Humboldt-Toiyabe National Forests and an additional 15 to 20 percent of land area shared between State Fish and Wildlife Management Areas or private resource lands restricted under the Land Conservation Act or the Forest Productivity Act. The county's highest priorities include reducing wildfire risk, enhancing forest and watershed health through implementation of fire resilient treatments, and protecting its rural communities. The County is devoted to supporting efforts to provide an effective pace and scale of treatments. As such, it is strongly committed to the

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success of the Loyalton Biomass Plant and the continued development of research and development of a timber and forest products campus at Loyalton. The County maintains and places into practice a "hands-on" approach to projects and strives to collaborate with other public agencies, and at times, non-governmental organizations, on projects and initiatives to reduce the risk of catastrophic wildfires as well as other resource projects yet closely monitors project planning, development, and implementation to assure that the County is well-served.

III. AGREEMENT

A. The Parties will work together on the Project to promote ecologically-based, landscape-scale restoration and management of the forests within the North Yuba River watershed, focusing on lands owned and managed by the U.S. Forest Service and in coordination with private landowners. The principal goals of the Project are (1) to improve and restore forest health and resilience, (2) to reduce the risk of high-severity wildfire, (3) to protect and secure water supplies, and (4) to protect communities from the effects of high-severity wildfire and climate change.

B. By "ecologically-based forest management," the Parties mean the approach generally described in General Technical Reports PSW-GTR-220 and 237 (North et al. 2009, 2012). Ecologically-based forest management seeks to reduce the risk of uncharacteristic, high-intensity wildfire while also protecting and restoring watershed health and native biodiversity and promoting forest conditions that are more resilient to drought, climate change, and other disturbances. This approach aims to increase forest stand heterogeneity on a site-specific basis, and considers the inherent topographic features of the landscape, emphasizing the key ecological role that low-to-moderate intensity, beneficial fire provides in many conifer forests of the Sierra Nevada. Ecologically-based forest management, together with shaded fuel breaks, defensible space, land use planning, and other measures, can help protect communities from the impacts of high-severity wildfire.

C. The Parties will consider the best available science and other relevant information in developing and implementing a forest restoration plan for the North Yuba River watershed, including, but not limited to, recent research by McGarigal et al. (2018) on the historic range of variability within the watershed, forthcoming analyses from the Tahoe-Central Sierra Initiative, General Technical Reports PSW-GTR-220 and 237 (North et al. 2009, 2012), TNC's recent paper on ecological forestry (Kelsey 2019), and other research.

D. The Parties are interested in exploring and developing innovative approaches to project planning and analysis that are more efficient and less expensive than typical planning efforts on Forest Service lands, without compromising environmental safeguards and opportunities for public engagement. This may include, but is not limited to, undertaking analysis and planning at a landscape scale, developing programmatic documents that can be used to efficiently develop site-specific projects using tools like tiering and incorporation by reference, modifying existing requirements for conducting resource and cultural surveys, amending the existing land and resource management plan, and other measures.

E. The Parties share an interest in promoting local economic opportunities and employment as a by-product of undertaking ecologically-based forest management at a landscape scale. This may include, but is not limited to, using shrubs and small trees for biomass energy, making wood products from small and medium-sized trees removed to reduce the risk of high-severity wildfire and to promote forest resilience, and other efforts that improve the local economy based upon forest and watershed restoration.

F. The Parties will work together and coordinate to provide and secure sufficient funding, staffing, and other resources to develop, analyze and implement the Project. The Parties are interested in using new and innovative

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approaches, which may include, but are not limited to, hiring consultants to undertake aspects of project planning, using in-kind contributions from the Parties, drawing upon state and local funding and staff resources under the Good Neighbor Authority and other authorities, and utilizing innovative financial mechanisms such as the Forest Resilience Bond developed by Blue Forest.

G. The Parties will coordinate and cooperate on issues relating to outreach and communications, with the goal of engaging stakeholders with interest in the Project, sharing information, and publicizing the Project. The Parties agree to recognize this collaborative effort in external communications by appropriately acknowledging that multiple parties are working closely together to advance the Project, by including other parties in outreach efforts where feasible and appropriate, and by working collaboratively to align and coordinate message content and communications strategies.

H. The Parties will work together in developing and implementing research and monitoring within the Project area. The Parties recognize that the scientific understanding of the value of ecological restoration and its long-term benefits to imperiled wildlife and unhealthy watersheds is developing, and that there are excellent opportunities to develop and apply science to improve forest and watershed management. The Parties also recognize that the uncertainties of a changing climate increase the importance of ongoing monitoring of environmental impacts and use of adaptive management to change course as needed.

I. Nothing in this MOU shall be construed as changing or delegating the Forest Service's legal responsibilities with respect to managing national forests within the watershed and complying with applicable laws, policies, and regulations, including but not limited to the National Environmental Policy Act and the National Forest Management Act.

J. The Parties may develop subsequent plans, including Master Participatory Agreements, Supplemental Project Agreements, and other documents to implement this MOU.

IV. COORDINATION STRUCTURE

A. The Parties shall form a Steering Committee that is made up of (1) the signatories to this MOU and (2) additional organizations or agencies that agree with the goals of the Project and substantively contribute to the furtherance of the Project with staff time, financial resources, and other contributions, if agreed upon by the signatories to the MOU.

B. The Parties shall also create a planning team (the "Planning Team") and an implementation team (the "Implementation Team") to carry out the planning for and the implementation of the Project, as addressed in more detail below.

C. The Steering Committee shall be responsible for overall project direction, approaches, fundraising, outreach, and communications and will oversee the Planning Team and Implementation Team. The Steering Committee may establish additional teams, workgroups or committees as needed.

D. All organizations on the Steering Committee shall endeavor to make substantive contributions to advancing the Project in the form of staffing, funding, or other in-kind contributions.

E. The Planning Team shall report to the Steering Committee and shall be responsible for planning, coordinating, and directing the planning phase of the Project, from project inception through project approval, including, but not limited to, hiring and overseeing contractors. The Planning Team shall be responsible for the Project's progress, quality, and content and shall be empowered to make real-time decisions to advance project planning.

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F. The Implementation Team shall report to the Steering Committee and shall be responsible for planning, coordinating, and directing the implementation phase of the Project, after Project approval. The Implementation Team shall be empowered to make real-time decisions to implement the proposed action, including, but not limited to, entering into stewardship agreements and hiring contractors.

G. The Steering Committee will ensure robust stakeholder and public engagement throughout Project planning and implementation, in addition to public participation requirements established by the National Environmental Policy Act and other Forest Service direction.

V. IT IS MUTUALLY UNDERSTOOD AND AGREED BY AND AMONG THE PARTIES THAT:

A. Principal Contacts. Individuals listed below are authorized to act in their respective areas for matters relating to this MOU.

Principal Contacts:

Program Contact		Administrative Contact	
Organization:	The Nature Conservancy		
Name:	David Edelson	Name:	Mary Lieth
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Program Contact		Administrative Contact	
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FAX:	530 288-1908	FAX:	530 288-1908
Email:	lindsey@theccp.org	Email:	cathy@theccp.org

Program Contact		Administrative Contact	
Organization:	Nevada City Rancheria Nisenan Tribe		
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Program Contact		Administrative Contact	
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Principal U.S. Forest Service Contacts:

U.S. Forest Service Program Manager Contact		U.S. Forest Service Administrative Contact	
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B. Assurance Regarding Felony Conviction or Tax Delinquent Status for Corporate Entities. This MOU is subject to the provisions contained in the Department of Interior, Environment, and Related Agencies Appropriations Act, 2012, P.L. No. 112-74, Division E, Section 433 and 434 regarding corporate felony convictions and corporate federal tax delinquencies. Accordingly, by entering into this MOU each Party acknowledges that it: (1) does not have a tax delinquency, meaning that it is not subject to any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, and (2) has not been convicted (or had an officer or agent acting on its behalf convicted) of a felony criminal violation under any Federal law within 24 months preceding its signature of this MOU, unless a suspending and debarring official of the USDA has considered suspension or debarment is not necessary to protect the interests of the Government. If any given Party fails to comply with these provisions, the U.S. Forest Service will annul this MOU and may recover any funds which were provided by the U.S. Forest Service to that Party which that Party has expended in violation of Sections 433 and 434.

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C. Notices. Any communication affecting the operations covered by this MOU given by the U.S. Forest Service or any of the other Parties is sufficient only if in writing and delivered in person, mailed, or transmitted electronically by e-mail or fax, as follows: (1) To the U.S. Forest Service Program Manager, at the address specified in the MOU; (2) To the other Parties, at the address for their respective Principal Contacts as shown above in this MOU or, such replacement address as a given Party may hereafter notify the other Parties to use. Notices are effective when delivered in accordance with this provision, or on the effective date of the notice, whichever is later.

D. Public Notices. It is the U.S. Forest Service's policy to inform the public as fully as possible of its programs and activities. The Parties are encouraged to give public notice of the receipt of this MOU and, from time to time, to announce progress and accomplishments. Press releases or other public notices should include a statement substantially as follows: "Tahoe National Forest of the U.S. Forest Service, Department of Agriculture, in cooperation with NAME." The Parties may call on the U.S. Forest Service's Office of Communication for advice regarding public notices. The Parties are requested to provide copies of notices or announcements to the U.S. Forest Service Program Manager and to The U.S. Forest Service's Office of Communications as far in advance of release as possible.

E. Participation in Similar Activities. This MOU in no way restricts the U.S. Forest Service or any of the other Parties from participating in similar activities with other public or private agencies, organizations, and individuals.

F. Endorsement. No contributions made by any of the other Parties under this MOU shall by direct reference or implication convey U.S. Forest Service endorsement of the Parties' products or activities.

G. Nonbinding Agreement. This MOU creates no right, benefit, or trust responsibility, substantive or procedural, enforceable by law or equity. The Parties shall manage their respective resources and activities in a separate, coordinated and (where appropriate) mutually beneficial manner to meet the purpose(s) of this MOU. Nothing in this MOU authorizes any of the Parties to obligate or transfer anything of value. Specific, prospective Project activities that involve the transfer of funds, services, property, and/or anything of value to a Party requires the execution of separate agreements and are contingent upon numerous factors, including, as applicable, but not limited to: agency availability of appropriated funds and other resources; cooperator availability of funds and other resources; agency and cooperator administrative and legal requirements (including agency authorization by statute); etc. This MOU neither provides, nor meets these criteria. If the Parties elect to enter into an obligation agreement that involves the transfer of funds, services, property, and/or anything of value to a Party, then the applicable criteria must be met. Additionally, under a prospective agreement, each Party operates under its own laws, regulations, and/or policies, and any Forest Service obligation is subject to the availability of appropriated funds and other resources. The negotiation, execution, and administration of these prospective agreements must comply with all applicable law. Nothing in this MOU is intended to alter, limit, or expand the statutory and regulatory authority of any agencies involved.

H. Use of U.S. Forest Service Insignia. In order for any of the other Parties to use the U.S. Forest Service insignia on any published media, such as a Web page, printed publication, or audiovisual production, permission must be granted from the U.S. Forest Service's Office of Communications. A written request must be submitted and approval granted in writing by the Office of Communications (Washington Office) prior to use of the insignia.

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I. Members of U.S. Congress. Pursuant to 41 U.S.C. 22, no U.S. member of, or U.S. delegate to, Congress shall be admitted to any share or part of this MOU, or benefits that may arise therefrom, either directly or indirectly.

J. Freedom of Information Act (FOIA). Public access to MOU or agreement records must not be limited, except when such records must be kept confidential and would have been exempted from disclosure pursuant to Freedom of Information regulations (5 U.S.C. 552).

K. Text Messaging While Driving. In accordance with Executive Order (EO) 13513, "Federal Leadership on Reducing Text Messaging While Driving," any and all text messaging by Federal employees is banned: a) while driving a Government owned vehicle (GOV) or driving a privately owned vehicle (POV) while on official Government business; or b) using any electronic equipment supplied by the Government when driving any vehicle at any time. All of the Parties, their employees, volunteers, and contractors are encouraged to adopt and enforce policies that ban text messaging when driving company owned, leased or rented vehicles, POVs or GOVs when driving while on official Government business or when performing any work for or on behalf of the Government.

L. Termination. Any of the Parties, in writing, may terminate this MOU in whole, or in part, at any time before the date of expiration.

M. Debarment and Suspension. The other Parties shall immediately inform the U.S. Forest Service if they or any of their principals are presently excluded, debarred, or suspended from entering into covered transactions with the federal government according to the terms of 2 CFR Part 180. Additionally, should any of the other Parties or any of their principals receive a transmittal letter or other official Federal notice of debarment or suspension, then they shall notify the U.S. Forest Service without undue delay. This applies whether the exclusion, debarment, or suspension is voluntary or involuntary.

N. Modifications. Modifications within the scope of this MOU must be made by mutual consent of the Parties, by the issuance of a written modification signed and dated by all properly authorized, signatory officials, prior to any changes being performed. Requests for modification should be made, in writing, at least 30 days prior to implementation of the requested change.

O. Commencement/Expiration Date. This MOU is executed as of the date of the last signature and is effective through the fifth anniversary of such execution date, at which time it will expire unless extended by the Parties.

P. Authorized Representatives. By signature below, each Party certifies that the individuals listed in this document as the representatives of that Party are authorized to act in their respective areas for matters related to this MOU.

In witness whereof, the Parties hereto have executed this MOU as of the last date written below.

DocuSigned by:
David Edelson
0418C75498C9400

11/5/2019

DAVID EDELSON, Forest Program Director
The Nature Conservancy

Date

DocuSign Envelope ID: 36C6E50F-5EB9-4DB2-BA31-AC05963B1DF8

DocuSigned by:
Melinda Booth
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11/5/2019

MELINDA BOOTH, Executive Director — Date
South Yuba River Citizens League

DocuSigned by:
Willie Whittlesey
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11/5/2019

WILLIE WHITTLESEY, Assistant General Manager — Date
Yuba Water Agency

DocuSigned by:
Mary Mitsos
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11/7/2019

MARY MITSOS, President & CEO — Date
National Forest Foundation

DocuSigned by:
Zach Knight
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11/5/2019

ZACH KNIGHT, Co-Founder & Managing Partner — Date
Blue Forest Conservation

DocuSigned by:
Cathy LeBlanc
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11/6/2019

CATHY LEBLANC, Executive Director — Date
Camptonville Community Partnership

DocuSigned by:
Shelly Covert
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11/6/2019

SHELLY COVERT, Tribal Spokesperson — Date
Nevada City Rancheria Nisenan Tribe

DocuSigned by:
Paul Roen
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11/6/2019

PAUL ROEN, Board Chair, County Supervisors — Date
Sierra County

for

11/7/19

ELI ILANO, Forest Supervisor — Date
U.S. Forest Service, Tahoe National Forest

The authority and format of this agreement have been reviewed and approved for signature.

AARON STOUT — Date
U.S. Forest Service, Grants Management Specialist
(530) 478-6825 | aaron.stout@usda.gov
631 Coyote Street, Nevada City, CA 95959

DocuSign Envelope ID: 36C6E50F-5EB9-4DB2-BA31-AC05963B1DF8

List of Priority NEPA-Ready Project Work in the North Yuba Partnership Project in the Trapper Project (Planned Decision Summer 2020)

Nepa Decision	Project Name	Activity Description	Units (UOM)	Amount	Funding Estimation	
					Est Cost per Unit	Contract Cost
Bloody Run	Culvert replacement	Watershed improvement	Structures	2	$275,000	$550,000
Bloody Run	Hand thin/hand pile	Fuels reduction	Acres	61	$1,500	$91,500
Bloody Run	Hand thin/machine pile	Fuels reduction	Acres	598	$1,000	$598,000
Bloody Run	Mastication	Fuels reduction	Acres	127	$800	$101,600
Bloody Run	Invasive weed treatments	Manual removal of noxious weeds	Acres	7	$500	$3,500
Bloody Run	Road Decomissioning	Watershed improvement	Miles	2.6	$15,000	$39,000
Bloody Run	Road repair	Watershed improvement	Miles	2	$15,000	$30,000
Bloody Run	Underburn	Fuels reduction	Acres	1260	$500	$630,000
Camp	Pile Burning	Fuels reduction	Acres	1000	$50	$50,000
Camp	Camp Underburn	Fuels reduction	Acres	4472	$500	$2,236,000
Camp	Hand thin/hand pile	Fuels reduction	Acres	2000	$1,500	$3,000,000
Camp	Hardwood culturing	Timber Stand Improvement	Acres	1000	$1,500	$1,500,000
Camp	Invasive weed treatments	Manual removal of noxious weeds	Acres	4000	$500	$2,000,000
Camp	Pre-commercial thin	Release/Forest Health	Acres	16	$800	$12,800
Camp	Realign stream	Watershed improvement	Miles	0.1	$100,000	$10,000
Camp	Road access	Road decom./closing/gate installation	Miles	15.6	$2,000	$31,200
Camp	Road maintenance	Watershed improvement	Miles	34	$5,000	$170,000
Camp	Road repair	Watershed improvement	Miles	16.2	$15,000	$243,000
Camp	Trail re-route	Re-route non-motorized trail segment	Miles	0.5	$10,000	$5,000
Camp	Wildlife habitat improvement	Wildlife cover piles and Oak Release	Acres	150	$1,500	$225,000
Canyon	Underburn	Fuels reduction	Acres	652	$250	$163,000
Chapman	Wildlife habitat improvement	Wildlife cover piles and Oak Release	Acres	90	$1,500	$135,000
Coleman	Hand thinning	Hardwood enhancement	Acres	467	$800	$373,600
Coleman	Machine piling	Fuels reduction	Acres	38	$1,000	$38,000
Coleman	Mastication	Fuels reduction	Acres	387	$800	$309,600
Coleman	Noxious weed Rx	Manual removal of noxious weeds	Acres	539	$500	$269,500
Coleman	Road maintenance	Watershed improvement	Miles	3.35	$10,000	$33,500
Coleman	Underburn	Fuels reduction	Acres	388	$500	$194,000
Gold	Aspen Restoration	Watershed improvement	Acres	22	$1,500	$33,000
Gold	Hand thin/hand pile	Fuels reduction	Acres	65	$1,500	$97,500
Gold	Pile Burning	Fuels reduction	Acres	100	$50	$5,000
Gold	Pre-commercial thin	Release/Forest Health	Acres	42	$800	$33,600
Gold	Road Decomissioning	Road Decomissioning	Miles	4.8	$15,000	$72,000
Gold	Road Reconstruction	Watershed improvement	Miles	1	$15,000	$15,000
Gold	Underburn	Fuels reduction	Acres	673	$500	$336,500
Gold	Wildlife habitat improvement	Wildlife cover piles	Acres	240	$1,000	$240,000
Plum	Invasive weed treatments	Manual removal of noxious weeds	Acres	65	$500	$32,500
Plum	Hand thin/machine pile	Fuels reduction	Acres	403	$1,000	$403,000
Plum	Mastication	Fuels reduction	Acres	37	$800	$29,600
Plum	Pre-commercial thin	Release/Forest Health	Acres	44	$800	$35,200

Nepa Decision	Project Name	Activity Description	Units (UOM)	Amount	Est Cost per Unit	Contract Cost
Plum	Road Decomissioning	Watershed improvement	Miles	7.23	$15,000	$108,450
Plum	Road maintenance	Watershed improvement	Miles	21	$5,000	$105,000
Plum	Road repair	Watershed improvement	Miles	6	$15,000	$90,000
Plum	Underburn	Fuels reduction	Acres	1200	$500	$600,000
Plum	Wildlife habitat improvement	Wildlife cover piles and Oak Release	Acres	175	$1,500	$262,500
Pendola	Pile Burning	Fuels reduction	Acres	70	$50	$3,500
Pendola	Underburn	Fuels reduction	Acres	700	$450	$315,000
Pendola	Invasive weed treatments	Watershed improvement	Acres	45	$500	$22,500
Phoenix	Pile Burning	Fuels reduction	Acres	1300	$50	$65,000
Phoenix	Hand thin/hand pile	Fuels reduction	Acres	900	$1,500	$1,350,000
Phoenix	Underburn	Fuels reduction	Acres	425	$500	$212,500
Recreation	Restroom installation	Watershed improvement	facilities	12	$25,000	$300,000
Red Ant	Wildlife habitat improvement	Wildlife cover piles and Oak Release	Acres	535	$1,500	$802,500
Red Ant	Invasive weed treatments	Watershed improvement	Acres	265	$500	$132,500
Red Ant	Underburn	Fuels reduction	Acres	650	$750	$487,500
Ruby	Pile Burning	Fuels reduction	Acres	270	$50	$13,500
Ruby	Invasive weed treatments	Pesticide	Acres	100	$200	$20,000
Ruby	Wildlife habitat improvement	Release and weeding	Acres	1350	$1,500	$2,025,000
Sierra City	hand cut and pile fuels reduction	Fuels reduction	Acres	63	$80	$5,040
Trails	Deer Lake Trail rehabilitation	Watershed improvement	miles	0.5	$10,000	$10,000
Trails	Downie River Bridge rehabilitation	Watershed improvement	Structures	1	$2,000	$2,000
Trails	Rock Creek Nature Trail rehabilitation	Watershed improvement	Miles	1	$5,000	$5,000
Trails	Sand Pond trail rehabilitation	Watershed improvement	Miles	1	$5,000	$5,000
Twin Culverts	Bridge Installation	Watershed improvement	structures	1	$3,000,000	$3,000,000
Yuba	Small Tree Thinning	Fuels reduction	Acres	3000	$2,500	$7,500,000
Yuba	Wildlife habitat improvement	Wildlife cover piles and Oak Release	Acres	370	$1,500	$555,000
Yuba	Underburn	Fuels reduction	Acres	2500	$500	$1,250,000
Yuba	Hand thin/hand pile	Fuels reduction	Acres	845	$1,500	$1,267,500
Yuba	Pile Burning	Fuels reduction	Acres	3000	$50	$150,000
Yuba	Planting	Forest health	Acres	625	$150	$93,750
TOTALS					**Total**	**$35,134,440**

List of NEPA- Project Activities In Process In the North Yuba Partnership Project

Nepa Decision	Project Name	Activity Description	Units (UOM)	Amount	Funding Estimation		Notes
					Est Cost per Unit	Contract Cost	
Trapper	Commerical Thinning	Forest Health and fuels reduction	Acres	8400	$0	$0	Revenue will be used to offset the cost of other treatments to the extent possible.
Trapper	Non-commerical Thinning	Forest Health and fuels reduction	Acres	5500	$700	$3,850,000	Cost could be much more if not done concurrent with commerical harvest, but could be less depending on bids.

Nepa Decision	Project Name	Activity Description	Units (UOM)	Amount	Est Cost per Unit	Contract Cost	
Trapper	Hand thin/hand pile	Fuels reduction	Acres	2500	$1,500	$3,750,000	
Trapper	Invasive weed treatment	Manual and chemical removal of noxious weeds	Acres	300	$500	$150,000	
Trapper	Reforestation	Planting of openings and associated surveys	Acres	800	$250	$200,000	
Trapper	Road Decomissioning	Watershed improvement	Miles	8	$15,000	$120,000	
Trapper	Road repair	Watershed improvement	Miles	42	$15,000	$630,000	
Trapper	Underburn	Fuels reduction	Acres	12800	$500	$6,400,000	
Trapper	Pile Burning	Fuels reduction	Acres	8000	$50	$400,000	
Trapper	Legacy Skid Trail Decompaction	Watershed improvement	Acres	162	$500	$81,000	
Trapper	Hyrdaulic mine stabilization and drainage improvements	Watershed improvement	Acres	24	$2,500	$60,000	
Trapper	Wildlife Cover Pile Creation	Wildlife habitat improvement	Acres	974	$1,000	$974,000	
TOTALS					**Total**	**$16,615,000**	