

**Responses to the prompts on this work plan should be typed directly into this template**

1. Describe the manner in which the proposal will be implemented to achieve ecological and community economic benefit, including capacity building to accomplish restoration.

The 4FRI is a product of nearly a decade of collaborative efforts and analyses focused on accelerating forest restoration in northern Arizona. Prominent among these collaborative efforts have been those of the Natural Resources Working Group in the White Mountains of eastern Arizona, the Greater Flagstaff Forests Partnership in the Western Mogollon Rim area, and the Arizona Governor’s Forest Health Councils. The central theme of these activities has been the broadly-recognized need to accelerate forest restoration and to shift restoration and management efforts from a short term, project-by-project basis to an integrated, landscape-scale program.

Specific implementation goals of the 4FRI are to:

- Promote restoration and reduce hazardous fuels through mechanical thinning of up to 50,000 acres per year across the four forests (up from a current rate of ~17,000 acres per year);
- Allow for reestablishment of frequent, low-severity fire as a key process in this ecosystem, including increased use of prescribed fire following mechanical thinning and increased management of wildland fires for restoration objectives, and;
- Engage new industry such that all, or nearly all, of the cost of removal of material is covered by the value of the products removed.

The project is unprecedented in that the first NEPA analysis area will cover 750,000 acres with a goal of identifying 300,000 acres for mechanical treatment that can be implemented over the next ten years. Successful completion of NEPA for work at the landscape scale will be precedent setting for other CFLRP projects. The stakeholders have provided the Forest Service with a landscape strategy designed to identify areas of agreement for strategically treating the first analysis area. In addition, the stakeholders are collaborating with the Forest Service through the NEPA process with the goal of creating broad support for action.

Insufficient infrastructure exists to complete this volume of acres on the western portion of the Mogollon Rim. Therefore, the hope is that the contract instruments that are used and/or configured to support the treatment goals will provide the assurance required to stimulate private sector investment in restoration by-products. In addition, the stakeholders anticipate that 20,000 additional acres (outside the first analysis acres) will be available annually across the Mogollon Rim in order to support and help transition the businesses that are in place as a result of the White Mountain Stewardship Contract in the eastern portion of the Mogollon Rim.

The 4FRI anticipates monitoring both bio-physical and socio-economic indicators to measure and evaluate progress at the landscape scale.

2. Anticipated unit treatment cost reduction over ten years:

Performance Measure Code	Average Historic Unit Cost	Cost Reduction per Unit	Assumptions
WTRSHD-RSTR-ANN			
FOR-VEG-EST	\$33/acre		
FOR-VEG-IMP		\$25 –	New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of

	\$177/acre	\$50/acre	treatments.
INVPLT-NXWD-FED-AC	\$100/acre		
S&W-RSRC-IMP			
HBT-ENH-STRM			
HBT-ENH-TERR			New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of treatments.
RG-VEG-IMP	\$68/acre	\$10/acre	New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of treatments.
RD-HC-MAIN			
RD-PC-MAINT	\$49,000/mile	\$20,000	Once we get the roads to their assigned maintenance level, the increased level of activity on the forests will allow them to be maintained at the level.
RD-DECOM			
RD-PC-IMP			
RD-HC-IMP			
STRM-CROS-MTG-STD			
TL-MAINT-STD			
TL-IMP-STD			
LND-BL-MRK-MAINT			
TMBR-SALES-TRT-AC	\$430/acre	\$250-\$350/acre	New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of treatments.
TMBR-VOL-SLD			New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of treatments.
BIO-NRG			New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of treatments.
FP-FUELS-NON-WUI	\$111	\$60	New or expanded industry expected to provide more utilization of material than current. This will reduce the cost of treatments.
FP-FUELS-WUI		\$100	New or expanded industry

	\$320		expected to provide more utilization of material than current. This will reduce the cost of treatments.
SP-INVSP-E-FED-AC			
SP- NATIVE-FED-AC			

3. Anticipated costs for infrastructure needed to implement project:

<b>Type of Infrastructure</b>	<b>Anticipated Cost</b>	<b>Funding Source (federal, private, etc)</b>
Arizona Forest Restoration Products - - OSB Plant	\$300MM	Private Investment based on assured supply
Pioneer Associates – manufacturing, furniture parts, doors and door frames.	\$250 MM	Private Investment
Community Renewable Energy Resources, LLC A series of 8 to 10 MW equivalent biomass-to-synthesis-gas production facilities located across the southwest with the syn-gas used to produce electricity, biochar, heat, and/or liquid fuels & bio-materials	\$50 - \$65 MM per facility	Combination of private equity and debt - either taxable and/or tax exempt, secured by long-term contracts for feedstock and off-takes with credit-worthy private companies.
Future Forests LLC, and associated companies involved with the White Mountain Stewardship Contract have established enterprises that can harvest and utilize small diameter wood that include: sawmills, a pellet plan, and a post and pole processor. In addition a power plant uses material as well.	The Contract has stimulated establishment of 20 businesses. An average of 319 jobs per year have been attributed to the Project (226 direct and 93 indirect). Over 10 million is invested annually in the contract which results in 13M in expenditures in the White Mountains	1. Federal Stewardship Contract. 2. Plus, these combined businesses represent a \$100MM investment of private equity and debt.

Presently, the largest harvest and manufacturing infrastructure exists in the eastern part of the project area. It developed in response to the White Mountain Stewardship Contract. It is our hope that this infrastructure will persist as we bring on additional acres in the western part of the project areas (see the fourth item in the chart)

Although numerous entrepreneurs have expressed interest in obtaining restoration by-products from 4FRI treatments, until the first contract RFP is released it is unclear what industries will step forward to bid on the 300,000 acres

projected for the western portion of the Mogollon Rim. The first three businesses in the chart represent some of the businesses that have demonstrated interest.

4. Projected sustainability of the supply of woody biomass and small diameter trees removed in ecological restoration treatments:

<b>Fiscal Year</b>	<b>Number of acres to be treated</b>	<b>Projected Green Tons Removed per Acre</b>	<b>Total Green Tons Available</b>
2010			
2011			
2012	10,000	3.5	35,000
2013	15,000	3.5	52,500
2014	20,000	3.5	70,000
2015	25,000	3.5	87,500
2016	30,000	3.5	105,000
2017	30,000	3.5	105,000
2018	30,000	3.5	105,000
2019	30,000	3.5	105,000

The green tons per acre used above is an estimate of the amount of woody material <5" dbh that would be removed. Depending on the type of industry which ultimately utilizes the material from this project, the number may change (more or less counted in the biomass category).

5. Projected local economic benefits:

<b>Type of projects</b>	<b>Total direct jobs</b>	<b>Total indirect jobs</b>	<b>Total Direct Labor Income</b>	<b>Total Indirect Labor Income<sup>1</sup></b>
Commercial Forest Products	<b>374.8</b>	<b>405.4</b>	<b>13,557,715</b>	<b>16,503,535</b>
Other Project Activities	<b>71.4</b>	<b>29.6</b>	<b>2,929,337</b>	<b>1,225,981</b>
<b>TOTALS:</b>	<b>446.2</b>	<b>435.0</b>	<b>16,487,051</b>	<b>17,729,516</b>

6. Document the non-Federal investment in the priority landscape:

<b>Source of Investment</b>	<b>Amount of Investment</b>	<b>Description of Use</b>
Stakeholders	<b>\$393,907.00</b>	Value of the time for stakeholder participation
Stakeholders	<b>\$50,453.00</b>	Travel, food, website, field trip costs, other services

<sup>1</sup> Values obtained from Treatment for Restoration Economic Analysis Tool (TREAT) spreadsheet, "Impacts-Jobs and Income" tab. Spreadsheet available at [INSERT WEBSITE HERE](#)

7. Plans to decommission any temporary roads established to carry out the proposal:

<b>Projected accomplishment year (fiscal)</b>	<b>Number of Miles to be Decommissioned</b>
2010	10.7
2011	*
2012	
2013	
2014	
2015	
2016	
2017	
2018	
2019	

\* NEPA planning proposes approximately 900 miles of road for decommission/obliteration. The actual decommission/obliteration will occur as task orders are issued and/or negotiated. A long term contract is expected to be issued during the summer or early fall of 2011. Once a contract is awarded, we will have a better idea of the miles of roads decommissioned by task order and year.