



# Four Forest Restoration Initiative Strategic Plan

Collaboratively restoring 2.4 million acres of  
northern Arizona's ponderosa pine forest and  
associated ecosystems

September 2017



## Executive Summary & Plan Organization

This Four Forest Restoration Initiative (4FRI) Strategic Plan is a result of ongoing collaboration between the USDA Forest Service (FS) and the 4FRI Stakeholder Group (SHG). It was co-developed in 2017 by the FS and SHG to prioritize action, address remaining challenges, and accelerate the pace of restoration across the 2.4 million-acre 4FRI landscape.

The Strategic Plan sets common, reachable targets, focuses energy and resources, and identifies responsibilities for both the FS and SHG. It defines:

- Long-term, initiative-wide Strategic Goals and Outcomes that will prioritize and guide restoration activities for the lifetime of the Initiative
- Specific Program Components and associated Outcomes and medium-term Objectives that should be reviewed on 5-year cycles and updated as necessary
- Near-term Action Items in each Program Component area and their associated ownership, which will be reviewed and revised annually through collaboration between the FS and SHG
- Additional Considerations and Progress Evaluation within each Program Component





## Four Forest Restoration Background



Northern Arizona is part of a six-million-acre expanse of ponderosa pine forest, much of which is managed by four of Arizona's national forests (Apache-Sitgreaves, Coconino, Kaibab, and Tonto). At a range of 6,300–8,000 feet above the surrounding desert valleys at the southwestern edge of the Colorado Plateau, this upland area is a source of water for four of Arizona's most important rivers—the Salt, Verde, Little Colorado, and Gila. These rivers provide water to rural communities and the greater metropolitan Phoenix area. Communities such as Alpine, Flagstaff, Heber, Payson, Pinetop-Lakeside, Show Low, Springerville, and Williams rely on northern Arizona's forest for the economic benefits from tourism, recreation, and forest products. Weather extremes and human activities have left the forest unnaturally dense and unhealthy, stressed for water and nutrients, and vulnerable to disturbances such as uncharacteristically severe wildfire, disease, and insect outbreaks.

The risks posed by these disturbances, along with an interest in restoring forest health, spurred the creation of the Four Forest Restoration Initiative (4FRI), the largest landscape-scale restoration effort ever attempted. It is an outgrowth of long-standing collaboration across northern Arizona. For almost 20 years, a diverse group of stakeholders have participated in community-based, collaborative restoration efforts such as the White Mountain Stewardship Contract, Greater Flagstaff Forests Partnership, Natural Resources Working Group, and Community Wildfire Protection Plan processes. These local efforts formed the basis of the 4FRI Stakeholder Group (SHG), an informal organization open to public membership.

Recognizing the ecological, economic, and social contexts within which landscape-scale restoration occurs, the USDA Forest Service (FS) and SHG received funding in 2010 through the Collaborative Forest Landscape Restoration Program (CFLRP)<sup>1</sup> to initiate collaborative, science-based ecosystem restoration. Committed to prioritizing, planning, and implementing this long-term effort across the 2.4-million acre 4FRI

area, the FS and SHG established the following basic principles for 4FRI in the 2010 Path Forward<sup>2</sup> document:

- Comprehensive ecological restoration needs and priorities should guide landscape-scale forest management.
- Sustainable restoration economies can and should be developed and enhanced so that restoration can proceed efficiently, and rural communities benefit from such action.
- Sustained investment in collaboration can build agreement and trust and minimize controversy surrounding forest management, thus allowing ambitious landscape-scale restoration to proceed with maximum efficiency and effectiveness without sacrificing quality of work.

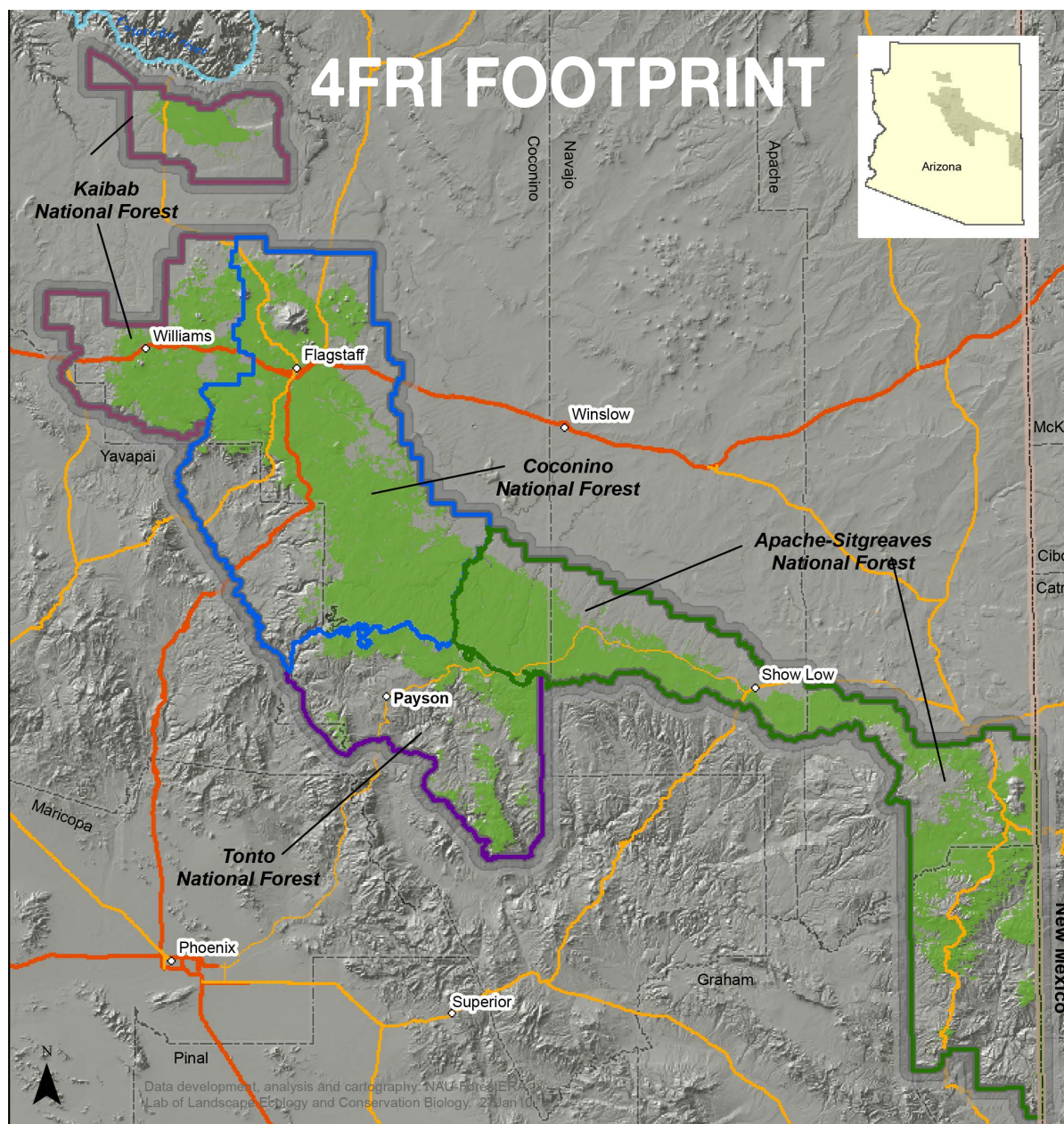
In 2010, the SHG developed a Charter<sup>3</sup> that provides operating guidelines. In 2011, SHG members and the FS signed a Memorandum of Understanding (MOU)<sup>4</sup> formalizing collaborative processes and aligning the agency and group. Since then, the FS and SHG have been working together to design and implement ecologically appropriate, socially supported, and economically viable forest restoration strategies based on the best available scientific information<sup>5</sup>.



<sup>1</sup> [www.fs.fed.us/restoration/CFLRP/overview](http://www.fs.fed.us/restoration/CFLRP/overview)  
<sup>2</sup>, <sup>3</sup>, <sup>4</sup> 4FRI.org

<sup>5</sup> Western Mogollon Plateau Adaptive Landscape Assessment (Sisk et al. 2004), White Mountains Adaptive Landscape Assessment (Abrams et al. 2005), Statewide Strategy for Restoring Arizona's Forests (Governor's Forest Health Council 2007), Analysis of Small Diameter Wood Supply in Northern Arizona (Hampton et al. 2008), Kaibab Forest Health Focus (Sisk et al. 2009).





## 4FRI Vision

We envision healthy, resilient forests in Northern Arizona that support natural fire regimes and pose decreased risk of uncharacteristically severe wildfire, foster quality habitat to support healthy populations of native plants and animals, and support thriving human communities, with high aesthetic values and sustainable forest activities, including recreation and forest restoration industries.

## 4FRI Mission

The mission of 4FRI is to collaboratively restore 2.4 million acres of northern Arizona's ponderosa pine forest and associated ecosystems.





## 4FRI Strategic Goals & Outcomes

# GOALS

# OUTCOMES

**Address the urgent need for restoration by accelerating the pace and scale of restoration treatments.**

**Restored ecosystems are resilient to future disturbances, pose decreased risk of uncharacteristically severe wildfires, and allow fire to safely resume its natural ecological role.**

**Collaborate to build and maintain strong social support and increase public engagement in forest management.**

**Increased understanding, support, engagement, and partnerships that enhance capacity for more rapid goal achievement and better decisions and outcomes.**

**Facilitate the development of sustainable forest restoration industries.**

**Increased mechanical thinning treatments are sustained at a rate of approximately 50,000 acres per year to achieve restoration goals.**

**Pursue technological innovations, partnership opportunities, and integration of new resources.**

**Increased capacity enhances planning and implementation and informs future restoration work.**

**Improve Forest Service business practices.**

**Refined administrative procedures facilitate restoration activities at a speed and scale necessary to meet goals efficiently.**

**Learn and adapt ecological restoration treatments and economic strategies based on monitoring and experience.**

**Enhanced decision-making incorporates the best available scientific information while providing strategies for accomplishing restoration with low value wood and biomass.**

**Apply an all-lands approach.**

**Extended and supported restoration work across jurisdictional boundaries improves ecological conditions across the entire landscape of northern Arizona.**



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## COMMUNICATION AND ENGAGEMENT

### OUTCOME

**Understanding and support of, and engagement in, forest restoration efforts by the public and targeted audiences is achieved through proactive and coordinated communication activities between the FS and SHG**

### OBJECTIVES and ACTION ITEMS

**1. 4FRI activities are closely coordinated among FS personnel, and between the FS and SHG, for development of timely outreach materials for external audiences**

1.A. (SHARED) Relay schedule and locations of treatments to both key FS and SHG communications representatives on a monthly basis by 4FRI Operations Coordinator in order to facilitate communication with the public on current treatments

1.B. (FS) Inform SHG and public of developments related to the 2017 Request for Information (RFI) and any subsequent Request(s) for Proposal (RFP) through regular FS communications

1.C. (FS) Communicate relevant FS personnel transitions and provide organizational information that includes roles, authorities, and responsibilities relative to the 4FRI effort

1.D. (SHARED) Create tailored and relevant messaging for public officials

**2. Communication, including tracking and reporting, across the four forests and all FS administrative levels is improved**

2.A. (SHARED) Create a coordinated communication plan

2B. (FS) Provide quarterly updates to all FS administrative levels based on a coordinated communication plan among all four forests to ensure ability for all levels of forests to communicate 4FRI progress

### CONSIDERATIONS

- Messaging should be tailored and consistent among the four forests as well as among stakeholders
- Key outreach topics include: restoration success stories and challenges, fire/smoke management, importance/value of restoration, impacts of mechanical thinning “in your neighborhood/community,” importance of private industry in achieving restoration, immediate post-treatment and subsequent changes on the landscape, and progress on all aspects of restoration (mechanical, fire management, comprehensive)
- Awareness of the political context of our communication is important



**3. SHG Communication Work Group and others develop timely and appropriate outreach materials, e.g. The Lookout quarterly newsletter, in order to inform and engage the public and other targeted audiences**

3.A. (SHG) Lead and collaborate on The Lookout quarterly stakeholder newsletter

3.B. (SHG) Assess and develop timely communication products based upon needs, and strives to include proactive outreach to improve public awareness of 4FRI activities

3.C. (SHARED) Inform public and targeted audiences of financial, social, and ecological value of restoration treatments, including the value of reducing the likelihood of uncharacteristically severe fires

**4. The public is increasingly engaged in and supportive of all aspects of restoration work**

4.A. (SHARED) Plan, publicize, and host appropriate activities (e.g., field trips, work days, open houses, info booths at public events) to engage the public throughout each year

4.B. (SHARED) Inform the public about fire and smoke management activities, including messaging about where/how the public can access information about areas likely to be impacted by smoke

**5. FS and SHG will work with tribes to determine pathways for tribal engagement in restoration activities and identify opportunities for partnerships and co-management**

5.A. (FS) Consult with tribal officials and the 4FRI team to identify opportunities for increased tribal engagement, and communicates results to the SHG as appropriate

**6. SHG, industry, and the public have improved understanding of FS contracting options and related decision-making processes**

6.A. (FS) Regularly update the SHG on contracting decisions and rationales in accordance with confidentiality provisions

PROGRESS EVALUATION
<ul style="list-style-type: none"> <li>Quarterly newsletter distribution if monitored</li> <li>Elected Officials surveyed for constituent input/feedback (trends?)</li> <li>Social/Economic monitoring results (MPMB)</li> <li>Compilation of media stories</li> <li>Increased FS and public engagement</li> <li>Attendance and feedback at public events</li> <li>Partner and tribal feedback</li> <li>Number of events attended with 4FRI-specific information distributed</li> </ul>

## NEPA PLANNING

### OUTCOME

NEPA analyses are completed within planned timeframes, with new efficiencies and lessons learned carried forward in subsequent analyses, to: 1) lay a foundation for landscape analyses of activities including mechanical thinning, fuels reduction, and comprehensive restoration; 2) enhance public input and engagement; and 3) provide certainty and predictability to private industry

### OBJECTIVES and ACTION ITEMS

#### 1. FS will explore all existing authorities to plan future projects more efficiently

1.A. (SHARED) Examine use of novel strategies such as the flexible toolbox approach being used in the Rim Country EIS and consider their uses in future planning efforts

1.B. (SHARED) Explore options for involving partners in planning to supplement FS capacity

1.C. (FS) – Identify, document, and evaluate relevant existing regulatory authorities to facilitate effective NEPA planning

#### 2. FS and SHG will provide clear expectations, when working together and with partners, regarding types of feedback needed and deadlines to inform the planning process

2.A. (FS) Provide a clearly defined schedule to the SHG for NEPA planning of projects within the 4FRI footprint, along with updates as part of the 4FRI monthly update, or separately if requested

2.B. (SHARED) Provide guidelines regarding timeliness, amount, preferred types, and formats of information needed with respect to relevant deadlines

### CONSIDERATIONS

- Increased collaboration in NEPA requires additional time to plan, engage, and obtain input
- Field trips are good options for holding in-depth discussions of specific topics
- Flexibility in testing and adopting new efficiencies or using partners to expand capacity is needed
- Long-term NEPA planning schedule for additional restoration treatments beyond implementation of the first two large EISs
- Effective project management will help ensure high quality analysis
- Cost of collecting and using LiDAR data may be prohibitive



### 3. FS and SHG strive to meet scheduled deadlines

3.A. (FS) Complete Rim Country Project analysis on schedule, with draft EIS by August 2018, final EIS/draft ROD by August 2019, and final ROD by February 2020

3.B. (FS) Sign C.C. Cragin Watershed Protection Project Decision Notice by July 2018

3.C. (FS) Coordinate NEPA planning across forests to minimize overlap of deadlines and staffing bottlenecks

#### PROGRESS EVALUATION

- NEPA milestones completed on schedule
- SHG input received on schedule
- Support for/success of flexible toolbox approach
- Efficiencies tested and adopted as appropriate

### 4. FS and SHG work together to expand awareness and public support for NEPA processes and decisions

4.A. (SHARED) Work to gather public input and provide information on the Rim Country and other NEPA processes

### 5. FS uses highest quality data in planning efforts

5.A. (SHARED) Determine options for improving FS capacity (e.g., training or outside assistance) to integrate LiDAR data into planning

5.B. (SHARED) Obtain additional LiDAR coverage across 4FRI where lacking

5.C. (SHARED) Integrate and interpret existing LiDAR data for planning and analysis of large-scale projects

5D. (SHARED) Use latest data, models, and databases to provide information relevant to the needs of analyses

### 6. FS engages implementers, SHG, and others to identify lessons learned and actions that would improve the efficiency of planning and the linkage from plans to implementation

6.A. (SHARED) Consider using findings from Industry Roundtable to inform planning processes

6.B. (FS) Hold regular meetings for information sharing and gathering on forests/districts with personnel involved in oversight and implementation

6.C. (SHARED) Develop implementation plans within NEPA documents that provide flexibility for unanticipated forest conditions and implementation needs

## IMPLEMENTATION PLANNING

### OUTCOME

**Restoration activities are completed efficiently through timely pre-implementation coordination and planning across resources, partners, and geographic areas**

### OBJECTIVES and ACTION ITEMS

**1. Prioritized 5-year plans will be created to identify preparation and resource survey needs and to guide implementation**

1.A. (FS) Use validated lists of priorities to guide 5-year plan development for mechanical thinning, prescribed fire, and comprehensive restoration activities

#### CONSIDERATIONS

- Planning for biomass removal
- 5-year plans provide guidance to more specific out-year planning

**2. Resource and restoration needs are integrated into all out-year planning exercises**

2.A. (FS) Identify treatment areas and budgets for out-year surveys that meet prioritization criteria

2.B. (FS) Complete survey work for all activities within NEPA-cleared treatment areas (e.g., within mechanical thinning areas, clear comprehensive restoration activities with the same surveys)

2.C. (FS) Prepare pre-implementation checklists for all federal fiscal year 2018 (FY18) and later mechanical thinning offerings prior to project layout

2.D. (FS) Develop pre-implementation checklists in coordination with resource specialists to identify design features from the project NEPA document

2.E. (FS) Strive to complete sale/contract prep activities at least one year ahead of anticipated need

**3. Best available tools and methods will be used to design ecologically desirable and economically efficient treatments and contracts**

3.A. (SHARED) Develop options for restoring ecologically important acres that do not generate net value when treated

3.B. (SHARED) Continue to use models (e.g., Ager Landscape Treatment Designer) to inform out-year mechanical thinning contracts



3.C. (FS) Strategically coordinate mechanical thinning treatments to improve opportunities to allow wildfire to achieve resource benefits

**4. Implementation of restoration activities will be prioritized collaboratively with partners**

4.A. (SHARED) Coordinate the 4FRI Board's and stakeholders' lists of priorities for implementation

4.B. (FS) Communicate projected revenue from retained receipts and collaboratively consider priorities for use within each project

4.C. (SHARED) Continue to hold operational meetings to coordinate implementation of all restoration activities

PROGRESS EVALUATION
<ul style="list-style-type: none"><li>• Working 5-year plans</li><li>• Completed pre-implementation checklists for next FY offerings</li><li>• Contracts and agreements completed according to 5-year plans</li><li>• Increase of surveyed/cleared acreage</li></ul>



**5. Use a variety of agreements with partners to accelerate implementation**

5.A. (SHARED) Identify available tribal resources for consideration

5.B. (SHARED) Explore how partners can expand survey, prep, and implementation capacities (e.g., Comprehensive Implementation Work Group (CIWG) and comprehensive restoration activities) to accelerate implementation

5.C. (SHARED) Identify opportunities for all-lands restoration activities through communication and planning across boundaries with partners, tribes, and the public

## BUSINESS PRACTICES

### OUTCOME

**Improvements in administrative structure and operational processes increase efficiency and effectiveness**

### OBJECTIVES and ACTION ITEMS

**1. Continuity is assured in planning and implementation efforts through investments in FS and SHG capacity**

1.A. (SHARED) Identify relevant training opportunities for FS employees and SHG members, including outside of their primary responsibilities/roles

1.B. (SHARED) Expand training for needs associated with new technologies (e.g., GIS for DxP)

1.C. (SHARED) Create and host 4FRI orientation for new SHG members and new FS employees that incorporates 4FRI foundational collaborative documents

1.D. (FS) Develop transition plans for staffing changes, including leadership roles

1.E. (FS) Improve knowledge and resource sharing across the four forests

1.F (FS) Develop and share operating guidelines for the 4FRI Board that document roles, responsibilities, and internal communication and decision-making protocols

**2. Partners' expertise and capacity is used to achieve desired conditions**

2.A. (SHARED) Develop appropriate tribal cooperative agreements

2.B. (FS) Identify opportunities to involve the SHG in improving RFP development and contractor selection processes

2.C. (SHARED) Use stewardship authority to enhance FS capacity to implement at larger scales

### CONSIDERATIONS

- Benefits and risks of beginning resources surveys and layout prior to having signed NEPA decisions
- Complexities of quantifying the value of a healthy forest and restoration treatments (Alternative (Ecosystem Services?)/Non-market valuation of timber)
- Pros and cons of requiring contractors to provide a thinning schedule
- How much is society willing to pay for restoration that will not self-fund?



2.D. (SHARED) Engage with other regulatory agencies to identify operational challenges/issues and possible solutions (e.g., a 4FRI-wide increased trucking weight pilot program)

2.E. (SHARED) Engage industry early to improve feasibility assessments of areas for mechanical thinning treatments

### **3. Budget development, allocation, and tracking processes will be regularly assessed for improvements**

3.A. (SHARED) Reevaluate and improve FS procurement processes

3.B. (FS) Improve fiscal accountability through streamlined tracking and reporting

3.C. (SHARED) Establish uniform criteria for evaluating and reporting financial value of restoration activities

### **4. Annual funding for projects and planning will support necessary staffing levels**

4.A. (SHARED) Explore options for funding additional personnel through agreements with partners (e.g., shared NWTF-FS position)

4.B. (SHARED) Redirect staff where necessary to support high priority work and evaluate innovation (e.g., different resource experts may be needed on site to guide and evaluate DxP outcomes)

4.C. (SHG) Advocate for and/or create additional funding opportunities

### **5. Efficiency of resource surveys will be increased**

5.A. (FS) Include comprehensive restoration and fuels activities in survey and treatment planning

5.B. (FS) Coordinate and complete resource surveys for out-year activities simultaneously when possible (e.g., clear multiple activities in one survey)

5.C. (FS) Plan for out-year surveys during budget development

### **6. Existing authorities are reviewed and used to allow for innovation**

#### **PROGRESS EVALUATION**

- Adoption of recommendations from TNC and ERI assessments of FS processes
- Improved results from RFI/RFP process
- More rapid and consistent implementation
- Improved tracking of resources that go into these projects to better and accurately understand efficiencies gained

6.A. (FS) Simplify silvicultural prescriptions and transition to DxP where feasible, and continue to evaluate outcomes

6.B. (SHARED) Evaluate weight scale sales for mechanical thinning as means to decrease cruise costs where appropriate

6.C. (SHARED) Use digital technology where appropriate (e.g., boundaries, digital prescriptions, tablet technology)

6.D. (SHARED) Examine the benefits and drawbacks of practices to improve economic viability of mechanical treatments (e.g., in-woods processing, increased on-site drying times, managing biomass)

6.E. (SHARED) Develop appropriate business practices for low value wood including appraisals, cruising, etc.

6.F. (SHARED) Where obstacles have been identified (e.g., through TNC and ERI assessments), recommend changes to local, regional, and national policies

**7. Methods for valuation of restoration will be improved and incorporated into FS contracts and agreements**

7.A. (SHARED) Calculate and communicate financial and social value of reducing the likelihood of uncharacteristically severe fires and the value of a restored forest

7.B. (SHARED) Reevaluate the viability of self-funding mechanical treatment

## FIRE

### OUTCOME

**Fire is safely reintroduced and resumes its natural role in shaping forest ecosystems**

#### OBJECTIVES and ACTION ITEMS

**1. Coordination across resource areas facilitates implementation of prescribed fire and management of wildfires to meet restoration objectives**

- 1.A. (SHARED) Coordinate with federal, state, municipal, and other partners to complete larger prescribed burns
- 1.B. (FS) Prioritize the placement and timing of prescribed fire treatments with other resource areas and restoration treatment activities
- 1.C. (FS) Use pre-implementation checklists

**2. Incrementally increase the annual program objective to achieve roughly 200,000 acres of prescribed and wildfire and fuels treatment per year**

- 2.A. (FS) Complete approximately 60,000 acres of restoration treatments using prescribed fire, wildfire, and non-commercial mechanical fuels treatments in FY18, if conditions allow (ASNF 18,000 acres, Coconino 21,000 acres, Kaibab 12,000 acres, Tonto 9,000 acres)
- 2.B. (FS) Complete approximately 70,000 acres of restoration treatments using prescribed fire, wildfire, and non-commercial mechanical fuels treatments in FY19, if conditions allow (ASNF 21,000 acres, Coconino 24,500 acres, Kaibab 14,000 acres, Tonto 10,500 acres)
- 2.C. (FS) Validate and refine, as necessary, the number of acres of treatments in the annual program objective

**3. The public is increasingly informed about and accepting of the role of fire in ecosystem restoration and forest management**

- 3.A. (FS) Improve communication with the public to explain the decision-making criteria and processes related to managing prescribed fire and wildfire
- 3.B. (SHARED) Improve communication with the public to explain the rationale for and benefits of managing prescribed fire and wildfire

CONSIDERATIONS
<ul style="list-style-type: none"> <li>A substantial number of acres have already been “NEPA cleared” for prescribed fire</li> <li>Weather conditions may affect whether target ranges are met or exceeded</li> <li>There will be a need for maintenance burns</li> <li>Public concerns about smoke and fire are high and could impact overall restoration efforts</li> </ul>



3.C. (SHARED) Improve data compilation of fire treatment planning, accomplishments, and ecological outcomes for both prescribed fire and wildfire to enhance communication efforts

PROGRESS EVALUATION
<ul style="list-style-type: none"><li>• Accomplishment reports (i.e., acres burned by fire type: prescribed fire or wildfire suppressed)</li><li>• Fire behavior and effects in treated areas</li></ul>

## MECHANICAL THINNING

### OUTCOME

**Sustainable mechanical treatments contribute to achieving restoration objectives**

### OBJECTIVES and ACTION ITEMS

#### **1. Industry partners will be engaged**

1.A. (SHARED) Hold Industry Roundtable, open to interested stakeholders, at least annually and follow through on agreed-upon priority action items

1.B. (SHARED) Encourage industry to propose solutions to restoration challenges (e.g., biomass removal, timber prep, implementation efficiencies, and resource surveys)

1.C. (SHARED) Increase prep efficiencies, including potential for contractors to perform prep

1.D. (SHARED) Consider applications of technological advances in industry

#### **2. Treatment designs are economically viable and meet restoration objectives**

2.A. (FS) Create tree thinning prescriptions to achieve heterogeneity in forest structure and composition across the landscape (e.g., for wildlife habitat, reduction in risk of uncharacteristic wildfire)

2.B. (SHARED) Complete Ager landscape treatment design tool analysis on 1<sup>st</sup> 4FRI EIS to help inform 5-year plan review and revision

2.C. (FS) Prioritize treatment areas based on the potential behavior and effects of wildfires and the need to protect irreplaceable values at risk, such as threatened species habitat or watershed function

2.D. (FS) Mechanical treatments are configured and timed to facilitate the use of prescribed fire and wildfire to meet resource objectives

2.E. (FS) Use pre-implementation checklists

### CONSIDERATIONS

- Future re-entries
- Currently there are approximately 537,000 acres “NEPA cleared” for mechanical thinning that are not yet under contract
- Volumes, size classes and accessibility of materials are variable
- Under appropriate agreements, tribal partners may be able to assist in treating areas
- Learn from failures and successes of other forest restoration projects

2.F. (SHARED) Investigate and include options for biomass removal during treatment design (e.g., market-based solutions, required removal)

**3. Offerings are aligned with existing industry capacity while creating enabling conditions for sustainable industry growth**

3.A. (SHARED) Establish current and reasonably foreseeable industry capacity

3.B. (FS) Prep out-year projects to distribute offerings throughout the fiscal year

3.C. (FS) Lay out and/or offer approximately 15,000 acres of DxP projects for FY18 and increase planning of DxP projects for FY19

3.D. (FS) Offer approximately 46,000 acres in FY18, 49,000 acres in FY19 and 50,000 acres each year thereafter

PROGRESS EVALUATION
<ul style="list-style-type: none"> <li>• Number of acres prepped and offered</li> <li>• Number of acres treated</li> </ul>



**4. Contracts are designed to accomplish restoration treatments and address industry capacity**

4.A. (SHARED) Identify opportunities to create flexibility within contracts (e.g., combining smaller sales, advocating for longer-term contracts)

4.B. (FS) Review Phase 1 Contract in May 2018 to determine future task orders

4.C. (FS) Implement service contracts on PAC treatments from 1<sup>st</sup> EIS (e.g., cut, skid, deck in FY18)

4.D. (FS) Incorporate information gleaned from the 2017 RFI and the 2012 RFP into development of a new RFP on the “west side” (for acres not currently under Phase 1 Contract) as needed to meet restoration goals

4.E. (FS) Provide clarity on whether or not biomass removal is mandatory and encourage removal where and when possible

4.F. (FS) Address risk management (e.g., cancellation ceiling issues) in long-term contracts and use in RFP if appropriate

4.G. (SHARED) Meet obligations under the TNC Master Stewardship Agreement

4.H. (FS) Include performance requirements to maintain accountability between FS and contractors



## COMPREHENSIVE RESTORATION

### OUTCOME

**Comprehensive restoration activities, other than mechanical thinning and prescribed fire, ensure that the full suite of habitat and ecosystem restoration objectives are accomplished**

### OBJECTIVES and ACTION ITEMS

**1. Habitat and ecosystem restoration opportunities are identified, prioritized, and implemented**

1.A. (SHARED) Draft a 5-Year Plan for comprehensive restoration projects

1.B. (SHARED) FS, SHG, and partners complete T-Six Spring restoration project during FY18

1.C. (SHARED) Identify opportunities for Categorical Exclusions specific to comprehensive restoration

1.D. (SHARED) Schedule comprehensive restoration projects in coordination with other treatments and wildlife habitat needs

1.E. (FS) Where appropriate, projects tier to Watershed Condition Framework, watershed restoration action plans, and species recovery plans to help focus implementation activities

**2. Identify funding opportunities to increase comprehensive restoration implementation (e.g., grants and non-FS entities carrying out or funding comprehensive restoration projects)**

2.A. (SHARED) Advocate for and/or create additional funding opportunities

2.B. (FS) Use retained receipts from thinning contracts to help fund comprehensive restoration where appropriate

2.C. (SHG) CIWG recommends a target monetary value of comprehensive restoration work to complete per year

2.D. (FS) Fund National Wild Turkey Federation (NWTF) forester/biologist to implement “Save the Habitat. Save the Hunt” restoration program

CONSIDERATIONS
<ul style="list-style-type: none"> <li>Restoration of areas already burned with uncharacteristic wildfire</li> <li>Tribal partners may be able to contribute toward the implementation of restoration activities</li> </ul>

**3. Resource surveys are prioritized, coordinated, and completed in areas where comprehensive restoration projects are planned**

3.A. (SHARED) Identify NEPA- and shovel-ready projects as well as areas where additional surveys are necessary

3.B. (FS) Complete and coordinate resource surveys for out-year projects, including during FS WorkPlan development

3.C. (SHARED) Use pre-implementation checklists

**4. Public engagement is expanded to improve public lands stewardship, generate citizen science, and add capacity**

4.A. (SHARED) Identify, publicize, and complete volunteer projects

4.B. (FS) Expand existing partnership between FS and Hopi Tribe to restore natural springs within the 4FRI footprint

4.C. (FS) Use existing Master Participating Agreement to increase tribal involvement in ongoing and future restoration-related activities

**5. Comprehensive restoration accomplishments, including the work of the CIWG, are publicized**

5.A. (SHARED) Coordinate with 4FRI CWG to outreach comprehensive restoration activities, volunteer opportunities, and accomplishments

5.B. (SHARED) Display work completed (e.g., expenditures, match, etc.) in the CFLRP Annual Report, partner websites, etc.

PROGRESS EVALUATION
<ul style="list-style-type: none"> <li>• NRM, WIT, and FACTS database reporting</li> <li>• Changes in Watershed Condition Framework scores</li> <li>• Changes in indicators specified in species recovery plans</li> <li>• Pre- and post-implementation monitoring in coordination with the Multi-Party Monitoring Board</li> </ul>

## MONITORING AND ADAPTIVE MANAGEMENT

### OUTCOME

**Monitoring information is collected, shared, and integrated into management; tracks progress; and improves effectiveness in meeting desired conditions**

### OBJECTIVES and ACTION ITEMS

**1. Monitoring is planned and prioritized based on NEPA commitments, topics of concern, and capacity limitations**

1.A. (SHARED) MPMB creates annual schedule for monitoring activities based upon priorities, funding, gaps, and commitments

**2. Use of new technologies is expanded to create efficiencies in monitoring and information exchange**

2.A. (SHARED) Fund and expand use of drones, LiDAR, and other new technologies to monitor treatments

2.B. (SHARED) Incorporate digital data collected by harvesters

**3. Changes to management are recommended based on best available science and lessons learned from implementation and effects monitoring**

3.A. (SHARED) Review and consult existing best available science

3.B. (SHARED) Consult agencies and partner organizations to determine if data relevant to monitoring questions exist

3.C. (SHARED) Collect and analyze data that are relevant and sufficient to address monitoring questions and achieve adaptive management goals

3.D. (SHARED) Use analyses of monitoring data to inform adaptive management

### CONSIDERATIONS

- Data collection formats should be consistent
- Some questions can only be answered in the long term
- Citizen science may not be appropriate in all circumstances
- Funding availability may limit the ability to meet objectives in the monitoring plan



**4. The Multi-Party Monitoring Board and the Communications Work Group coordinate to interpret monitoring results for the FS, SHG, and public**

4.A. (SHARED) MPMB and CWG meet as necessary to address outreach needs and develop products

4.B. (SHARED) MPMB and CWG determine options to provide a data-rich, interactive platform to share monitoring results with the FS, SHG, and public

**5. Citizen scientists are engaged and add monitoring capacity**

5.A. (SHARED) Develop additional citizen science and volunteer opportunities for monitoring

5.B. (SHARED) Continue involvement of partners and citizen scientists to collect data from springs and streams using the most appropriate methods (e.g., Collector for ArcGIS)

**6. Resources necessary for current and future monitoring are secure**

6.A. (SHARED) Identify and foster partnerships and commitments to add monitoring capacity

6.B. (SHARED) Ensure adequate funding exists before additional monitoring indicators are added to the monitoring plan

PROGRESS EVALUATION
<ul style="list-style-type: none"><li>• Critical indicators monitored</li><li>• Monitoring results shared in an accessible way</li><li>• Monitoring data integrated into adaptive management</li></ul>

## ACRONYMS

<b>4FRI:</b>	Four Forest Restoration Initiative
<b>ArcGIS:</b>	ESRI brand geographic information system for management, analysis, and display of geographic information
<b>ASNF:</b>	Apache-Sitgreaves National Forests
<b>CFLRP:</b>	Collaborative Forest Landscape Restoration Program
<b>CIWG:</b>	Comprehensive Implementation Work Group
<b>CWG:</b>	Communications Work Group
<b>DxP:</b>	Designation by prescription
<b>EIS:</b>	Environmental impact statement
<b>ERI:</b>	Ecological Restoration Institute (of Northern Arizona University)
<b>FACTS:</b>	Forest Service Activity Tracking System (USDA FS database)
<b>FMO:</b>	Fire management officer (USDA FS position)
<b>FS:</b>	USDA Forest Service
<b>FY:</b>	Federal Fiscal year
<b>IWG:</b>	Industry Work Group
<b>LIDAR:</b>	Light detection and ranging
<b>MOU:</b>	Memorandum of Understanding
<b>MPMB:</b>	Multi-Party Monitoring Board
<b>NEPA:</b>	National Environmental Policy Act
<b>NF:</b>	National forest
<b>NRM:</b>	Natural Resource Manager (USDA FS database)
<b>NWTF:</b>	National Wild Turkey Federation
<b>PAC:</b>	Protected activity center (for the Mexican Spotted Owl)
<b>PAO:</b>	Public affairs officer (USDA FS position)
<b>ROD:</b>	Record of decision
<b>RFI:</b>	Request for information
<b>RFP:</b>	Request for proposals
<b>PWG:</b>	Planning Work Group
<b>SHG:</b>	4FRI Stakeholder Group
<b>TMA:</b>	Timber Management Assistant (USDA FS position)
<b>TNC:</b>	The Nature Conservancy
<b>USDA:</b>	United States Department of Agriculture
<b>WIT:</b>	Watershed Improvement Tracking (USDA FS database)

## GLOSSARY OF TERMS

**Adaptive Management:** The general framework encompassing the three phases of planning: assessment, plan development, and monitoring (36 CFR 219.5). This framework supports decision-making that meets management objectives while simultaneously accruing information to improve future management by adjusting the plan or plan implementation. Adaptive management is a structured, cyclical process for planning and decision-making in the face of uncertainty and changing conditions with feedback from monitoring, which includes using the planning process to actively test assumptions, track relevant conditions over time, and measure management effectiveness (Forest Service Handbook 1909.12)

**All-lands Approach:** A land management approach that incorporates cross-boundary partnerships to achieve desired outcomes at a landscape-scale.

**Biomass:** Trees <6" in diameter at breast height and thinning slash, including leaves, branches, and tops of cut trees.

**Biomass Removal:** Typically refers to the removal of trees <6" in diameter at breast height and thinning slash, including leaves, branches, and tops of cut trees.

**Cancellation Ceiling:** The maximum cancellation charge that the contractor can receive in the event of contract cancellation by the Government.

**Categorical Exclusion:** A category of actions that the Forest Service has determined does not individually or cumulatively have a significant effect on the quality of the human environment, and for which, therefore, neither an environmental assessment (EA) nor environmental impact statement (EIS) is required.

**Citizen Science:** The involvement of the general public in scientific research or monitoring, typically in collaboration with, or under the direction of, professional scientists.

**Comprehensive Restoration:** Restoration activities, other than mechanical thinning and prescribed fire, which ensure that the full suite of identified habitat and ecosystem restoration objectives are accomplished.

**Deck:** A (log) deck is a designated area where logs are stacked.

**Digital Boundary:** A timber sale boundary that is recorded and used in a digital format, on a computer or tablet, rather than physically designated boundaries on the ground.

**Digital Prescription:** A digital representation of the desired conditions for a stand of trees. Digital prescriptions are used to assist harvesters in selecting trees to be cut during implementation of Designation by Prescription treatments, in which the cutter selects the trees to be thinned.



**Ecological Function:** Ecological processes that sustain composition and structure, such as energy flow, nutrient cycling and retention, soil development and retention, predation and herbivory, and natural disturbances such as wind, fire, and floods (Forest Service Handbook 1909.12).

**Ecological Resilience:** The ability of an ecosystem to regain structural and functional attributes that have suffered harm from stress or disturbance (SER 2004).

**Ecosystem:** A spatially explicit, relatively homogeneous unit of the Earth that includes all interacting organisms and elements of the abiotic environment within its boundaries. An ecosystem is commonly described in terms of its composition, structure, function, and connectivity (Forest Service Handbook 1909.12)

**Flexible Toolbox Approach:** An approach used in planning landscape-level restoration projects that is less prescriptive, using decision matrices to describe site conditions and the tools or range of prescriptions that would be applied to them. This approach accounts for imperfect information and adapts to changes in environmental conditions, giving more flexibility to implementers and encouraging application of the appropriate tool to achieve the desired results.

**In-woods Processing:** Use of sites within the forest to process, sort, and dry wood products before removing them from the forest, in order to maximize efficient transportation and utilization of forest products.

**Layout:** The process of delineating and flagging the boundaries of a particular mechanical thinning sale unit. It includes flagging any interior units or block boundaries, including special treatment areas, protection areas, and exclusion zones.

**Mechanical Thinning/Mechanical Treatment:** Any activity (e.g., silvicultural thinning, biomass removal) performed by human-controlled tools (e.g., chain saw, feller-buncher) that results in the removal or alteration of wood fiber (does not include the use of fire)

**Monitoring Indicators:** Quantitative measures used in conjunction with other information to help describe the condition of a resource of interest. Over time, monitoring indicators can be used to evaluate the effects of management actions and progress towards desired conditions.

**Out-year:** The year following the current fiscal year

**Offerings:** Timber contracts that will be offered to the public using a competitive bidding process.

**Pre-implementation Checklist:** A document identifying all design features and mitigations that are needed to implement a project according to guidance from the applicable NEPA documents. May also be referred to as a plan-in-hand.

**Record of Decision (ROD):** A concise public record of the responsible official's decision to implement an action when an environmental impact statement (EIS) has been prepared (Forest Service Handbook 1909.15)

**Resource Benefits/Objectives:** Outcomes that achieve or move towards desired conditions for any particular resource.

**Resource Survey:** A pre-implementation survey done to identify areas or features that are sensitive, culturally important, or that may otherwise require special treatment during the implementation of restoration activities.

**Silvicultural Prescription:** A document which has a planned series of treatments designed to change current stand structure and composition of a stand to one that meets desired conditions.

**Skid:** The process of dragging logs from one point to another.

**Stewardship Agreement:** The general purpose of Stewardship Agreements (SA) is to achieve land management goals for National Forest System (NFS) lands while meeting local and rural community needs. Stewardship agreements are tools that can be used to accomplish landscape restoration objectives (Forest Service Handbook 1509.11, 72.61).

**Stewardship Authority:** Section 323 of Public Law 108-7 (16 U.S.C. 2104 Note, as revised February 28, 2003, to reflect sec. 323 of J.J. Res. 2 as enrolled), the Consolidated Appropriations Resolution, 2003, amending Public Law 105-277.

**Tablet Technology:** Refers to the use of computer tablets (e.g., iPads) to implement various restoration objectives using digital data formats.

**Treatment Area:** An area that has been designated for treatment (e.g., with prescribed fire or mechanical thinning).

**Trucking Weight Pilot Program:** A temporary exemption from existing logging truck weight limits intended to explore the feasibility and effects of heavier trucks on infrastructure and public safety.

**Uncharacteristically Severe Wildfire:** A wildfire, the effects of which are more severe than they would have been under historic weather, fuel loading, and forest structural conditions.

**Weight Scale Sale:** A timber sale in which the bill/credits are generated based on the weight of logs rather than board feet or cubic volume.

### ACTION ITEMS FOR FEDERAL FISCAL YEARS 2018/2019

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Communication and Engagement	1.A.	Relay schedule and locations of treatments to both key FS and SHG communications representatives on a monthly basis by 4FRI Operations Coordinator in order to facilitate communication with the public on current treatments	2	FY18	Ongoing	4FRI Operations Coordinator
FS	Communication and Engagement	1.B.	Inform SHG and public of developments related to the 2017 Request for Information (RFI) and any subsequent Request(s) for Proposal (RFP) through regular FS communications	2	FY18	FY19	4FRI Public Affairs Officer
FS	Communication and Engagement	1.C.	Communicate relevant FS personnel transitions and provide organizational information that includes roles, authorities, and responsibilities relative to the 4FRI effort	2	FY18	Ongoing	4FRI Chief Executive
SHARED	Communication and Engagement	1.D.	Create tailored and relevant messaging for public officials	2	FY18	Ongoing	CWG Chair
SHARED	Communication and Engagement	2.A.	Create a coordinated communication plan	2	FY18	FY19	4FRI Public Affairs Officer

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Communication and Engagement	2.B.	Provide quarterly updates to all FS administrative levels based on a coordinated communication plan among all four forests to ensure ability for all levels of forests to communicate 4FRI progress	2	FY18	Ongoing	4FRI Public Affairs Officer
SHG	Communication and Engagement	3.A.	Lead and collaborate on The Lookout quarterly stakeholder newsletter	3	FY18	Ongoing	CWG Chair
SHG	Communication and Engagement	3.B.	Assess and develop timely communication products based upon needs, and strives to include proactive outreach to improve public awareness of 4FRI activities	3	FY18	Ongoing	CWG Chair
SHARED	Communication and Engagement	3.C.	Inform public and targeted audiences of financial, social, and ecological value of restoration treatments, including the value of reducing the likelihood of uncharacteristically severe fires	3	FY18	Ongoing	CWG Chair
SHARED	Communication and Engagement	4.A.	Plan, publicize, and host appropriate activities (e.g., field trips, work days, open houses, info booths at public events) to engage the public throughout each year	3	FY18	Ongoing	4FRI Public Affairs Officer

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Communication and Engagement	4.B.	Inform the public about fire and smoke management activities, including messaging about where/how the public can access information about areas likely to be impacted by smoke	3	FY18	Ongoing	CWG Chair
FS	Communication and Engagement	5.A.	Consult with tribal officials and the 4FRI team to identify opportunities for increased tribal engagement, and communicates results to the SHG as appropriate	3	FY18	Ongoing	FS Tribal Relations Manager (Tonto NF)
FS	Communication and Engagement	6.A.	Regularly update the SHG on contracting decisions and rationales in accordance with confidentiality provisions	3	FY18	Ongoing	4FRI Chief Executive
SHARED	NEPA Planning	1.A.	Examine use of novel strategies such as the flexible toolbox approach being used in the Rim Country EIS and consider their uses in future planning efforts	4	FY18	Ongoing	4FRI Planning Coordinator
SHARED	NEPA Planning	1.B.	Explore options for involving partners in planning to supplement FS capacity	4	FY18	Ongoing	4FRI Planning Coordinator
FS	NEPA Planning	1.C.	Identify, document, and evaluate relevant existing regulatory authorities to facilitate effective NEPA planning	4	FY18	FY18	4FRI Planning Coordinator



Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	NEPA Planning	2.A.	Provide a clearly defined schedule to the SHG for NEPA planning of projects within the 4FRI footprint, along with updates as part of the 4FRI monthly update, or separately if requested	4	FY18	Ongoing	4FRI Planning Coordinator
SHARED	NEPA Planning	2.B.	Provide guidelines regarding timeliness, amount, preferred types, and formats of information needed with respect to relevant deadlines	4	FY18	Ongoing	4FRI Planning Coordinator
FS	NEPA Planning	3.A.	Complete Rim Country Project analysis on schedule, with draft EIS by August 2018, final EIS/draft ROD by August 2019, and final ROD by February 2020	5	FY18	FY19	4FRI Planning Coordinator
FS	NEPA Planning	3.B.	Sign C.C. Cragin Watershed Protection Project Decision Notice by July 2018	5	FY18	FY18	Coconino NF NEPA Coordinator
FS	NEPA Planning	3.C.	Coordinate NEPA planning across forests to minimize overlap of deadlines and staffing bottlenecks	5	FY18	Ongoing	4FRI Planning Coordinator
SHARED	NEPA Planning	4.A.	Work to gather public input and provide information on the Rim Country and other NEPA processes	5	FY18	Ongoing	4FRI Planning Coordinator

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	NEPA Planning	5.A.	Determine options for improving FS capacity (e.g., training or outside assistance) to integrate LiDAR data into planning	5	FY18	Ongoing	4FRI GIS Specialist
SHARED	NEPA Planning	5.B.	Obtain additional LiDAR coverage across 4FRI where lacking	5	FY18	Ongoing	4FRI GIS Specialist
SHARED	NEPA Planning	5.C.	Integrate and interpret existing LiDAR data for planning and analysis of large-scale projects	5	FY18	Ongoing	4FRI GIS Specialist
SHARED	NEPA Planning	5.D.	Use latest data, models, and databases to provide information relevant to the needs of analyses	5	FY18	Ongoing	4FRI GIS Specialist
SHARED	NEPA Planning	6.A.	Consider using findings from Industry Roundtable to inform planning processes	5	FY18	FY19	4FRI Planning Coordinator
FS	NEPA Planning	6.B.	Hold regular meetings for information sharing and gathering on forests/districts with personnel involved in oversight and implementation	5	FY18	Ongoing	4FRI Planning Coordinator
SHARED	NEPA Planning	6.C.	Develop implementation plans within NEPA documents that provide flexibility for unanticipated forest conditions and implementation needs	5	FY18	FY19	4FRI Operations Coordinator

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Implementation Planning	1.A.	Use validated lists of priorities to guide 5-year plan development for mechanical thinning, prescribed fire, and comprehensive restoration activities	6	FY18	Ongoing	4FRI Operations Coordinator
FS	Implementation Planning	2.A.	Identify treatment areas and budgets for out-year surveys that meet prioritization criteria	6	FY18	Ongoing	4FRI Operations Coordinator
FS	Implementation Planning	2.B.	Complete survey work for all activities within NEPA-cleared treatment areas (e.g., within mechanical thinning areas, clear comprehensive restoration activities with the same surveys)	6	FY18	Ongoing	4FRI Operations Coordinator
FS	Implementation Planning	2.C.	Prepare pre-implementation checklists for all federal fiscal year 2018 (FY18) and later mechanical thinning offerings prior to project layout	6	FY18	FY20	4FRI Operations Coordinator
FS	Implementation Planning	2.D.	Develop pre-implementation checklists in coordination with resource specialists to identify design features from the project NEPA document	6	FY18	FY20	4FRI Operations Coordinator
FS	Implementation Planning	2.E.	Strive to complete sale/contract prep activities at least one year ahead of anticipated need	6	FY18	Ongoing	4FRI Operations Coordinator

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Implementation Planning	3.A.	Develop options for restoring ecologically important acres that do not generate net value when treated	6	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Implementation Planning	3.B.	Continue to use models (e.g., Ager Landscape Treatment Designer) to inform out-year mechanical thinning contracts	6	FY18	Ongoing	4FRI GIS Specialist
FS	Implementation Planning	3.C.	Strategically coordinate mechanical thinning treatments to improve opportunities to allow wildfire to achieve resource benefits	7	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Implementation Planning	4.A.	Coordinate the 4FRI Board's and stakeholders' lists of priorities for implementation	7	FY18	Ongoing	4FRI Operations Coordinator
FS	Implementation Planning	4.B.	Communicate projected revenue from retained receipts and collaboratively consider priorities for use within each project	7	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Implementation Planning	4.C.	Continue to hold operational meetings to coordinate implementation of all restoration activities	7	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Implementation Planning	5.A.	Identify available tribal resources for consideration	7	FY18	Ongoing	FS Tribal Relations Manager (Tonto NF)

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Implementation Planning	5.B.	Explore how partners can expand survey, prep, and implementation capacities (e.g., Comprehensive Implementation Work Group (CIWG) and comprehensive restoration activities) to accelerate implementation	7	FY18	Ongoing	CIWG Chair
SHARED	Implementation Planning	5.C.	Identify opportunities for all-lands restoration activities through communication and planning across boundaries with partners, tribes, and the public	7	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	1.A.	Identify relevant training opportunities for FS employees and SHG members, including outside of their primary responsibilities/roles	8	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	1.B.	Expand training for needs associated with new technologies (e.g., GIS for DXP)	8	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	1.C.	Create and host 4FRI orientation for new SHG members and new FS employees that incorporates 4FRI foundational collaborative documents	8	FY18	Ongoing	SHG Co-chairs
FS	Business Practices	1.D.	Develop transition plans for staffing changes, including leadership roles	8	FY18	FY19	4FRI Admin. Officer

4FRI - Collaboratively restoring 2.4 million acres of northern Arizona's forests



Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Business Practices	1.E.	Improve knowledge and resource sharing across the four forests	8	FY18	Ongoing	4FRI Chief Executive
FS	Business Practices	1.F.	Develop and share operating guidelines for the 4FRI Board that document roles, responsibilities, and internal communication and decision-making protocols	8	FY18	FY18	4FRI Chief Executive
SHARED	Business Practices	2.A.	Develop appropriate tribal cooperative agreements	8	FY18	Ongoing	FS Tribal Relations Manager (Tonto NF)
FS	Business Practices	2.B.	Identify opportunities to involve the SHG in improving RFP development and contractor selection processes	8	FY18	Ongoing	4FRI Chief Executive
SHARED	Business Practices	2.C.	Use stewardship authority to enhance FS capacity to implement at larger scales	8	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	2.D.	Engage with other regulatory agencies to identify operational challenges/issues and possible solutions (e.g., a 4FRI-wide increased trucking weight pilot program)	9	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	2.E.	Engage industry early to improve feasibility assessments of areas for mechanical thinning treatments	9	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Business Practices	3.A.	Reevaluate and improve FS procurement processes	9	FY18	Ongoing	4FRI Admin. Officer

4FRI - Collaboratively restoring 2.4 million acres of northern Arizona's forests

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Business Practices	3.B.	Improve fiscal accountability through streamlined tracking and reporting	9	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	3.C.	Establish uniform criteria for evaluating and reporting financial value of restoration activities	9	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	4.A.	Explore options for funding additional personnel through agreements with partners (e.g., shared NWTF-FS position)	9	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	4.B.	Redirect staff where necessary to support high priority work and evaluate innovation (e.g., different resource experts may be needed on site to guide and evaluate DXP outcomes)	9	FY18	Ongoing	4FRI Chief Executive
SHG	Business Practices	4.C.	Advocate for and/or create additional funding opportunities	9	FY18	Ongoing	SHG Co-chairs
FS	Business Practices	5.A.	Include comprehensive restoration and fuels activities in survey and treatment planning	9	FY18	Ongoing	4FRI Operations Coordinator
FS	Business Practices	5.B.	Coordinate and complete resource surveys for out-year activities simultaneously when possible (e.g., clear multiple activities in one survey)	9	FY18	Ongoing	4FRI Operations Coordinator
FS	Business Practices	5.C.	Plan for out-year surveys during budget development	9	FY18	Ongoing	4FRI Admin. Officer

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Business Practices	6.A.	Simplify silvicultural prescriptions and transition to DxP where feasible, and continue to evaluate outcomes	10	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Business Practices	6.B.	Evaluate weight scale sales for mechanical thinning as means to decrease cruise costs where appropriate	10	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	6.C.	Use digital technology where appropriate (e.g., boundaries, digital prescriptions, tablet technology)	10	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Business Practices	6.D.	Examine the benefits and drawbacks of practices to improve economic viability of mechanical treatments (e.g., in-woods processing, increased on-site drying times, managing biomass)	10	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	6.E.	Develop appropriate business practices for low value wood including appraisals, cruising, etc.	10	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Business Practices	6.F.	Where obstacles have been identified (e.g., through TNC and ERI assessments), recommend changes to local, regional, and national policies	10	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Business Practices	7.A.	Calculate and communicate financial and social value of reducing the likelihood of uncharacteristically severe fires and the value of a restored forest	10	FY18	Ongoing	MPMB Chair
SHARED	Business Practices	7.B.	Reevaluate the viability of self-funding mechanical treatment	10	FY18	Ongoing	IWG Chair
SHARED	Fire	1.A.	Coordinate with federal, state, municipal, and other partners to complete larger prescribed burns	11	FY18	Ongoing	FS Forest and District FMOs
FS	Fire	1.B.	Prioritize the placement and timing of prescribed fire treatments with other resource areas and restoration treatment activities	11	FY18	Ongoing	FS Forest and District FMOs
FS	Fire	1.C.	Use pre-implementation checklists	11	FY18	Ongoing	FS Forest and District FMOs
FS	Fire	2.A.	Complete approximately 60,000 acres of restoration treatments using prescribed fire, wildfire, and non-commercial mechanical fuels treatments in FY18, if conditions allow (ASNF 18,000 acres, Coconino 21,000 acres, Kaibab 12,000 acres, Tonto 9,000 acres)	11	FY17	FY17	4FRI Operations Coordinator

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Fire	2.B.	Complete approximately 70,000 acres of restoration treatments using prescribed fire, wildfire, and non-commercial mechanical fuels treatments in FY19, if conditions allow (ASNF 21,000 acres, Coconino 24,500 acres, Kaibab 14,000 acres, Tonto 10,500 acres)	11	FY18	FY18	4FRI Operations Coordinator
FS	Fire	2.C.	Validate and refine, as necessary, the number of acres of treatments in the annual program objective	11	FY18	Ongoing	4FRI Operations Coordinator
FS	Fire	3.A.	Improve communication with the public to explain the decision-making criteria and processes related to managing prescribed fire and wildfire	11	FY18	Ongoing	4FRI Public Affairs Officer
SHARED	Fire	3.B.	Improve communication with the public to explain the rationale for and benefits of managing prescribed fire and wildfire	11	FY18	Ongoing	CWG Chair
SHARED	Fire	3.C.	Improve data compilation of fire treatment planning, accomplishments, and ecological outcomes for both prescribed fire and wildfire to enhance communication efforts	12	FY18	Ongoing	4FRI Monitoring Coordinator

4FRI - Collaboratively restoring 2.4 million acres of northern Arizona's forests



Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Mechanical Thinning	1.A.	Hold Industry Roundtable, open to interested stakeholders, at least annually and follow through on agreed-upon priority action items	13	FY18	Ongoing	IWG Chair
SHARED	Mechanical Thinning	1.B.	Encourage industry to propose solutions to restoration challenges (e.g., biomass removal, timber prep, implementation efficiencies, and resource surveys)	13	FY18	Ongoing	IWG Chair
SHARED	Mechanical Thinning	1.C.	Increase prep efficiencies, including potential for contractors to perform prep	13	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Mechanical Thinning	1.D.	Consider applications of technological advances in industry	13	FY18	Ongoing	IWG Chair
FS	Mechanical Thinning	2.A.	Create tree thinning prescriptions to achieve heterogeneity in forest structure and composition across the landscape (e.g., for wildlife habitat, reduction in risk of uncharacteristic wildfire)	13	FY18	Ongoing	4FRI Silviculturist
SHARED	Mechanical Thinning	2.B.	Complete Ager landscape treatment design tool analysis on 1 <sup>st</sup> 4FRI EIS to help inform 5-year plan review and revision	13	FY18	Ongoing	4FRI GIS Specialist

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Mechanical Thinning	2.C.	Prioritize treatment areas based on the potential behavior and effects of wildfires and the need to protect irreplaceable values at risk, such as threatened species habitat or watershed function	13	FY18	Ongoing	FS Forest Timber Program Managers and District TMAs
FS	Mechanical Thinning	2.D.	Mechanical treatments are configured and timed to facilitate the use of prescribed fire and wildfire to meet resource objectives	13	FY18	Ongoing	FS Forest Timber Program Managers and District TMAs
FS	Mechanical Thinning	2.E.	Use pre-implementation checklists	13	FY18	Ongoing	FS Forest Timber Program Managers and District TMAs
SHARED	Mechanical Thinning	2.F.	Investigate and include options for biomass removal during treatment design (e.g., market-based solutions, required removal)	14	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Mechanical Thinning	3.A.	Establish current and reasonably foreseeable industry capacity	14	FY18	Ongoing	IWG Chair
FS	Mechanical Thinning	3.B.	Prep out-year projects to distribute offerings throughout the fiscal year	14	FY18	Ongoing	4FRI Operations Coordinator

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Mechanical Thinning	3.C.	Lay out and/or offer approximately 15,000 acres of DxP projects for FY18 and increase planning of DxP projects for FY19	14	FY18	FY19	4FRI Operations Coordinator
FS	Mechanical Thinning	3.D.	Offer approximately 46,000 acres in FY18, 49,000 acres in FY19 and 50,000 acres each year thereafter	14	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Mechanical Thinning	4.A.	Identify opportunities to create flexibility within contracts (e.g., combining smaller sales, advocating for longer-term contracts)	14	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
FS	Mechanical Thinning	4.B.	Review Phase 1 Contract in May 2018 to determine future task orders	14	FY18	FY18	4FRI Chief Executive
FS	Mechanical Thinning	4.C.	Implement service contracts on PAC treatments from 1 <sup>st</sup> EIS (e.g., cut, skid, deck in FY18)	14	FY18	Ongoing	4FRI Operations Coordinator
FS	Mechanical Thinning	4.D.	Incorporate information gleaned from the 2017 RFI and the 2012 RFP into development of a new RFP on the “west side” (for acres not currently under Phase 1 Contract) as needed to meet restoration goals	14	FY18	FY18	4FRI Chief Executive

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
FS	Mechanical Thinning	4.E.	Provide clarity on whether or not biomass removal is mandatory and encourage removal where and when possible	14	FY18	Ongoing	4FRI Chief Executive
FS	Mechanical Thinning	4.F.	Address risk management (e.g., cancellation ceiling issues) in long-term contracts and use in RFP if appropriate	14	FY18	FY19	4FRI Chief Executive
SHARED	Mechanical Thinning	4.G.	Meet obligations under the TNC Master Stewardship Agreement	14	FY18	FY22	4FRI Operations Coordinator
FS	Mechanical Thinning	4.H.	Include performance requirements to maintain accountability between FS and contractors	14	FY18	Ongoing	4FRI Chief Executive
SHARED	Comprehensive Restoration	1.A.	Draft a 5-Year Plan for comprehensive restoration projects	15	FY18	FY19	CIWG Chair
SHARED	Comprehensive Restoration	1.B.	FS, SHG, and partners complete T-Six Spring restoration project during FY18	15	FY18	FY18	CIWG Chair
SHARED	Comprehensive Restoration	1.C.	Identify opportunities for Categorical Exclusions specific to comprehensive restoration	15	FY18	Ongoing	4FRI Planning Coordinator
SHARED	Comprehensive Restoration	1.D.	Schedule comprehensive restoration projects in coordination with other treatments and wildlife habitat needs	15	FY18	Ongoing	CIWG Chair

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FS	Comprehensive Restoration	1.E.	Where appropriate, projects tier to Watershed Condition Framework, watershed restoration action plans, and species recovery plans to help focus implementation activities	15	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Comprehensive Restoration	2.A.	Advocate for and/or create additional funding opportunities	15	FY18	Ongoing	CIWG Chair
FS	Comprehensive Restoration	2.B.	Use retained receipts from thinning contracts to help fund comprehensive restoration where appropriate	15	FY18	Ongoing	4FRI Operations Coordinator
SHG	Comprehensive Restoration	2.C.	CIWG recommends a target monetary value of comprehensive restoration work to complete per year	15	FY18	Ongoing	CIWG Chair
FS	Comprehensive Restoration	2.D.	Fund National Wild Turkey Federation (NWTF) forester/biologist to implement “Save the Habitat. Save the Hunt” restoration program	15	FY18	Ongoing	4FRI Innovations and Efficiencies Coordinator
SHARED	Comprehensive Restoration	3.A.	Identify NEPA- and shovel-ready projects as well as areas where additional surveys are necessary	16	FY18	Ongoing	4FRI Operations Coordinator
FS	Comprehensive Restoration	3.B.	Complete and coordinate resource surveys for out-year	16	FY18	Ongoing	4FRI Operations Coordinator

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Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
			projects, including during FS WorkPlan development				
SHARED	Comprehensive Restoration	3.C.	Use pre-implementation checklists	16	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Comprehensive Restoration	4.A.	Identify, publicize, and complete volunteer projects	16	FY18	Ongoing	CIWG Chair
FS	Comprehensive Restoration	4.B.	Expand existing partnership between FS and Hopi Tribe to restore natural springs within the 4FRI footprint	16	FY18	Ongoing	FS Tribal Relations Manager (Tonto NF)
FS	Comprehensive Restoration	4.C.	Use existing Master Participating Agreement to increase tribal involvement in ongoing and future restoration-related activities	16	FY18	Ongoing	FS Tribal Relations Manager (Tonto NF)
SHARED	Comprehensive Restoration	5.A.	Coordinate with 4FRI CWG to outreach comprehensive restoration activities, volunteer opportunities, and accomplishments	16	FY18	Ongoing	CIWG Chair
SHARED	Comprehensive Restoration	5.B.	Display work completed (e.g., expenditures, match, etc.) in the CFLRP Annual Report, partner websites, etc.	16	FY18	Ongoing	4FRI Operations Coordinator
SHARED	Monitoring and Adaptive Management	1.A.	MPMB creates annual schedule for monitoring activities based upon priorities, funding, gaps, and commitments	17	FY18	Ongoing	MPMB Chair

Party Responsible	Program Component	Action Item #	Action Item	Page Number	Start Year	Completion Year	Point of Contact
SHARED	Monitoring and Adaptive Management	2.A.	Fund and expand use of drones, LiDAR, and other new technologies to monitor treatments	17	FY18	Ongoing	4FRI Monitoring Coordinator
SHARED	Monitoring and Adaptive Management	2.B.	Incorporate digital data collected by harvesters	17	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	3.A.	Review and consult existing best available science	17	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	3.B.	Consult agencies and partner organizations to determine if data relevant to monitoring questions exist	17	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	3.C.	Collect and analyze data that are relevant and sufficient to address monitoring questions and achieve adaptive management goals	17	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	3.D.	Use analyses of monitoring data to inform adaptive management	17	FY18	Ongoing	4FRI Monitoring Coordinator
SHARED	Monitoring and Adaptive Management	4.A.	MPMB and CWG meet as necessary to address outreach needs and develop products	18	FY18	Ongoing	CWG Chair
SHARED	Monitoring and Adaptive Management	4.B.	MPMB and CWG determine options to provide a data-rich, interactive platform to share monitoring results with the FS, SHG, and public	18	FY18	Ongoing	MPMB Chair

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SHARED	Monitoring and Adaptive Management	5.A.	Develop additional citizen science and volunteer opportunities for monitoring	18	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	5.B.	Continue involvement of partners and citizen scientists to collect data from springs and streams using the most appropriate methods (e.g., Collector for ArcGIS)	18	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	6.A.	Identify and foster partnerships and commitments to add monitoring capacity	18	FY18	Ongoing	MPMB Chair
SHARED	Monitoring and Adaptive Management	6.B.	Ensure adequate funding exists before additional monitoring indicators are added to the monitoring plan	18	FY18	Ongoing	MPMB Chair

## STAKEHOLDER GROUP MEMBERSHIP

Embarking on a 20-year initiative to restore northern Arizona's ponderosa pine forests at the landscape scale requires substantial up-front commitment, investment, and assurance of direction. Some individuals and groups, including members of local, county and state governments, environmental groups, organizations, institutions, and industry representatives, have made that commitment. Collectively, these diverse stakeholders have come to be known as the 4FRI Stakeholder Group (SHG).

The 4FRI SHG is not exclusive. New individuals and groups may join at any time, and members of the public have the same rights and opportunities for access to information and input into the process whether or not they choose to join the collaborative.

The 4FRI SHG has formed several working groups in order to make progress in keys areas. The working groups are listed below. More information on the SHG can be found at [www.4fri.org](http://www.4fri.org).

## STAKEHOLDER WORK GROUPS

**Communications Work Group (CWG):** The CWG was formed to share information about the full suite of 4FRI activities and forest restoration occurring across northern Arizona to the stakeholder group; the general public; government from locals to Capitol Hill; media; business and industry; and all partners.

**Comprehensive Implementation Work Group (CIWG):** The CIWG focuses on improving the coordination and tracking of non-mechanical restoration activities and it works with the FS and other partners to identify and prioritize projects. In addition, the CIWG facilitates project funding and participates in project design and implementation; solicits economic and ecological input from external parties; provides a forum for understanding and evaluating project implementation; and conducts outreach to interested organizations and the general public.

**Industry Work Group (IWG):** The IWG focuses on the socio-economic desired conditions of private industry thinning contracts to assure that the supply of prepared sites and wood for businesses is in balance with industry needs to sustain these business's viability.

**Multi-Party Monitoring Board (MPMB):** The MPMB’s mission is to ensure that 4FRI monitoring leads to collaborative learning and to determine if treatments are meeting the desired conditions of a restored fire-adapted ecosystem and resilient ecological and socioeconomic processes across the entire 2.4 million-acre landscape.

**Planning Work Group (PWG):** The PWG drafts input and comment letters for parts of the environmental planning process on behalf of the larger SHG. Efforts of the PWG often determine the details of agreements or inputs provided by the SHG for FS consideration in the planning process.





For more information see: [www.fs.usda.gov/4fri](http://www.fs.usda.gov/4fri) and [www.4fri.org](http://www.4fri.org)