

**The Four-Forest Restoration Initiative: Promoting Ecological Restoration, Wildfire Risk Reduction, and Sustainable Wood Products Industries**  
*A proposal for funding extension under the Collaborative Forest Landscape Restoration Program*

**Proposal Overview**

The Four Forest Restoration Initiative (4FRI) represents nearly two decades of collaborative effort that has yielded unparalleled treatment and learning within the CFLR Program. 4FRI focuses on northern Arizona's ponderosa pine forest ecosystems, roughly 2.4 million acres across the Apache-Sitgreaves, Coconino, Kaibab, and Tonto National Forests, to reestablish natural fire regimes, sustain native biodiversity, and protect communities from unnaturally severe fires while also engaging new industry (see map in Attachment A). While ecological context drives 4FRI, the unprecedented scale means restoration can only be accelerated through shared stewardship. This proposal encompasses a priority landscape that aligns with: a) the State of Arizona Forest Action Plan to restore Arizona's forests; b) a Region 3 Shared Stewardship proposal; and c) includes priority watersheds outlined in the Forest Service Watershed Condition Framework (WCF) that deliver half of the water for the City of Phoenix. This proposal supports synergies with tribal authorities and tribal forest management for increased market access of woody material. This proposal also leverages partnerships by aligning goals with state, local, and tribal governments, in addition to fostering extraordinary social license for restoration across the entire footprint (See Attachment A for the project area map). Due to its ambitious size and goals, this proposal seeks funding to support the next 10-year implementation cycle to fully realize 4FRI objectives.

**Past Performance**

*Lifetime Goals*

There are three versions of the lifetime goals for 4FRI: the original version from 2010, revised lifetime goals in 2013, and revised lifetime goals in 2017. The original (2010) lifetime goals were tied to the seven restoration items in the original act and based on actual accomplishments for the four forests. The assumption was 30,000 acres of mechanical harvest and approximately 123,900 acres of fuels-related activities per year could be achieved and would attract new wood products industry into the region. These lifetime goals were prior to the 4FRI Phase 1 Integrated Resource Service Contract (4FRI Phase 1).

In 2013 the Washington Office allowed projects to update their lifetime goals and include all performance measures measured in the 4FRI annual report. This occurred after award of 4FRI Phase 1, assumed that all 300,000 contracted acres would be treated, and that by 2017, 20,000 acres per year would be awarded to contracts outside of 4FRI Phase I. It also assumed a maximum accomplishment of 60,000 acres per year of prescribed fire.

In 2017, the Washington Office allowed projects to again update their lifetime goals. Assumptions in the 2013 revision were not met. 4FRI Phase 1 did not perform as expected, failing to deliver additional mill capacity needed to process 30,000 acres per year of harvest. This significantly dropped the lifetime goals for timber volume sold, acres treated, and tons of

green biomass produced to align with what had been produced to date and move away from the aspirational goal of 1 million acres of mechanical harvest over 20 years. The underperforming 4FRI Phase 1 that failed to deliver log and biomass utilization on the west side of the project area is the primary reason for the shortfall in mechanical treatment, however prescribed fire and use of wildfire were largely successful.

#### 2017 4FRI Strategic Plan

In 2017, following the lifetime goals adjustment, the 4FRI Stakeholders and the Forest Service collaboratively developed the [4FRI Strategic Plan](#). The plan identified the goal of 50,000 acres of mechanical harvest per year (pages iv, 14, and 38) and 70,000 acres per year of treatments using prescribed fire (pages 11 and 35). These acreage figures are more aligned with the 2013 revised lifetime goals and with the 4FRI Stakeholder's goal of treating 1 million acres with mechanical harvest over a 20-year time frame from the [Path Forward](#) (page 4), as well as the collaboratively developed Strategic Plan goal of 50,000 acres per year of mechanical harvest. This extension request is needed to achieve mechanical harvest objectives that will create desired forest structure, pattern, and composition reflecting the best available science for southwestern ponderosa pine and to meet original lifetime goals and the 4FRI Strategic Plan.

#### Status of 4FRI Lifetime Goals

4FRI has met or exceeded the 2017 revised lifetime goals for acres accomplished of the following: forest vegetation established; soil and water resources protected maintained or improved; terrestrial habitat restored; rangeland vegetation improved; and hazardous fuels treated both inside and outside the Wildland Urban Interface (WUI). 4FRI has met or exceeded the 2017 revised lifetime goals for miles accomplished of the following: stream habitat improved; stream habitat restored; trails maintained to standard; and property lines marked/maintained to standard.

4FRI has not met or exceeded the 2017 revised lifetime goals for acres of the following: forest vegetation improved; noxious weeds managed; lake habitat improved; nor forestlands treated using timber sales. 4FRI has not met or exceeded 2017 revised lifetime goals for miles of the following: high clearance and passenger car roads receiving maintenance; roads decommissioned; high clearance and passenger car roads improved; nor trails improved to standard. 4FRI has not met or exceeded its 2017 production goals for timber volume sold and green tons of bioenergy products produced. Many of the goals that were not attained reflect the inability to achieve sufficient mechanical harvest through timber sales or stewardship contracts/agreements. For example, timber harvest acres are a part of the attainment of fuels objectives, while road maintenance and improvement are likewise tied to road packages associated with timber harvest activities.

To date, 4FRI has treated roughly 860,000 acres contributing to fuels projects, with 60% of those acres accomplished by prescribed fire and wildfire managed to meet forest plan objectives in the

WUI. 4FRI has been very successful using managed wildfire to meet forest plan objectives achieving 387,639<sup>1</sup> acres of fuels reduction by this means.

Conversely, key goals such as acres treated by timber sale and timber volume sold remain a challenge for 4FRI. The primary challenges have been: a) the relatively low value of forest products produced and their associated markets; b) economic factors that constrain establishment of new industry; c) unforeseen impacts of regulatory mechanisms; and d) flawed execution of the 4FRI Phase 1.

#### Main Social, Economic and Ecological Outcomes to Date

One of the primary objectives for 4FRI is to create, support, and sustain a wood products industry able to mechanically thin 1 million acres over a 20-year time frame. Efforts such as 4FRI Phase 1, modernizing the delivery of forest products through the use of virtual boundaries, digital prescriptions, and designation by prescription, and partnering to remove barriers to establishing industry within the state and counties have contributed to successful establishment of three new milling facilities. A second long-term 20-year stewardship contract ([4FRI Phase 2](#)) is currently in the solicitation process and expected to help create needed capacity in the western portion of the 4FRI footprint.

While 4FRI continues to work toward achieving its objectives, we have successfully completed the NEPA and created and maintained a strong social license for landscape-scale restoration. Despite the currently limited industry capacity, in 2017, restoration-based activities on 4FRI generated almost 1,000 full and part-time jobs and more than 900 FTE jobs in the region, approximately \$150 million in regional output, \$50 million in regional labor income, and impacted over 140 different industry sectors ([Hjerpe and Mottek-Lucas 2018](#)).

Restoration treatment activities also reduced fire risk in multiple locations across the 4FRI footprint and were tested with multiple, large wildfires including the Wallow and San Juan Fires on the Apache-Sitgreaves NF and the Slide Fire on the Coconino National Forest ([Johnson et al. 2019](#), [Roccoforte 2016](#), [USDA Forest Service 2014](#), [Waltz and Stoddard 2013](#)). Additional fuels treatment effectiveness report summaries for 4FRI can be found in the [2018 4FRI Annual Report](#).

#### Matching Requirement Original vs Actual

The original 4FRI proposal noted: \$500,000 in partner contributions per year for a total of \$5,000,000 in partner funds through agreements; \$200,000 partner in-kind services for a total of \$2,000,000 over the life of the project; and \$5,734,000 in goods for service generated over the life of the project, for a total of \$12,734,000 in expected contributions from non-appropriated sources.

Partner contributions from 2010 include: \$1,781,576 in agreements; \$9,837,498 in partner in-kind contributions; and \$19,341,989 in goods for services generated across the 4FRI landscape from 2010 through 2019, for a total of \$30,961,063 from non-appropriated sources. The total

---

<sup>1</sup> 102,581 acres in the WUI and 285,058 acres in the Non-WUI

amount of non-appropriated sources exceeded the original 4FRI proposal. In addition, 4FRI generated \$51,690,868 in leveraged funds through the life of the project, which includes items such as purchasing sawmill equipment and in-woods processing and transportation equipment (e.g., skidders, log trucks).

### **Applying Learning to the Future**

Reflecting on past performance, 4FRI has both attained some of its most ambitious objectives and continues to work on attaining some of its most ambitious objectives.

#### Planning Track

The planning track of the first 4FRI analysis delivered a stakeholder-supported [Record of Decision](#) (ROD) that cleared over 430,000 acres for mechanical restoration thinning followed by prescribed fire and an additional 156,000 acres for prescribed fire only (no mechanical treatment). In as much, the 4FRI planning track attained its ambitious objective. This landmark decision reflected both best-practice collaboration and areas for improvement. Specifically, a deadlock toward the end of the planning process could only be resolved outside the collaborative process by a small group of stakeholders working with the Forest Service under the auspices of the Governor of Arizona. That effort delivered a NEPA decision that was not opposed by the 4FRI collaborative, but left room for improvement. In the second, ongoing 4FRI NEPA analysis, Rim Country, 4FRI Stakeholders have devoted additional effort to achieve agreement on issues and outcomes of concern, which are then brought into discussions with the Forest Service. That two-step approach has been successful. On January 8, 2020, 4FRI stakeholders approved consensus comments on the Rim Country DEIS, which will be delivered to the Forest Service.

In addition to the first EIS and ROD, 4FRI has utilized other "shelf-stock" NEPA to implement restoration across the landscape, as illustrated in the map Attachment A. The substantial acreage of NEPA clearance across this landscape is a success. However, some 4FRI Stakeholder/Forest Service agreements have not been consistently applied. This issue has been addressed in frank discussions between 4FRI Stakeholders and the Forest Service, with a mutual commitment to achieve better alignment during implementation in ongoing and future projects.

#### Implementation Track

4FRI has used multiple methods to implement mechanical harvesting. 4FRI awarded the 10-year 4FRI Phase 1 in 2012, as well as a mix of regular timber sales, stewardship contracts, and stewardship agreements since 2010. As previously described in the Past Performance section, 4FRI Phase I intended to mechanically thin 300,000 acres over 10 years, with expected annual completion of approximately 30,000 acres. Currently in its 7th year, 4FRI Phase 1 should have implemented around 200,000 acres of mechanical treatments. Instead, as of October 2019, 4FRI Phase 1 only treated 13,268 acres. The 4FRI regular timber program<sup>2</sup> outside of 4FRI Phase 1 has completed 120,122 acres since 2010, which still falls below the 15,000-20,000 acre per year goal.

---

<sup>2</sup> Includes timber sales, stewardship contracts and stewardship agreements

To achieve the goals stated under the extension, the Forest Service and Stakeholders have profoundly modified how the implementation track is executed. A new landscape-scale RFP ([4FRI Phase 2](#)) has been developed in a novel partnership led by the Forest Service that includes state agencies, local government, watershed operators, and industry experts and incorporates lessons learned from the 1st RFP and 4FRI Phase 1 contract. These adjustments include a more robust evaluation and selection process that considers a proposal's executability, financing, technical feasibility, Forest Service due diligence, contractor accountability, economic sustainability of the contract, and industry flexibility. Industry responses and ultimate outcome of the 4FRI Phase 2 RFP will not be known until the end of the solicitation period, likely toward the end of February 2020, with contract award anticipated in the spring/summer of 2020. The Forest Service and partners have done considerable work to ensure the RFP has a proper balance of implementing NEPA decisions and meeting desired conditions, providing flexibility and assurances to industry, and building the required accountability in the contract(s).

A major lesson learned from the first CFLRP authorization is that creating industry is difficult and once industry is lost, it is very difficult to get it back. Retaining existing industry is therefore key to the second authorization timeframe. Existing industry will still have the goal of harvesting 15,000 to 20,000 acres per year under this proposal. The [4FRI Phase 2](#) contract is expected to provide additional markets for the existing industry. To date, the Forest Service is offering and awarding on average 23,000 acres/year to existing industry, primarily on the east side of the project area, which will continue. Contract mechanisms will continue to include timber sales, stewardship contracts (integrated service and integrated timber contracts), and stewardship agreements. Currently, the State of Arizona is hesitant to implement timber sales under Good Neighbor Authority because of a lack of wood products industries; however, the State has used that authority on multiple hand thinning projects in the WUI within the 4FRI footprint.

A lesson learned from 4FRI Phase 1 is that wood supply alone does not guarantee success. The Forest Service and 4FRI Stakeholders now understand that regulatory mechanisms and economic development must be aligned to accomplish landscape-scale restoration that includes extensive mechanical thinning. 4FRI will continue to take advantage of and promote opportunities that provide the necessary alignment for success. For example, the [Healthy Forest Enterprise Incentive](#) that provides financial incentives for wood product industries has been re-authorized. 4FRI Stakeholders actively promoted the program to industry partners, resulting in increased enrollment and utilization of the incentive. Concurrently, the Arizona Department of Transportation (ADOT) will have increased [ADOT weight limits](#) for forest products delivery vehicles, in place by early 2020, from 80,000 pounds up to 97,000 pounds. The alignment of wood supply, economic incentives, and regulatory relief is key to implementing shared stewardship concepts and expanding efforts to establish these factors is expected to result in improved success in implementation in the next implementation cycle.

## Economic, Social, and Ecological Context

The 4FRI landscape occupies portions of five Arizona counties: Coconino, Gila, Navajo, Apache and Greenlee. According to Headwaters Economics<sup>3</sup>, these counties have experienced increasing population growth, personal income and employment since 2017. This long-term steady growth is a general indicator of a healthy economy. The bulk of employment in the five-county region is in service-related industries, which grew 27% from 2000 to 2017. Non-service-related industries, which include forestry-related positions, have grown by 47% during that period.

Accommodation and food services comprise the largest private sector jobs component.

A healthy forest ecosystem directly supports the social and economic well-being of this area, and also supplies municipal water for Phoenix, the fifth largest city in the United States. Restored forests will benefit both water supply and water quality. Forests within the 4FRI footprint also support significant economic contributions from outdoor recreation (see Table 1).

<b>Economic Contributions from Water-based Outdoor Recreation by County<sup>4</sup></b>						
	<b>AZ Resident Participants</b>	<b>Jobs</b>	<b>GDP</b>	<b>Federal Tax</b>	<b>State and Local Tax</b>	<b>Output</b>
<b>Apache</b>	17,000	4,000	\$222,000,000	\$32,300,000	\$25,700,000	\$421,800,000
<b>Coconino</b>	329,000	17,000	\$1,040,000,000	\$151,000,000	\$121,100,000	\$1,978,000,000
<b>Gila</b>	169,000	3,000	\$202,500,000	\$29,400,000	\$23,500,000	\$387,400,000
<b>Navajo</b>	118,000	4,000	\$220,000,000	\$31,900,000	\$25,600,000	\$420,400,000

Table 1. Economic Contributions from Water-based Outdoor Recreation by County.

4FRI has strong social license from the communities within the 4FRI footprint, as reflected in studies supported by the 4FRI Multi-Party Monitoring Board shortly after the award of the initial 2010 CFLR proposal (Mottek 2013). In 2012, Flagstaff residents passed a \$10 million municipal bond to support planning and implementation of forest health and watershed protection projects on Forest Service lands adjacent to the City of Flagstaff and 4FRI treatments, also known as the Flagstaff Watershed Protection Project (FWPP). FWPP is an example of shared stewardship with the City of Flagstaff, Coconino County, Arizona Department of Forestry and Fire Management, and the Forest Service. In 2019, the Museum Fire burned through partially completed FWPP treatments close to Flagstaff. Post-fire surveys are underway to better understand the community response to the fire and post-fire flooding risk events and assess continued public support for forest management, which will help to inform FWPP and 4FRI.

The majority of the 4FRI area (86%) is dominated by forests with very high or high fire hazard ratings (56% and 34%, respectively, see the fire hazard map in Attachment A). Treatment within the WUI has been identified as the highest priority in the original proposal. Prioritizing the WUI is an example of large-scale efforts aligning with guidance from the Healthy Forests Restoration Act of 2003, local governments, and the six Community Wildfire Protection Plans (CWPPs)

<sup>3</sup> Demographic data associated with counties can be found at <https://headwaterseconomics.org/dataviz/forest-indicators/>

<sup>4</sup> [The Economic Contributions of Water-related Outdoor Recreation in Arizona Audubon Arizona March 2019](#)

located in the project area. Without action, uncharacteristic wildfire will continue to jeopardize communities, economic benefits, and ecosystem services provided by these forests.

### Ecological context

#### Key Vegetative Components

The 2.4 million-acre 4FRI project area is a complex mix of 36 separate vegetation types defined by the Forest Serviced Region 3 Midscale Vegetation data layer. The table below displays all vegetative types that comprise >1% of the project area.

Vegetation Dominance Type	Acres	% of Total <sup>5</sup>
Ponderosa pine	1,114,990	46%
Ponderosa pine mix	776,480	32%
Grass-forb mix	98,348	4%
Pinyon, pinyon-juniper	68,026	3%
Juniper	64,558	3%
Pine-juniper mix	60,379	2%
Alligator juniper-oak	47,272	2%
Upper evergreen forest tree mix	46,187	2%
Shrub mix	21,591	1%
Gambel oak	20,291	1%
Upper deciduous-evergreen forest tree mix	18,940	1%
Aspen-evergreen tree mix	18,098	1%
Douglas-fir	13,303	1%
<b>TOTAL</b>	<b>2,368,463</b>	<b>98%</b>

Table 2. Vegetation Dominance Type within 4FRI

Ponderosa pine types make of 80% of the project area and are the main focus area for overstory vegetation types within the project area. Current conditions in ponderosa pine far exceed the natural range of variability for number of trees per acre. Historically, fire-based disturbance regimes created patchy, structurally heterogeneous forest structure with multi-aged stands dominated by old trees interspersed with regenerating trees and grassy openings ([Covington and Moore, 1994](#), [Allen et al. 2002](#), [Fule et al. 2001](#), [Reynolds et al. 2013](#)). Openings are now fewer, smaller, and fragmented patches with decreased rates of litter decomposition and increased fuels accumulation (Sabo et al. 2008). Wildlife, fish, and native plant habitats are threatened by decreased habitat resiliency, decreased diversity and habitat loss due to uncharacteristic disturbance events. Currently, fires are at risk of burning at a severity, frequency, and scale outside the natural range of variability ([Abatzoglou and Williams 2016](#), [Kent 2015](#), [Swetnam and Betancourt 1998](#), [Westerling et al. 2006](#), [Westerling et al. 2014](#)). In addition, in severely burned areas, invasive plants, including noxious weeds have an increased competitive advantage ([Sheley and Petroff 1999](#)).

Wildlife species are varied and diverse across the 4FRI footprint. Federally listed endangered species include five fish species: Gila chub, Gila topminnow, Razorback sucker, Loach minnow, and Spikedace. The Mexican grey wolf also occurs within the 4FRI boundary and is a Federally

<sup>5</sup> % of total is based on 4FRI project area of 2,418,540 acres.

Endangered/Experimental population under section (10.)(j.) of the Endangered Species Act. Federally listed Threatened species include the Chiricahua leopard Frog, Mexican spotted owl, Western yellow-billed cuckoo, Narrow-headed gartersnake, Northern Mexican gartersnake, Gila trout, Little Colorado Spinedace, and Apache trout.

There are 26 Forest Service sensitive species within the project area including five bird species (Bald eagle, Golden Eagle, Northern goshawk, American peregrine falcon, and Burrowing owl western), four amphibian species (Northern leopard frog, Lowland leopard frog, Fossil springsnail, and California floater), five mammal species (Navajo Mogollon vole, Western red bat, Spotted bat, Allen's Lappet-browed bat, and Pale Townsend's big-eared bat), five fish species (Desert sucker, Sonoran sucker, Little Colorado sucker, Headwater chub, and Roundtail chub), and nine insect species (Netwing Midge, A Mayfly *Fallceon eatoni*, A Mayfly *Moribaetis mimbresaurus*, A Stonefly, Parker's clyloepus riffle beetle, A Caddisfly *Lepidostoma apache*, A Caddisfly *Lepidostoma knulli*, A Caddisfly *Limnephillus granti*, A Caddisfly *Wormaldia planae*, Ferris' Copper, and Nokomis Fritillary aka Great Basin Silverspot).

There are 452 Mexican spotted owl (MSO) (Federal Threatened Species) Protected Activity Centers (PACs) within the 4FRI project area. Since the first CFLRP proposal, the US Fish and Wildlife Service has revised the [MSO Recovery Plan](#) to note that two primary reasons for the original listing of the Mexican spotted owl in 1993: historical alteration of its habitat as the result of timber-management practices, and the threat of these practices continuing as evidenced in existing Forest Plans. The danger of stand-replacing wildland fire was also cited as a threat. Since publication of the 1995 Recovery Plan, new information has been acquired on the biology, threats, and habitat needs of the Mexican spotted owl. The primary threats to its population in the U.S. have transitioned from timber harvest to an increased risk of stand-replacing wildland fire. Fire also impacts necessary biodiversity; for example, spotted owl species are expected to experience large-scale habitat modification or loss due to high intensity fire ([Wan et al. 2019](#)). Currently, Wild Earth Guardians (WEG) has filed a lawsuit that has an injunction against all activities within Mexican spotted owl habitat that is affecting the Tonto National Forest portion of the 4FRI project area and is expected to be lifted in early Spring 2020. In December, the Apache-Sitgreaves, Coconino and Kaibab National Forests received a Notice of Intent (NOI) to sue over the Mexican spotted owl. The 4FRI stakeholders have invited WEG to participate in collaboration in 4FRI, but they have chosen not to engage. The 4FRI Multi-Party Monitoring Board and the Forest Service continue monitoring both pre- and post-treatment to determine the effects of treatments on individuals and Mexican spotted owl populations.

There are 228 northern goshawk post-fledging areas within the 4FRI project area. This is regional sensitive species and has management recommendations for habitat across the 4FRI project area. Uncharacteristic stand replacing fire negatively affects the habitat of these species in a variety of ways such as habitat loss and/or increased post-fire runoff and sedimentation.

The 4FRI project area is made up of all or portions of 316 6<sup>th</sup> code watersheds. The Watershed Condition Framework (WCF) summary for the project is displayed in the map in Attachment A. There are multiple stressors related to the functioning at risk and impaired watersheds, but 63%

of the area is in poor condition because the fire regime is departed from the Natural Range of Variability and prone to unnaturally severe wildfires. Forty-five percent of the area is affected by poor road systems that are affecting overall watershed condition, as well.

The WCF also highlights that invasive species are creating poor watershed conditions over 16% of the project area. According to the WCF, water quality is generally good to fair over 91% of the project area currently; however, the possibility of uncharacteristic stand replacing fire over 63% of the area make the treatment of these acres a high priority in order to maintain good to fair water quality across the 4FRI landscape.

Uncharacteristic high-intensity crown fires can alter successional trajectories of post-burn vegetation, creating and entraining type conversion and novel ecological systems as compared to those existing before such events ([Savage and Mast 2005](#), [Kuenzi et al. 2008](#)). Restoring 4FRI forests to within their natural range of variability increases ecosystem resilience to wildfire, drought, and other disturbances ([Stephens et al. 2013](#), [Wasserman et al. 2019](#)). While future climate scenarios may include shifts in potential vegetation ranges, restoration goals for these fire-adapted forests are viable strategies to increase forest resiliency to climate change, slowing or halting the turnover to novel systems, and protect legacy old-growth forests ([Gonzalez et al. 2018](#), [Waltz et al. 2014](#)). Following high-severity fire, riparian and aquatic habitats are also at risk from excessive erosion pulses, loss of riparian vegetation, and lower water yields ([Baker 1990](#), Cain et al. 1997). Future climate patterns are predicted to put fish and wildlife habitats at further risk ([Gonzalez et al. 2018](#)).

Some roads on the 4FRI footprint are adversely impacting watershed conditions. The Coconino and Kaibab National Forests have completed Travel Management decisions that reduce the number of open miles across the landscape. The 1st 4FRI EIS identified 860 miles of unauthorized roads to be decommissioned, that were identified during the Forests' TMR processes. We expect similar outcomes as the Tonto and Apache-Sitgreaves complete Travel Management planning. Removing or relocating road stressors identified in the WCF as a part of 4FRI implementation will aid in greatly improving watershed conditions.

*Current Fire Regime/Condition and expected wildland fire behavior*

The 4FRI project area is dominated by frequent fire regimes and condition classes that are not in alignment with historic fire frequency. The table below displays the current setting for the project area.

<b>Fire regime/Condition Class</b>	<b>Acres</b>	<b>% of total</b>	<b>Fire regime/Condition Class</b>	<b>Acres</b>	<b>% of total</b>
<b>0-35 yrs</b>	<b>2,303,605</b>	95%	<b>35-100+ yrs</b>	<b>107,750</b>	4%
Condition Class 1	120,548	5%	Condition Class 1	1,497	<1%
Condition Class 2	966,899	40%	Condition Class 2	0	0%
Condition Class 3	1,216,158	50%	Condition Class 3	106,253	4%

*Table 3 Fire Regime and Condition Classes of the 4FRI Project Area*

Although, frequent low intensity surface fires should be a regular ecosystem process, currently in the Southwestern ponderosa pine ecosystems, high-intensity fires burn across larger areas than they did historically ([Kent 2015](#), [Swetnam and Betancourt 1998](#), [Westerling et al. 2006](#), [Westerling et al. 2014](#)). As displayed in the condition class ratings, fires within 4FRI are now at risk of burning at a severity, frequency, and scale outside the historic range of variability as a result of the fundamental shift in forest structure and pattern and condition class. These risks only increase under future climate predictions ([Gonzalez et al. 2018](#), [Kent 2015](#)). The fire hazard rating for the project area is displayed in the map Attachment A.

#### Key Social, Economic and Ecological Conditions at Risk

While treatments as described in 4FRI's 2010 proposal have made progress towards restoration of key ecosystem functions, the last decade has shown an increase in catastrophic, unnaturally severe wildfires that have had damaging impacts to the communities and lives of people within the WUI. Most notably, the Wallow Fire burned over 530,000 acres on the eastern side of Arizona within the 4FRI boundary and in western New Mexico. The fire resulted in the loss of 72 buildings. The 21,227-acre Slide Fire outside of Sedona, Arizona cost Sedona nearly \$100 million dollars in lost revenues from tourism as a result of the fire. The 16,309-acre Tinder fire on the Mogollon Rim destroyed 34 structures. Most recently, the Museum Fire outside Flagstaff threatened homes in Flagstaff and resulted in post-fire flooding risks. The impacts of these wildfires highlight the urgency of restoring Arizona's ponderosa pine ecosystems.

Without action and given the fire hazard and fire condition classes across the landscape, there is a real possibility that wildfires will burn larger and in a stand-replacing manner that will negatively impact the economic well-being of the tourist industry that supports many jobs in the region, negatively impact water quantity and quality for local and downstream users, and negatively impact recreation dollars generated from water-based recreation. Without action, as the MSO Recovery Plan states, "stand replacing wildfires will make recovery of the species nearly impossible due to habitat loss." Noxious weed expansion in uncharacteristic stand replacing wildfire patches will also be exacerbated. With expected warming of the climate, the ability of forests that experience uncharacteristic wildfire to regenerate is in question. The intensity of uncharacteristic fires can alter the successional trajectory of burned areas, leading to different post-fire vegetative communities than those that existed before the event, further perpetuating an unnatural fire regime ([Savage and Mast 2005](#), [Kuenzi et al. 2008](#), [Stoddard et al. 2018](#)). This loss of habitat due to type conversion will cause a shift in wildlife species and negatively impact all species that depend on ponderosa pine forests. Watershed conditions will also degrade from a multitude of stressors associated with stand replacing wildfire.

### **Proposed Extension and Treatments**

#### Desired Conditions and Strategy

The purpose of 4FRI is to reestablish and maintain heterogeneity of the structure, pattern, health, function, and vegetation composition and diversity of the ponderosa pine ecosystems encompassed in the 4FRI Landscape Strategy. The overall strategy is to restore uneven-aged stand structures and pre-fire suppression spatial patterns to improve stand and landscape structure and health and set the stage for increased management of wildland fires to meet

resource objectives. One of the key outcomes of restoration is increased ecosystem resilience to natural disturbances and anticipated changes from climate change. The desired conditions for 4FRI are outlined in detail in the 1st Final Environmental Impact Statement (EIS) completed in 2015 for the west side of the 4FRI landscape, the Draft Environmental Impact Statement (DEIS) for the 4FRI Rim Country Project on the eastside of the 4FRI landscape, and the Kaibab, Coconino, Apache-Sitgreaves, and Tonto's Forest Plans. The desired conditions and strategy to move toward those conditions have not significantly changed since the 2010 proposal.

#### Strategy for Key Resource Areas in CFLRP Authorization Legislation

4FRI NEPA decisions outline strategies for the key resource areas highlighted in the CFLRP reauthorization. For example, Old Tree Implementation and Large Tree Retention plans in the 1<sup>st</sup> 4FRI EIS and RIM Country DEIS are in alignment with old tree retention and removal of primarily young aged trees as outlined in the legislation (see old tree retention discussion below).

Mechanical and fire treatments would also address the establishment and spread of invasive species, as well as insect and disease concerns. Per requirements in the CFLRP, restoration projects across the 4FRI landscape do not propose establishment of new, permanent roads, and all temporary roads will be decommissioned. With respect to water quality and watershed condition and function, the restoration strategy will facilitate improvement of overall surface water quality and watershed condition and function by reducing uncharacteristic stand replacing fire and prevent subsequent effects of post-fire flooding. The 4FRI strategy also involves a focused effort on [stream restoration](#), especially in the Rim County area which supports a large number of perennial streams. The Rim Country NEPA and Implementation Plans will include condition-based management identifying a suite of actions that can be tailored to existing site conditions, in a manner consistent with CFLRP guidance.

#### Intersection of Strategy with Other Restoration and Stewardship Efforts

The 4FRI project is aligned with both national and local strategies. The [USDA Strategic Plan 2018-2022](#) outlines multiple areas that align with the goals of 4FRI and activities that are currently taking place within 4FRI, specifically within the USDA's Strategic Goal #6: Ensuring Productive and Sustainable Use of our National Forest System lands. 4FRI is engaged in a streamlined NEPA processes through landscape scale analysis, utilizing multiple authorities with diverse partners to get our work done, including Good Neighbor Authority, one of the first 20-year stewardship projects, and utilizing multiple stewardship contracts to meet our desired conditions. 4FRI is also a learning laboratory for the modernization efforts, another highlight of the USDA goal to modernize policies and practices.

4FRI is also aligned with the [USDA Forest Service Strategic Plan: FY 2015-2020](#) especially with the Strategic Goal of sustaining our Nation's Forest and Grasslands. The outcome of 4FRI mirrors the desired outcome of resilient and adaptive ecosystems in a changing environment through restoring the structure, function, and composition to improve resilience and restoring the natural processes that will sustain and maintain the restored conditions.

The 4FRI project is integrated with other planning efforts across Northern Arizona to restore ecosystem and economic health across Northern Arizona. The State of Arizona created the [Arizona Forest Resource Strategy](#) in 2010 that outlines seven major resource strategies including People and Forests, Ecosystem Health, Water and Air, Fire, Economics, Climate Change and Culture. The Strategy that was co-developed with multiple partners including the Forest Service, outlines long-term coordinated approaches for addressing forest resource issues across all of Arizona. The [2015 Arizona Forest Action Plan Status Report](#) highlights the role of 4FRI in meeting goals outlined in the 2010 report.

### How Strategy Restores Tree Composition, Structure, and Function

The vast majority of the 4FRI landscape is departed from historical reference conditions. The overall strategy for both the 1<sup>st</sup> EIS and the Rim Country DEIS, as well as other smaller planning documents, is to reconfigure composition, structure, and function toward natural spatial patterns for ponderosa pine and dry mixed-conifer, as well as reestablish tree openings and interspaces that have been lost due to fire exclusion, as described in [Reynolds et al. 2013](#) and subsequently incorporated into the respective Forest Plans. This will be accomplished largely through mechanical treatments, especially in the ponderosa pine cover type, while allowing fire to play more of a natural role in the dry mixed conifer cover type. Implementing mechanical treatments and fire also decreases fuel loading, helps to protect old trees (see more on old growth below) and protects communities and watersheds from uncharacteristic crown fire. The following gives a visual display of structure changes mechanical thinning that are occurring within 4FRI.

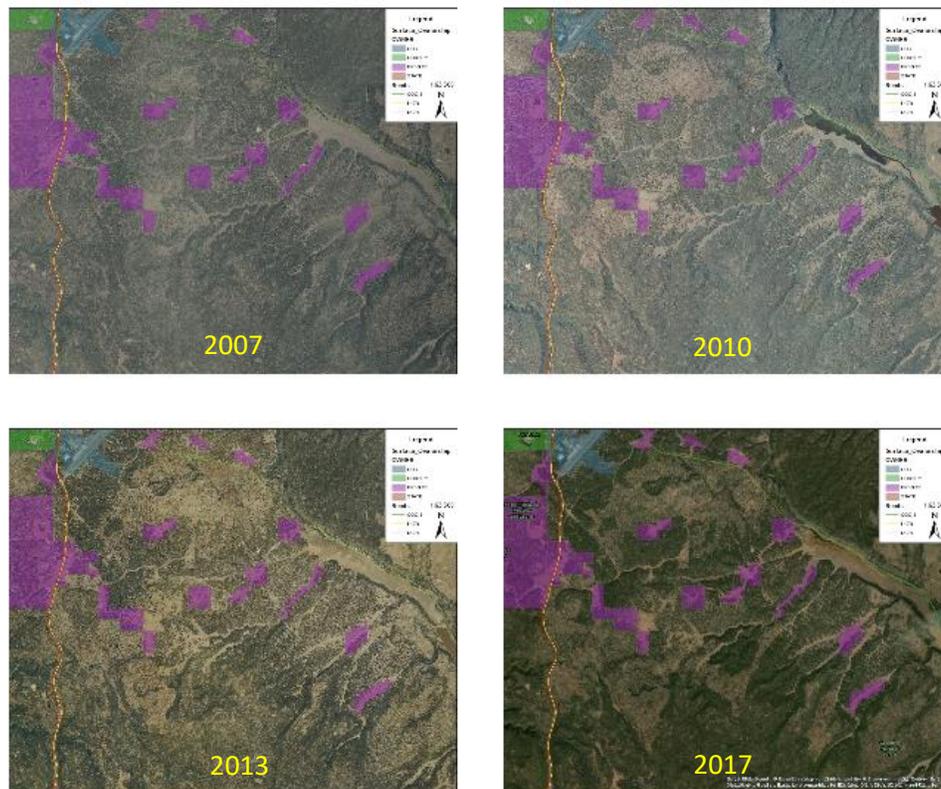


Figure 1. Aerial view of a portion of 4FRI showing reduction of fuels post-mechanical harvest over 10 years.

The photos above display the before (2007) and after aerial photo (2010, 2013, and 2017) of mechanical harvest on multiple timber sale areas south of Flagstaff, Arizona on the Flagstaff Ranger District of Coconino National Forest. The photos are typical of 4FRI treatments and illustrate changes in structure, pattern, and composition that will positively influence fire behavior. The requested extension will allow for this type of work to be expanded across the 4FRI landscape.

#### How Strategy Maintains or Contributes to Old Growth Restoration

The 4FRI Stakeholders developed the [Old Growth Protection and Large Tree Retention Strategy](#) in 2012, and its concepts were memorialized in the 1<sup>st</sup> 4FRI EIS in the respective [Old Tree and Large Tree Implementation Plans](#). Old trees (approximately over 150 years old) will be retained, with few exceptions, regardless of their diameter, within the 1<sup>st</sup> EIS area. Removal of old trees would be rare. Exceptions would be made for threats to human health and safety, and those rare circumstances where the removal of an old tree is necessary in order to prevent additional habitat degradation. Old trees will not be cut for forest health issues or to balance age or size class distributions. In addition, the 1<sup>st</sup> EIS follows the Coconino and Kaibab National Forest's old growth standards. On the Coconino, the standards are that no less than 20 percent of the forested ecosystem management areas should have old growth. On the Kaibab, the forest plan states that old growth should occur throughout the landscape as part of uneven-aged management. Both the Coconino and Kaibab restoration units meet or exceed the desired conditions for old growth as detailed in their forest plans. The Rim County DEIS includes an [Old Tree and Large Tree Implementation Plans](#) that mirrors the Old Tree Implementation Plan from the 1<sup>st</sup> 4FRI EIS and retains old trees across the landscape, in a manner appropriate to specific site conditions.

#### How Strategy Uses Best Available Science

The forests in Northern Arizona have been continually researched since 1908 and there is a plethora of best available science relevant and built into 4FRI. Both the 1<sup>st</sup> EIS and Rim Country DEIS use the best available science for the 4FRI landscape as described in detail in "[Restoring Composition and Structure in Southwestern Frequent-Fire Forests: A science-based framework for improving ecosystem resiliency](#)" (Reynolds et al. 2013) otherwise known as GTR-310. GTR-310 was developed collaboratively with the Forest Service and scientific experts in Northern Arizona and provides a restoration strategy from a compilation of the best available science for the two key forest types in the 4FRI landscape: ponderosa pine and dry-mixed conifer.

In addition, the desired conditions and strategy for both the 1<sup>st</sup> EIS and Rim Country DEIS were developed collaboratively with input from scientific experts in Northern Arizona, included scientific organizations such as the Ecological Restoration Institute, The Nature Conservancy, and U.S. Fish and Wildlife Service, who participated in the planning effort as part of the 4FRI Stakeholders Planning and DEIS Work Groups. These scientific organizations and relevant scientific experts continue to participate in the implementation and monitoring of the 1<sup>st</sup> EIS to facilitate the continued use of best available science by providing a variety of science sources in addition to GTR-310 relevant to 4FRI (Esch et al. 2018).

#### **Wildfire Risk Reduction**

## Addressing Uncharacteristic Wildland Fire and Reestablishing Natural Fire Regimes

4FRI treatments will be based on an integration of fire management planning, community protection activities, and a broad program of forest restoration. Reduction of hazardous fuels through thinning of primarily small diameter trees and prescribed burning to create forest structure, pattern and composition where stand-replacing fires are rare under severe burning conditions across an entire landscape will reduce the potential for uncharacteristic wildland fire behavior ([Johnson et al. 2019](#), [Roccoforte 2016](#), [USDA Forest Service 2014](#)), while creating conditions that facilitate the safe reestablishment and maintenance of natural fire regimes that support and maintains ecosystem health. In addition, the proposed treatments will result in a more resilient forest structure ([Schoennagel et al. 2017](#), [Stevens-Rumann et al. 2013](#)). Future climate projections for the Southwest ([Gonzalez et al. 2018](#)) show hotter temperature and more variable precipitation patterns, making mid to short term wildfire forecasting more difficult and less reliable. However, the proposed structure, pattern, and composition will make the resulting forest structure more resilient and better able to cope with expected climate change.

## Types of Hazardous Fuels Treatments that Will Occur

4FRI currently utilizes mechanical and hand thinning, prescribed and pile burning, wildfires that meet forest plan objectives, mastication, and air curtain burners. We expect to use the same treatment options in this proposal and the acres associated can be found in Attachment B. The placement of treatments is based upon multiple factors including Wildland Urban Interface (WUI), High risk watersheds, priority watersheds in WCF, and areas with high fire risks.

## Anticipating and Managing Future Wildland Fires

Once restoration has taken place, we expect that it will be possible for an increased amount of low-severity, frequent fire to burn in this ecosystem. Successful restoration will allow low-severity fire to inexpensively shape forest conditions in the future and will broaden the temporal window and range of weather conditions under which prescribed burning can occur and wildland fires can be managed for restoration objectives. Unplanned ignitions (wildland fire) will continue to be utilized where conditions are safe and suitable to accomplish restoration.

## Reduction of Long-term Wildland Fire Management Costs

The cost of suppressing wildland fires has increased drastically over the last decade due to numerous factors, including protection of the WUI, a reduced federal workforce, fuel densification and forest health issues, firefighter/public/media expectations, and intolerance to smoke ([Mangan 1999](#), [Calkins and Gebert 2009](#), [Gebert et al. 2007](#)). 4FRI-specific studies related to fire suppression costs include [Fitch et al 2018](#), who cite a reduction of costs when fire severity is decreased. Mechanical treatments and re-introduction of fire will reduce fire severity across the landscape which will equate to a reduction in fire suppression costs. Cost avoidance studies in the 4FRI footprint include [Fox 2015](#), who examined cost avoidance accrued by implementing FWPP.

At present, USFS fire planning efforts tend to be WUI-focused and occur at small spatial scales when compared to the extent and magnitude of large fires like Rodeo-Chediski and Wallow. However, the Forest Service is implementing larger burn blocks and utilizing wildfires managed

for resource benefits at larger scales than at the beginning of the first CFLRP proposal. For example, the Forest Service has implemented 387,639 acres of wildfire to meet land management plan objectives, including three fires >20,000 acres in size (23,885-acre Camillo Fire, 30,641-acre Juniper Fire, and 33,850-acre Jack Fire) since 2015. The 4FRI mission to treat fuels strategically across the 2.4 million-acre planning area would not only maximize restoration effectiveness but enhance the ability to manage fires for restoration objectives at scale, while simultaneously protecting values-at-risk and minimizing fire management costs.

#### Maintenance of Desired Conditions

Long-term maintenance of desired conditions will be achieved through a combination of prescribed and wild surface fires and mechanical and hand treatments to mimic natural disturbance regimes. As the structure and pattern becomes closer to the natural range of variability, these strategies will allow a greater number of wildfires to be managed to meet forest plan objectives.

Capacity/Shared Stewardship/Cross Boundary Projects and Collaboration with Wildland fire  
Currently, the USFS through 4FRI is engaging with shareholders in an unprecedented way that will expand across the 4FRI footprint. The Coconino and Kaibab National Forest have an Annual Operating Plan with the State of Arizona to share resources on prescribed fires, increasing prescribed fire capacity across agencies. The Coconino has a joint burn plan with the State of Arizona to allow prescribed fire to cross jurisdictional boundaries which increases the scale, decreases costs and increases the benefit of prescribed fire across all lands. Wildfires managed to meet land management planning objectives are currently coordinated across ownership boundaries of state, private and federal lands.

#### Plans to Collaborate with Partners to Mitigate Barriers

4FRI has engaged multiple focus groups to better understand messaging in regards to forest health, water protection and wildfire resilience ([Metz and Everitt 2019](#), [Mottek 2013](#)). [Metz and Everitt 2019](#) used FWPP as a case study to inform 4FRI. [Mottek \(2013\)](#) examined questions specific to restoration treatments in and around the Flagstaff and Williams, Arizona locations. The Tonto National Forest has developed Potential Wildfire Operation Delineations (PODS) that help explain wildfire response across their landscape. These tools will continue to be utilized, and because 4FRI has such a robust collaborative, we anticipate additional learning opportunities in the next authorization time frame.

#### Benefits to Local Communities

Studies like [The Economic Impact of Post Wildfire Flooding Bill Williams Mountain, Flagstaff Watershed Protection Project Cost Avoidance Study](#), and [Full Cost Accounting of the 2010 Schultz Fire](#) show that protection of communities from catastrophic fire and post fire flooding, through forest restoration is critical ([Fox 2015](#), [Combrink and Rouse 2018](#)). The economic impact and potential damages for a single fire on Bill Williams Mountain outside of Williams, Arizona has been estimated to be between \$379-694 million dollars ([Combrink and Rouse 2018](#)). Costs associated with a catastrophic fire in the Dry Lake Hills area north of Flagstaff have been estimated between \$489-986 million ([Fox 2015](#)). In addition, 4FRI restoration work itself

has a significant positive economic contribution to the region as outlined in the 2018 study [Regional Economic Contributions of the Four Forest Restoration Initiative](#). The study found in Fiscal Year 2017, 4FRI restoration activities generated almost 1,000 full and part-time jobs and more than 900 FTE jobs in the region; approximately \$150 million in regional output; \$50 million in regional labor income; and impacted over 140 different industry sectors in the region ([Hjerpe and Mottek-Lucas, 2018](#)).

The White Mountain Stewardship Project (WMSP), which took place within the 4FRI boundary on the Apache-Sitgreaves National Forest from 2004 to 2014, also displayed positive impacts to local economies through jobs and economic contribution. [2013-2014 White Mountain Stewardship Project \(WMSP\) Economic Assessment](#) noted that in 2013, the WMSP-related businesses in the region generated more than 242 local jobs, \$13 million in wages (labor income), \$106 million in economic output (value of production), and \$13 million in state and local tax revenues. In 2014, the WMSP-related businesses in the region generated about 292 local jobs, \$17 million in wages, \$118 million in economic output, and \$16 million in state and local tax revenues.

This data indicates a forest restoration-based economy that is achieving about 13,000 acres of mechanical treatments per year. With extension and expansion of the scale of restoration with the new [4FRI Phase 2](#) RFP, we expect these contributions to the local economy to expand proportionally with treated acres. Under the 4FRI goal of 50,000 acres of mechanical treatment per year, we expect economic benefits to be at least three times greater than currently realized.

The [4FRI Phase 2](#) RFP is currently offering up to 818,000 acres of wood and service work utilizing the new 20 year contracting authority authorized in the 2018 Omnibus Budget Bill in hopes of enticing perspective large scale industry to invest in wood products infrastructure. Qualified Opportunity Zones were created by the 2017 Tax Cuts and Jobs Act in Arizona counties where the much of the [4FRI Phase 2](#) RFP is located, creating additional incentive for investment in these new industries.

Our goal for 4FRI is cost avoidance of large wildfires, job creation as we expand the number of acres treated and healthy watersheds that provide clean drinking water, ecotourism and water-based recreation benefits. We also expect continued and increased partner contributions.

#### Key Metrics to Track Social and Economic Goals

1. Contracts offered each year
2. Workers employed in forest industry
3. Fuel reduction acres in relation to high risk wildfire
4. Fire through creation of defensible space - Treatments in WUI
5. Partner contributions

## Utilization of Forest Restoration Byproducts-

### Maintain Existing Utilization Infrastructure

Since the 4FRI footprint encompasses the entire Mogollon Rim, and far exceeds the 1st 4FRI analysis area, the 4FRI strategy for utilization of forest restoration byproducts during the first CFLRP period included a large component outside the 4FRI Phase 1 contract. This affected the wood baskets at both Eastern and Western ends of the project area. In the White Mountains, the strategy was articulated around the "Bridge the Gap" program, intended to retain and further develop industry created under the White Mountain Stewardship Contract (2004 – 2014). This program has been widely successful, resulting in ramped up industry-funded mechanical restoration thinning of 9,000-14,000 acres/year. Forest restoration byproducts have been utilized in large diameter sawmilling (Nutrioso, Arizona), heating pellets (Show Low, Arizona), small diameter sawmilling (Eagar and Snowflake, Arizona), and bioelectricity (Snowflake, Arizona) and have been supporting around 250 direct jobs annually at zero cost to the Forest Service since no subsidy is being paid for ecological services and stumpage is being collected. In the Williams/Flagstaff, Arizona area, the strategy was articulated around the continuation of timber sales that support the production of pallets by Southwest Forest Products, and the development of new small diameter sawmilling in the Garland Prairie area by new industry supported by a Stewardship Agreement with The Nature Conservancy. Forest products currently being produced within the 4FRI landscape include 30% sawn products<sup>6</sup>, 10% roundwood products and 60% forest and mill residue products.

Under the CFLRP extension, existing industry will continue to be supported by timber sales and stewardship contracts issued outside the larger [4FRI Phase 2](#) contract. See Attachment C for expected utilization across 4FRI. We expect that 75% of all material harvested across the footprint will be utilized, and harvested/mechanically treated acres will ramp up over the 10-year period. For current industry, the product mix is expected to be similar to current products. With the [4FRI Phase 2](#) contract, there is an opportunity for new product utilization and production.

### Attract Investments in Appropriate-Scale New Utilization Infrastructure

The 4FRI implementation strategy rests on the premise that the costs of landscape-scale restoration far exceed available Forest Service subsidies, and that ecosystem services monetization is still in its infancy, the only executable way to fund landscape scale restoration is to rely on the forest products economy to offset the costs. Landscape-scale restoration must pay for itself through forest restoration byproducts utilization. The core challenge of 4FRI large scale implementation (~50,000 acres of mechanical thinning/year) remains the lack of utilization infrastructure, hence an inability to produce marketable forest restoration byproducts to offset treatment costs. The strategy for utilization of forest restoration byproducts of the second CFLRP period remains the same: to attract investment in appropriate-scale utilization infrastructure, by offering one or several long term (20 years under the new Stewardship Authority) large-scale

---

<sup>6</sup> Note only 2% of 4FRI sawn products are plane and dry kilned board that can be sold for a high value. The remaining sawn products are low value rough cut green boards and cants.

(several hundred thousand acres) contract(s) that provide guaranteed material supply sufficient for a viable return on investment, and to fully engage partners and stakeholders in regulatory and economic incentives. The main tool to execute this is the [4FRI Phase 2](#) Stewardship solicitation that is designed to increase the acres treated primarily on the west side of 4FRI.

There is a two-pronged approach for the extension request: 1) maintain existing industry; and 2) solicit a 20-year stewardship project that can treat up to 800,000 acres over the life of the contract(s). Please refer to the maps in Attachment A that displays current mill and RFP sub-areas for a visual representation of this strategy.

For fire treatments, we expect to increase the use of wildfire to increase as stand structures and patterns are better able to withstand wildfire and meet Forest Plan objectives, with at least 70,000 acres of prescribed fire accomplished per year ([4FRI Strategic Plan](#)).

### **Collaboration**

The 4FRI Stakeholder Group (SHG) was chartered in 2010. Membership is diverse, drawn from local, county, and state government, the private sector, forest-products industry, non-profit organizations representing a variety of constituencies, educational institutions, and the public at large. The SHG is highly functional and flexible, with long-term participation by numerous members. Most of the groups that have membership in the SHG have been consistent participants since the SHG was chartered in 2010 and were heavily engaged prior to the formation of the formal SHG focused on the CLFLRP. New individuals or entities may join at any time, and the SHG maintains a list of members in good standing (Attachment D). SHG meetings are open to the public and media and there are no significant barriers to participation for any interested parties.

The SHG convenes monthly, with attendance by Forest Service staff/leadership, stakeholders, and other partners. These meetings provide a venue for informational updates, outreach, and prioritization of SHG tasks, decision making, and networking. The SHG is governed by the [4FRI Stakeholder Group Charter](#), which provides a collaborative vision, mission, and actions for 4FRI, along with the organizational structure and decision rules needed to facilitate such a large collaborative group. The 4FRI SHG and the Forest Service work together under the [2011 Memorandum of Understanding](#) that describes mutual benefit and interests. The SHG and Forest Service have also co-developed basic principles for 4FRI, including those outlined in the 2010 [Path Forward](#) and the 2017 [4FRI Strategic Plan](#).

The 4FRI SHG is self-facilitated through its Steering Committee, which manages rotating chair and co-chair positions that lead 4FRI meetings. Each SHG chair serves for 3 months, during which time the co-chair is preparing to take over as primary chair. On an as-needed basis, the SHG or a work group will employ professional facilitation services to address more complex issues. For example, the work group assisting with the DEIS for Rim Country is currently using professional facilitation services, which will be terminated once the process is complete. The 4FRI Charter provides a decision-making structure that the SHG chairs implement to resolve disputes and generate collaborative agreement.

The SHG charters work groups that support planning and implementation, which are open to all interested parties and interact with Forest Service staff and other partners in a variety of venues. These groups are engaged in the development and review of the Rim Country EIS, preparing this CFLRP renewal, monitoring and adaptive management, public outreach via newsletter and online media, industry engagement, and "comprehensive" restoration of other ecosystems included in 4FRI. For example, a specific work group was formed to assist the Forest Service with this CFLRP renewal application. Discussion about the establishment of a new work group or memorandum of understanding between the SHG and Forest Service for the implementation of 4FRI Phase 2 efforts is ongoing. The SHG will work with Forest Service staff to ensure effective and consistent translation of the completed NEPA into treatments on the ground.

The most significant outcomes of the SHG's work to date include continued collaboration of developing the first 4FRI EIS, the 4FRI Strategic Plan, and the in-progress Rim Country DEIS. Over time, the SHG has increased its efficiency in working together, understanding the EIS process, and building and maintaining trust both within the SHG and between the SHG and Forest Service. Although the SHG is not without its challenges, the group continues to meet regularly and attended by a diverse group of stakeholders who collaborate with the Forest Service with noteworthy success, in most efforts ([Esch and Vosick 2016](#)).

The chartered SHG will continue to operate in the same manner described here under the proposed extension and supports this proposal (Attachment E). The 4FRI SHG and Forest Service will continue to work together and share ownership and develop creative thinking and innovation to accomplish shared goals for the 4FRI landscape.

### **Multi-party Monitoring**

Monitoring in 4FRI is conducted in collaboration between the Forest Service and the 4FRI Multi-Party Monitoring Board (MPMB), which is a 4FRI Stakeholder Group (SHG) work group. The MPMB's mission is to ensure that monitoring leads to collaborative learning and to determine if treatments are meeting the desired conditions of a restored fire-adapted ecosystem and resilient socioeconomic processes across the entire 2.4 million-acre 4FRI landscape. The [4FRI Adaptive Management, Biophysical and Socioeconomic, Mexican Spotted Owl and Arizona Bugbane Monitoring Plan](#) (henceforth: Monitoring Plan) was developed for the first Environmental Impact Statement (EIS) and designed to ensure that 4FRI treatments consistent with the intent of 4FRI and to use monitoring data for adaptive management. The Monitoring Plan is being adopted and modified as needed for the Rim Country EIS. The [4FRI Strategic Plan](#) also outlines specific outcomes, objectives, and action items for monitoring.

A significant amount of learning has occurred based on the first EIS process that has impacted the MPMB approach for implementation on the new Rim Country DEIS. Ecological monitoring results have not yet resulted in adaptive management changes, due to the limited acreage of mechanical treatment completed to date. However, the MPMB has collected a wealth of pre-treatment data to inform adaptive management as implementation ramps up, which is detailed in the [4FRI Rapid Plot Pre-Treatment Monitoring Report 2019](#). For example, pretreatment data confirms that tree densities across all projects were in a higher range than the range of natural

variability. 4FRI pretreatment densities were 124 to 228 trees per acre while historical reconstructions estimate the natural range of variability for southwestern ponderosa pine was between 12 to 124 trees per acre ([Reynolds et al. 2013](#)). In addition, 4FRI MPMB has collected wildlife population and occurrence data on a multitude of wildlife species. The MPMB has also been active in adapting their monitoring approaches and protocols to opportunistically collect post-treatment data. Socio-economic monitoring has resulted in the [4FRI Socioeconomic Monitoring Report](#) in 2013 and a [Regional Economic Contributions of 4FRI](#) in 2018 to understand the economic impacts of 4FRI. All 4FRI monitoring reports can be found [here](#).

The MPMB manages monitoring and oversees data management and analysis along with the Forest Service Monitoring Coordinator, although, this position is currently unfilled. The diverse make-up of the MPMB helps to ensure a fair and unbiased approach to monitoring, and the MPMB regularly engages experts in specific fields to further develop knowledge and ensure the use of best available science. The MPMB represents the interests of the SHG, and major decisions about monitoring questions and priorities go to the SHG to ensure that monitoring is serving the needs of the SHG and the Forest Service. The MPMB is open to all stakeholders but also recruits the necessary experts in certain fields. They have invited presentations to the SHG on a wide range of topics, including socio-economic monitoring, wildlife habitat modeling, and spring and stream monitoring. The MPMB also regularly works with local and regional monitoring efforts, engages district, forest, and regional staff of the Forest Service, and works to coordinate monitoring with other 4FRI efforts to ensure efficiency.

### **Readiness to Implement Extension**

Currently, there are 844,000 acres that are NEPA ready and 817,000 acres that are pending completion of NEPA (see map of NEPA projects in Attachment A). These acres represent the bulk of the 4FRI footprint and are comprised of two main landscape-scale planning projects, the Four-Forest Restoration Initiative (1st 4FRI EIS) and the Rim Country Environmental Impact Statements (2nd 4FRI EIS). The Record of Decision (ROD) for the 1st EIS was signed in 2014, spanned two national forests, representing an unprecedented scale collaborative effort. That decision, along with other shelf-stock NEPA, has allowed ongoing restoration as directed in the 2010 4FRI Landscape Strategy and the 2017 4FRI Strategic Plan. The second collaborative planning effort (Rim Country) includes three national forests, will clear restoration treatments across approximately 1.2 million acres, and anticipated to have a signed decision in winter 2021. Collectively, these NEPA documents have a total footprint of roughly 2.4 million acres across the four national forests. This proposal is aligned with each applicable Forest Plan as well as the State of Arizona's Forest Action Plan.

Consistent with the 2010 project proposal, stewardship contracting will continue to be the primary contracting mechanism used under this extension. While forests continue to use small-scale timber and service contracts, force accounts, and stewardship contracts, large-scale stewardship contracts remain essential to the success of the project. The 4FRI Phase 1 Integrated Resource Service Contract (IRSC) was awarded in 2012 and resulted in roughly 70,000 acres of awarded task orders to date. The Forest Service, along with State and other non-federal entities,

have recently released the [4FRI Phase 2](#) Stewardship request for Proposals which is aimed at offering a minimum of 30,000 acres per year over a 20-year period. In addition, stewardship agreements, Good Neighbor Authority, and Joint Chiefs Landscape Scale Restoration Program are all expected to play a vital role in maintaining partnerships that support implementation of forest restoration work.

### **Unit Capacity and Project Funding**

Project funding is outlined in Attachment F. Key non-Forest Service funding sources are anticipated to include; the National Forest Foundation through the [Northern Arizona Forest Fund](#), The State of Arizona, Coconino County, City of Flagstaff, The Nature Conservancy, and Salt River Project. The Multi-Party Monitoring Board funding will be 10% of the CFLRP appropriation. This has been adequate to complete monitoring to date and is expected to be adequate into the extension period.

4FRI has been a national leader in innovation and modernization and will carry that into the next 10-year cycle of implementation. The next phase of work under the proposed extension will add a collaborative governing board comprised of Forest Service and 4FRI Stakeholders. This group will guide implementation, including the [4FRI Phase 2](#) Stewardship Contract footprint. The governing board will complement the existing 4FRI Executive Board, which is comprised of the four Forest Supervisors, the 4FRI Chief Executive, the Deputy Regional Forester, and Regional Forestry Director.

4FRI has shown it can successfully innovate to accommodate 50,000 acres per year of contracted mechanical harvest with existing appropriations. For example, Designation by Prescription (DxP) enabled the Four Forests to go from 32,000 acres offered in fiscal year (FY) 2017 to just over 46,000 acres in FY 2018, with the same workforce. The savings in personnel time and marking paint cost was approximately \$750,000. In 2018, 31% of the sales offered were DxP units. That is expected to increase to greater than 50% of the project area, with a corresponding savings in sale prep costs.

4FRI is also working with The Nature Conservancy to develop other cost saving/technology-based solutions, such as the Digital Prescription Guide (4FRI DPG), a virtual boundary pilot study, and increased application of LiDAR technology, including cruising with LiDAR. In the prescribed fire arena, 4FRI is decreasing unit costs by increasing prescribed burn blocks size and sharing resources across forest boundaries to meet capacity. 4FRI also is a national leader in using wildfire to meet land management plan objectives, which would continue under this extension. Award of [4FRI Phase 2](#) contract(s) with 20-year stewardship authority will support accomplishment of restoration objectives post-extension.

## Citations

- Abatzogula John T and A.P. Williams 2016. Impact of anthropogenic climate change on wildfire across western US forests. *Proceedings of the National Academy of Sciences* 113(42) 11770-11775. Available online at <https://www.pnas.org/content/pnas/113/42/11770.full.pdf>
- Allen, C.D., Savage, M., Falk, D.A., Suckling, K.F., Swetnam, T.W., Schulke, T.P., Stacey, P.B., Morgan, P., Hoffman, M., Klingel, J.T. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: a broad perspective. *Ecol. App.* 12:1418–1433. Available online at: <https://www.biologicaldiversity.org/publications/papers/Allen-Restoration-2002.pdf>
- Arizona Rural Policy Institute. 2014. Flagstaff Watershed Protection Project Cost Avoidance Study. 23p Available online at: <https://www.flagstaffwatershedprotection.org/wp-content/uploads/2014/10/Final-FWPP-Cost-Avoidance-October-27.pdf>
- Arizona State Forestry Division. 2010. Arizona Forest resource Strategy. 106p. Available online at: <https://dffm.az.gov/sites/default/files/Arizona-Forest-Resource-Strategy-2010.pdf>
- Arizona State Forestry Division. 2015. Arizona Forest Action Plan 2015 Status report and Addendum. 364p. Available online at: <https://dffm.az.gov/sites/default/files/Arizona%20FAP%202015%20Report%20and%20Addendum%20-%2020151120.pdf>
- Audobon Sociey. 2019. The Economic Contributions of Water related Outdoor Recreation in Arizona. Prepared by Southwick Associates for Audobon Arizona. Available online at: [https://www.audubon.org/sites/default/files/audubon\\_az\\_water-based\\_rec\\_economics\\_2019-04-08.pdf](https://www.audubon.org/sites/default/files/audubon_az_water-based_rec_economics_2019-04-08.pdf)
- Baker, M.B. Jr. 1990. Hydrologic and water quality effects of fire. Pages 31-24 in J.S. Krammes, tech. coord. Effects of fire management of southwestern natural resources. Gen. Tech. Rept. RM-191. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. Available online at: [https://www.fs.fed.us/rm/pubs\\_rm/rm\\_gtr191.pdf](https://www.fs.fed.us/rm/pubs_rm/rm_gtr191.pdf)
- Bryce E Esch, Amy E M Waltz, Tzeidle N Wasserman, Elizabeth L Kalies, Using Best Available Science Information: Determining Best and Available, *Journal of Forestry*, Volume 116, Issue 5, September 2018, Pages 473–480, Available online at: <https://doi.org/10.1093/jofore/fvy037>
- Cain, T., J. Rinne, J. Stefferud, and A. Telles. 1997. Effects determinations for loach minnow, spikedace, Little Colorado spinedace, and Sonora chub on National Forests in the Southwestern Region, USDA Forest Service. Unpublished Report to the Regional Forester. 56pp.
- Combrink, T. et al. 2013. Full cost accounting of the 2010 Schultz Fire. Ecological Restoration Institute. ERI-Issues in Forest Restoration. <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/276/rec/1>
- Calkins, D and K. Gebert. 2009. Economics of Wildland Fire Risk Management. *Advances in Fire Practice, Lessons Learned Center*. Available online at: [https://www.fs.fed.us/rm/pubs\\_other/rmrs\\_2009\\_calkin\\_d001.pdf](https://www.fs.fed.us/rm/pubs_other/rmrs_2009_calkin_d001.pdf)
- Combrink, T and W. Rouse. 2018. The Economic Impact of Post Fire Flooding: Bill Williams Mountain. The Alliance Bank Policy Institute, W.A. Franke College of Business Northern Arizona University. 23p Available online at: <https://coconino.az.gov/DocumentCenter/View/21682/The-Economic-Impact-of-Post-Wildfire-Flooding-Bill-Williams-Mountain?bidId>
- Covington, W & Moore, Margaret. 1994. Southwestern ponderosa pine forest structure: Changes since Euro-American settlement. *Journal of Forestry*. 92. 39-47. Available online at: [https://www.researchgate.net/profile/Margaret\\_Moore4/publication/262687689\\_Southwestern\\_ponderosa\\_pine\\_forest\\_structure\\_Changes\\_since\\_](https://www.researchgate.net/profile/Margaret_Moore4/publication/262687689_Southwestern_ponderosa_pine_forest_structure_Changes_since_)

Euro-American\_settlement/links/57fd107208ae406ad1f3ba95/Southwestern-ponderosa-pine-forest-structure-Changes-since-Euro-American-settlement.pdf?origin=publication\_detail

Esch, B. Vosick, D.J. 2016. The Four Forest Restoration Initiative (4FRI): The role of collaboration in achieving outcomes. Ecological Restoration Institute. ERI- Issue in Forest Restoration. <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/271/rec/2>

Fitch R.A, Y.S. Kim, A.E.M, Waltz, J.C. Crouse. 2018. Changes in potential wildland fire suppression costs due to restoration treatments in Northern Arizona Ponderosa pine forests. Forest Policy and Economics 97 (2018) 101-114. Available online at: <https://in.nau.edu/wp-content/uploads/sites/212/Changes-in-potential.pdf>

Four Forest Restoration Initiative Stakeholders. 2010. The Path Forward. Available online at [https://4fri.org/wp-content/uploads/2018/04/path\\_forward\\_032410.pdf](https://4fri.org/wp-content/uploads/2018/04/path_forward_032410.pdf)

Four Forest Restoration Initiative Stakeholders. 2010. Stakeholder Group Charter. Available online at: [https://4fri.org/wp-content/uploads/2018/04/4FRI\\_charter\\_amended\\_022713.pdf](https://4fri.org/wp-content/uploads/2018/04/4FRI_charter_amended_022713.pdf)

Four Forest Restoration Initiative Stakeholders. 2010. Landscape Strategy for the 4 Forest Restoration Initiative. 33p Available online at: [https://www.fs.fed.us/restoration/documents/cflrp/2010Proposals/Region3/R3\\_4FRI/4FRI\\_Landscape\\_Strategy.pdf](https://www.fs.fed.us/restoration/documents/cflrp/2010Proposals/Region3/R3_4FRI/4FRI_Landscape_Strategy.pdf)

Four Forest Restoration Initiative Stakeholders. 2011. Old Growth Protection and Large tree retention Strategy. 34p Available online at: [https://4fri.org/wp-content/uploads/2018/04/old\\_growth\\_protection-revised080812.pdf](https://4fri.org/wp-content/uploads/2018/04/old_growth_protection-revised080812.pdf)

Fox, Wayne R. 2016. The Cost of Inaction: Flagstaff watershed Protection Cost Avoidance Study. In Arizona State Law Journal 2016 Volume 4. p65-92. Available online at: [http://arizonastatelawjournal.org/wp-content/uploads/2016/04/Fox\\_Final.pdf](http://arizonastatelawjournal.org/wp-content/uploads/2016/04/Fox_Final.pdf)

Fulé, P.Z. A.E.M. Waltz, W.W. Covington and T. A. Heinlein. 2001. Measuring Forest Restoration Effectiveness in Reducing Hazardous Fuels. Journal of Forestry November:24-29. Available online at: <https://academic.oup.com/jof/article/99/11/24/4614299>

Gebert, K.M., D.E. Calkin, J. Yoder. 2007. Estimating Suppression Expenditures for Individual Large Wildland Fires. Western Journal of Forestry 22(3). Available online at: [https://www.fs.fed.us/rm/pubs\\_other/rmrs\\_2007\\_gebert\\_k001.pdf](https://www.fs.fed.us/rm/pubs_other/rmrs_2007_gebert_k001.pdf)

Gonzalez, P., F. Wang, M. Notaro, D.J. Vimont, and J.W. Williams. 2018. Disproportionate magnitude of climate change in United States national parks. Environmental Research Letters 13: 104001. doi:10.1088/1748-9326/aade09. Available online at : <https://iopscience.iop.org/article/10.1088/1748-9326/aade09>

Hjerpe, Evan and Anne Mottek-Lucas. 2018. Regional Economic Contributions of Four Forest restoration Initiative. The Conservation Economics Institute. Available online at: <https://www.fs.fed.us/restoration/documents/cflrp/results/4fri/RegionalEconomicContributions4FRI-Dec2018.pdf>

Johnson M.C, M.C. Kennedy and S Harrison. 2019. Fuel treatments change forest structure and spatial patterns of fire severity, Arizona, U.S.A. Can. J. For. Res. 49: 1357–1370. Available online at: <https://www.nrcresearchpress.com/doi/full/10.1139/cjfr-2018-0200#.XfPhruhKiUk>

Kent, L.Y. 2015. Climate Change and Fire in the Southwest. Ecological Restoration Institute Working Paper 34. <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/680/rec/34>

Kim, Y.S, Mottek-Lucas A. 2015. 2013-2014 White Mountain Stewardship Project Economic Assessment. Ecological Restoration Institute. Economic Monitoring Report. [http://openknowledge.nau.edu/1903/1/2013-2014%20WMSP%20Economic%20Monitoring%20Report\\_formatted\\_Final\\_3.pdf](http://openknowledge.nau.edu/1903/1/2013-2014%20WMSP%20Economic%20Monitoring%20Report_formatted_Final_3.pdf)

- Kuenzi, A.M., P.Z. Fulé' and C.H. Sieg. 2008. Effects of fire severity and pre-fire stand treatment on plant community recovery after a large wildfire. *Forest Ecology and Management* Vol. 225;855-865. Available online at: [https://www.fs.fed.us/rm/pubs\\_other/rmrs\\_2008\\_kuenzi\\_a001.pdf](https://www.fs.fed.us/rm/pubs_other/rmrs_2008_kuenzi_a001.pdf)
- Mangan, R. J. 1999. Issues in Large Wildfire Suppression Cost Reduction: An Operational Perspective. Pages 31-35 in *Proceedings of the Symposium on Fire Economics, Planning, and Policy: Bottom Lines: 1999 April 5-9 San Diego CA. PSW-GTR-173*, Albany, CA. Available online at: [https://www.fs.fed.us/psw/publications/documents/psw\\_gtr173/psw\\_gtr173\\_02\\_mangan.pdf](https://www.fs.fed.us/psw/publications/documents/psw_gtr173/psw_gtr173_02_mangan.pdf)
- Metz D and M. Everitt. 2019. Messaging Recommendations for Improving Forest health, Water Protection and Wildfire Resilience. FM3 Research. 14p. Available online at: <https://www.carpediemwest.org/wp-content/uploads/Forests-Water-Wildfire-Resilience-Messaging-Memo-FINAL.pdf>
- Mottek Lucas, A. 2013. Four Forest Restoration Initiative Socioeconomic Monitoring Report. 95pp Available online at: [https://4fri.org/wp-content/uploads/2018/04/4FRI\\_SE\\_Monitoring\\_Report\\_7\\_26\\_13.pdf](https://4fri.org/wp-content/uploads/2018/04/4FRI_SE_Monitoring_Report_7_26_13.pdf)
- Roccoforte, J.P. 2016 Fact Sheet: Evaluating treatment effectiveness following the 2014 San Juan Fire, White Mountains, Arizona. Ecological Restoration. ERI Fact Sheet 2016. Available online at <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/40/rec/1>
- Reynolds, Richard T.; Sánchez Meador, Andrew J.; Youtz, James A.; Nicolet, Tessa; Matonis, Megan S.; Jackson, Patrick L.; DeLorenzo, Donald G.; Graves, Andrew D. 2013. Restoring composition and structure in Southwestern frequent-fire forests: A science-based framework for improving ecosystem resiliency. Gen. Tech. Rep. RMRS-GTR-310. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 76 p Available online at: [https://www.fs.fed.us/rm/pubs/rmrs\\_gtr310](https://www.fs.fed.us/rm/pubs/rmrs_gtr310)
- Sabo, K.E., et al. 2009. The role of disturbance severity and canopy closure on standing crop of understory plant species in ponderosa pine stands in northern Arizona, USA. *Forest Ecology and Management* 257 (2009) 1656-1662. Available online at: [https://www.fs.fed.us/rm/pubs\\_other/rmrs\\_2009\\_sabo\\_k001.pdf](https://www.fs.fed.us/rm/pubs_other/rmrs_2009_sabo_k001.pdf)
- Savage, M. and J.N. Mast. 2005. How resilient are southwestern ponderosa pine forests after crown fire? *Canadian Journal of Forest Research* 35:967-977. Available online at: <https://www.nrcresearchpress.com/doi/10.1139/x05-028#.XfO74OhKiUk>
- Schoennagel, T. et al. 2017. Adapt to more wildfire in western North American forests as climate change. *PNAS* 114 (18): 4582-4590. Available online at: <https://www.pnas.org/content/114/18/4582>
- Sheley, R.L. and J.K. Petroff. 1999. Biology and management of noxious rangeland weeds. Oregon State University Press, Corvallis, OR. 438p. Available online at: <https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=1260&context=wnan>
- Stephens, S.L. J. K. Agee, Peter Z Fule, M. P. North, W. H. Romme, T. W. Swetnam, M. G. Turner. 2013. Managing forests and fire in changing climates. *Science* 342 (6154): 41-42. Available online at: <https://science.sciencemag.org/content/342/6154/41>
- Stevens-Rumann, C., Shive, K., Fulé P. and Sieg S.H. 2013. Pre-wildfire fuel reduction treatments result in more resilient forest structure a decade after wildfire. *International journal of Wildland Fire* Available online at: [https://www.firescience.gov/projects/11-1-1-27/project/11-1-1-27\\_Stevens-Rumann\\_PreFireTreatmentsDecadeAfterFireRodeoChediski\\_IJWF2013.pdf](https://www.firescience.gov/projects/11-1-1-27/project/11-1-1-27_Stevens-Rumann_PreFireTreatmentsDecadeAfterFireRodeoChediski_IJWF2013.pdf)
- Stoddard, M.T., D.W. Huffman, P.Z. Fule, J.E. Crouse, A.J. Sanchez Meador. 2018. Forest structure and regeneration responses 15 years after wildfire in a ponderosa pine and mixed-conifer ecotone, Arizona, USA. *Fire Ecology* 14 (12). <https://link.springer.com/article/10.1186/s42408-018-0011-y>

Swetnam, T.W. and J.L. Betancourt. 1998. Mesoscale disturbance and ecological response to decadal climatic variability in the American Southwest. *Journal of Climate* 11:3128-3147. Available online at: [http://www7.nau.edu/mpcer/direnet/publications/publications\\_s/files/Swetnam\\_Betancourt\\_1998.pdf](http://www7.nau.edu/mpcer/direnet/publications/publications_s/files/Swetnam_Betancourt_1998.pdf)

USDA. 2018. USDA Strategic Plan FY 2018-2022 64p. Available online at: <https://www.usda.gov/sites/default/files/documents/usda-strategic-plan-2018-2022.pdf>

USDA Forest Service, 2014. Slide Fire Fuels Treatment Effectiveness Report: Coconino N.F. May 2014. Available online at [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3808033.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3808033.pdf)

USDA Forest Service, 2014. Record of Decision for the Four-Forest Restoration Initiative Coconino and Kaibab National Forests Coconino County, Arizona. 74 pp. Available online at [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3836454.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3836454.pdf)

USDA Forest Service. 2014. Final Environmental Impact Statement for the Four-Forest Restoration Initiative with Errata and Objection resolution Modifications. 605 pp. Available online at [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3836625.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3836625.pdf)

USDA Forest Service. 2014. Appendix D- Selected Alternative Implementation Plan with Errata and Objection Resolution Modifications. Available online at: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3836488.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3836488.pdf)

USDA Forest Service. 2014. Appendix E- Four Forest Restoration Initiative Adaptive Management, Biophysical and Socioeconomic, Mexican Spotted Owl, and Arizona Bugbane Monitoring Plan with Errata and Objection Resolution Modifications. Available online at: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprd3836490.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3836490.pdf)

USDA Forest Service. 2015. USDA Forest Service Strategic Plan: FY2015-2020. 60p. Available online at: [https://www.fs.fed.us/sites/default/files/strategic-plan%5B2%5D-6\\_17\\_15\\_revised.pdf](https://www.fs.fed.us/sites/default/files/strategic-plan%5B2%5D-6_17_15_revised.pdf)

USDA Forest Service and Four Forest Restoration Initiative Stakeholders Group. 2011. Memorandum of Understanding between the 4 Forest Restoration Initiative (4FRI) Collaborative Stakeholder Group Representatives and the US Forest Service Apache-Sitgreaves, Coconino, Kaibab and Tonto National Forests. FS agreement # 10-MU-11031600. Available online at: [https://4fri.org/wp-content/uploads/2018/04/MOU\\_with\\_signatures.pdf](https://4fri.org/wp-content/uploads/2018/04/MOU_with_signatures.pdf)

USDA Forest Service and Four Forest Restoration Initiative Stakeholders Group. 2017. Four Forest Restoration Initiative Strategic Plan. Available online at [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd587633.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd587633.pdf)

USDA Forest Service, 2018 Four Forest Restoration Initiative 2018 Annual Report. Available online at [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd645995.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd645995.pdf).

USDA Forest Service. 2019. 4FRI Rim Country Project Draft Environmental Impact Statement Volume 1 332 pp. Available online at: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd666974.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd666974.pdf)

USDA Forest Service. 2019. 4FRI Rim Country Project Draft Environmental Impact Statement Volume 2 487 pp. Available online at: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd666975.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd666975.pdf)

U.S. Fish and Wildlife Service. 2012. Final Recovery Plan for the Mexican Spotted Owl (*Strix occidentalis lucida*), First Revision. U.S. Fish and Wildlife Service. Albuquerque, New Mexico, USA. 413 pp. available online at: [https://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/MSO/2012MSO\\_Recovery\\_Plan\\_First\\_Revision\\_Final.pdf](https://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/MSO/2012MSO_Recovery_Plan_First_Revision_Final.pdf)

Waltz, A.E.M., M.T. Stoddard, E.L. Kalies, J.D. Springer, D.W. Huffman, A.J. Sanchez-Meador. 2014. Effectiveness of fuel reduction treatments: assessing metrics of forest resiliency and wildfire severity after

the Wallow Fire, AZ. *Forest Ecology and Management* 335:43052 Available online at:  
<https://www.sciencedirect.com/science/article/pii/S0378112714005155>

Waltz, A.E.M. and M. Stoddard. 2013. Do Fuel Treatments Reduce Fire Severity in Ponderosa Pine Forest? Tree Mortality Patterns One Year after the Wallow Fire. *Ecological Restoration Institute Fact Sheet*. <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/537/rec/2>

Wan, H.Y., S.A. Cushman, and J.L. Ganey. 2019. Recent and project future wildfire trends across the ranges of three spotted owl subspecies under climate change. *Frontiers in Ecology and Evolution*  
<https://doi.org/10.3389/fevo.2019.00037>

Wasserman, T. et al. 2019. A summary of the natural range of variability for southwestern frequent fire forests. *Ecological Restoration Institute Working Paper 42*.  
<https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/960/rec/7>

Westerling, A., H.G. Hidalgo, D.R. Cayan, and T.W. Swetnam. 2006. Warming and earlier spring increase Western U.S. forest wildfire activity. *Science* 313 (5789): 940-943. Available online at:  
<https://science.sciencemag.org/content/313/5789/940/tab-pdf>

Westerling, A., T. Brown, T. Schoennagel, T. Swetnam, M. Turner, T. Veblen. 2014. Briefing: Climate and Wildfire in Western US Forests, in Sample, V. Alaric and R. Patrick Bixler (eds.). 2014. *Forest Conservation and Management in the Anthropocene*. General Technical Report. Fort Collins, CO: US Department of Agriculture, Forest Service. Rocky Mountain Research Station. Available online at:  
[https://www.fs.fed.us/rm/pubs/rmrs\\_p071/rmrs\\_p071\\_081\\_102.pdf](https://www.fs.fed.us/rm/pubs/rmrs_p071/rmrs_p071_081_102.pdf)

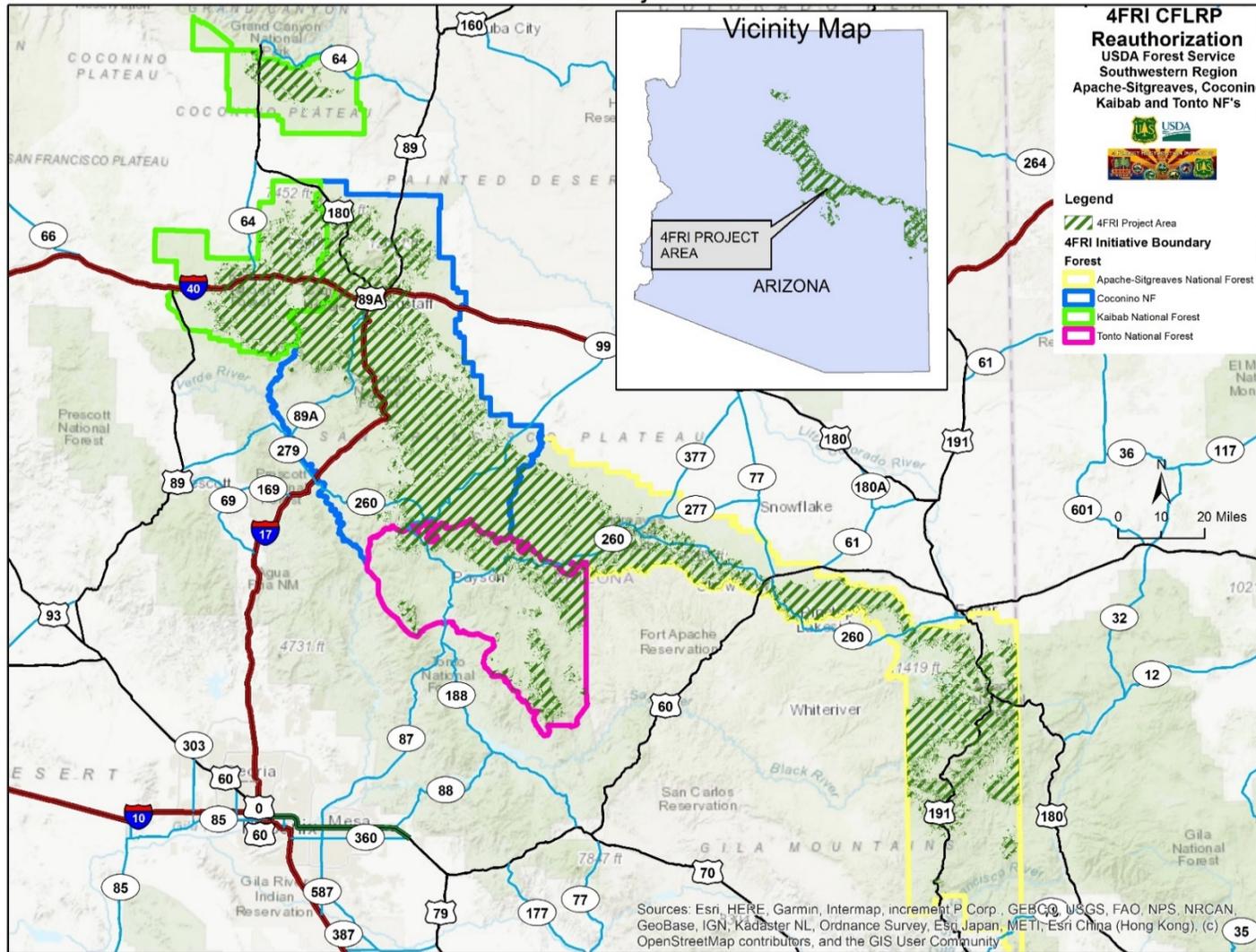
## Attachment A Project Maps

### LIST OF MAPS

<b>MAP NAME</b>	<b>Page Number</b>
4FRI Project Area	28
4FRI NEPA Projects	29
Watershed Condition Framework in 4FRI	30
Fire Hazard in 4FRI	31
Fire Regime in 4FRI	32
Forest Products Infrastructure in 4FRI	33
4FRI Core Planned Mechanical Harvest Treatment Areas	34
4FRI Ownership in Project Area Boundary	35
Apache-Sitgreaves National Forest Mechanical Harvest Areas and Ownership	36
Coconino National Forest Mechanical Harvest Areas and Ownership	37
Kaibab National Forest Mechanical Harvest Areas and Ownership	38
Tonto National Forest Mechanical Harvest Areas and Ownership	39

Attachment A Project Maps

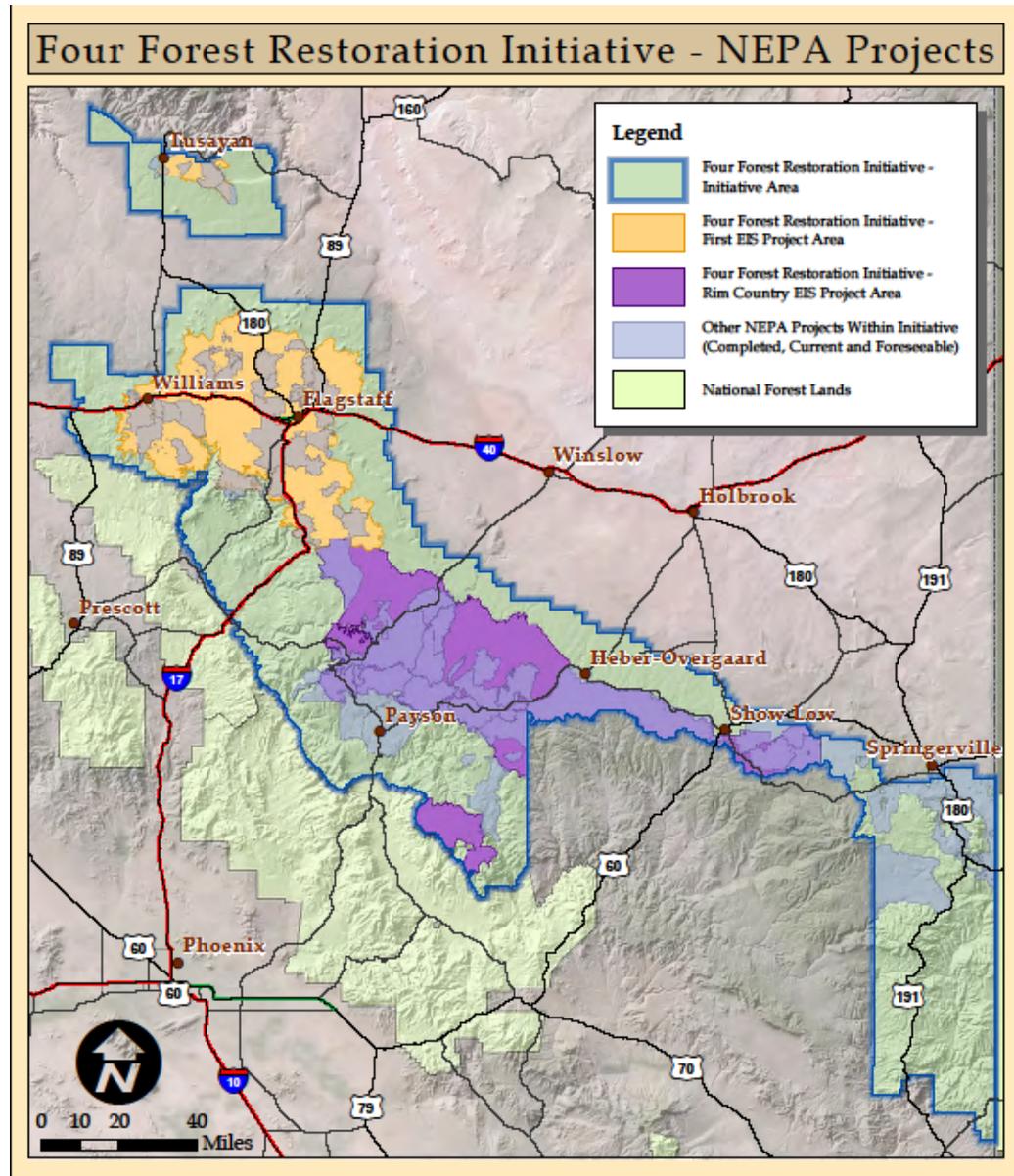
4FRI Project Area



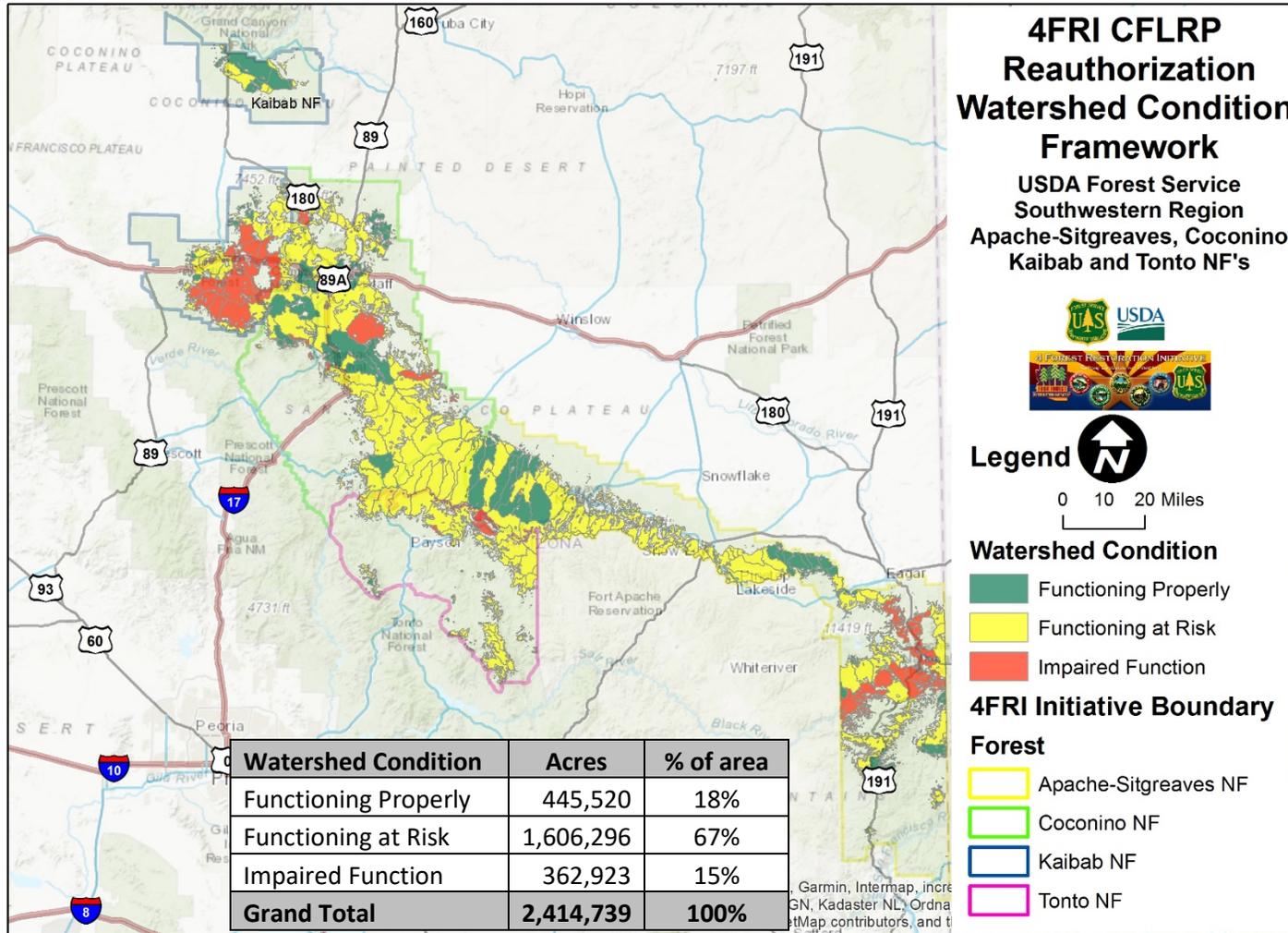
Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

rkf  
 November 14, 2019

Attachment A Project Maps



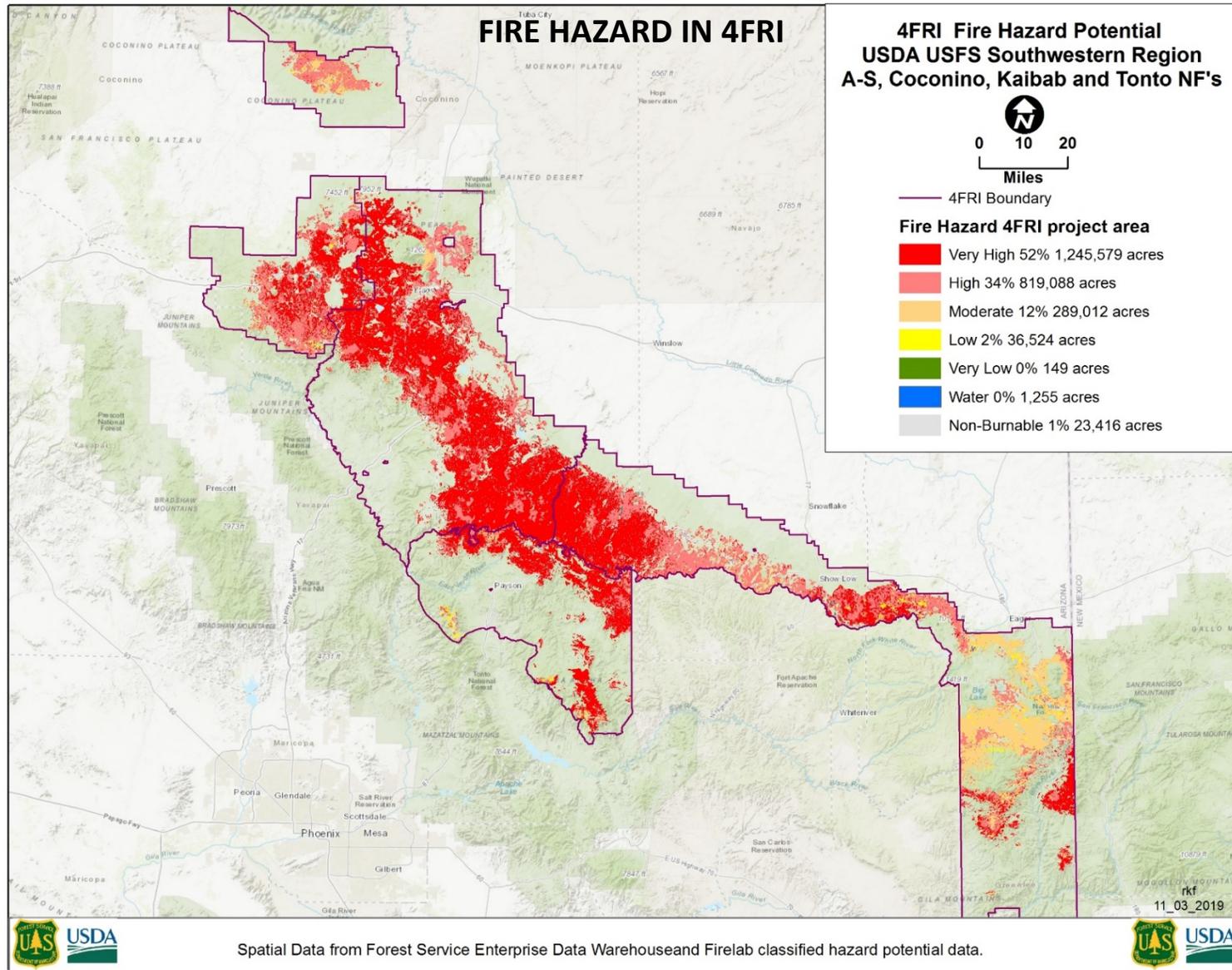
Attachment A Project Maps



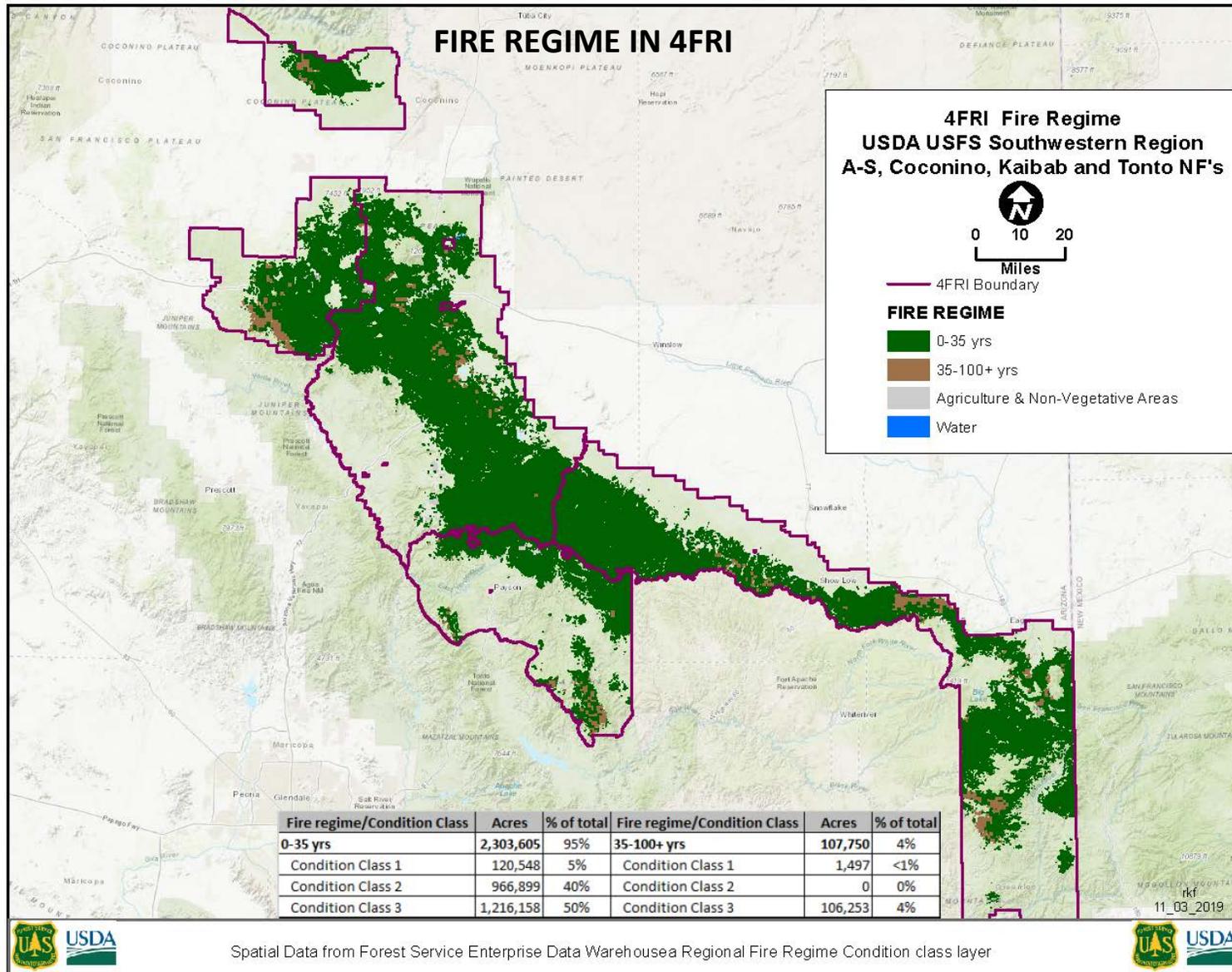
Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

rkf  
November 3 ,2019

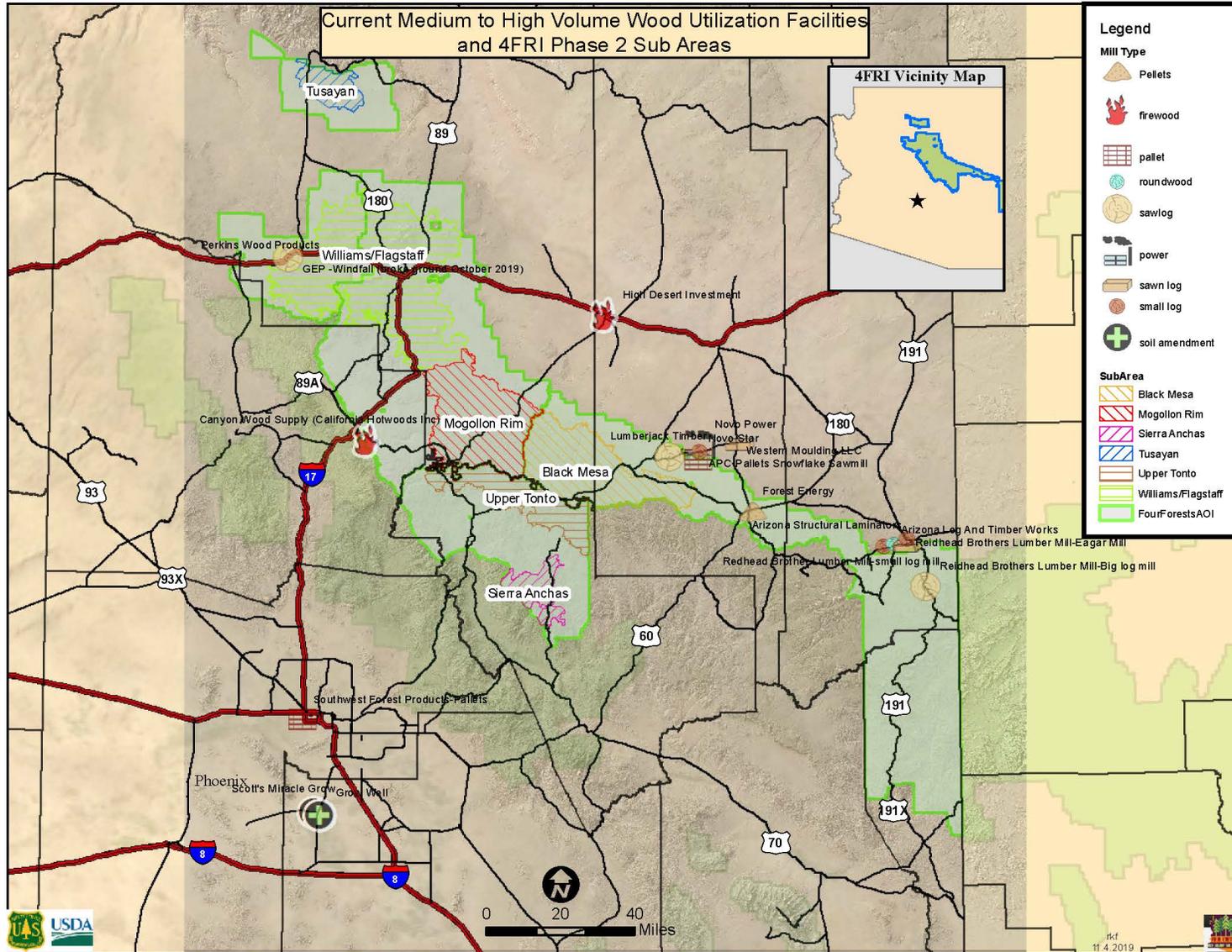
Attachment A Project Maps



Attachment A Project Maps



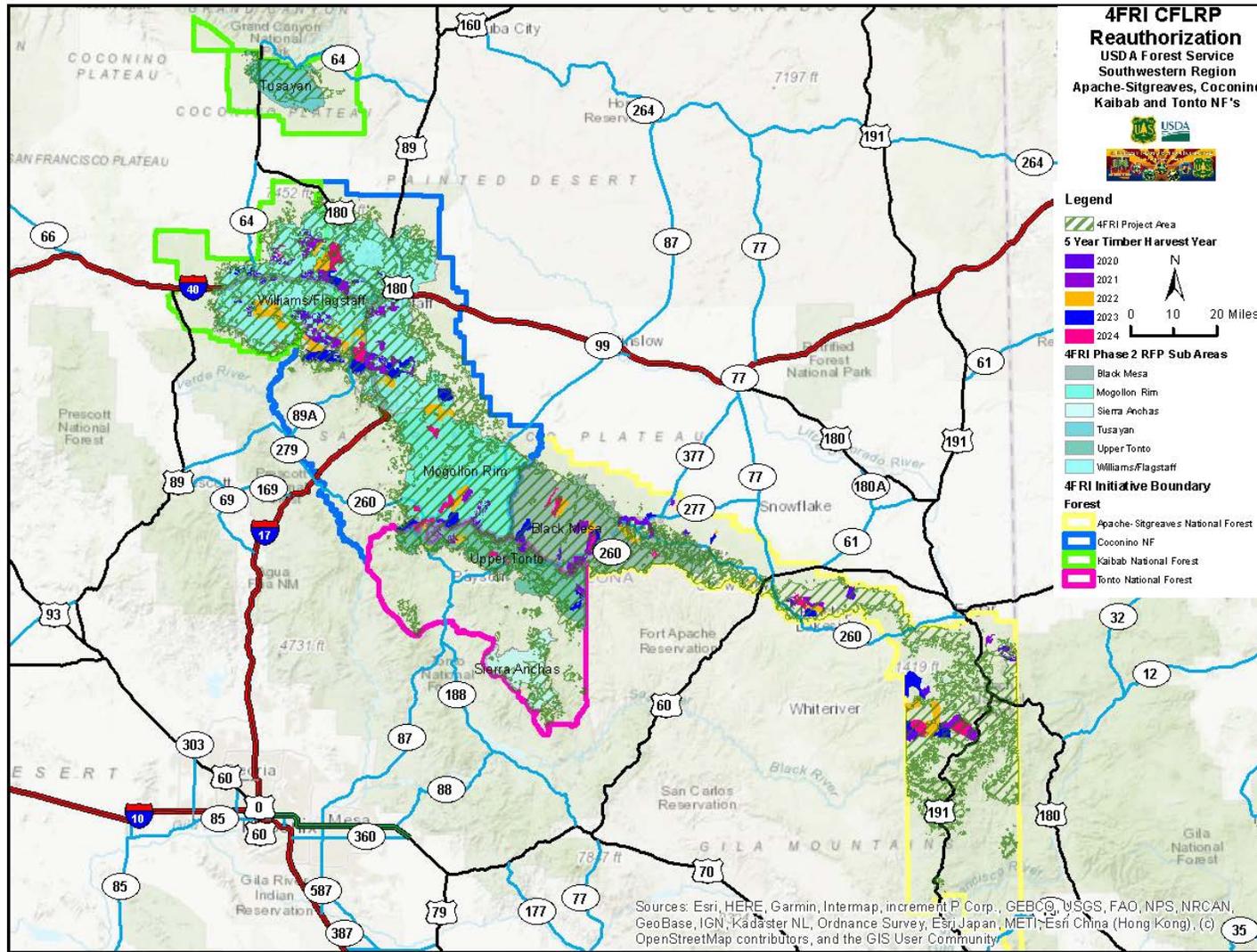
### FOREST PRODUCTS INFRASTRUCTURE IN 4FRI



Data Source: USFS geospatial data layers. Data are subject to change.

Attachment A Project Maps

4FRI Core Planned Mechanical Harvest Areas

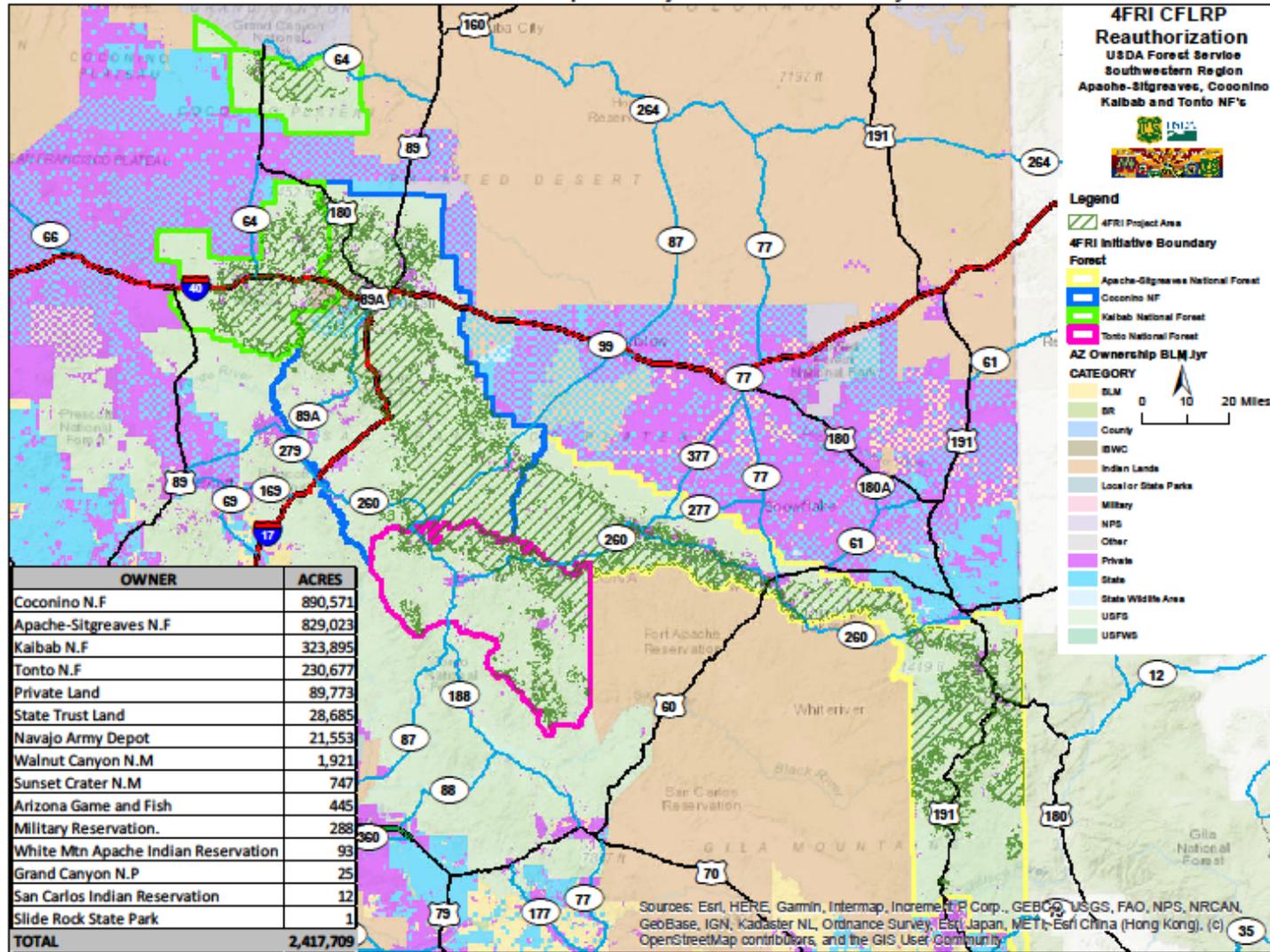


Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

kt  
 November 14, 2019

Attachment A Project Maps

4FRI Ownership in Project Area Boundary

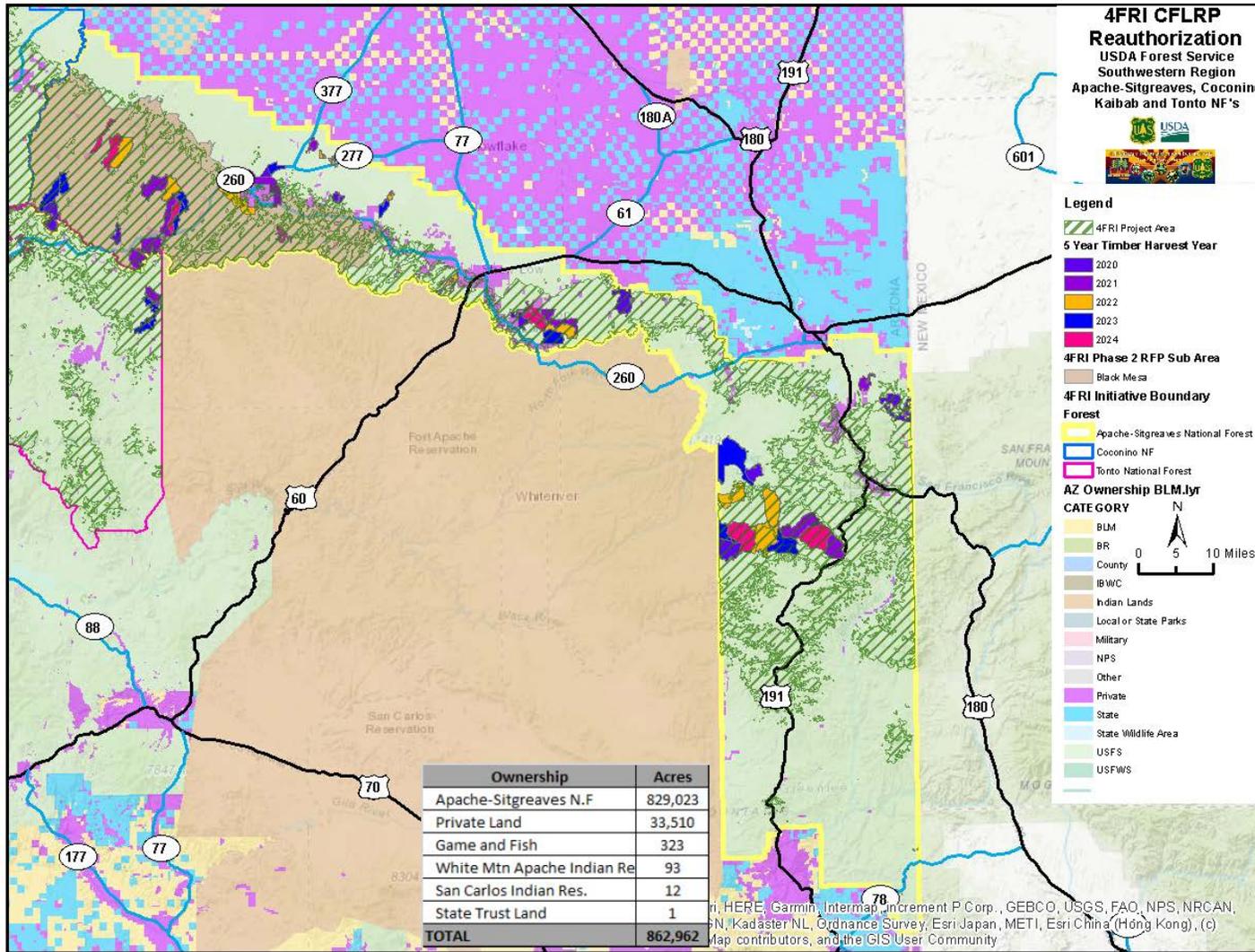


Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

rd  
 November 14, 2019

Attachment A Project Maps

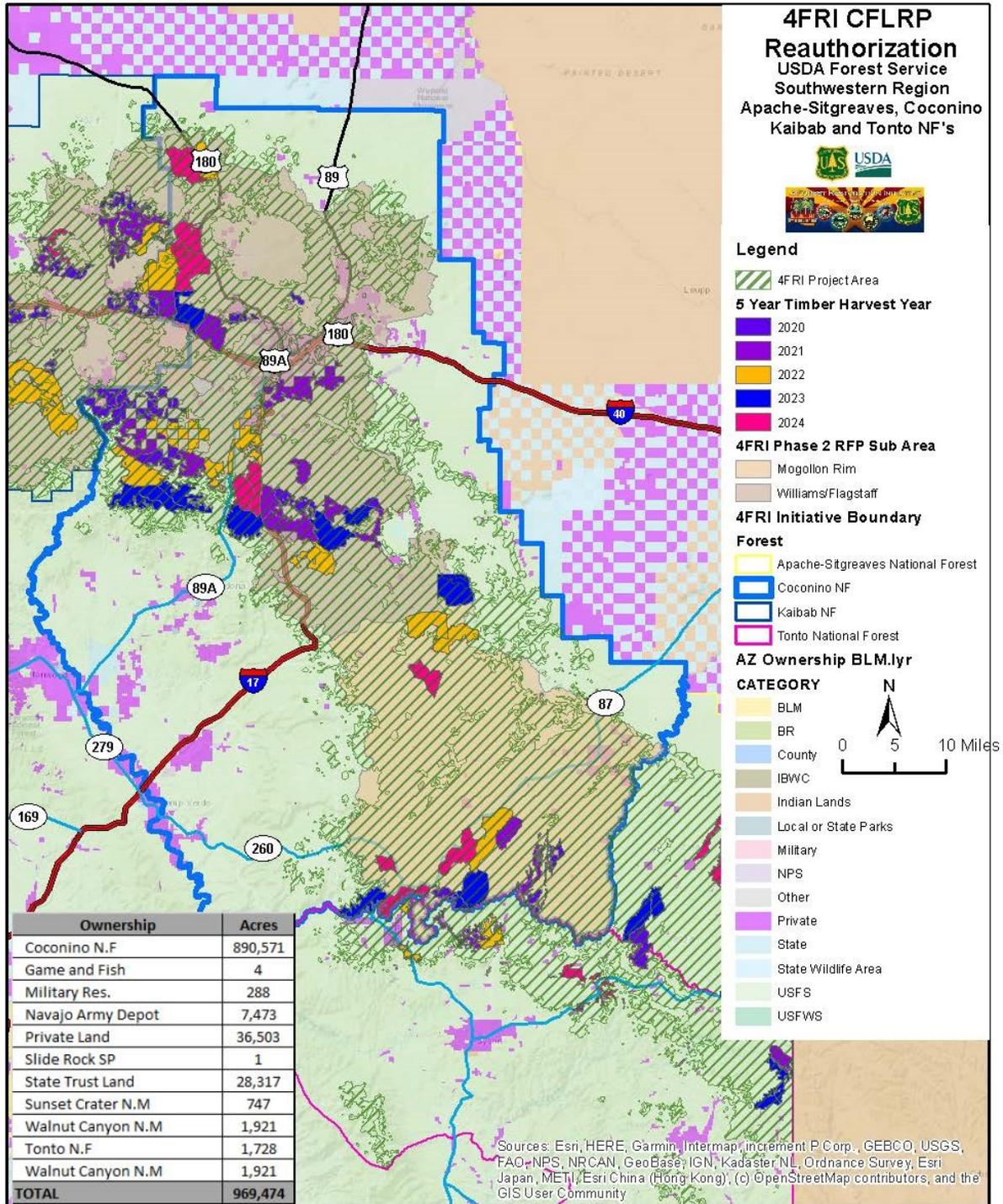
Apache-Sitgreaves National Forest Mechanical Harvest Areas and Ownership



Data from USDA Forest Service geospatial data and Open street map base layer. All lines are approximate and subject to change.

ikf  
 November 14, 2019

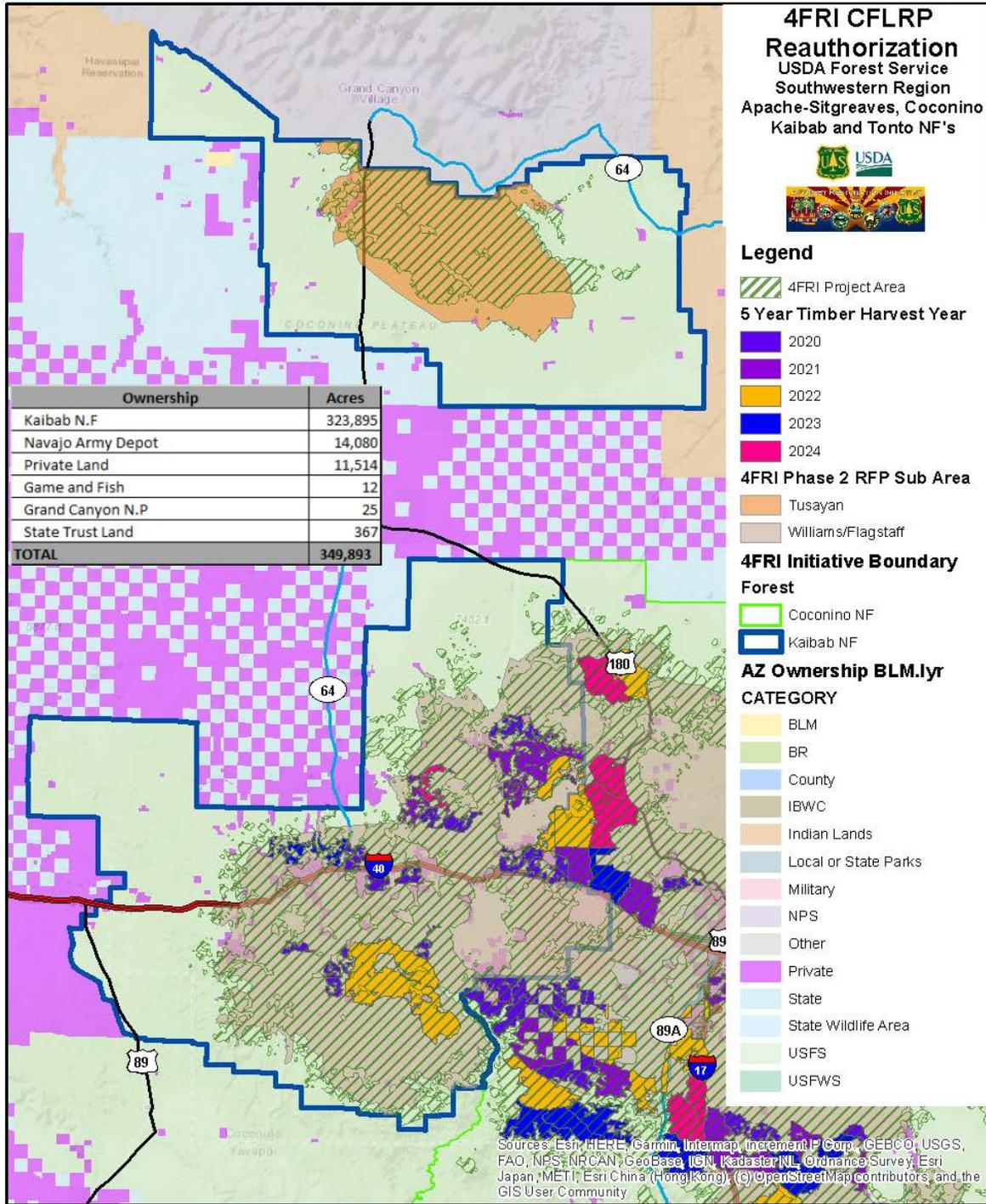
## Coconino National Forest Mechanical Harvest Areas and Ownership



Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

rkf  
 November 14 ,2019

## Kaibab National Forest Mechanical Harvest Areas and Ownership

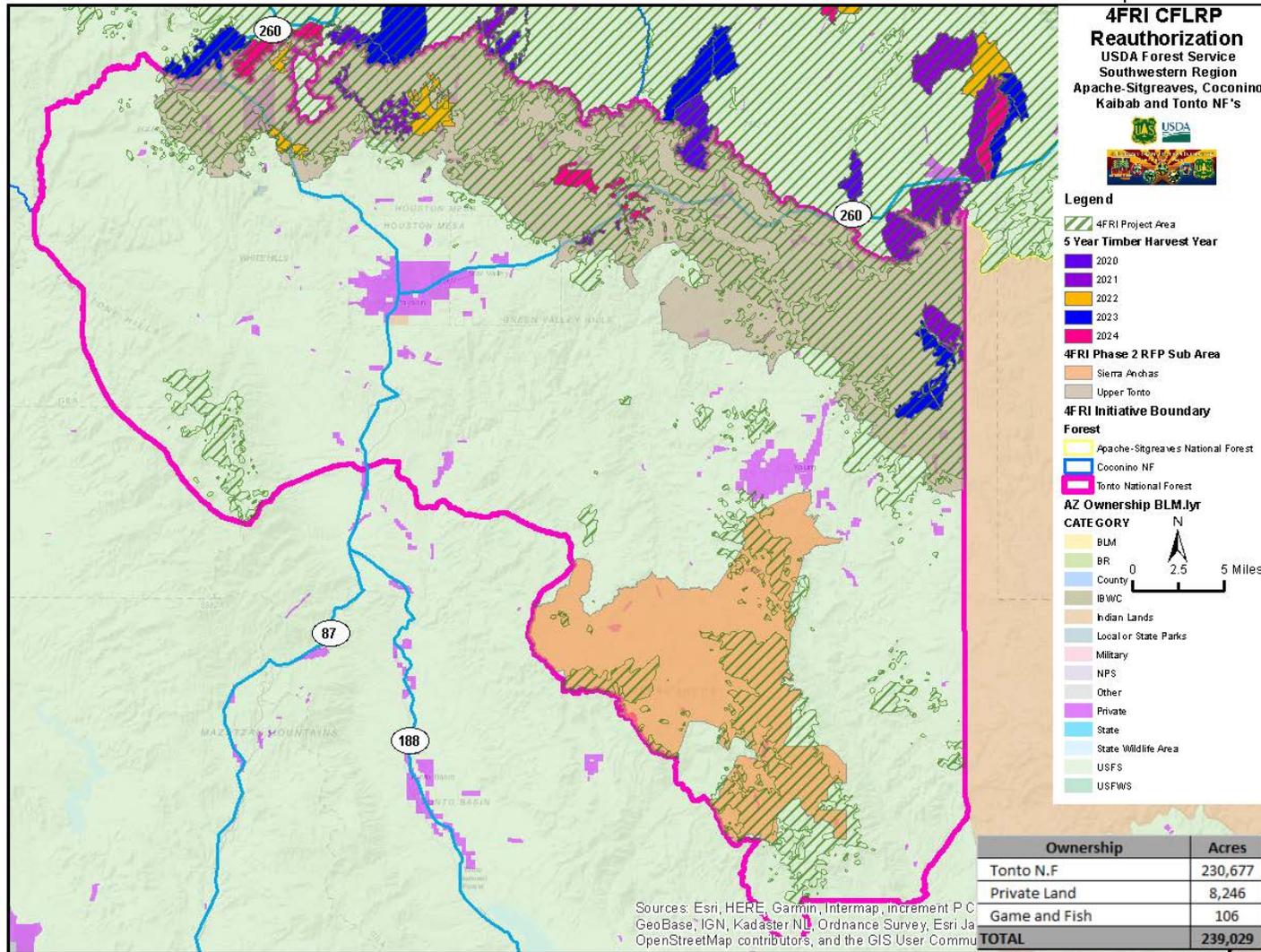


Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

rkf  
 November 14 ,2019

Attachment A Project Maps

Tonto National Forest Mechanical Harvest Areas and Ownership



Data from USDA Forest Service geospatial data and Open street map base layer. All line are approximate and subject to change.

ktf  
 November 14, 2019

Attachment B Planned Treatments

Core Restoration Treatment Types	<i>Please briefly fill in additional background information for the prompts below</i>	Year 1*	Year 2	Year 3	Year 4	Years 5-10	<b>TOTAL</b>	Key treatment objectives	Estimate % 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)		109,000	117,000	117,000	117,000	652,000	<i>1,112,000</i>		98%	
<i>Mechanical Thinning (acres)</i>	Acres offered	42,000	50,000	50,000	50,000	250,000	<i>442,000</i>	restore structure, pattern, composition	98%	State of Arizona, Navajo Army Depot
<i>Prescribed Fire (acres)</i>	Includes wildfires that occur in approved NEPA	67,000	67,000	67,000	67,000	402,000	<i>670,000</i>	restore natural processes fire regime and reduce fuel loading	98%	State of Arizona, Navajo Army Depot, City of Flagstaff
<i>Other (acres)</i>	TSI, mastication	3,000	3,000	3,000	3,000	18,000	<i>30,000</i>	reduce fuel loading and restore natural fire regime	98%	State of Arizona, City of Flagstaff, City of Pinetop
<i>Wildfire Risk Mitigation Outcomes - Acres treated to mitigate wildfire risk</i>		40,000	40,000	40,000	40,000	240,000	<i>400,000</i>	restore natural fire regime	100%	

Attachment B Planned Treatments

Core Restoration Treatment Types	<i>Please briefly fill in additional background information for the prompts below</i>	Year 1*	Year 2	Year 3	Year 4	Years 5-10	<i>TOTAL</i>	Key treatment objectives	Estimate % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
<i>Wildfire Risk Mitigation Outcomes - WUI acres</i>	Region 3 Wildland urban interface data layer located on FS gis server at T:\FS\Reference\GIS\r03\LayerFile\SIDE_Layer_Files\R03\Fire_Management\Wildland_Urban_Interface.lyr	10,000	10,000	10,000	10,000	60,000	<i>100,000</i>	protect life and property, reduce fuel loading and restore natural fire regime	98%	State of Arizona, City of Flagstaff, City of Pinetop
Invasive Species Management (acres)		1,900	1,900	1,900	1,900	11,400	<i>19,000</i>	restore natural composition and mitigate effects of treatments	100%	-
Native Pest Management (acres)	-	-	-	-	-	-	<i>0</i>			-

Attachment B Planned Treatments

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	Estimate % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
Road Decommissioning (miles)		15	15	15	15	90	150	improve watershed condition	100%	-
Passenger Car Road Maintenance and Improvement (miles)		600	600	600	600	3,600	6,000	implement mechanical harvest and improve watershed condition	100%	-
Road Reconstruction (miles)		5	5	5	5	30	50	implement mechanical harvest and improve watershed condition	100%	-
Trail Reconstruction (miles)		15	15	15	15	90	150	improve watershed condition	100%	-

Attachment B Planned Treatments

Core Restoration Treatment Types	<i>Please briefly fill in additional background information for the prompts below</i>	Year 1*	Year 2	Year 3	Year 4	Years 5-10	<i>TOTAL</i>	Key treatment objectives	Estimate % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
Terrestrial Wildlife Habitat Restoration (acres)		75,000	75,000	75,000	75,000	450,000	750,000	by product of mechanical and fuel treatments, improve habitat for open and closed canopy species (4FRI ecological indicator)	100%	
Crossing Improvements (number)										-
In-Stream Fisheries Improvement (miles)	-	-	-	-	-	0	0			-
Lake Habitat Improvement (acres)										-
Riparian Area Improvements						0	0			

Attachment B Planned Treatments

Core Restoration Treatment Types	<i>Please briefly fill in additional background information for the prompts below</i>	Year 1*	Year 2	Year 3	Year 4	Years 5-10	<b>TOTAL</b>	Key treatment objectives	Estimate % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
{acres)—see stream habitat restored below										
Soil and Watershed resources enhanced or maintained (acres)		40,000	40,000	40,000	40,000	240,000	<i>400,000</i>	improve watershed condition and maintain/improve water quality	98%	State of Arizona, Navajo Army Depot
Priority watersheds moved to improved condition class (number)		1	1	1	1	6	<i>10</i>	improve watershed condition and maintain/improve water quality	100%	
Stand Improvement (acres)		15,000	15,000	15,000	15,000	90,000	<i>150,000</i>	restore structure and composition	100%	
Reforestation and		18,500	18,500	18,500	18,500	111,000	<i>185,000</i>	restore structure	100%	-

Attachment B Planned Treatments

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	Estimate % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
revegetation (acres)								and composition		
Timber Harvest (acres)**	Acres treated- 99% ground based, 1% other	14,000	15,000	16,000	17,000	215,000	277,000	Provide raw material for industry development and sustain existing industry	97%	State of Arizona
Rangeland Vegetation Improvement (acres)	-									-
Abandoned Mine Reclamation/ Remediation	-	-	-	-	-	-	0			-
High Clearance Road Maintenance and Improvement (miles)		350	350	350	350	2,100	3,500	implement mechanical harvest and improve watershed condition	100%	

Attachment B Planned Treatments

Core Restoration Treatment Types	<i>Please briefly fill in additional background information for the prompts below</i>	Year 1*	Year 2	Year 3	Year 4	Years 5-10	<b>TOTAL</b>	Key treatment objectives	Estimate % accomplished on NFS lands (across all ten years)	Other landownership types (other federal, tribal, state, private, etc.) where treatments will occur
Stream Habitat restored or enhanced (miles)		10	10	10	10	60	100	improve habitat for aquatic/riparian dependent species and improve/maintain watershed condition	100%	

Attachment B Planned Treatments

**CFRLP Proposal Attachment C: Utilization of Forest Restoration Byproducts**

<b>Fiscal Year</b>	<b>Estimate of acres treated/offered<sup>7</sup> annually that will generate restoration byproducts</b>	<b>Total projected annual harvested volume (ccf)<sup>8</sup></b>	<b>Expected percentage commercially utilized*</b>
2020	42,000	162,960	75% <sup>9</sup>
2021	50,000	165,900	75%
2022	50,000	168,840	75%
2023	50,000	171,780	75%
2024	50,000	180,600	75%
2025	50,000	195,300	75%
2026	50,000	210,000	75%
2027	50,000	239,400	75%
2028	50,000	268,800	75%
2029	50,000	268,800	75%

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

Product mix for existing industry is expected to be similar to current products produced.

Product mix for 4FRI phase 2 RFP will include at least 50% biomass removal along with larger product sizes.

<sup>7</sup> Total acres offered is aligned with the acres offered in Attachment B

<sup>8</sup> Total annual harvested volume is aligned with the increased harvest acres displayed in Attachment B as Phase 2 RFP comes on-line

<sup>9</sup> Assumes 100% use of 6"+ which is 64% of the total harvested, and 50% use of biomass which is 36% of total harvested volume, but only on 3/5 or 60% (RFP acres) of the acres

Attachment D Collaborative Membership

**Forest Service staff representative(s) working with collaborative:** (Please provide list of key staff):

4FRI Board: Steve Best/ Rob Gump (Apache Sitgreaves), Neil Bosworth/ Tom Torres (Tonto), Laura Jo West/ Lesley Yen (Coconino), Heather Provencio (Kaibab), Cliff Dils/ Elaine Kohrman (Region 3).  
 4FRI Key Staff: Jeremy Kruger, Henry Provencio, Dick Fleishman, Samantha Flores, Brienne Pettit, Joshua Bahling, Robbin Redman, John Souther, Patrick Moore, Mark Nigrelli, Justin Schofer.

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
Please see note under table.*	Apache County	No	County			
Please see note under table.*	Arizona Game and Fish Department	No	Wildlife	Recreation (non-motorized)		
Please see note under table.*	Arizona Department of Forestry and Fire Management	Yes	State	Fire Management		
Please see note under table.*	Arizona Wildlife Federation	No	Wildlife			
Please see note under table.*	Campbell Global	No	Forest Products			
Please see note under table.*	Center for Biological Diversity	No	Environmental			
Please see note under table.*	City of Flagstaff	No	Other	Fire Management		City
Please see note under table.*	Cochise County	No	County			

Attachment D Collaborative Membership

<b>Collaborative Member/Partner Name</b>	<b>Organizational Affiliation (if applicable)</b>	<b>Was this person involved in proposal development?</b>	<b>Primary Issue Category</b>	<b>Second Issue Category</b>	<b>Third Issue Category</b>	<b>If "other," briefly describe</b>
Please see note under table.*	Coconino County Board of Supervisors	No	County			
Please see note under table.*	Coconino Sportsmen	No	Wildlife	Recreation (non-motorized)		
Please see note under table.*	Eastern Arizona Counties Organization (representing Apache, Cochise, Gila, Graham, Greenlee, and Navajo counties)	Yes	County			
Please see note under table.*	Ecological Restoration Institute	Yes	Research	College/University	Fire Ecology	
Please see note under table.*	Empire Machinery	No	Forest Products			
Please see note under table.*	Gila County	No	County			
Please see note under table.*	Graham County	No	County			
Please see note under table.*	Grand Canyon Trust	Yes	Environmental	Wilderness		
Please see note under table.*	Greater Flagstaff Forest Partnership	No	Environmental			
Please see note under table.*	Greenlee County	No	County			
Please see note under table.*	Mottek Consulting	No	Research			

Attachment D Collaborative Membership

<b>Collaborative Member/Partner Name</b>	<b>Organizational Affiliation (if applicable)</b>	<b>Was this person involved in proposal development?</b>	<b>Primary Issue Category</b>	<b>Second Issue Category</b>	<b>Third Issue Category</b>	<b>If "other," briefly describe</b>
Please see note under table.*	Navajo County	No	County			
Please see note under table.*	Novo BioPower	No	Forest Products			
Please see note under table.*	The Nature Conservancy	No	Environmental	Research		
Please see note under table.*	TRACKS	No	Recreation (non-motorized)			
Please see note under table.*	Tri Star/ Novo Star Wood Products	No	Forest Products			
Please see note under table.*	Trout Unlimited	No	Wildlife	Watershed	Recreation (non-motorized)	
Please see note under table.*	U.S. Fish and Wildlife Service	No	Research	Wildlife		

\*Please note, due to the scope and size of the 4FRI Stakeholder Group (the collaborative group), we have included all of the organizations that are in good standing with the 4FRI Stakeholder Group on this table but not every single individual, as the list would be very lengthy. The 4FRI Stakeholder Group maintains a list of members in good standing who have signed the 4FRI Stakeholder Group Charter and attend at least 4 Stakeholder Group meetings each year. This 4FRI reauthorization proposal was reviewed and approved by the entire 4FRI Stakeholder Group. However, only the organizations that were members of the work group that was convened to assist in this process are noted as being involved in proposal development in the third column.



<http://www.4fri.org/>

January 8, 2020

Dear CFLRP Federal Advisory Panel Members:

RE: 4FRI CFLRP Tier 2 Proposal – Attachment E (Letter of Commitment)

Dear CFLRP Federal Advisory Panel Members:

The Four Forest Restoration Initiative (4FRI) Stakeholder Group (SHG) is providing this letter of commitment as part of the 4FRI Collaborative Forest Landscape Restoration Program (CFLRP) Tier 2 Proposal, Attachment E (Letter of Commitment). Please see Attachment D for a complete list of organizations that have signed the 4FRI Stakeholder Group Charter and are in good standing by attending at least 4 SHG meetings each year. The 4FRI SHG is committed to continuing to assist in implementing the 4FRI project according to the details outlined in the Tier 2 proposal.

The 4FRI SHG is a highly functional and organized collaborative group, which consists of a diverse membership of local, county, state, federal, private, non-profit, and public organizations that represent a broad range of interests relevant to collaborative forest restoration. The SHG is governed by the [4FRI Stakeholder Group Charter](#), which provides a collaborative vision, mission, and actions for 4FRI, along with organizational structure and decision rules. The SHG and the Forest Service work together under the [2011 Memorandum of Understanding](#) and have also co-developed basic principles for 4FRI, including those outlined in the 2010 [Path Forward](#) and the 2017 [4FRI Strategic Plan](#). The SHG convenes monthly, with attendance by Forest Service staff/leadership, stakeholders, and other partners. These meetings provide a venue for informational updates, outreach, and prioritization of SHG tasks, decision making, and networking. The SHG is self-facilitated through its Steering Committee, which manages rotating chair and co-chair positions that lead 4FRI meetings. The SHG also charters work groups that support planning and implementation, which are open to interested parties and interact with Forest Service staff and other partners in a variety of venues.

In response to the CFLRP re-authorization process, the 4FRI SHG formed the CFLRP Reauthorization Working Group with the purpose of working collaboratively with the Forest Service (FS) on reauthorization of the 4FRI pilot. The goals of the 4FRI CFLRP Re-authorization

## Attachment E- Stakeholder's Letter of Commitment

Working Group were twofold: 1) Obtain continued funding for 4FRI; and 2) Ensure that restoration done under 4FRI is consistent with the 4FRI stakeholder foundational documents, the 1<sup>st</sup> Environmental Impact Statement (where is applies), and CFLRP criteria. The primary functions were to: 1) Assist FS with research, writing, and processes related to reauthorization of the 4FRI pilot; and 2) Use the renewal opportunity to reinforce the need for all 4FRI restoration within the footprint of the original proposal. The charter for the CFLRP Reauthorization Working Group was approved by the SHG on June 26, 2019. The working group members were drawn from the 4FRI stakeholders and worked collaboratively with FS staff throughout the development of the Tier 1 and Tier 2 proposals. The working group also provided regular briefings to the SHG on activities, recommendations, and accomplishments regarding the reauthorization process, as well as shared drafts of the proposal with the SHG for feedback and approval. Finally, the working group ensured that the final proposal was reviewed and approved by the SHG, as well.

The 4FRI SHG is committed to continuing to partner with the FS in the implementation of 4FRI. The SHG will continue to operate in the same manner outlined in the [4FRI Stakeholder Group Charter](#), as well as further outlined and described in [The Path Forward](#), [Memorandum of Understanding](#), and [Strategic Plan](#) under the proposed extension. These collaboratively developed documents reflect the robust engagement of the diverse body of stakeholders participating in 4FRI and illustrate the shared ownership of 4FRI stakeholders in the implementation and monitoring of the entire CFLRP landscape encompassed by 4FRI.

The roles and contributions of partners in 4FRI are paramount to its progress. There are numerous examples of partner contributions to 4FRI implementation and monitoring. The 4FRI Communications Work Group, a subset of the 4FRI SHG, puts together a regular newsletter called "The Lookout" to highlight some of these many contributions of 4FRI's partners. For example, the [Fall 2019 newsletter](#) highlights the Chip-and-Ship Pilot Project at Camp Navajo, which was a pilot project led by 4FRI stakeholders to test the logistics and efficiency of chipping and shipping 4FRI wood products via railway transportation. The [Summer 2019 newsletter](#) highlights work being done by the 4FRI Comprehensive Implementation Work Group to complete spring restoration projects in the 4FRI landscape. These are just two of the many examples of how members of the 4FRI SHG are working toward the successful realization of the CFLRP strategy outlined in 4FRI.

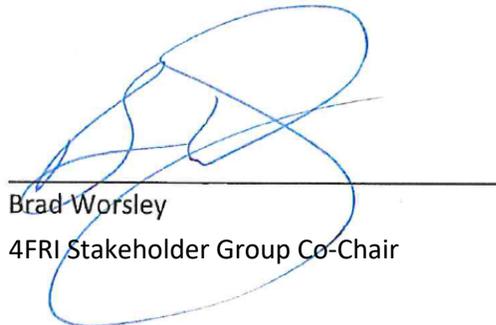
This letter of commitment demonstrates that the 4FRI SHG has reviewed and approved the 4FRI CFLRP Tier 2 proposal. The SHG formally adopted the proposal on January 8, 2020 at a special SHG meeting with no reservations. This letter has been reviewed and approved by the 4FRI SHG and the signatures of the current 4FRI SHG co-chairs represent the signatures of all of the current 4FRI SHG members (Attachment D). Thank you for your consideration of the reauthorization of 4FRI.

Sincerely,



Greg Smith

4FRI Stakeholder Group Co-Chair



Brad Worsley

4FRI Stakeholder Group Co-Chair

Attachment F- Funding Plan

<b>Fiscal Year 1*</b>	<b>Funding Planned/Requested</b>
Partner fund contributions on NFS lands	\$2,000,000
Partner in-kind contributions on NFS lands	\$800,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$1,900,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$28,000,000
<b><i>Total non-CFLRP funding for NFS lands</i></b>	<b>\$32,700,000</b>
CFLRP Funding Request	\$4,000,000
<b><i>Total CFLRP funding for NFS lands</i></b>	<b>\$4,000,000</b>
Partner fund contributions on non-NFS lands	\$750,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
<b><i>Total non-CFLRP funding for non-NFS lands</i></b>	<b>\$800,000</b>
<b><i>*Assume funding requested for Year 1 will be allocated in February 2020 at the earliest</i></b>	

Attachment F- Funding Plan

<b><u>Fiscal Year 2</u></b>	<b><u>Funding Planned/Requested</u></b>
Partner fund contributions on NFS lands	\$2,000,000
Partner in-kind contributions on NFS lands	\$800,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$1,900,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$28,000,000
<b><i>Total non-CFLRP funding for NFS lands</i></b>	<b>\$32,700,000</b>
CFLRP Funding Request	\$4,000,000
<b><i>Total CFLRP funding for NFS lands</i></b>	<b>\$4,000,000</b>
Partner fund contributions on non-NFS lands	\$750,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
<b><i>Total non-CFLRP funding for non-NFS lands</i></b>	<b>\$800,000</b>

Attachment F- Funding Plan

<b>Fiscal Year 3</b>	<b>Funding Planned/Requested</b>
Partner fund contributions on NFS lands	\$2,200,000
Partner in-kind contributions on NFS lands	\$800,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$2,500,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$28,000,000
<b><i>Total non-CFLRP funding for NFS lands</i></b>	<b>\$33,500,000</b>
CFLRP Funding Request	\$4,000,000
<b><i>Total CFLRP funding for NFS lands</i></b>	<b>\$4,000,000</b>
Partner fund contributions on non-NFS lands	\$750,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
<b><i>Total non-CFLRP funding for non-NFS lands</i></b>	<b>\$800,000</b>

Attachment F- Funding Plan

<b>Fiscal Year 4</b>	<b>Funding Planned/Requested</b>
Partner fund contributions on NFS lands	\$2,500,000
Partner in-kind contributions on NFS lands	\$800,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$3,000,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$28,000,000
<b><i>Total non-CFLRP funding for NFS lands</i></b>	<b>\$34,300,000</b>
CFLRP Funding Request	\$4,000,000
<b><i>Total CFLRP funding for NFS lands</i></b>	<b>\$4,000,000</b>
Partner fund contributions on non-NFS lands	\$750,000
Partner in-kind contributions on non-NFS lands	\$50,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
<b><i>Total non-CFLRP funding for non-NFS lands</i></b>	<b>\$800,000</b>

Attachment F- Funding Plan

<b>Fiscal Years 5-10</b>	<b>Funding Planned/Requested</b>
Partner fund contributions on NFS lands	\$15,000,000
Partner in-kind contributions on NFS lands	\$4,800,000
Goods for Services or Revenue from GNA to be applied within CFLRP landscape	\$18,000,000
USFS Appropriated, Perm, and Trust fund contributions on NFS lands	\$168,000,000
<b>Total non-CFLRP funding for NFS lands</b>	<b>\$202,800,000</b>
CFLRP Funding Request	\$24,000,000
<b>Total CFLRP funding for NFS lands</b>	<b>\$24,000,000</b>
Partner fund contributions on non-NFS lands	\$4,500,000
Partner in-kind contributions on non-NFS lands	\$300,000
USFS Appropriated, Perm, and Trust fund contributions on non-NFS lands	\$0
<b>Total non-CFLRP funding for non-NFS lands</b>	<b>\$4,800,000</b>

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). **NEPA funding will be needed in 2020 to complete the Black River EA (approximately 200,000 acre) on the Apache-Sitgreaves and to fund the DEIS to FEIS for the Rim Country 1.24 million acre project area and for any Section 18 reviews needed on older NEPA projects for approximately \$2 million dollars in FY 20. Additional NEPA funds will be needed in FY 21 to get the Rim Country FEIS to final and through the objection process and other small NEPA projects for approximately \$1.5 million in FY 21. NEPA needs after that will be limited and mainly CE's and Section 18 reviews. This will require \$800,000-\$1,000,000 per year for the life of the project. Forest plan monitoring and any reconsultation needs will likely require an additional \$550-\$ 1 million per year. NEPA planning and forest plan monitoring cannot be paid with CFLN funds.***

## Attachment G- Forest Supervisors Letter of Commitment



Forest  
Service

Four Forest Restoration Initiative  
(4FRI)

1824 South Thompson Street  
Flagstaff, AZ 86001  
(928) 527-3600

---

**Date:** December 6, 2019

Dear CFLRP Federal Advisory Panel Members:

As part of the Four Forest Restoration Initiative (4FRI) Collaborative Forest Landscape Restoration Program (CFLRP) Tier 2 Proposal, we are providing this letter confirming the commitment by the Apache-Sitgreaves, Coconino, Kaibab, and Tonto National Forests to continue planning, implementing, and monitoring 4FRI restoration activities as outlined in our proposal. We developed this proposal with the 4FRI Stakeholders Group, including participation by state and local governments and a number of non-governmental organizations.

A flagship example of collaboration and shared stewardship, 4FRI has become a platform for learning, exploring opportunities, and adopting new business practices to increase efficiency. Since 2010, the Forest Service has conducted restoration activities on over 806,000 footprint acres across the 4FRI landscape.

The 4FRI project planning and analysis (NEPA/ESA/NHPA/forest plan alignment) is complete on approximately 1 million acres and in spring 2021 a Record of Decision is expected on the Rim Country DEIS, which covers an additional 1.2 million acres.

Our proposal is based on landscape restoration strategy utilizing the best available science that identifies and prioritizes restoration treatments over the next decade in the 4FRI footprint. Proposed activities contribute to the restoration of the structure and composition of old growth stands by maximizing the retention of large trees by focusing on small diameter trees.

We will use a diverse mix of implementation tools including contracts, agreements, and partnerships including but not limited to Good Neighbor Authority agreement with the State of Arizona, stewardship agreements with the National Wild Turkey Federation and The Nature Conservancy, and stewardship contracts to be awarded under the 4FRI Phase 2 Request for Proposals (RFP). The RFP is the product of a unique partnership between the Forest Service, Bureau of Reclamation, Salt River Project (SRP), Arizona Commerce Authority, and Arizona State Department of Forestry and Fire Management (DFFM). This is one of the first times the Agency is utilizing the recent 20-year stewardship authority. The non-federal partners will be participating in the review of proposals and providing the Forest Service recommendations for award.

CFLRP 4FRI efforts will benefit local economies by providing local employment opportunities in forest restoration through FS contracts/agreements. A Socioeconomic Report for the 4FRI Multi-Party Monitoring Board found that 4FRI activities in 2017 generated more than 900 full time jobs, approximately \$150 million in regional output, and \$50 million in regional labor income.



Caring for the Land and Serving People

Printed on Recycled Paper 

In addition, our proposal highlights our continued commitment to the 4FRI Stakeholders Group multi-party monitoring board, and to meeting the monitoring requirements of the CFLRP program across the forests.

This letter confirms that we have reviewed and approved this proposal, and are commitment to continued collaboration through project implementation and monitoring. Thank you for your consideration of the reauthorization of 4FRI.

Sincerely,

**MICHAEL  
BEST**  Digitally signed by MICHAEL  
BEST  
Date: 2019.12.09 10:25:20  
-0700

**M. STEPHEN BEST**  
Forest Supervisor  
Apache-Sitgreaves National Forest

**LAURA JO  
WEST**  Digitally signed by LAURA  
JO WEST  
Date: 2019.12.09 19:54:49  
-0700

**LAURA JO WEST**  
Forest Supervisor  
Coconino National Forest

**HEATHER  
PROVENCIO**  Digitally signed by HEATHER  
PROVENCIO  
Date: 2019.12.10 05:34:54  
-0700

**HEATHER PROVENCIO**  
Forest Supervisor  
Kaibab National Forest

**NEIL  
BOSWORTH**  Digitally signed by NEIL  
BOSWORTH  
Date: 2019.12.16 11:55:52  
-0700

**NEIL BOSWORTH**  
Forest Supervisor  
Tonto National Forest