



Four Forest Restoration Initiative Socioeconomic Monitoring Report

Funded by the National Forest Foundation



Methodology
Focus Groups • US Forest Service Interviews
Contractor Protocol and Economic Data Reporting Form

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Introduction

To assure the Four Forest Restoration Initiative (4FRI) project's success, it is essential to assess current social conditions by establishing baseline data before project implementation and/or education and outreach programs or events. Once a baseline is established, data collection should occur after project implementation to measure the change from the baseline to post-implementation and continue to evaluate changes longitudinally. Reassessing perceptions and attitudes as the project progresses will provide the necessary information to ensure public support is not waning. As implementation progresses across the Four Forests, public meetings, demonstration field trips, and public outreach campaign effectiveness should be gauged. It is crucial that socioeconomic monitoring is prioritized and is regularly implemented for at least five years to assure the project's success. Once the 4FRI Collaborative realizes the project is socially and economically on track, assessments can be less frequent, but should continue throughout the life of the project.

Economic monitoring is necessary to assess factors such as utilization of woody biomass and small-diameter trees and how these projects affect the local and State economy. Moreover, transparent economic analyses will assist in promoting both political and social support for the project.

This project was based on establishing baseline socioeconomic monitoring data that can be used to feed into successive studies and facilitate the ultimate success of the project. The National Forest Foundation (NFF) has funded this first monitoring project of the Initiative, *The Four Forest Restoration Initiative Socioeconomic Monitoring Program*.

In assessing social systems affected by the 4FRI project, understanding the general public's perceptions will take two types of research to adequately answer the monitoring questions. This project implemented Phase I of social monitoring, which includes an exploratory study of two focus groups of the general public (one each in the Coconino and Kaibab National Forests) and six personal interviews (three in each Forest) with land managers that provides information that is specific to the 1st Analysis Area.

Phase I results from this exploratory study will provide a basis to conduct Phase II, which will be a more structured descriptive and/or explanatory study and, information derived in this study can also be used to develop strategic outreach and education efforts (EPA 2002). Issues that were raised in the focus groups and

interviews can be applied to Phase II to obtain broad public opinion and attitudes towards the 4FRI project before implementation begins. Building off of results in Phase I, the successive phase can be designed by using probability-sampling methodology, such as a telephone survey, that will yield statistically valid results that can be used as generalizations of the population as a whole (Babbie 2010).

Based on a recent review of literature in describing economic concepts in the context of ecological restoration, Robbins and Daniels (2011) revealed that although direct costs and revenues should be easy to capture, they are rarely reported. To address this lack of accounting, this project addresses streamlining expenditure, revenue and employment data reporting by collaboratively designing contractor protocols and a reporting form. As the contractor has been directly involved in the development of the protocol and reporting form, this will yield relevant data that the contractor is willing to provide as well as prepare them for the reporting requirements that will ultimately improve response rates.

Focus Group Methodology – General Public

Focus group methodology was used to more deeply explore topics related specifically to the 4FRI project and how it affects participants' perceptions and attitudes towards the various forest health and restoration issues that will arise. This assisted in understanding the degree of awareness, knowledge and support for the project from the general public in two different communities in the 1st Analysis area (Flagstaff and Williams).

An attempt was made to recruit Flagstaff focus group participants who were geographically dispersed around the greater Flagstaff area. This distinction was made because their experiences in forest health and prescribed and wildfire effects may vary based on the location of their residence. In the end, focus group participants lived in areas scattered throughout the greater Flagstaff area. For instance, one respondent lived near an untreated area that burned in the Schultz fire on the east side of town and another lived in Mountainaire, which is in an area that has been treated, on the west side of town. Since Williams is a much smaller community than Flagstaff and it was exceedingly more difficult to recruit from this community, residence location was not a consideration in the recruiting process. To enlist a broad base of community members in both Flagstaff and Williams, a variety of methods were used from posting a flyer in the Williams' post office to contacting various community groups such as the Rotary Club and the Chamber of Commerce. A telephone recruitment script was used to encourage involvement and provided pertinent information to those interested in participating. As an incentive, a \$100 drawing was offered to potential participants in each group. Once participants were recruited, confirmation letters that included logistics were either e-mailed or mailed to them (see Appendix A1-A5 for recruitment documents).

Participants were instructed to arrive 15 minutes before the focus group began so they

had time to complete required paperwork. Upon arrival, they signed in as well as read and signed an Informed Consent form, disclosing that an Internal Review Board at Northern Arizona University reviewed and approved this research. The form also outlined the purpose of the project, what they are being asked to do and explained several other provisions. Once the participants completed all of the required forms, they were given a short written survey to complete prior to the start of the focus group. The survey was designed to gain a better understanding of participants' breadth of knowledge, awareness and perceptions about various forest health and restoration issues before they participated in the focus group. Results from the survey that includes demographic composition of the groups, are presented in an Annotated Questionnaire (one respondent in Williams did not complete the questionnaire due to a visual impairment). In total 11 participated in the Flagstaff group and 14 in Williams. The focus groups' protocol of questions was derived from the 4FRI report, *Socioeconomic Monitoring for the Four Forest Restoration Initiative's - Social Systems' Monitoring Framework*. The protocol that was administered included, ground rules, introduction of group members, the 4FRI project background and six topical sections with a series of related questions. To appropriately steer and time the discussion, time allotments were noted on the protocol and allocated in each section. The focus group discussion lasted for two hours. The discussion was audio recorded as well as recorded by a staff member who took notes for the duration of the discussion. In concluding the focus groups, a random drawing for \$100 was conducted and was awarded to one of the participants. The incentive was effective and created excitement and interest in the participants (see Appendix B1-B9 for focus group documents, survey and Annotated Questionnaire).

Results from these focus groups are presented in the following section, *4FRI Focus Group Results*, and were derived from both the written notes as well as reviewing the audio recordings. The results reflect what was said in the focus groups, and remarks were reported as they were stated and not judged or checked for factual accuracy. Quotations are embedded in the results to better understand the discussions, and at times, the emotions at hand. These results reveal similarities and differences between the communities/Forests as well distinct issues and can be used to develop successive studies, future outreach and educational efforts as well as identifying social considerations that should be used by the United States Forest Service (USFS), contractors and loggers in planning implementation.

Personal Interview Methodology – US Forest Service Personnel

Personal face-to-face interviews with USFS personnel were used to elucidate in-depth answers about various socioeconomic issues that may arise as the 4FRI project progresses. Three USFS 4FRI team staff members, intimately involved with the 4FRI, were selected to represent the Coconino National Forest (COF). The Kaibab National Forest's (KNF) Public Information Officer recommended three staff members who were most familiar with the 4FRI project. All who were initially targeted were available and agreed to participate in the study. Appointments were made with each interviewee via e-mail and interviews were completed at USFS Supervisor's Office in Flagstaff and in Williams within a two-week time frame.

A protocol of questions was developed that were similar to the focus group's protocol and was used to guide the interview (Appendix C-1). The interview began with an introduction, a verbal consent agreement and an explanation of the purpose of the study. There were four main sections in the interview that contained a series of related questions. Questions were asked in a conversational style, and at times, were omitted and/or combined, depending on the direction of the interview and/or the person's expertise. The interviews ranged from an hour to an hour and a half. The interviews were audio-recorder and the interviewer took written notes during the session.

Results from these interviews are presented in the preceding section, *4FRI US Forest Service Interview Results*, and were derived from reviewing the audio recordings. At times, quotations are use anonymously to increase understanding of concepts or thoughts the respondents were presenting. Similar to the focus group results, information provided in these interviews can be compared and contrasted to the focus group results, used for subsequent research and strategic planning of outreach and educational campaigns and to tactically plan implementation of forest projects to match socioeconomic issues and concerns.

Contractor Protocol and Reporting Form

A contractor protocol was developed to indicate who would report the data, the reporting timeframe, as well as the reporting frequency and expected submission date. The contractor reporting form was initially developed from information contained in the 4FRI report, *Socioeconomic Monitoring for the Four Forest Restoration Initiative's - Economic Monitoring Framework*. In addition, the USFS specialist, who completed the economic analysis for the 4FRI Draft Environmental Impact Statement (DEIS), was consulted to include necessary variables to ground truth IMPLAN, an economic modeling software package. The reporting form was reviewed by an economist from the W. A. Franke College of Business at Northern Arizona University as well as an administrative staff member of the contractor. Both of these are considered "living" documents and will be refined and revised as the reporting is administered. In addition, the contract for the 4FRI project is currently being transferred to another firm and these products should be reviewed and revised, if needed, by the final contracting company (see Appendix D1-D2 for contractor protocol and reporting form).

Contribution to the National Collaborative Forest Landscape Restoration Program (CFLRP) Indicators

The purpose of this joint effort of the 4FRI Collaborative with the USFS monitoring process is to assess the accuracy of USFS estimates and provide data for adaptive management. In this way, the information provided by the USFS in the EIS, coupled with the collaborative socioeconomic monitoring framework, are linked to support

a thorough and on-going assessment of social and economic conditions in the study area.

The National CFLRP indicators are little defined for socioeconomic monitoring. Currently, national indicators recommend utilizing the USDA TREAT economic tool for assessing job contributions these projects will provide for local communities and social evaluations are not stipulated. These initial socioeconomic assessments are above and beyond National CFLRP indicators and are important for the continued success of the 4FRI project to meet stakeholder-defined desired conditions. As all funded CFLRP projects struggle to quantify these important social and economic values, we expect our efforts will be shared through the NFF's CFLRP networking opportunities.

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4FRI Focus Group Results

Flagstaff, AZ (November 8, 2013) and Williams, AZ (November 14, 2013)

This report contains a summary of combined results for two focus groups conducted in Flagstaff and in Williams, Arizona. The summary is organized in the same order as the protocol of questions that were asked during the focus groups. At the end of this report, apparent similarities and differences between the groups are presented as a list. In addition, questions asked by participants during the various sections of the focus groups are listed in each section and can be used as a tool for future outreach and research development.

Demographics of the participants are contained in the Annotated Questionnaires for surveys that were administered prior to the focus groups (Appendix B-7 and B-8).

I. Fire as it relates to restoration and its return to the ecosystem

Q1: Can you tell me what you know about fire's natural role in the ponderosa pine forests' ecosystem?

Generally respondents from both groups were very knowledgeable about fire's natural role in the ponderosa pine ecosystem. Participants understood the historic condition of the ponderosa pine forest and the progression to its current unhealthy state from past United States Forest Service (USFS) policy.

Participants provided examples of how the number of trees was much less in the past than it is today; whereas, historically there were 7-35 trees per acre versus current levels of 2,000 trees per acre. Because of this, the forest was much healthier in the past than its current state. One respondent provided a specific example where the Four Forest Restoration Initiative (4FRI) project may remove 200-300 trees per acre and leave 20. The result is shocking, he explained, but this is how the forests used to look. Another elaborated by saying early white settlers could easily gallop a horse through the forest. They were also aware that past surface fire behavior from lightening was a natural method of keeping fire risk low, which also prevented large fires. They described the historic fire regime as low-intensity fires and quantified the burning intervals of 3-10 years, which regulated understory/debris and pine regeneration. This type of low-intensity fire is regarded now as a beneficial fire, but 50 years ago, it was not. Participants discussed how fire clears litter, duff and small trees, which helped to reduce crown fire tendencies. In addition, they understood that fire preserved grassland underneath trees; it removed brush when it moves quickly without killing roots of perennial grasses and forbs. They gave an example of areas containing 30 trees per acre and described these areas within the ponderosa pine forest as previous high quality grassland. They added that thinning provides more feed for wildlife/livestock due to increased understory vegetation and water.

Participants were aware that the USFS past policy was to primarily harvest large fire resistant trees and suppress most fires, which led to the present unhealthy conditions.

Q2: How do you think fire should be used as a management tool?

When the groups were asked about how fire should be used as a management tool, their responses can be grouped into three categories: methods, alternatives and negative impacts of prescribed fires.

When speaking to how prescribed fires should be conducted, participants explained areas should be thinned and cleared before broadcast burns and these burns should be of low enough intensity to avoid tree mortality (90% survival rate is ideal). They also mentioned that it is best to simulate what would naturally occur by letting lightning caused fires do their job as long as they do not threaten neighborhoods. Respondents explained how a thick duff layer leads to crown fires and makes implementation of prescribed fires difficult due to the risk of escape. Some believe pile burning is a better method compared to allowing natural lightning-caused fires to burn because managed fires can become too destructive. Others disagreed by saying prescribed burns generally work well in areas that are somewhat open, but not in dog hair thickets. Some attributed the open forests structure to sheep grazing and believe this type of grazing filled fire's historic role. Similarly, another suggested after thinning is complete to pile burn in less open forests and to implement broadcast burning in more open forests.

Alternatives to burning were also discussed. Some suggested that properly managed brief intensive grazing is restorative and is sometimes used as mitigation for invasive, "nasty" weeds. Some offered diverging opinions and responded by saying, at the end of the century sheep overgrazed and this, coupled with a very wet year, led to an abnormally high rate of regeneration. These conditions caused today's dog hair thickets and were the impetus of forest health decline. In the end, the group lacked consensus and agreed grazing can deliver a mixed bag of results.

Another issue that was brought up was how the USFS does not heed weather conditions and some prescribed fires burn out of control. One respondent gave a specific example on the North Rim where an "educated forester" from the Pacific Northwest ignored local advice (he/she did not understand the climate) and allowed a managed fire to burn in dry conditions. The wind picked up and this resulted in a wildfire that burned one-third of the Rim. They believe at times there is not enough personnel to deal with escaped fires; it always seems like there is a slow response to supply resources to wildfires until it has escaped and drastic measures have to be taken. However in defense, some explained this is not a perfect science and managers do the best they can with the information that is available and, in the end, believe conducting prescribed fires will save communities and homes. Another Flagstaff participant gave an example of a prescribed fire that was not conducted

properly on Highway 180, near the bend before USFS Road 794. The USFS prescribed burn killed a majority of the trees and they believe it was a big mistake. The respondent attributes this to not thinning before burning and this ultimately has led the respondent to distrust the agency. Lastly, participants offered suggestions of chipping slash as an alternative to pile burning. However, one respondent informed the group that this is not currently possible on a large scale as a market for chips is nonexistent here and it is extremely competitive.

Questions asked by participants:

- What is the purpose of a prescribed burn? Doesn't thinning alone accomplish the goals?
- Can slash piles be ground for wood pellets? How can they be used instead of burning on-site?
- After treatment, will re-entries have to be made?

Q3: As the 4FRI forest restoration projects progress, to what degree do you believe your community will be protected from high-severity wildfires?

Generally participants believe as the 4FRI projects progress, protecting their communities from high-severity wildfires will be better than it is now. They understand this can never be guaranteed; however, they said, if you don't treat, it's going to burn. Many in both groups spoke of the successes of treatments in the Woody and Hardy fires (near Flagstaff) and how treatments caused these fires to drop to the ground, which ultimately allowed for easier control of the fires. Although there are risks in controlled burns, they agreed these risks have to be accepted. In this regard, one respondent commented that it would be nice to see personnel on fires at night to make sure controlled burns don't escape, but for this to occur citizens would have to accept increased taxes. Another participant, who lives near Observatory Mesa in Flagstaff, explained they live adjacent to state trust land that has high tree density and/or piles remain in areas that have been thinned. They have shared their concern with Flagstaff Fire Department about how to work with the State Trust Land Department to treat and/or remove the piles on this land before fires ignite and spread to town. These concerns have especially escalated with the Flagstaff participants since the Schultz Fire. One respondent was knowledgeable about the history of forest restoration and wildfire mitigation through the Greater Flagstaff Forests Partnership's efforts as well as the recent bond that passed to create the Flagstaff Watershed Protection Project (FWPP). He continued to explain that Flagstaff is unique across the four forests because so many projects have already occurred in the area. Lastly, a comment was focused on the problems that are occurring with the forests nationwide; however, the southwest is unique due to the intensely dry climate. Unique to the William's focus group was the concern for Bill Williams Mountain. Participants believe if the entire Bill Williams' area is treated, this could save the town and fires will be manageable.

Many in the Williams focus group spoke to how the responsibility should rest on the locals, versus the USFS, because locals understand the climate, risk to homeowners

and have respect for the issues. In addition, they put the onus on the local residents to fireproof their own properties and results were apparent to them after the fire effects of treated areas on the Woody Fire. They continued to explain that property owners should take initiative to help the USFS with this problem. In this regard, a Flagstaff respondent described how Highland Fire Department thinned her property in Mountainaire at no charge by using AmeriCorps workers. Another agreed and described how Flagstaff Fire Department does the same in the City with grants that pay property owners 50 percent of the cost to thin their properties. Flagstaff respondents also described specific issues such as problems with transients and illegal campers on city property. As a solution, homeowners worked with the police department to build a gate on a USFS road, which ultimately reduced fire risk in their neighborhood. They believe the City is very responsive to illegal camping.

In the end there was consensus in both groups and they believe these treatments will help more than harm, and it is worth the effort

Questions asked by participants:

- How will the 4FRI project affect private and state trust land that is adjacent to USFS land?
- What are the aims of this project, thinning?
- Is the USFS contracting it out?
- How is this different than what's already been done?
- How do you thin state trust lands?

II. Smoke

Q1: What are your major concerns with smoke in the implementation of 4FRI and how do you balance these against other benefits and impacts of forest restoration?

As both groups thought about smoke effects in the implementation of 4FRI, there was a general feeling of acceptance. Participants believe if you live in the ponderosa pine forests in the southwest, smoke is something you have to live with. One respondent said, if you don't like the smoke, then move to Phoenix. Another explained where he lives in a valley by the Cedar Plaza Safeway in Flagstaff, that smoke is bad at night; however, he further described how the Rodeo-Chediski fire caused worse air quality than what is being released from the power plant in St. Johns. He continued by explaining that low-intensity managed burn smoke is better than the alternative uncontrolled smoke from high-intensity crown fires. One respondent offered, "It's a necessary evil. I don't think anybody likes it, but if we're thinning and we're burning south and west of town, we're going to get smoke. I'd rather have that than see property burning down."

Then the groups spoke to effects to those with respiratory problems. Many believe authorities should give advanced notice so people with respiratory problems have a chance to get out of town. They further elaborated, people with respiratory

concerns are always more harmed by smoke; however, the degree of smoke effects depends on the individual. Some knew the government has established safe levels of prescribed fire smoke that are regulated by the Arizona Department of Environmental Quality (ADEQ). On the other hand, when a wildfire is burning, they explained, smoke is more harmful because it cannot be regulated. Another mentioned people were being hospitalized in Winslow daily due to thick smoke from wildfires. One respondent from Flagstaff said controlled burn smoke isn't heavy or overwhelming and the prevailing winds cause smoke to dissipate within a couple of days; although, all agreed the degree of smoke is dependent on where you live in town. A Flagstaff participant, who is a physician, said in general they are not seeing people hospitalized due to prescribed fire smoke. Another Flagstaff participant described how his wife has pulmonary problems and was told, "If you can smell the smoke, stay inside." He confirmed that staying indoors does help his wife with mitigating smoke effects. In addition, he would like to see more detailed information on how to ascertain safe levels of smoke with your nose and eyes.

Then the discussions moved towards how smoke and subsequent health effects can be mitigated. There seemed to be confusion among participants when it came to availability of prescribed fire smoke information. Some said the Arizona Daily Sun (AZDS), the local Flagstaff newspaper, should publish smoke levels/air quality daily. In response to this, one respondent agreed that the entire city should be informed of prescribed burns because some are unsure if it is smoke from a prescribed fire or a wildfire. She continued to explain, she receives a daily briefing from the USFS via e-mail and her neighbors ask her for the information. Another in the group clarified that the AZDS and National Public Radio (NPR) does publish information on prescribed burns. However, the Williams group clarified that their local paper is published once a week, so other means of notification may be necessary. Respondents generally were against placing regulations on smoke levels that could potentially limit and/or hinder the 4FRI's ability to implement prescribed fires. They also discussed how the 4FRI project would cover so many acres for numerous years and how the Winslow plant is huge plus in mitigating smoke from pile burning. Pile burning on the project will be less frequent because small- and medium-diameter trees will be utilized to manufacture furniture rather than burning it in the forest. "This is a big plus for this whole project; let's use the medium size trees instead of burn them."

Next they spoke to how the public needs further education to why prescribed fires and the byproduct of smoke is necessary as well as acceptable tree densities found in a healthy forest. They suggested that Northern Arizona University's (NAU) School of Forestry could produce articles and flyers that could be distributed to the public. In addition, they suggested water bill inserts as an effective means to educate the public on the issue. They also noted that many property owners have not thinned and do not understand why they have not done so. Conversely, most respondents in these groups have thinned their properties.

Specific to the Williams' focus group was how smoke is a major concern for their tourism industry. They believe this can have long-term effects on tourism; tourists will not return to Williams if they are there only once and have to deal with smoke on their vacation. One respondent confirmed these effects by explaining that *Arizona Highways* turned down a story about Williams due to the presence of smoke and their town lost the opportunity to be on national television. They offered a solution for the USFS to burn during off-season, perhaps in the winter, which will have better weather conditions as well as avoiding adverse impacts to tourism.

Specific to the Flagstaff focus group were issues surrounding the Schultz Fire. Respondents explained to the group that the USFS had a thinning project planned and it was appealed by the Center for Biological Diversity (CBD). They continued to explain; the CBD did not want it thinned and do not understand what is looked like historically; they think the thick forests should remain the status quo. They continued to explain, by the time it was settled in court, the USFS could not find a contractor to thin at the price it could afford and this was partly due to the recession. "It was a negligible fraction of what the fire ultimately costs..." The lawsuit cost a huge amount of money as well. "It went into court, and as far as I'm concerned, we need to outlaw all attorneys from any forest projects. I don't know why they have to argue for so many years over a project like that." Another added, the CBD is marked by pseudo science, with bad opinions that are based on 50 years of observation of the current conditions, rather than looking at it from a 200-year long-term perspective. Another suggested looking at a comparison of what it would it have cost to thin versus what it costs since it burned, specifically the amount of flood damage and the cost to rebuild infrastructure. They succinctly summed it up with the following two quotations: "The Schultz Fire proved if you don't thin, this is what you're going to get." and "The Schultz fire was a big wake up call to everybody. This is the worst case scenario and we don't want to see that in Flagstaff."

In summary, this issue promoted a lot of discussion. All are willing to make the trade offs and, from the pre-survey that they completed prior to the focus group, they now understood this could be quantified. They felt questions on the survey were useful. For example, a question asked how many days they are willing to endure specific levels (heavy, moderate and light) of smoke. One respondent shared that he tried to think about what his wife who has pulmonary issues would say!

Respondents summed it up by saying, in the long-term, the 4FRI is right thing for the forest and the community and all agreed by saying, "It's a necessary evil" and "Better now than later."

Q2: What tradeoffs do you see and are you willing to make them?

When the Williams' focus group was asked about the tradeoffs they see with smoke from prescribed fires and whether they are willing to make them, most comments centered on public notification of smoke and education. They all agreed that no one in the meeting is against the 4FRI, but know that some community members are.

They agreed that Williams has been fortunate compared to other communities that have been damaged by fires. They explained that educating the public is crucial to garnering their support. To this end, if the general public really understands the severity of what could happen to town if fire gets away, community members will be more open to idea of treatment. They believe if the USFS was more responsible with burns and gave people sufficient notice; there would be fewer complaints. They blame this on inactive public information officers who are no longer giving a heads up regarding burns and smoke and they feel they should involve the local press. Williams' participants offered many suggestions of how to better inform community members about smoke that will be in town from controlled burns that include opportunities for USFS to do presentations in town, such as the annual presentation at a City Council meeting, water bill inserts, electronic marquees/signage a few days prior to the burn, visits to senior centers, hospitals, schools and signage in a popular attraction, Bearizona. Even with all of the outreach, they admitted the loudest complainers don't participate or understand the issues at hand. Some again suggested burning piles in the winter and broadcast burn after summer rains. Some thought if burns can be eliminated in the summer, this would lessen the blow to peak tourism months (April-November) and to seasonal residents. They also believe if residents have to put up with smoke from the project, there should be benefits to the community. They continued to explain, benefits to the economy and employment are often not realized in small towns. They want to know how the 4FRI project may assist in boosting the economy in their community. Lastly, there was again a sense of urgency to treat the forest when one respondent said, "It's not *if*, it's *when*." Lastly, one participant asked why the 15,000 acres of Bill Williams Mountain has not been prioritized.

Similarly, the Flagstaff group as a whole is willing to make tradeoffs between smoke and reduced fire risk. They continued to postulate how there are underlying misunderstandings in the community; some still see dense forests as desirable and many do not understand appropriate tree densities in the forests. These misconceptions lead them to believe there continues to be a need to educate. They also voiced a frustration that despite a growing understanding of fire risk, many homeowners still have not thinned their properties.

III. Logging trucks - increased traffic on the road

Q1: The 4FRI project will occur over the next 10 years in the Coconino and Kaibab National Forests. When implementation is in full swing, it's estimated that 120,000 logging trucks will be on the roads next year. This translates to approximately 460 trucks each day dispersed on the roads throughout both forests. How do you feel about the logging trucks on the road?

As the groups postulated the prospect of an increased volume of logging trucks on the road, discussion began with trade-offs between the complications of increased truck traffic versus the benefits of thinning. One participant said, "So my choice is

more forest fires or more trucks on the road?" Many in the group agreed with the respondent who stated, "I'll take the trucks. It's very simple in my mind. It's a necessary evil." Others agreed by saying, "Bring 'em on," "I think we need the trucks, they are going to have to bring the wood out," and "Let them roll." Another member supported this by saying; it's still a toss up - logging trucks or forest fires? Seems with this crowd, the overwhelming feeling is... it's something that needs to be done. They continued to say, people in Greer would have wished logging trucks went through there. One respondent spoke to memories of having forest industry in Flagstaff. When Southwest Forest Industry was here, he explained, there was a cultural and community feeling with the industry's presence. He then gave examples of logging trucks driving through town and the smell of mill; this made you feel like you were at home. Another said, "We may have 50 years of very manageable or minimum forest fires after this is done, so for the next generation beyond us, I think we're doing them a favor."

Respondents especially in Williams were concerned with the routes the trucks will take and whether they will go right through town. Many thought they would go down 4th Street and this will add to the road issues (tight corners) they already have in Williams. They suggested routing trucks in the city for shortest distance possible, thus, minimizing the impact to downtown. More specifically they suggest leaving through the west end, take a left on 4th Street and then on to the freeway. These decisions should involve the police chief and city manager. One question in the Flagstaff group was raised wondering which highways they will be using besides Interstate 40. A solution was to bypass Flagstaff with USFS roads like the suggestion for the Snowbowl traffic.

The groups were also concerned with safety issues. One participant said, "I hate them." The logging is good; I just hate the trucking. They roll over because the new drivers are going too fast. Others agreed they would like to see more emphasis on driver training and safety, especially when it comes to bicyclists and pedestrians. One asked, how many accidents have we had with logging trucks? Most agreed they had not heard of many. There was disagreement in the group of whether logging trucks should be restricted to a certain speed on USFS roads (e.g. 35 mph). Some think the bigger problem is hunters, weekend recreationists, etc. while others thought the loggers are the larger threat. Lastly, a respondent commented that a truck full of logs is much less dangerous than one full of uranium.

Another issue that was raised was the effect logging trucks and forest industry, in general, will have on revenues and taxes. Many questioned whether there would be money to improve/restore logging access and paved roads. They were also concerned that rural highways would not be able to handle the weight of the logging trucks and taxpayers would have to foot the bill to improve those highways. Another interjected by saying; taxes will be offset by those collected from the trucks, which have to pay based on the weight and miles travelled. They also discussed the benefits with the reintroduction of forest industry that would initiate a broader ripple effect with the roads and the travel management plans. Industry will provide

much needed improvements such as graded roads, water trucks and cinder pits that will better define roads and improve their conditions. In addition, they believe the logging companies will have protocols and a reclamation plan in place that should be far better than past projects. Lastly, they discussed the opportunity for a much broader community dynamic with additional benefits of industry from royalties given to school districts or to the transportation department. One said the current school budget overrides are a result of the lack of forest industry in the area.

The next discussion point was the importance of repairing roads after the logging is complete. Another elaborated on this point; that's the key, you have to restore the roads that are used for logging and not leave them for 50 years, and that's what happened on the Apache Sitgreaves National Forest (ASNF).

With trucks and roads in the discussion, the USFS Travel Management Rule (TMR) was brought up. Several respondents shared, logging trucks need to stay on the open USFS roads on the map; new roads should not be constructed. Woodcutters can't go back in these roads; if they are enforcing this on citizens, then they should oblige the logging trucks. Some disagreed because logging trucks are a necessity to remove the trees. However, there seemed to be confusion of why the roads are being closed in the first place. Many hope that roads will be reopened some time in future.

Questions asked by participants:

- Will the logging trucks go right through town (in Williams)?
- Are they taking the logs to Winslow?
- Is it going to be noticeable through town (in Williams)?
- Will logging trucks put out the locals?
- Will there be any money to improve logging access roads?
- Is logging going to create additional roads for recreationists?
- Why are roads being closed? Is it because of a threat to habitat, erosion or compaction of roads? Does the USFS have good reason to close roads to everyone?
- Are vehicles prohibited because of fire risk?
- Can you log in the wilderness area?
- What about Walnut Canyon; will they treat there?
- What is the comparison between the projected truck density for the 4FRI project and the amount of trucks that were on the roads when Southwest Forest Products was logging?
- How long will the effects of thinning/burning last?
- Will treatments last 100 years or more?
- How many trees will be left per acre?
- You quantified 400 logging trucks per day and that's good. I want to know how many 18-wheelers will be on I-40 every day? What is the percentage increase compared to number of trucks now? It's no effort to get that additional number. This information would be very helpful.

IV. Large trees - protection, enhancement, don't cut trees mentality

Q1: Forest thinning involves cutting many of the trees in the forest; however, most trees that will be thinned will be less than 16 inches diameter at breast height. The larger trees that are cut (over 16" DBH) will be diseased trees, trees that are hazardous, trees in areas where the managements' goals are to restore seeps and springs, meadows or aspens and trees will be thinned in areas where there are a large proportion of mid-sized trees with a high fire risk. How do you feel about this type of forest thinning?

Generally in both focus groups, large tree removal was not an issue. Participants were more concerned with regeneration and retaining some small trees, restoration of springs and watersheds, recharge of the aquifers and aspen restoration. Some were excited to cut ponderosa pines because they currently see the pines encroaching the meadows; this would restore the diversity of trees, such as aspen and Douglas fir. In the Flagstaff group, there was some disagreement towards aspen restoration, as some believe they are an early succession species and the natural cycle will dictate their abundance and survival.

Discussion turned to the current state of the forest, including the over stocking of trees and the heavy litter. "Pine trees should not look like asparagus stalks," one respondent said. Participants believe this leads to less water infiltration resulting in stressed trees that are susceptible to drought and bark beetle. Several commented on how the removal of trees will enhance the aquifers and springs that have dried out. This led the group to recount the historic state of the Rio de Flag. They described it as a perennial stream stocked with brown trout. They speculated that this was due fewer trees "sucking" the water out of the ground; there used to be run off. Then they further described how sheep grazed at Mt Elden Lookout Road in the early 1900s. They described the area as forested grasslands. This area was thinned three times and continued to explain, the amount of water 16-inch ponderosa pines consume is staggering. Because of this, one respondent said, "Cut so that you don't have to come back and do it again. If you're going to do it, do it." Lastly, they again spoke to the need for education on a statewide level to teach the public about the challenges and benefits of forest treatments.

To further elucidate the question and how it relates to old growth tree retention, the Flagstaff group was asked; do you trust the USFS to protect yellowbelly ponderosa pines? When posed with this question one respondent said, they are supposed to be the experts. Another participant offered, the USFS is doing good job protecting the old growth because they are habitat trees; but there is still concern that the USFS is using clever words to get around environmental opposition to cutting large trees.

A few respondents gave specific examples of USFS projects, such as the one on USFS 151 Road and told the group they were dissatisfied with the end result. "I have no problem not trusting them," a respondent said and he continued, "The hypocrisy is

huge.” This led the group to ask, what are checks and balances and how are the crews going to be trained? In addition, they wondered, who is going to be marking the trees? They said, if it is the contractor, I would be more concerned. In this regard, they hope that the USFS will be monitoring to protect the larger trees and the respective habitat. At the end of the discussion, they determined a sufficient recourse is to encourage citizens to monitor on their own.

Questions asked by participants:

- Is this the healthiest way to thin a forest? Is this what will restore forest to its’ natural state?
- Who selects the trees to be removed?
- Will cutting trees increase water in the aquifers?
- Does 4FRI have an 800-number so citizens can call and comment/complain throughout implementation?

V. Recreational values

Q1: How do you think the 4FRI project will affect recreational opportunities such as, hiking and biking trails, camping, wildlife viewing, hunting and water recreation activities, such as fishing that occur at lakes, streams, and other waterways?

As respondents thought about the effects the 4FRI project will have to recreation, an analogy was used; you receive a vaccine to prevent a disease and this is what we are doing with the 4FRI project. Although this project will have temporary impacts, the alternative of losing our forests to wildfires is much worse. Participants agreed, healthier forests would improve recreational opportunities and avoid risk of fires, and will ultimately put the community at ease. Some felt impacts will be down the road and those in the group may not even realize the effects. They also spoke to the fact that current logging practices can have less negative impacts with better technology (crawling machines versus skidders). There was also concern that water quality will be impacted by heavy machinery; they wondered, will erosion/runoff be greater and negatively affect water quality? They all agreed that streams, waterways and springs should be treated with extreme care throughout project.

As before, the Williams participants’ responses were focused on tourism effects. They explained, the pine forest is a huge selling point and important for the tourism industry; its part of community's allure. They have heard from visitors that this is their favorite area as they are driving across the country and generations of families come to visit and camp there. Respondents from this group believe logging should occur outside of camping/tourist season. This is a big industry for Williams, so the least impact to camping season is critical. To this end, they suggest implementing treatments quickly to limit negative impacts. In addition, they suggest as treatments occur in the area, the Visitor’s Center could provide alternatives and activities, such as new biking and hiking trails, to tourists and convey a positive attitude and invite them to come back. They were also concerned with safety and suggested the need

for coordination between the agency and locals to avoid accidents and conflicts with recreationists.

Respondents also discussed benefits to recreation that will be realized after treatment. Initially, they believe it may be a hard sell because during thinning, recreationists/hunters won't have access but, following treatments, the area will be more open which will lead to greater support and approval of project. In addition, they surmised thinning would result in a renewed abundance of grasses, which will positively effect the elk population.

With logging comes roads and participants were concerned if logging sites are not restored there could be possible negative impacts from ATVs. Although many are not happy with the TMR, they want to be assured that these roads will be off limits to the ATV crowd that can cause a lot of destruction.

Questions asked by participants:

- Did the Proposition to thin around Lake Mary pass?

Q2: How do you think the 4FRI project will affect other forests' aesthetic values, such as hiking views, forest landscapes, and archeological sites?

When participants were asked to think about how the 4FRI project will affect other forests' aesthetic values, most felt a more open park-like structure would positively affect views, horseback riding, and accessibility to hikers. They did admit that it would take time before recreationists see the benefits, as there will be temporary negative impacts; it will be torn up, logging trucks on the roads, dust, etc. However, in the long-term, the impacts to recreation will be beneficial. One respondent summed it up succinctly, "That comes back to that saying...'you can't see the forest through the trees' and that's so true."

The conversation moved to the importance of protecting archeological sites, even though most respondents had no personal connection to them. Many participants were aware that these sites are strictly protected. One respondent elaborated that archaeological surveys will be conducted before treatments are implemented.

The discussion took an interesting swing in the Flagstaff group with some wondering if the USFS is motivated to improve recreation. What is their interest in this? There was disagreement in the group when this question was posed. On one hand, some felt the USFS is almost anti-recreation. Others disagreed and gave examples of recreational activities implemented by the USFS such as, hiking and equestrian trails around Flagstaff and how trails around Sedona increased in both quantity and quality.

Lastly, TMR was discussed once again. The impetus for this they thought was in response to ATV activity; however, they do not feel USFS accomplished what they

should have when they closed so many roads. They felt this was more of a knee jerk reaction rather than addressing the problem at hand.

Questions asked by participants:

- Is there resistance from the tribes?
- How large is the project? How much area will be treated around Flagstaff?
- Is there going to be more than one contractor?
- Is the Hart Prairie project part of the 4FRI?
- How long will it take to complete the project?
- Is it going to be in the southeastern part of the Mogollon area?

VI. What are the other issues?

Q1: Now that we've had a chance to discuss several issues that will arise from the 4FRI project, are there other topics that you can think of that we have not covered this evening?

Participants offered a wide variety of subjects that had not been discussed, such as campfires, the National Environmental Policy Act (NEPA) process, climate change and collaboration as well as elaborated on previously touched on topics such as, implementation, Bill Williams Mountain, TMR and education.

One of the most poignant moments amongst the two groups occurred in Williams when a participant asked, what's NEPA? When this was explained to her, she wanted to know if there is any way to accelerate the NEPA process so the community doesn't have to wait another two years for the Bill Williams Mountain to be treated. She understands that bureaucracy is unavoidable but the *risk is so serious* to the community and said,

Is there anyway the NEPA process can be accelerated so that we're not waiting for 2 years?...This is serious to our community and to have to jump through all of these hoops to do an environmental impact study... I can assure you that the environmental impact of that mountain going up is going to be far worse than what it's going to take to take the trees down. I think you would all agree with me and why is it that, whoever is NEPA, why don't they see this, why don't they understand the environmental impact that will cause to the watershed, to all of the life on that mountain that you know, the little critters. That just is not reasoning to me; it's irrational. What about the environmental impact when the whole mountain goes up in a blaze of glory and we have no water. I'm just asking. Two years is a really long time, I think.

They agreed locals should write letters and make phone calls to motivate Congress and Obama's involvement in hastening this process.

Several discussed their ideas in regards to how implementation should occur. They suggest treating areas all over the forests simultaneously so treatments are not concentrated and linear. This strategy, they believe, would assist in lessening the overall wildfire risk and would enhance the public's acceptance and support of the project by giving community members a sense of ownership and pride as well as minimizing unsightly treatment effects. In response to this, one participant said they do not believe this would be economically feasible as it is difficult for contractors to work on smaller projects in various locations. Another was happy to hear the project is retaining old growth trees.

Another important issue to both groups was campfires. A respondent from the Williams group said, the other side of fire as a management tool is to implement campfire restrictions in certain areas or times to avoid fire risk in years before treatments begin. They continued, any extra ignition source outside of lightning is extremely dangerous. Another from Williams suggested implementing restrictions on Bill Williams Mountain, "I've been beating that drum." The Flagstaff respondents were just as adamant and believe that campfires should be restricted completely. They recounted, there were seven illegal fires during the Schultz Fire. A helicopter had to be diverted from fighting the fire to put them out. Others suggested shutting the forest down sooner. They explained, there always seems to be six weeks when we are hoping they close the forest and then if they do close the forest, with just a couple of showers, they open the forest too quickly. The USFS decides on closing the forest and they believe they use the wrong parameters to make their decisions. One respondent explained, it seems there is a lack of a systematic analysis of campfire policy. To do this, he said, we have to go through a whole NEPA process, which may cost \$150,000 and funding for this is lacking. At times, when it is so hot and dry, they are unhappy with how long the forest is open. In this regard, many feel there is a need to put pressure on the USFS and find the funding for this analysis. Lastly, some are aware and pleased that parts of the Dry Lake Hills area have a permanent closure to campfires.

Then the discussion led to the lack of capacity of the USFS to enforce the restrictions. Some suggested signs would stop half of the campfires. Others spoke to recent combined air and ground campfire patrols and how this has been very effective and helpful to their community. They reiterated the need for a ban on campfires throughout fire season because of lack of knowledge by tourists and a continued need to beef up the monitoring. One gave an example of how police scouted transient campfires in their neighborhood and found this as an effective deterrent.

The Williams' group discussed closures and restrictions. They suggest closing roads to Bill Williams Mountain earlier to keep people and fires out. They also realize that human-caused fires will happen regardless of restrictions; so the locals need to be diligent and report them. Some wondered whether enforcement would be effective.

In response to this, many believe it will be much easier to control restricted/closed areas because those on fire watch will report any flame if it is illegal.

TMR was brought up once again. Some said the 30-foot restrictions are the biggest joke there ever was and they voiced anger over road closures because firewood is inaccessible to locals.

Education was also a big focal point once again for the Flagstaff participants. There is a need to continue outreach to convince the public treatments are good for the community *and* the forest. Continued education should focus on the ultimate goal of community protection. Many reiterated their frustration of homeowners who still have not thinned their property. Some mentioned the destruction of the Rodeo-Chediski fire; they described the ground there remains impermeable: it is like glass. They suggest sending resistant residents on aerial field trips to see the fire's destruction. One suggested a more realistic approach which would include field trips to treated areas (e.g. on Highway 89 on the way to Sedona) to explain proper stocking densities and the positive effects thinning has on the diversity of grasses that have returned. Both groups came up with a list of outreach methods such as, involving school children, which can result in indirectly educating their parents and installing kiosks at USFS trailheads and campsites. Lastly, they thought, an effective piece of the educational process would be to disclose the positive economic impact this project will have on the communities. Supporting the need to continue to educate the public, a quieter respondent in the Williams group said, I now fully understand the reasons for prescribed fires and thinning. I learned a lot.

The Flagstaff group briefly discussed the effects climate change will have on the project. As one participant described his experience in grassland restoration on the Babbitt Ranch (50,000 acres); he raised the issue of whether ponderosa pine will shift its species range due to climate change. If this happens, he wonders whether the project's focus on ponderosa pine is substantiated. Despite this uncertainty, he agrees there is a need to educate and continue to focus on the current goal, which is to reduce fire risk.

The conversation turned to the Mexican Spotted Owl (MSO) with speculation on how this species will be regulated. Respondents realize there may be a need to remove some trees to prevent fires; however, this could destroy the MSO's habitat. There was disagreement in the group between how to protect their habitat while reducing fire risk. Some felt the majority of MSO habitat is in high altitude, wilderness areas, which would not be logged. While others believe the ASNF has an abundance of MSO habitat on steep terrain that would be treated.

Lastly, the Flagstaff group discussed how the 4FRI project has oversight from a respected stakeholders group comprised of 40 organizations that are working together to accomplish a complicated landscape scale project. Some equated this to the formation and operation of GFFP years ago. They understand there may be some power struggles within the group; however, these organizations are working

together to plan the project and mitigate legal appeals. They explained, citizens fear what they cannot control; however, this project allows residents to regain a sense of control. The 4FRI project has the potential to prevent a huge disaster and they believe the community will support the project for this reason. In the end, they felt the 4FRI Stakeholder group should be recognized and emphasized to further public support.

Questions asked by participants:

- Has spotted owl population increased?

VII. Overall similarities and differences between the two groups

- Generally respondents from both groups were very knowledgeable about fire's natural role in the ponderosa pine ecosystem. Both groups' answers were similar in this section and there were no notable differences between the two groups.
- Generally participants from both groups were very knowledgeable about how fire should be used as a management tool. Their answers were similar in this section and there were no distinguishing differences between the two groups.
- Generally participants believe as the 4FRI projects progress, protecting their communities from high-severity wildfires will be better than it is now. There was consensus in both groups and they believe these treatments will help more than harm, and it is worth the effort.
- Unique to the Williams' focus group was the concern for Bill Williams Mountain. Participants believe if the entire Bill Williams' area is treated, this could save the town and fires will be manageable.
- As both groups thought about smoke effects in the implementation of 4FRI, there was a general feeling of acceptance.
- The Williams group clarified that their local paper is published once a week, so other means of prescribed fire notification may be necessary.
- Respondents generally were against placing regulations on smoke levels that could potentially limit and/or hinder the 4FRI's ability to implement prescribed fires.
- Specific to the Williams' focus group was how smoke is a major concern for their tourism industry.

- Specific to the Flagstaff focus group were issues and repercussions surrounding the Schultz Fire.
- Participants in both groups believe there is a continued need to educate the public on the necessity of prescribed fires and the byproduct of smoke should be accepted in this type of ecosystem.
- Williams' participants want to know why the Bill Williams Mountain has not been prioritized.
- Although both groups had many suggestions to mitigate problems caused by increased logging trucks on the roads, they were in favor of them because the trucks are needed to implement the projects.
- Respondents in Williams were concerned with the routes the trucks will take and whether they will go right through town.
- Generally in both focus groups, large tree removal was not an issue. Participants were more concerned with regeneration and retaining some small trees, restoration of springs and watersheds, recharge of the aquifers and aspen restoration.
- Participants from both groups agreed, healthier forests would improve recreational opportunities and avoid risk of fires, and will ultimately put the community at ease.
- When asked about the effects the 4FRI project will have on recreation, the Williams participants' responses were again focused on their tourism industry. Respondents from this group believe logging should occur outside of camping/tourist season. This is a big industry for Williams, so the least impact to camping season is critical.
- Respondents in both groups believe the benefits to recreation will be realized after treatment. Initially, it may be a hard sell because during thinning, recreationists/hunters won't have access. However, following the treatments, the area will be more open which will lead to greater support and approval of project.
- Most from both groups felt a more open park-like structure would positively affect other forests' aesthetic values such as, views, horseback riding, and accessibility to hikers.
- A Williams' participant asked, what's NEPA? When this was explained to her, she wanted to know if there is any way to accelerate the NEPA process so the community doesn't have to wait another two years for the Bill Williams Mountain to be treated.

- An important issue to both groups was campfire restrictions and forest closures.
- Distinct to the Williams' group were campfire restrictions on Bill Williams Mountain.
- As other issues were discussed by the Flagstaff participants; education was a big focal point once again.
- Many Flagstaff respondents reiterated throughout the discussion their frustration of homeowners who still have not thinned their property.
- The Flagstaff group discussed how the 4FRI project has oversight from a respected stakeholders group comprised of 40 organizations that are working together to accomplish a complicated landscape scale project. In the end, they felt the 4FRI Stakeholder group should be recognized and emphasized to further public support.

Four Forest Restoration Initiative Socioeconomic Monitoring Report

4FRI US Forest Service Interview Results Coconino National Forest, Flagstaff, AZ and Kaibab National Forest, Williams, AZ May 2013

This report contains summary results of six personal interviews, three with USFS Coconino National Forest's Four Forest Restoration initiative (4FRI) team staff, conducted in Flagstaff and three with USFS Kaibab National Forest who are involved with the 4FRI project, conducted in Williams. Since responses, at times, were significantly different in each interview, participants' answers to each of the questions are reported separately as a bulleted list. The summary is organized in the same order as the protocol of questions that were asked during the interviews (Appendix C-1).

Before the interviews began, respondents were read a verbal consent as well as explained the purpose of the study and how results will be reported and used. Respondents were asked to pose all of their answers as it relates to the 4FRI project. The interview was conversational in nature and the order and exact wording of the questions varied based on the direction of the interview and the type of person being interviewed. Therefore, for some of the interviewees, responses may be missing to select questions.

I. USFS' Role in the Community

1. As you think about the 4FRI project, can you describe the Forest Service's role in maintaining and enhancing the social conditions of the community?

- ❖ There's an overall stewardship responsibility to manage National Forest (NF) lands and inform and involve communities that are in or adjacent to the forest. The USFS has an obligation to help them understand issues and hear their concerns. Moreover, their concerns may help us better design management activities.
- ❖ The USFS is integral in Flagstaff, more than some communities, because NF lands surround it. Although this is integral to residents, some still do not understand what the USFS as an agency stands for and accomplishes. For instance, they believe the USFS and the National Park Service (NPS) are one in the same. This community is dependant on the forest for physical, mental and spiritual health as well as economic benefit, recreation and products from the forest. One concern I see is that most (residents of 10-30 years) see the dense forest as "the forest" and they don't understand what it needs to be healthy, that it's not sustainable, and we can loose it all and everything that depends on it.
- ❖ The Kaibab National Forest (KNF) has a good relationship with the communities; the northern districts are part of the 4FRI project. The 4FRI will enhance these

relationships, and there is a great deal of support for restoration and the 4FRI project. In Williams, the community has been pushing for treatment of Bill Williams Mountain (BWM) for years. In addition, citizens were proactive in completing the Community Wildfire Protection Plan (CWPP). Even with the byproduct of smoke, most understand and support restoration.

- ❖ Our focus is to reduce the potential for catastrophic fire and all of the expense that goes with it; this is a key driver. The role of the USFS is multi-faceted for social well being that includes, recreation, forage and wood products.
- ❖ “I think the USFS in general struggles mightily with the social component within the community...we typically aren’t trained in that arena.” We struggle with how we conduct effective outreach and communicate our roles, responsibilities, partnership opportunities and our contributions. We struggle because we tend to be reactive rather than proactive in getting information to the community. This, in effect, has a negative impact on the USFS. I think the public is generally supportive of the USFS due to recreating in the forest. Although, when we communicate to the public about specific projects, we don’t do a great job.
- ❖ Education is the best way to keep people up to speed. We have to keep educating as best we can.

2. As you think about the 4FRI project, can you describe the Forest Service’s role in maintaining and enhancing the economic conditions of the community?

- ❖ There are opportunities for economic benefit; however, the resource is the priority. Our guidance changed in the 80s. At the time, the priority was to get the cut out at all costs. That’s why we’re where we are at now because in the past, it was all economically driven; we did not put the resource first. Now it’s restoration based, but there’s potential for economic development. This is a big paradigm shift. That doesn’t mean it couldn’t come back from a different administration in Washington. If this happened, the public would be defiant. National Environmental Policy Act (NEPA) protects the resource and discloses effects to the environment.
- ❖ Resources come first, that’s the priority. If there is economic benefit, all the better. In the past, we played a more active role on the economic impact. The USFS is not an economic engine. Our goal focuses on caring and serving the lands for the greatest good for the public. If we had an established timber industry, it may be different; but here, we really don’t have that. The USFS should attempt to improve the social relationships by looking at opportunities to describe our programs and what the USFS is doing to benefit communities. We could be more strategic through editorials in the paper and outreach and education for targeted audiences at camps.

- ❖ Although, it can help economically, we don't know what it will look like for Williams and Tusayan areas. Our role as the USFS is to maintain healthy forests and to reduce risk of fire. By enhancing the forest environment and reducing fire risk, this enables these communities to foster their vital tourism industries. Citizens understand the forest directly impacts the economic vitality of the communities. For example, if there is a terrible fire on BWM, this will detrimentally affect the watershed and view shed of the community.
- ❖ There's an expectation that we do contribute to the economic well being of the community here; however, our best interest is in ecological management techniques. Although, in the regular course of business, there will be products, services, etc. from the forest. Williams is a good example of a town that depends on tourism because it is situated in the forest. If there are large fire scars, visitors won't want to visit and this will negatively affect Williams' tourism industry.
- ❖ There are forest products; logging/processing; jobs; and taxes to improve roads, schools, libraries and social programs. These all contribute to economic benefits to communities.
- ❖ Less aware, no comment.

3. How broadly do you define the community your Forest serves?

- ❖ There are four tiers and each has different understanding and needs. This provides a challenge of how you educate the different groups. Therefore, one message is not sufficient; we need to have different messaging for the various tiers.
 1. There are the locals who live in the four forests.
 2. Urban residents who do not live in the forests
 3. National visitors and
 4. International visitors
- ❖ Multiple levels:
 1. The local community by in large is mostly effected by what we do
 2. Regional level and
 3. National level
- ❖ The Coconino National Forest (COF) covers the community within the forest boundary. I think it extends to Phoenix residents who recreate in the forest. As you conceptualize the 4FRI, it is much broader and includes communities such as, Winslow and Snowflake.
- ❖ The community we serve is much more than Flagstaff. The communities that will be affected by the 4FRI creates a bond between them; it's a new common bond for the project that will benefit everyone.

- ❖ We serve well beyond the immediate local community. We are a resource for visitors across the state. People from the Phoenix valley area come here to hunt and camp. In addition, the international community travels to the KNF to hunt for big game.
- ❖ Our communities include southern Utah to the Verde River and all towns in-between. This includes Phoenix and Tucson residents who travel here to recreate. In addition, the Grand Canyon has a national and international draw, and they will spend time on the KNF.

II. Issues/Concerns/Opportunities with the General Public

4. Currently, what are the main issues the public has with the USFS?

a. What issues do they complain about the most?

- ❖ They complain about smoke from prescribe fires, the Travel Management Rule (TMR) and fires burning into communities.
- ❖ They are concerned mostly with smoke and TMR. While they understand the need for smoke, when it comes to impacts from smoke on a daily basis and for weeks at a time, people tend to get frustrated. This will be a huge challenge for the 4FRI. People think we'll use all of the wood, so there won't be as much burning. There are misconceptions that prescribed fires won't be implemented.
- ❖ The major concern is smoke. The public complains less frequently about road closures. They ask whether we could apply chemicals to the trees instead of burning them. Based on these comments, it is startling to observe the breadth of knowledge in some of the public. There is a faction that just doesn't get it.
Follow up question: What do you think is the percentage of the public that does not get it? Fifty percent, maybe, but I'm unsure because I deal with only certain sectors of the population.
- ❖ Most complain about TMR and access to the forest. In addition as we implement prescribed fires and use it to manage the land, we receive a majority of calls about the smoke in town.
- ❖ The public mostly complains about roads and access in the COF. This includes road maintenance and recreation opportunities such as, camping and motorized access. The loudest complaints are forest users who want to drive on any road that is out there. Secondary complaints are issues concerning forest health. They ask us, "When are you going to start?" There's a sense of urgency. It is clear the public is concerned about fire risk reduction and forest health. These concerns demonstrate the public is knowledgeable and educated; they understand. There's a minority voice out there that are primarily concerned with job creation. Thirty years ago, this would have been different, but with the absence of industry as an economic driver, this is no longer a priority.

- ❖ I struggle with using the terminology, “the general public.” I would describe this in three different categories. First you have the actively engaged public who are interested from an amenity, economic and planning perspective that includes NEPA and commodities (e.g. ranchers, loggers, stakeholders). We interact with them regularly. The loggers and those who view this from a commodity perspective feel we are not doing enough restoration; however, the ranchers are less inclined to believe this. Secondly, there is a larger group I would describe as the passive public. They are occasional visitors to the NF. Many of them do not understand the difference between the USFS and the NPS. In addition, they do not have the capacity to be involved in NF issues. Hunters from this group are dissatisfied with the TMR and how they are unable to drive ATVs in the forest. In addition, this group includes residents from the Verde Valley who complain about smoke settling in their community. Thirdly, there is the Wildland Urban Interface (WUI) public where the forests are in their backyard. They are FireWise and supportive of fuel reduction activities and smoke. They understand its “pay me some now or pay much more later.” However, there are some second homeowners in this group who love the shade; they feel cutting a tree and losing the shade is a crime. They defend this perspective with statements such as, “That’s what I pay my homeowners insurance for.”

b. How can the USFS address these issues?

- ❖ We need to have a statewide restoration and smoke awareness campaign. With forest restoration comes smoke and we need to make it clear as a statewide message. We need to include our partners in delivering the message and the USFS is not the only one that is held accountable. Citizens with health concerns complain to legislatures. As a solution, partners can assist us and reach out to politicians so they really understand what smoke buys us, and what this means to the health and future of our forest. We need assistance to reach out and inform the public as well as the political leaders.
- ❖ When it comes to smoke, there is Erik Nielsen’s effort that disclosed results from an exercise of the public talking to the public about what needs to happen and what can and cannot be done. The USFS does a lot more to mitigate smoke impacts than the public realizes. This study showed the public is unaware of what the USFS is doing to lessen smoke effects. Regardless, we need to put fire on the landscape; there is no alternative. What can be done as outreach to communicate this to the public? I’ve heard we should not use the phrase, “educate the public;” that’s insulting. I don’t agree with this. All of us continually need to be educated. The USFS staff is versed and can share and teach about what can and can’t be done about smoke and the reasons it’s so important to have fire on the landscape. We know it’s highly unlikely we can reintroduce fire at the same historic frequency, and as we consider climate change effects, we may find it needs to be less frequent. In order to get the message across we could orchestrate field

excursions to fire towers to view managed fires or field trips to managed or to prescribed fire sites. We can pass out literature until we are red in the face, but the public does not absorb it. Visuals and hands on are the key to get the message across and experiences such as these sink in. In addition, we could film these field trips and distribute the videos for presentations. It is also very important to talk about the successes on a regular basis; they outnumber the failures to a phenomenal degree, but we don't talk about that. Another idea is to form a local fire council. This organization could publish "Fire Facts" in the newspaper on a regular basis. The initial article should be comprehensive and explain to reader this will be a regular column with follow-up smaller articles that could include information such as, historic fire frequency and the necessity of fire in the landscape. These articles should reflect an awareness and understanding that fire is typical in this ecosystem and should not be alarming. Ponderosa Fire Advisory Council (PFAC) may be interested in pursuing this idea. This needs to be stakeholders developed and driven with a combination of organizations pitching in to write the various articles.

- ❖ With the TMR issue, continue to engage the public and interest groups. It's a national rule, a top down effort. Now we're looking at what changes make sense. Should we open more camping areas that were closed with the roads? Should we look at a different firewood policy? When it comes to the smoke issue, the public is much more accepting of thinning to reduce fire potential. Not sure we can resolve concerns around smoke. However, the 4FRI project will assist in getting more biomass off of the forest and decrease pile burning and reduce smoke impacts. Time will tell. This is a larger scale project with more acres with fire, but most biomass will be removed from the land. The collaborative process is the key in attempting to resolve those concerns.

c. How can the USFS work with collaborative partners to address these issues?

- ❖ The stakeholders can access the public in ways the USFS cannot. There is a need for education, but we all have to be on the same page. The stakeholders have varied interest and specialties. For example, the Ecological Restoration Institute (ERI) is heavily restoration focused, the Center for Biological Diversity (CBD) is heavily conservation/activist centered. However, to be effective, we need to speak with a common voice and that's not easy. *Follow up question: How can we better speak w/a common voice?* We have to build trust. Our actions have to follow what we say we are going to do. We have to be transparent and have ample disclosure. If we made a mistake, we have to admit it; we need to be accountable.
- ❖ When it comes to the TMR issue, we did not work with the stakeholders enough. We have a flat forest, so it's not easy to manage travel. It would help tremendously to target the public outreach with collaborators. Hunters are all for TMR, so we should reach out to them and we have not pursued this avenue enough. It's an issue of capacity.

❖ The USFS recently conducted a field trip with the Arizona Department of Environmental Quality (ADEQ), which was successful in my view. These kinds of trips with those who make decisions about fires should occur more frequently as these trips help them to better understand this landscape. The loudest complainers are from the Verde Valley. Residents who live in Snowflake and the Verde Valley were told they would have clean air when they moved there. With these erroneous impressions, they are getting a false idea of reality. Who's telling them this? They need to be told there's going to be smoke in the air during certain times of the year. To resolve these inconsistencies in the messaging, it would be a good idea to interact with the Chamber of Commerce, realtors, tourist associations, etc. In that vein, fire could be portrayed as a tourist attraction through nature walks and kiosks depicting serial stages related to fire. These kinds of displays can be moved to sites that have been burned or at specific sites so that positive changes over time are realized by the public. More specifically, we could install photo points immediately after the low-intensity surface fire, and continue the photos to demonstrate how the area adapts and how fire positively affects the site. Another USFS employee from Tusayan has developed the idea of having a fire management week with a fire festival in northern Arizona in 2015. This may include a fire fighter Olympics, music and artwork that is similar to Art Walk and Festival of Science in Flagstaff. *Interviewer's suggestion: The Southwest Fire Science Consortium (SWFSC) may be able to provide funding for the event through their proposal process.*

❖ We hope we are delivering the appropriate key messages. The most important message is the reduction of wildfire threat and, this in effect, saves the taxpayer dollars for fire suppression. We realize there will be impacts such as smoke, dust and traffic, but it comes down to, pay some now or pay much more later. The stakeholders can help to deliver that message, so the public is not shocked and surprised.

d. Currently, what opportunities are there to improve the USFS' relationship w/the general public?

❖ The traditional means of communicating with the public we have been using have not been successful. We do press releases and open houses, but they're not effective. One exception to that is Yellow Belly Ponderosa. Consequently, we need to look at opportunities to combine our messaging with our collaborators. This combined effort should be especially geared to the activist communities. They don't trust the USFS, but if they hear it from other collaborators who have influence in particular realms, these groups may be more supportive.

❖ If capacity was not an issue, we could develop a comprehensive program to work with the younger generation which includes elementary to college students as well as programs geared to adults. These programs should include messaging such as, what the NF lands offer and what are the opportunities to participate in various activities. When we have volunteer days, we find it's the same people over and

over. Campground programs are really popular, but these programs target the public that's already appreciates and recreates in the forest. Therefore, we need to focus on those who are not in that category, and this would help the USFS with public acceptance and support. We are in a good place with the majority of the public, but they are the silent majority.

- ❖ We need to be more proactive with delivering the public information. To do this, we need to understand how people are getting their information. We need to explore the most effective mediums and direct the messages to these sources. In addition, we need to be more transparent, discover what is important to them and deliver the information to the correct outlets so we are effective in our messaging.
- ❖ We need to communicate what it is we are doing to address the concerns that surround us; it has to be a two way street. We are limited by our own capacities to engage the public. Finding new and different ways is a key to success. Our Public Affairs shop has come up with new tools such as, the USFS website, Flickr, Twitter, and we may look into the prospect of Facebook. These new tools have increased our ability to increase communication, and we need to improve these methods as well as develop other tools to meet this goal.
- ❖ For the active public, I think there is already a process in place to address disagreements. For the passive public it is more difficult as we have less than 200 employees for 1.5 million acres on the KNF. We have a multi-use mission and I believe environmental education and public outreach and engagement is necessary, but we don't have the capacity to do a lot of that.

5. Once 4FRI implementation occurs, what do you think will be the main issues the public has with the USFS? Are they the same as you just described or do you think they will be different?

a. What issues will they complain about the most?

- ❖ Smoke, logging trucks and logging activity will be the main issue that will arise once 4FRI implementation occurs.
- ❖ The issues will be different once 4FRI implementation begins. Initially, it's going to be a mess. The effects of logging traffic, noise, dust and displacement will generate a lot of complainants. It's going to be a drastic change, and a good portion of the public will think the forest is too open. But I think these objections will subside as time goes on. I predict once the landscape begins to recover from treatments, people will like it and be supportive.
- ❖ Once implementation occurs, the key challenges and issues will be the actual logging, truck traffic as well as smoke. The log trucks will travel through residential areas, so we will have to show people what this is buying them and this will be a challenge. "It takes feet on the ground" and honesty. You have to straight out tell people this is the annoying stuff that will occur, over this length of

time, but as a resident, this is what it will buy you. A news release is not the best method to convey this. We need to meet with people in the community face-to-face to discover what the best method is in communicating with them.

- ❖ Smoke will continue to be an issue, but I think residents will be resigned that it's going to happen. In addition, once implementation begins other key issues would include trucks and traffic, dust and the disturbance to sites immediately after thinning. However, if we can demonstrate to citizens how it will look 10 years down the road, this may lessen the initial shock and impact of implementation.
- ❖ In spite of all of the outreach, people will be surprised of what it looks like once we implement the thinning. They will be initially shocked, but realize a year or two later, it looks better and better. Also, the truck traffic travelling through Williams will surprise people. There will be more days of smoke from prescribed fires, but not necessarily larger quantities of smoke; however, ADEQ will work with us to mitigate the effects to the greatest extent possible. All of these effects will be noticed and will provide additional opportunities to have conversations with the public.
- ❖ As large scale thinning occurs, the passive public will understand what this involves. Once they see the impacts of implementation, they will be surprised and they are not going to like it. The shade lovers won't be happy either as they would rather assume the status quo. They will think it's too much change, and change is not easy to accept. I think the USFS will receive harsh criticism. In the end, I would put traffic concerns and public safety first and foremost.

b. How can the USFS address these issues?

- ❖ Education is important to convey awareness to the public. We need to communicate what will occur once implementation begins and the reasons for it. Also, the contractors are the face of implementation and they need to be aware of public issues and concerns. For instance, trucks should not drive too fast and cause private vehicles to veer off of the road. *Follow up question: Do you think training for the contractors in dealing with the public would help?* Yes, there is a need to develop workshops for contractors so they understand expectations in constructively working with the public. We cannot require contractors to do this, but this type of training would be good for new employees. Pioneer will be in charge of the subcontractors and can help to implement this protocol.
- ❖ To address post-thinning shock, demonstrate the stages of effective ecological treatments, before, during and after and the positive effects it will have once the site has had a chance to recover. We need to plan ahead to accomplish this. Most effective kinds of outreach are visuals. Waysides with photo points could effectively demonstrate this. For the truck issue, I'm not as sure how to handle this. The truck presence and sheer numbers will be much more than what the

public is used to. A possible solution is to schedule logging and burning around sensitive times such as, prom night, holiday weekends, etc.

- ❖ We have a huge advantage with the 4FRI Collaborative to assist with outreach to communities. The stakeholders are in touch with their constituents on a monthly basis. Internally we will look to talk and listen to people and meet with groups such as the Chamber of Commerce.

c. How can the USFS work with collaborative partners to address these issues?

- ❖ Collaborative partners must be part of the loop to assist in informing the public. For instance, the stakeholders can develop and implement a program to train loggers. This can be a subcomponent of the workforce-training program.
- ❖ “I think the collaborators are key for outreaching.” They are key to assist in various outreach components such as, signage development for on-site kiosks that include objectives and before/after photos. In addition, we need to provide the information to front liners, such as campground host. Another good idea is to develop a message loop to radio signals where forest users can tune in to a station to hear relevant current 4FRI information.
- ❖ Our partners can begin by working with locals, but on a broader scale we need to initiate a statewide educational campaign. The message needs to be delivered to Phoenix residents so they are aware of the changes they’ll see when they visit the NF. Local organizations can assist with this as they have developed a relationship with the public and can gain more trust and support than the USFS can on its own. The more organizations that are delivering the same message, the greater the chance the public will buy in to it.
- ❖ It comes down to education. By informing the public in advance, this will assist in managing the public’s expectations about these issues. This needs to happen ahead of implementation. One idea is to involve schools. We can take them to an area before it’s thinned. When the students are there, they can take photos, create drawings and count trees. Then the students can revisit the site the next year and document the changes. We could also involve the parents and invite them out to the site with their children. This combination of kids learning with their parents can have a lasting effect through the student’s understanding and the pressure they can apply to their parents to comply with ecological and societal demands.
- ❖ Do more to get the word out that this is landscape restoration. If you look at the maps in the Draft Environmental Impact Statement (DEIS), it’s hard to distinguish the various polygons. Until they see the effects, which include smoke, dust, traffic, stumps and that some shade trees are gone, they are not as inclined to be engaged. We need to convey what they should expect, what is going to happen and why. There will be short-term undesirable effects, but we will either pay less now or pay more later.

d. Once 4FRI implementation occurs, what opportunities are there to improve the USFS' relationship w/the general public?

- ❖ After the Schultz Fire, an effective approach was a public field trip on Waterline Road. As a novel approach for the 4FRI project, we can conduct tours of logging sites and prescribed fires. To make this a reality and increase our capacity, we need the stakeholders to assist us with this effort. This is our biggest issue; we lack the capacity to do this on our own. In addition, in working with our partners, we can develop a media blitz to communicate to the public the reasons why we need to treat the forest on a landscape scale. It's important to "Try to get ahead because we are so ... reactive...this is an opportunity to be proactive and, if you're reactive, obviously, you're too late. We gotta' get ahead of the game."
- ❖ We need to have more transparency in the results. There's a distrust that we're actually doing what we said we were going to do. So for instance, did we increase heterogeneity? How much did the grasses improve? Do we have the expected ecological and economic results? This needs to be a continuous feedback loop. Once we know the answers, we need to share the information.
- ❖ With increased industry, there will be job creation in local communities. People in local communities understand this work needs to be done. Therefore, if the USFS can make good on its promises, to enhance forest health and reduce fire risk, we will take a major step in improving our relationship in these communities.
- ❖ It relates to what we've talked about so far. You have to blow your horn to show the public what the USFS and stakeholders have done together. A possible avenue may be through a more comprehensive *Fire Facts* article that could highlight actual fire successes such as, fires that are close to communities and had dropped to the ground and fires that are beneficial to the ecosystem.
- ❖ The key is monitoring which leads to adaptive management. This will assist in determining if we need to modify approaches to thinning, types of equipment, etc. Through this process, we need to determine what we have learned and, based on this, make appropriate changes. If we aren't learning, we are missing an opportunity here.
- ❖ Conduct environmental education and issue based discussions by taking the public into the field. At the time, listen to their concerns and determine how to adapt/respond to them.

6. In thinking about working with the general public as the 4FRI project progresses, what are your main concerns?

- ❖ How do we get ahead and build the capacity to get ahead of the impact the 4FRI will have on the public? To accomplish this, we need to expand the scope of

partners to help with the messaging. For instance, for aspen restoration partner with Friends of Northern Arizona's Forest and for spring restoration look to the Friends of the Rio. These are ideal partners.

- ❖ My primary concern is establishing industry. Until we have this mechanism in place, it's not going to happen at the scale we need it to happen at. What can the USFS do about it? We're learning, we are doing just about everything we can. The contracting and accountability process is slow. "We are trying to recreate industry...it's a huge task."
- ❖ It will change the way we do business in a lot of ways. The 4FRI will be the only program of work; we won't have all of the separate projects/forests that we have now. We have been entrenched in a culture and the more we work together with a clear vision, the more we will improve reaching our goals. *Follow up question: What are the advantages and disadvantages to this?* Advantages include a clear direction and vision; this will eliminate the need to determine priorities. This will get the train moving and it will pick up steam over time. However, it will be difficult to change the way we do things, it always is.
- ❖ Public reaction to the initial thinning will be intense; they will be worried. However, in the long run, they will think it looks better. *Interviewer's suggestion: What about conducting pre- post-field trips with a protocol of questions? This could include a panel study, which uses the same subjects visiting the same site? We could have them observe the site before, after and then a few years later to determine their perceptions of the treatments over time.* I think that's a great idea. We need to better understand how to reach the public and bring them in. The USFS needs to do a better job with outreach. It's the same 'ol same 'ol; we've had really poor attendance at our meetings and I find this frustrating. We have to reach out in more effective ways. For instance, we could try the the ma and pa grocery store and the bulletin board at Walmart. Another idea is to assign staff to promote specific outreach events. Internally, we could post flyers in the USFS break room.
- ❖ There is a strong need for the USFS to be visible and show the public results of our accomplishments. This can be done through field trips to show them wildfire success stories; how we positively affected fire behavior through our efforts. For instance, we can illustrate how a recent fire is 50 acres instead of what used to be the norm of 5,000 acres. We can show them how the fire dropped to the ground in an area that had been thinned.
- ❖ My main concerns are safety, health impacts from smoke, and the short-term visual impacts. In addition recreation opportunities will be restricted and this will result in conflicts. From an ecosystem perspective, I think a major issue will be the weeds that appear after treatment. The active public will be concerned about these non-native invasions.

- a. How can the USFS address these?
- b. How can the USFS work with collaborative partners to address these?

- ❖ "...They are the #1 tool in the tool box to get this done, because the stakeholder group, being as diverse as they are, are far reaching in their influence." We have activist, environmentalists, conservationists, politicians and academics. Each of them carries a message. "It's just a much more unified voice." If all of those groups understand the same message to carry to our federal and state politicians, "that's huge." It's looking at it from the large picture perspective. I think we're missing the chance to strengthen the political and social will that's so important and results in funding. Working on issues that affect policy is part of the triangle that we are missing. If we have this in place, it will keep the machine moving. Right now, we are missing industry; big industry is the anchor. "If we get there... there's no stopping us." We should maintain small industry, but we won't be successful without big industry. So for instance, a logger explained this to me recently and said that in order to be able to survive economically, he needs the big mill that will process the bark and branches. If he did not have a way to add value to the biomass, he told me he could not make a living off of everything else. The key here is that the biomass makes the loggers money versus having to pay to dispose of it. Stakeholders can assist with incentive programs that will support loggers and get this project off of the ground. For instance, to help jump start the project, push for the availability of State Assistance Grants that help to pay for diesel or defer taxes and this will help to trim high transportation costs. Once the project off the ground, it will be self-sustaining, but it takes a lot and it will take all of us to get it off of the ground. "Getting that motor started is tough; it takes a lot."
- ❖ The 4FRI stakeholders can help. For example, there's Salt River Project (SRP) and Arizona Public Service (APS) who have interest in the utility corridors. In addition, we need to think about how we can join forces to spread the word about our accomplishments.

- c. In this context, are there opportunities we haven't discussed?

- ❖ Continue to monitor longitudinal smoke effects through ADEQ. I predict the number of days we will burn will increase, but the intensity of smoke will decrease. Also, continue to work with the public so they understand why prescribed fires are necessary. In Erik's [Nielsen] group, a participant said, "You're making us choose between a healthy forest and clean air; that's not fair." My response to this is; *exactly*, there are tradeoffs. There's no way around it and we are taking big risks if we don't thin and burn. However, residents in the Verde Valley and Sedona keep saying, but I live down here and I don't care. We need to partner with Arizona Tourism Departments to push this issue.

7. Can you describe any other issues in working with the public that you believe will arise in the future; say five, ten years from now regarding the 4FRI project?

- ❖ What are the unintended consequences of what we have going on? It's not going to be the same faces in both the stakeholder and USFS fronts. We need to ask ourselves; how do we transfer the knowledge to those that are replacing the old characters? When there's turnover, we are back at ground zero and we have to start over to build relationships, trust, etc.
 - ❖ Other issues include all of the associated effects of treatment in the woods such as, traffic, dust and forest structural changes. If all goes well, it will be, "How come you haven't started over here yet?" That would be nice. We're so far behind and I think we are not moving fast enough.
 - ❖ Will the issues be similar to what we talked about previously? I feel hopeful that these issues will be more accepted than they are when the project begins because the public will see the benefits for themselves. Initial major frustrations will transcend and looking back, they will be seen as minor annoyances.
 - ❖ The smoke issue will settle down and people will accept it. Out of 100,000 citizens, most don't complain and about half of them understand frequent fire is necessary. For the 1,000 that complain, do we stop what we are doing just for them? Right now, we are doing just that; we are reacting to the squeaky wheels. It would help if a fraction of the 100,000 citizens wrote a letter to the governor telling her we need to burn in order to protect the forest. These actions could be implemented by a Prescribed Fire Council that would include various factions. This would provide an avenue for advocacy and instill political pressure. If it's the USFS trying to advocate alone, people are going to say I don't want to hear from the government.
 - ❖ What we don't know is how long we can sustain this. It's one thing to be on the forefront of a project as we are today. You get a lot of attention in the early years and then it becomes more of an ordinary thing. So I wonder if we will be able to sustain the flow? When industry is reestablished and there's a market demand, this will help us. Ten years from now we will have thinned a lot of the forest. Then the USFS will have to decide what's the next cycle for management? We will need to continue to thin, but most likely, we will need to cut larger trees to prevent crowns from growing together. Will there be resistance to doing this? Yes and we will need to make yet again a paradigm shift; we will shift from lots of small trees to a preponderance of larger trees.
 - ❖ We'll see fire suppression costs plummet and these fires will become the exception; therefore, we can allow more fires to burn and manage smoke so it has minimal effects. I am an optimist that there will be more short-term rather than long-term issues. "The long term benefits will outweigh the short term impacts."
- a. How can the USFS address these?

- ❖ Ask Diablo Trust because the problem with turnover and having to start from scratch happened to them. They may have created a transition document that we can mirror in the USFS and with the stakeholder group.
- ❖ We've issued a contract and they are struggling with their financing, which is understandable. It's a lot of money. "We're going to have to develop opportunities to show progress *now*, 'cause without that, this thing will be dead on the vine." There's shelf stock, a lot out there, but we are going to have an issue with USFS capacity to administer and implement the work. However, if we are not making progress, we are not going to see the funds to increase this capacity. So it's a double-edged sword. We should provide opportunities for smaller long-term contracts. This will assist in the larger industry's establishment. However with this strategy, it's tough because we're stressing the USFS capacity again. If we had industry established on the west side, we could show progress by implementing shelf stock. We've completed 6,600 acres in a timber sale in the White Mountains, about one and a half years ago, but most are unaware of this. Right now, established industry is so far away and this is not feasible.

b. How can the USFS work with collaborative partners to address these?

- ❖ I ask the question, how do you prepare for this? If the stakeholders continue to be engaged, we need to be strategic and figure out where we want to be in 15-20 years. So, what do we need to do now to make this a reality? We need to think about the needs in working with groups, in research/data collection, etc. How do we find the money to do it? How do we do it most efficiently? The stakeholder group is far richer than just the USFS due to the diversity of experience around the table.

c. What opportunities do you foresee in working with the public in the future, say five, ten years from now?

- ❖ Opportunities include field trips, pair the USFS and stakeholders in meeting with groups and social media for both internal and external publics. We assume way too much, not everyone is informed.
- ❖ Get people excited about fire. Take them to fires that are very controlled and let them see it for themselves.
- ❖ We have a lot in front of our face and the challenge internally is to "get your head up out of the trench and look around" to try and figure out what's coming at us in the future. How do we position ourselves and how can this be done with collaborative partners? We need to invite it. They are participating now because of the threat of fire. I wonder as the landscape is treated, will we still generate the same level of enthusiasm? What else will come up that takes precedence?

- ❖ If we were successful here, we could become a model for other parts of the west. It's a good place to start because the area is a fairly simple ecosystem; water quality/fisheries is not at the forefront here, it's not driving it and the terrain is gentle and we have established roads. We can effectively treat at a landscape scale, whereas other areas in the west would be more challenging.

III. Monitoring

8. In the current social monitoring plan developed by the 4FRI Stakeholder group there are a number of measures for public awareness, knowledge and support, such as the role of fire, smoke, restoration and fire as a management tool as well as the adoption of Fire Wise and defensible space actions. In thinking about issues identified by socioeconomic monitoring results, can you describe what the USFS plans to do to address these through public outreach?

- ❖ “About the only thing I can say probably for sure is that, “We can't do it alone.”
- ❖ No, because I don't know the results. The USFS recognizes the need for a 4FRI Public Affairs liaison that will respond to the social side.
- ❖ The USFS has done a fairly good job over the last decade to reach out to the local community. This will have to be a much more broad and concerted effort at the statewide, regional and national levels. To this end, we need to expand our idea of community. For example, Sedona gets a lot of smoke from all over the state. This is not just a COF issue; it's a statewide issue. Other agencies conduct prescribed burns such as, the City and the State. This needs to be a combined effort to outreach to the public, not just the USFS. We need partner support do this effectively and this will help with capacity.
- ❖ In Nebraska, we have a historic office that found an old radio show produced by the USFS. The show was based on a fire-informational discussion with musical interludes. It was a Smokey the Bear radio show on NPR. Producing something similar would be out of the box and it would get people's attention. When we see the turnout of our current outreach efforts, we know we are not doing it right and we are not bringing new people into the discussion. We need to try different ways of engaging them by contacting churches, clubs, local bulletin boards and PTAs at schools. The USFS e-mail list doesn't seem to be very effective. “Going from the top down, doesn't seem to work very well.”
- ❖ Not sure we know yet what we plan to do, but we know we need to deal with it. We need to instill a good monitoring system that involves as many collaborators as we can; this will help the USFS develop the “what” question. It's critical we pay attention to that and use the results to make improvements over time.
- ❖ Not sure the USFS has a real good plan, but I wish we did. Hope we can get ahead of the power curve here.

9. What do you think are the most important social monitoring questions we should answer as we develop our social monitoring plan?

- ❖ In regards to the smoke question, we know it's a necessary evil. I'd like to know if residents would prefer a lot of smoke over a short period of time or a little smoke over a long period of time. How do you minimize the smoke impact in the public's view? As I think about the TMR issue, it's a national problem and a forest issue, not a 4FRI issue. Most people can't read the maps. The COF has a smart phone application, which helps. But I think we need to sign the roads with notifications of whether it is open or closed. What will come up though, is that we're using a road that's not open on the TMR, and I'm afraid this will create problems. For wildfire effects on communities, they know this in the White Mountains, Downey Park and Timberline. They have lived through it. However, there's a perception that once the fire is out, it's done. Some don't realize after a severe fire, there's two years of misery with potential flooding and the effects. Lets look at the total cost of fire versus prevention. Lets get ahead of the game, rather than be reactive.
- ❖ We know the public accepts restoration, but do they accept outcomes of restoration? Are they happy with how the forest looks once implementation occurs? What's the initial reaction versus their reaction five years later? This kind of information should be gathered from occasional recreationists (not residents), who regularly visit the NF.
- ❖ What does success look like to the public? We tell them about the importance of forest restoration and fewer wildfires, but if there are some fires, will the public see this as a failure? Once we know what success looks like in their eyes, how do we show them we are successful?
- ❖ I'd like to measure awareness and ask questions like: Have you heard of this project? What's the USFS all about? Who manages the forest around here? Do you know if and how you can have a say about it? Since these are public lands, what does that mean to you? It would be great if they understood they have a say; however, it would be more constructive if they had an understanding that this is a fire-adapted ecosystem before they give us recommendations. The west has so much public land and they don't understand NEPA and then they don't know how to participate. In this regard, I think the public should have exposure to and an understanding of NEPA, as early as high school. This would lessen the perceived complications of the process. This is important because you need to understand NEPA if you want to have a say in how public lands are managed. Possibly promote this to be included in high school curriculums such as, environmental science classes or policy and government. We need to be teaching science and basic ecology to kids; all we're teaching them any more is basic money management.

- ❖ Ecologically, what will we find out when all of the biomass is leaving the land? This will be happening on a large scale over a long period of time. Is it causing any issues? What's the right amount of fire to put on the landscape as prescribed and managed fires? How does this affect long-term soil fertility and composting ability? Socially, how much smoke are we seeing in non-WUI areas? Are there more concerns with this over time?
- ❖ What is the level of public acceptance of the visual impacts, dust and noise? Can they see the long-term benefit to get over the short-term impacts? As recreational opportunities are affected, are their needs being met? Are they avoiding treated areas? Are people feeling safe on the roads? What are the fire suppression costs over the long-term? Is this making a difference compared to the Rodeo-Chediski, Schultz and the Wallow Fires and all of the money that was spent over the past 20 years on fire suppression? What are we spending on fire suppression down the road?

10. Part of this project is to streamline expenditure, revenue and employment data reporting by collaboratively designing prepared protocols and contractor reporting forms to capture relevant economic data. What do you think are the most important economic monitoring metrics we should collect as we develop our contractor protocol and data reporting form?

- ❖ Critical contractor metrics are jobs created and the pay rate. This is the kind of information that Congress will want to see. Revenue is of interest, but this may be hard to get from contractors. We will need to complete an analysis to determine an accurate multiplier. The Department of Commerce may have that data. Should show the contractor reporting form to Alan Reiblen and Bill Greenwood (President of Arizona Wood Products Association). Would be good to collect demographics on the form (replace minority with race and ask gender).
- ❖ This contractor data reporting form is awesome, there's a lot of detail and specificity. The idea to ground truth IMPLAN is great and looking at the quality of jobs is also important. If they are in business, they should be able to report this data. It would also be nice to know what are the population changes relative to taxes. I would expect Winslow would realize increases in both. What do the politicians want to know? We should ask them. By providing information that is important to politicians, this will assist the 4FRI in maintaining and increasing capacity.
- ❖ What jobs is the 4FRI bringing to our local communities in northern Arizona? Where is the workforce coming from?
- ❖ I'm not familiar with the economic issues.
- ❖ I'm interested in knowing what's being produced from the biomass? This information this will help us to better determine which types of contracts

(stewardship vs. conventional) and what contractual standards are most ideal for the project. For example, as biomass is depleted, there's potential for more clear wood in the future, which will have greater value than the biomass did previously. This kind of information will help us figure out what we can do differently and will assist in private business development in northern Arizona and for others. In addition I think we should connect with marketing and utilization experts and ask them what data they believe would be useful to collect.

- ❖ The data in the contractor data reporting form is relevant data to collect. It is very comprehensive; however, contractors may be reluctant to provide the information. Since some of the information is sensitive and the market is competitive, they may want to report this anonymously. As an incentive to provide this information, you will need to show the contractors how these data and analyses will benefit them. "Nothing is going to happen on the Nation Forest without basic public support; that's fundamental" If I was the contractor, and looking at the big picture; I would want public support. This information will reveal the project is creating the jobs and other benefits to community through funding for roads, social programs, libraries and schools. The public will realize this, and when they make a connection between the contractor and all of those benefits, they will be supportive. This is definitely an incentive for the contractors to participate in providing this data. It would also be helpful to extract tax revenues.

11. How do you see socioeconomic monitoring fitting into adaptive management?
a. In terms of socioeconomic effects, how will the USFS apply the monitoring information to improve the process through adaptive management? How do you envision initiating this and developing a protocol?

- ❖ If social support was waning, I would ask, what's the message delivery system that's not working? How has the demographics changed over time? This may explain why attitudes have changed. *Follow up question: Is a protocol necessary for future planning/outreach/education?* Not sure. When structure is applied, we seem to miss the boat. I haven't thought of the social as adaptive, but if we go in the toilet, how do we change that? What's the answer? What do we do with it? We're not good with this; we're too compartmentalized. A 4FRI Public Affairs Officer and a monitoring coordinator can help move this forward from a social standpoint. We need to identify the parties who need to be involved in the social realm, both internally and externally.
- ❖ We need to align 4FRI monitoring with the Forest Plan. Generally the socioeconomic is forgotten about; USFS specialists don't focus on it. *Follow up question: How does this [socioeconomic] play in to it?* Results will focus mostly on outreach and perceptions. This will change the way we seek feedback from the public. The greatest flexibility for adaptive management will be in socioeconomic monitoring because we won't necessarily have to change what we are doing in the field. Honestly, I haven't thought about until just now. We need to be sure the Multiparty Monitoring Board will have a member with a socioeconomic

background. In addition, we need to hire the monitoring coordinator. *Follow up question: Should there be a formal process/protocols in place to apply monitoring results?* Adaptive Management is a series of checks and balances and then you make a decision of how you adapt. This will come from the stakeholders. They will have a better handle on expectations and be more willing to change. This will push on the capacity of the USFS. This is a key role for the stakeholders and for the coordinator to marshal those recommendations through the USFS. We will be setting a precedent and the monitoring coordinator will need to be creative and have a vision for how this should go.

- ❖ Line officers have to see the socioeconomic end of things as important as acres treated and work on the ground. This is a challenge for the USFS as we think along the lines of production. We are fostering leaders who do recognize socioeconomic impacts, but we need to continue to push the envelope more than we are now. We tend think if the work is done on the ground, everything else will fall into place. But to get the work done on the ground, social concerns need to be considered and we need to focus just as much on communication, education and outreach as we do on the mechanisms of removing timber from the forest. Historically in the USFS, these have not been equitably weighed. “In order for this project to be successful, we have to be taking these things into consideration and we have to be making decisions based on what we’re hearing and the work that we’re doing with partners in our communities.” There’s no plan to integrate the information at this point. Hopeful the stakeholder group will play a role in this. The partners can collect, *interpret/offer a perspective* and present the data and how this information can be used to steer the Initiative.
- ❖ We can begin with public meetings with those who are unhappy; however, we need to improve upon reaching that sector of the population. For instance, if they are ATV users in Munds Park, go the gas station there and ask them, who should we talk to? Is there a group here we can meet with? *Follow up question: Should there be a formal process/protocols in place to apply monitoring results?* Don’t know if thought about socioeconomic monitoring data; it’s a different expertise. Who do we go to initially, and how do we follow this through? This will depend on what the complaint is and this will determine where it will go in part. The monitoring coordinating position is where it would start and they would direct it. The Multiparty Monitoring Board is another resource that can help with this.
- ❖ Good question! We’re tuned in to the ecological monitoring far more than the socioeconomic side. I know it’s important; we need to spend more time thinking about it and what we are going to do. We need to come to grips internally of how we will monitor and approach adaptive management. We will have to ask, how do we use the information? What’s the expectation and standard approach? We need to figure that out.
- ❖ The USFS does not conduct formal adaptive management, but we do adapt on site-specific basis frequently. Its not rocket science. We do adaptive management

and we have and will continue to. It's entirely expected as we move forward with new information to alleviate the public's concern, to be a good neighbor and garner public acceptance. At a broader scale, it's a trade-off. If the evaluation demonstrates we have a cheat grass problem, maybe we need to back off. How is it formalized? Not sure. We will need to continue the mantra that there are long-term benefits to restoring the resiliency of our forests and reduce fire risk.

IV. Prospect on Success of the 4FRI Project

12. As you know, one of the main goals of the 4FRI project is restored forest ecosystems that support natural fire regimes and reduce the threat of destructive wildfire to communities.

a. Can you describe whether you believe this is achievable?

- ❖ It's going to be hard but definitely achievable. A key component is to have industry in place to move forward with the mechanical side. We've averaged 55,000 acres of burn accomplishments for all four forests. Managed fire should be a primary tool in the toolbox. On the mechanical side is easier than the burning side because there are no emissions. Smoke will be the largest potential obstacle to keep us from our goals.
- ❖ Absolutely without a doubt.
- ❖ Yes, it's achievable. The amount of resources the USFS has put towards the 4FRI demonstrates the agency's commitment.
- ❖ With the issue of smoke, yes it is achievable because we have the knowledge and can manage the smoke. However, funding is very political. To make this point, the recent prescribed fire accident in Colorado, caused changes in DC policy. Because of this, it is much more onerous to conduct prescribed fires and, on top of this, there are budget cuts. I worry about the lack of political support and funding. This is where the stakeholder group can step in to assist in influencing policy.
- ❖ Absolutely, we are going to do just that. There are priorities and strategic locations of treatments around communities that will make a difference first. Since this is a large-scale project, the benefits are compounded. It will prove we are protecting our communities from fire and subsequent flooding.
- ❖ "Yes, as long as we maintain the support of the public." ... we have to." Stakeholder support is worth its weight in gold, but in thinking about the passive public, "their understanding and acceptance and support are going to make or break us. There in lies the challenge."

b. Can you describe whether you believe this is sustainable?

- ❖ It's sustainable as far as keeping a mill open. However, once we complete the first round of harvesting, it will grow back and the product mix will change over time. In 60-80 years, the forest will contain mostly large trees. Right now, the bulk is 16-18 inch trees and by then, they'll be 24-30 inch trees, and they will not be rare. This will change production and we will need to process large diameter trees years from now. This will lead to a more evenly distributed product mix, but this will require retooling the mills once again.
- ❖ Yes, the structure can be expanded to have 4FRI meet the goals we have set so it will be sustained overtime.
- ❖ There's a question mark on the horizon. Industry infrastructure needs to return. Pioneer's large plant is great idea, but don't know how this will play out. You cannot haul low value material long distances for processing. As an alternative, I am wondering if we can do it on a smaller scale to reduce haul distances for low value material. This can be accomplished with local processing capability. This first effort will bring capability of industry that we haven't had for a long time. *Follow up question: Is the mill in Winslow close enough?* Yes, for higher value products such as, paneling and finger joint stock. However, for biomass, I think it's too far away. A solution to this is to have smaller industry scattered around the forests. Over time, as the trees become larger, it will be more valuable, there will be more incentive from profit, and it will get easier.
- ❖ It's the only sustainable approach, anything but that is unsustainable.

c. What needs to happen to make this a reality?

- ❖ Industry is established. We need to operate at a scale that we are at right now and the economy will dictate this. It's perfect timing because land prices are down; it's best to invest in down times. If we can establish as the economy is recovering, we are in a perfect spot.
- ❖ Need public, community and stakeholder pressure for the project. The more all of these groups are demanding this of us, and we are hearing this on a regular basis, the more this will assist the project's success and sustainability.
- ❖ Stakeholder support and political pressure that will affect funding and policy.
- ❖ Getting industry up and running. That's gotta' happen. We need to make the investments and take the risks.

13. Another main goal of the 4FRI project is to support sustainable forest industries that strengthen local economies.

a. Can you describe whether you believe this is achievable?

- ❖ If mill capacity is in place, then yes, it's achievable. The biomass has to be value added and used in multiple ways to make it profitable.
- ❖ Absolutely, but the economic drivers will have to adapt; that's history. Some blame environmentalist concern for the Mexican Spotted Owl (MSO) for loosing our industry, but our industry was based on large diameter wood. If you're not flexible as a business, you are going away. The White Mountain Apaches can only process material that is 14 inches plus. That's based on the old model; I don't think they will be successful. There may be different opportunities in 20 years.
- ❖ Yes, but this is an area where I don't have the expertise and I don't know what it's going to look like.
- ❖ This should be done in a sustainable manner, but big trees will need some time to catch up. Because of past management, we don't have the timber base. However, based on small diameter wood, yes this can be achieved.
- ❖ Yes this is achievable. Industry went away the first time because it wasn't adapting to changing needs as it depended on large trees. Once there was concern, the political pressure interrupted industry and they lost the ability to do much. With this large-scale restoration approach, I hope industry sizes itself to deal with an integrated system of trees of all sizes and vegetation of all kinds and have the ability to produce goods that people need without hauling long distances. That's what's going to make industry sustainable here.
- ❖ I'm hopeful it's achievable. Entrepreneurs will need to step forward and the economics need to be favorable.

b. Can you describe whether you believe this is sustainable?

- ❖ Yes, and the products will vary. Two hundred years from now there will be a stable product mix that will include utilization that is balanced in size and age.
- ❖ Absolutely. With the number of acres that need treatment and the level of ponderosa pine growth, it's sustainable. We just need to get it up and running at an acceptable level.
- ❖ Yes. It's essential here. It's a dynamic system; fire suppression will continue, thinning will be ongoing, trees grow and plants grow. Therefore, there is a sustainable long-term role for industry here, but at the same time, we need public support and acceptance.

c. What needs to happen to make this a reality?

- ❖ Get it up and running, which takes a lot of money.

V. Was there anything I didn't ask you that you would like to add on topics that were discussed today?

- ❖ The administration in DC can potentially change the focus of the USFS. *Follow up question: How would you describe it now?* The focus now is restoration based; it's the same as the 4FRI's mission. The USFS is not doing a good job as an agency as it is categorizing the nation as fire adapted ecosystems. For instance, lodgepole pine/chaparral are not fire adapted ecosystems; however, the USFS is not differentiating between these types of ecosystems and ours in the southwest. The 4FRI is being used as an example, but the ecological premises should not be a blanket approach; it's a mixed message, full of inaccuracies. This will ultimately influence the 4FRI project. Another suggestion is to keep an eye on demographics as people move and evolve our messaging based on these changes. This can be tracked through the Census. Also, schools are a key to outreach success, as students will teach their parents new concepts they are learning. Yellow Belly Ponderosa is the kind of outreach that big partners, such as SRP, can bring to the table. SRP commercials that support the 4FRI are on the horizon. Additionally, the USFS Public Information Officer opportunities are unlimited; they need to be creative.
- ❖ Because of this interview, you got me thinking about the socioeconomic and monitoring much more than I had. I really want to get the Multiparty Monitoring Board and the monitoring coordinator in place. How the socioeconomic fits in to this will be up to the group. It will be extremely important that the Monitoring Board is a group of collaborators with a common vision with a variety of expertise (e.g. academic, economic, environmental, etc.). The east side is disgruntled and they are saying, how come you aren't here yet? We have to stay the flavor of the month, and all is going good, but implementation is what's missing. Without showing progress through implementation, you lose support, money, everything. To increase public awareness and support, we need to have publicity for implementation on the ground. Unfortunately, I don't have a lot of faith that this will move fast enough. It may be best to do smaller contracts to show progress. If we don't do this, we will lose political and stakeholder support.
- ❖ The FS is 100% invested in this, so I am hopeful that all of our partners are equally invested. I think they are and we will see results and we will be successful. What we perceive as obstacles now will be minor hurdles in the end.
- ❖ I suggest we have a core team meeting to discuss the focus group results. Stress levels from working on this project have been unbelievable for the team. As luck has it, the team gets along so well, and we could not have pulled this effort off if this had not been the case. We have not had the experience in working with all four forests yet. I'm glad you're doing this study and I am excited to see the report.

- ❖ The socioeconomic side is something we haven't paid as much attention to and we should be. I look forward to what we learn from your efforts and how these results can move us forward into the future. There are many things we can learn here and things that can help us. I look forward to start to figure this out.

4FRI Focus Group Recruitment Script [Flagstaff]

Hello, my name is [State first and last name] and [State first and last name] referred me to you to see if you'd be interested in participating in a focus group where we will discuss forest health and restoration issues, such as smoke from prescribed fires, logging trucks on the road, thinning the forest and other issues as they'll arise from the Four Forest Restoration Initiative Project. All participants will be entered in to a drawing to win a \$100 gift certificate from a local merchant or restaurant of their choice. The focus group will consist of 10-15 people from the greater Flagstaff area and will be held at the **East Flagstaff Community Library on Thurs., Nov. 8th in the evening from 6:15-8:30 PM.** Are you interested in participating?

If no → Thank you for your time.

If yes → Do you know where the East Flagstaff Community Library is located?

If needed → At the 3000 N. Fourth Street, Suite 5

The library is located on the southeast corner of Cedar and 4th Street.

What is the name of the neighborhood where you live?

Can you please provide me with the best phone number to reach you?

Would you prefer that we send you a confirmation letter to your e-mail or mailing address? What is that?

Thank you very much for agreeing to participate. We will send you a confirmation letter with all of the information that you need. A few days before the focus group, we will call you as a reminder. If for some reason, you cannot be there, please call or e-mail me as soon as you know so we have time to find a replacement. My contact information will be on the confirmation letter that you'll receive. Again thank you and I look forward to seeing you on November 8th!

4FRI Focus Group Recruitment Script [Williams]

Hello, my name is [State first and last name] and [State first and last name] referred me to you to see if you'd be interested in participating in a focus group where we will discuss forest health and restoration issues, such as smoke from prescribed fires, logging trucks on the road, thinning the forest, recreation and other issues as they'll arise from the Four Forest Restoration Initiative Project. All participants will be entered in to a drawing to win a \$100 gift certificate from a local merchant or restaurant of their choice. The focus group will consist of 10-15 people from the greater Williams area and will be held at the Williams' City Hall Council Chambers on **Wed., November 14th from 6:15pm – 8:30pm in the evening.**

Are you interested in participating?

If no → Thank you for your time.

If yes → Do you know where the Williams' City Hall Council Chambers is located?

If needed → 113 S. 1st Street)

Next to the library and across the street from the post office.

Can you please provide me with the best phone number to reach you?

Would you prefer that we send you a confirmation letter to your e-mail or mailing address? What is that?

Thank you very much for agreeing to participate. We will send you a confirmation letter with all of the information that you need. A few days before the focus group, we will call you as a reminder. If for some reason, you cannot be there, please call or e-mail me as soon as you know so we have time to find a replacement. My contact information will be on the confirmation letter that you'll receive. Again thank you and I look forward to seeing you on November 14th!



**LOOKING FOR CITIZENS TO PARTICIPATE
IN A FOCUS GROUP TO DISCUSS FOREST
HEALTH AND RESTORATION ISSUES**

- **PRESCRIBED FIRES**
- **THINNING THE FOREST**
- **LOGGING TRUCKS ON THE ROAD**
- **THE ROLE OF FIRE AND PROTECTING RURAL COMMUNITIES**
- **RECREATION & MORE...**

On behalf of the Four Forest Restoration Initiative, we will be conducting a focus group where we will discuss forest health and restoration issues, such as smoke from prescribed fires, logging trucks on the road, thinning the forest, recreation and other issues as they'll arise from the Four Forest Restoration Initiative Project.

The focus group will consist of 10-15 people from the greater Williams area and will be held at the Williams' City Hall Council Chambers (113 S. 1st Street) on **Wed., November 14th from 6:15pm – 8:30pm in the evening.**

All participants will be entered into a drawing to win a \$100 gift certificate from a local merchant or restaurant of your choice.

If you are interested in participating, please contact:

Anne Mottek, Mottek Consulting (Flagstaff, AZ) at:

(928) 310-8102 or

e-mail: **mottekconsulting@infomagic.net**



Greetings [*First and Last Name*],

Thank you very much for agreeing to participate in a very important focus group that affects you and your community. The focus group topics include forest health and restoration issues as they pertain to the Four Forest Restoration Initiative (4FRI). For more information, see the description and goals of the 4FRI project on the following page.

The focus group will be held on:

Thurs., Nov. 8th in the evening from 6:15PM-8:30PM.

At the East Flagstaff Community Library

3000 N. Fourth Street, Suite 5 in Flagstaff

The library is located on the southeast corner of Cedar and 4th Street.

See the following link for directions:

<http://www.mapquest.com/maps?address=3000+N+4th+St&city=Flagstaff&state=AZ&zipcode=86004&redirect=true>

For those of you who participate, your name will be entered into a drawing for a \$100 gift certificate for a local merchant or restaurant of your choice.

If for some reason you cannot attend, please contact me at the e-mail or phone number below as soon as you know so we have time to find a replacement.

Best regards

Anne Mottek

Mottek Consulting

Email: mottekconsulting@infomagic.net

Phone: (928) 310-8102

From the 4FRI website (see: <http://www.4fri.org/>):

4FRI Description

The Four Forest Restoration Initiative (4FRI) is a collaborative effort to restore forest ecosystems on portions of four National Forests - Coconino, Kaibab, Apache-Sitgreaves, and Tonto - along the Mogollon Rim in northern Arizona.

Ponderosa pine forest stretches almost continuously from the south rim of the Grand Canyon, across the Mogollon Rim, to the White Mountains in eastern Arizona. Unfortunately, these forests have been degraded by unsustainable historical land uses and fire exclusion. The result is overgrown forests with thin, unhealthy trees and the threat of unnaturally severe wildfire.

The vision of 4FRI is restored forest ecosystems that support natural fire regimes, functioning populations of native plants and animals, and forests that pose little threat of destructive wildfire to thriving forest communities, as well as support sustainable forest industries that strengthen local economies while conserving natural resources and aesthetic values.

4FRI Goals

- Plan and implement restoration treatments across 2.4 million acres of ponderosa pine forest.
- Treat 50,000 acres per year during a 20-year period.
- Allow for increased use of prescribed fire and management of natural fires for restoration objectives.
- Engage industry so the cost of restoration is covered by the value of the products removed.
- Assure that the science-based and socially-acceptable agreements forged during the last decade result in the implementation of long-term, landscape-scale restoration. Surround and support communities and provide wildlife habitat, recreational resources and ecosystem services.

Additional information can be found at: <http://www.fs.usda.gov/4fri>



Greetings [*First and Last Name*],

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Wed., Nov. 14th in the evening from 6:15PM-8:30PM.

At the **Williams' City Hall Council Chambers (113 S. 1st Street)** in Williams

This is across the street from the post office and next to the library.

Click on the following link for directions or paste into your browser:

<http://maps.google.com/maps/ms?ie=UTF&msa=0&msid=203013754349593713964.0004cdd886aa40ee8767b>

For those of you who participate, your name will be entered into a drawing to win \$100!

If for some reason you cannot attend, please contact me at the e-mail or phone number below as soon as you know so we have time to find a replacement.

Best regards

Anne Mottek

Mottek Consulting

Email: mottekconsulting@infomagic.net

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Additional information can be found at: <http://www.fs.usda.gov/4fri>

**Four Forest Restoration Initiative Focus Group Sign-in Sheet
Flagstaff, AZ Nov. 8, 2012**

	First Name	Last Name	Signed Consent Form
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**Four Forest Restoration Initiative Focus Group Sign-in Sheet
Williams, AZ Nov. 14, 2012**

	First Name	Last Name	Signed Consent Form
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NAU Human Subject Informed Consent

School of Earth Sciences & Environmental Sustainability
Northern Arizona University • PO Box 5694
Flagstaff, Arizona 86011 • 928.523.4980

Project Title: *Four Forest Restoration Initiative Socio-Economic Monitoring Program*

Dear Participant,

You are being asked to participate in a project conducted through the School of Earth Sciences & Environmental Sustainability at Northern Arizona University by Dr. Erik Neilsen that involves research. The researcher is required to receive your informed consent before you participate in this project.

Anne Mottek Lucas, Project Director, will explain to you in detail: (1) the purpose of the project; (2) what you will be asked to do and how long your participation will last; (3) how your personal information will be kept confidential; (4) if you will receive any compensation; (5) the possible risks; and (6) potential benefits of participation.

Your participation in this research is voluntary. If you refuse to participate, there are no penalties or loss of benefits or services that you are otherwise entitled. If you decide to participate and then withdraw or skip a question, there are also no penalties or loss of benefits or services. Whether or not you choose to participate in this project will have no effect on your relationship with NAU now or in the future.

A basic explanation of the project is written below. Please read this explanation and discuss it with Anne Mottek Lucas. Feel free to ask questions that will assist you in understanding the project.

After any questions you may have are answered and you decide to participate in this research, please sign on the last page of this form in the presence of the person who explained the project to you. A copy of this form will be given to you to keep.

1. PROJECT PURPOSE:

Four Forest Restoration Initiative Socio-Economic Monitoring Program consists of two focus groups, one in the Coconino National Forest (Flagstaff) and one in the Kaibab National Forest (Williams). During this time, participants will be asked to complete a short written survey upon arrival and to participate in a group discussion about forest health and restoration issues as they pertain to the Four Forest Restoration Initiative (4FRI).

2. EXPLANATION OF PROCEDURES: A short written survey will be administered to the focus group participant before the focus group begins and then participants will engage in a verbal

discussion of a previously developed protocol of questions. The written survey will take approximately 5-10 minutes to complete. The focus group will last for two hours.

3. CONFIDENTIALITY:

As a participant in this study, please be informed through this consent form, the information you provide is anonymous and confidential and will only be reported as a group response. None of the information you provide will be connected to any identifying information in any way. In addition, your participation is voluntary and you can choose to end participation and/or not answer questions at any time.

4. COMPENSATION:

As a participant in this study, your name will be entered into a drawing for \$100 cash that will be awarded at the end of the focus group.

5. BENEFITS:

Results from the focus groups will assist in understanding citizen's perceptions of forest health and restoration issues as they pertain to the 4FRI project. Results from this study will be used to develop a more structured subsequent study to understand citizen's perceptions of issues brought forth in these focus groups.

6. RISKS:

Due to the anonymity and confidentiality of the information collected, there are no foreseen risks to you as a participant in this study.

7. CONSENT:

I have read the above information about *Four Forest Restoration Initiative Socio-Economic Monitoring Program* and have been given an opportunity to ask questions. I agree to participate in this project, and I have been given a copy of this consent document.

Signature of Participant Date _____

Printed Name of Participant

Signature of Research Representative Date _____

Printed Name of Research Representative

The dated approval stamp in the header of this consent form indicates that this project has been reviewed and approved by the Northern Arizona University Institutional Review Board (IRB) for the Protection of Human Subjects in Research. Contact the Human Research Protections Office at 928-523-4236 if you have any questions about: (1) the conduct of the project, or (2) your

rights as a research participant, or (3) a research-related injury. Any other questions about the research project should be directed to:

Dr. Erik Nielsen
School of Earth Sciences & Environmental Sustainability
Northern Arizona University
PO Box 5694
Flagstaff, Arizona 86011
928.523.4980
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PO Box 22511
Flagstaff, AZ 86002
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mottekconsulting@infomagic.net

Appendix B-4



Institutional Review Board for the
Protection of Human Subjects in Research

Northern Arizona University
PO Box 4087
Flagstaff, AZ 86011-4087

928-523-4340
928-523-1075 fax
www.research.nau.edu/vpr/IRB

To: Katie Sauerbrey
From: Paula McAllister
Date: October 17, 2012
Subject: New Project
Review Type: Expedited

Project: Understanding Dimensions of Social Acceptability for Smoke Impacts from Prescribed Fire
Project Number: 382506-1
New Approval Expiration Date: October 16, 2013
Review Category/ies: 6) Recordings and 7) Focus groups, surveys, and interviews

Your application of New Project materials has been approved by the Institutional Review Board (IRB) at NAU. Your approval will expire on the date listed above. If you need to **extend** your research beyond the approval expiration date above, you must file an Application for Continuing Review at http://www.research.nau.edu/vpr/IRB/irb_forms.html.

If your project **changes** in any way, you must file a Research Amendment form (also available at website above) PRIOR TO implementing any changes. You may not implement the changes until you have written approval for the change from the IRB, unless the change is necessary to eliminate immediate hazards to participants. Failure to do so will result in noncompliance and possible suspension or termination of your research project.

Any unanticipated problems or unexpected **adverse events** must be reported to the IRB within 5 business days (within 24 hours for serious adverse events) of your becoming aware of the event by filling out an Adverse Reaction or Event Reporting form (also available at website above).

Two copies of your informed consent form, which has been approved and stamped by the IRB, must be given to each study participant - one for them to keep and one for them to sign and return to you.

As you conduct your research, please remember that:

1. Participants are volunteers or are involved in regular educational programs; they are free to withdraw from the research at any time without penalty.

2. Participants must be informed through written or oral explanation and must sign or approve electronically or verbally an informed consent form (for minors and children the parent or guardian must sign, and, in medically related cases, a physician must sign for consent).

3. Unless the participants agreed to an alternative arrangement, the participants' anonymity and confidentiality must be protected. They should not be able to be identified through the responses. The presentation of the data should not put them at risk of any negative consequences. Access to the data is specified and restricted by the researcher and the department.

Appendix B-4

Additional IRB information may be found at <http://www.research.nau.edu/vpr/IRB/index.htm>.

**4FRI Focus Group Participant Written Survey
Flagstaff, AZ November 2012**

Please check ONE answer for each question.

Question	A Lot	Some	A Little	Nothing At All	Don't Know/ Not Applicable
How much do you know about forest health and restoration?					
Before you were invited to this focus group, how much have you heard about the Four Forest Restoration Initiative Project through the media or from other sources?					
How much confidence do you have in the Forest Service to plan and implement the Four Forest Restoration Initiative Project successfully?					
Knowing the Forest Service is working with the Four Forest Restoration Initiative Stakeholder collaborative group, how much does this improve your confidence in the project's success?					
How concerned are you about forest fires damaging/destroying your home and/or property?					
How much have you done to protect your property from forest fires?					
How often do you use the Coconino/Kaibab National Forests for recreation?					

Based on your personal experience, if any, what level of smoke are you willing to accept as a byproduct of prescribed burning? **Check one answer.**

- _____ Heavy Smoke (*according to the Environmental Protection Agency (EPA): At risk adults and children should reduce prolonged or heavy activity*)
- _____ Moderate Smoke (*EPA: May be a health concern to unusually sensitive populations*)
- _____ Light Smoke (*EPA: Not considered a health impact*)
- _____ No Smoke

How many days per month you are willing to tolerate smoke from prescribed fire at each different smoke level. **Circle ONE answer for EACH level – light, moderate and heavy)**

	Number of Days				
Light Smoke	0	1-3	4-6	7-9	10+
Moderate Smoke	0	1-3	4-6	7-9	10+
Heavy Smoke	0	1-3	4-6	7-9	10+

Based on smoke levels from this last year (prescribed fire and wildfire) in your community, how do you perceive the impacts on your community as a whole? **Select one answer.**

- | | |
|--|--|
| <input type="checkbox"/> Very Negative | <input type="checkbox"/> Slightly Positive |
| <input type="checkbox"/> Negative | <input type="checkbox"/> Positive |
| <input type="checkbox"/> Slightly Negative | <input type="checkbox"/> Very Positive |
| <input type="checkbox"/> Neither Negative nor Positive | |

Before you attended this focus group today, how have you heard about the Four Forest Restoration Initiative (4FRI) Project? **Select all that apply.**

- Hadn't heard about the 4FRI Project until I was invited to the focus group.
- Newspaper
- Radio
- A presentation or program
- Four Forest Restoration Initiative Stakeholder's Website
- Forest Service Website
- Other website on the Internet
- Word of mouth (from a friend or colleague)
- Other (please specify): _____

Demographics:

Are you a part time or full time resident?
(Fulltime resident: lives in the area for 6 months or more each year)

- Part time resident Full time resident

Do you rent or own your home?
 Rent Own

How long have you lived in the Greater Flagstaff area?

- | | |
|---|---|
| <input type="checkbox"/> Less than one year | <input type="checkbox"/> 9-15 years |
| <input type="checkbox"/> 1-2 years | <input type="checkbox"/> 16-20 years |
| <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 21-30 years |
| <input type="checkbox"/> 6-8 years | <input type="checkbox"/> More than 30 years |

Appendix B-5

How close is your residence to the forest?

- | | |
|--|---|
| <input type="checkbox"/> Directly adjacent to the forest | <input type="checkbox"/> 2-3 miles |
| <input type="checkbox"/> Within a quarter mile | <input type="checkbox"/> 4-5 miles |
| <input type="checkbox"/> Within a half mile | <input type="checkbox"/> 6-10 miles |
| <input type="checkbox"/> Within 1 mile | <input type="checkbox"/> More than 10 miles |

Are you?

- Male Female

Select the best category that describes your age.

- | | |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> 18-19 | <input type="checkbox"/> 50-59 |
| <input type="checkbox"/> 20-29 | <input type="checkbox"/> 60-69 |
| <input type="checkbox"/> 30-39 | <input type="checkbox"/> 70 or older |
| <input type="checkbox"/> 40-49 | |

What is the highest year of school you have completed or the highest degree you have earned?

- Some school, but did not receive a high school diploma
- High school diploma
- Associates degree (2 year college degree)
- Bachelor's degree (4 year college degree)
- Master's degree
- PhD or equivalent (e.g. MD or Law)

Describe your occupation: _____

**4FRI Focus Group Participant Written Survey
Williams, AZ November 2012**

Please check ONE answer for each question.

Question	A Lot	Some	A Little	Nothing At All	Don't Know/ Not Applicable
How much do you know about forest health and restoration?					
Before you were invited to this focus group, how much have you heard about the Four Forest Restoration Initiative Project through the media or from other sources?					
How much confidence do you have in the Forest Service to plan and implement the Four Forest Restoration Initiative Project successfully?					
Knowing the Forest Service is working with the Four Forest Restoration Initiative Stakeholder collaborative group, how much does this improve your confidence in the project's success?					
How concerned are you about forest fires damaging/destroying your home and/or property?					
How much have you done to protect your property from forest fires?					
How often do you use the Coconino/Kaibab National Forests for recreation?					

Based on your personal experience, if any, what level of smoke are you willing to accept as a byproduct of prescribed burning? **Check one answer.**

- _____ Heavy Smoke (*according to the Environmental Protection Agency (EPA): At risk adults and children should reduce prolonged or heavy activity*)
- _____ Moderate Smoke (*EPA: May be a health concern to unusually sensitive populations*)
- _____ Light Smoke (*EPA: Not considered a health impact*)
- _____ No Smoke

Appendix B-6

How many days per month you are willing to tolerate smoke from prescribed fire at each different smoke level. **Circle ONE answer for EACH level – light, moderate and heavy)**

	Number of Days				
Light Smoke	0	1-3	4-6	7-9	10+
Moderate Smoke	0	1-3	4-6	7-9	10+
Heavy Smoke	0	1-3	4-6	7-9	10+

Based on smoke levels from this last year (prescribed fire and wildfire) in your community, how do you perceive the impacts on your community as a whole? **Select one answer.**

- | | |
|--|--|
| <input type="checkbox"/> Very Negative | <input type="checkbox"/> Slightly Positive |
| <input type="checkbox"/> Negative | <input type="checkbox"/> Positive |
| <input type="checkbox"/> Slightly Negative | <input type="checkbox"/> Very Positive |
| <input type="checkbox"/> Neither Negative nor Positive | |

Before you attended this focus group today, how have you heard about the Four Forest Restoration Initiative (4FRI) Project? **Select all that apply.**

- Hadn't heard about the 4FRI Project until I was invited to the focus group.
- Newspaper
- Radio
- A presentation or program
- Four Forest Restoration Initiative Stakeholder's Website
- Forest Service Website
- Other website on the Internet
- Word of mouth (from a friend or colleague)
- Other (please specify): _____

Demographics:

Are you a part time or full time resident?
(*Fulltime resident: lives in the area for 6 months or more each year*)

- Part time resident Full time resident

Do you rent or own your home?
 Rent Own

How long have you lived in the Greater Williams area?

- | | |
|---|---|
| <input type="checkbox"/> Less than one year | <input type="checkbox"/> 9-15 years |
| <input type="checkbox"/> 1-2 years | <input type="checkbox"/> 16-20 years |
| <input type="checkbox"/> 3-5 years | <input type="checkbox"/> 21-30 years |
| <input type="checkbox"/> 6-8 years | <input type="checkbox"/> More than 30 years |

Appendix B-6

How close is your residence to the forest?

- | | |
|--|---|
| <input type="checkbox"/> Directly adjacent to the forest | <input type="checkbox"/> 2-3 miles |
| <input type="checkbox"/> Within a quarter mile | <input type="checkbox"/> 4-5 miles |
| <input type="checkbox"/> Within a half mile | <input type="checkbox"/> 6-10 miles |
| <input type="checkbox"/> Within 1 mile | <input type="checkbox"/> More than 10 miles |

Are you?

- Male Female

Select the best category that describes your age.

- | | |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> 18-19 | <input type="checkbox"/> 50-59 |
| <input type="checkbox"/> 20-29 | <input type="checkbox"/> 60-69 |
| <input type="checkbox"/> 30-39 | <input type="checkbox"/> 70 or older |
| <input type="checkbox"/> 40-49 | |

What is the highest year of school you have completed or the highest degree you have earned?

- Some school, but did not receive a high school diploma
- High school diploma
- Associates degree (2 year college degree)
- Bachelor's degree (4 year college degree)
- Master's degree
- PhD or equivalent (e.g. MD or Law)

Describe your occupation: _____

**Annotated Survey
4FRI Focus Group Participant Written Survey
Flagstaff, AZ November 2012**

Q1. How much do you know about forest health and restoration?

Check ONE answer

	n	Valid Percent
A Lot	1	9.0
Some	9	82.0
A Little	1	9.0
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	11	100.0

Q2. Before you were invited to this focus group, how much have you heard About the Four Forest Restoration Initiative Project through the media or from other sources? **Check ONE answer**

	n	Valid Percent
A Lot	3	27.2
Some	4	36.3
A Little	3	27.2
Nothing At All	1	9.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	11	99.7

Q3. How much confidence do you have in the Forest Service to plan and implement the Four Forest Restoration Initiative Project successfully?

Check ONE answer

	n	Valid Percent
A Lot	7	64.0
Some	3	27.2
A Little	1	9.0
Nothing At All	0	0.0
Don't Know/ Not Applicable/ Answer Missing	0	0.0
Total	11	100.2

Q4. Knowing the Forest Service is working with the Four Forest Restoration Initiative Stakeholder collaborative group, how much does this improve your confidence in the project's success? **Check ONE answer**

	n	Valid Percent
A Lot	5	45.4
Some	4	36.3
A Little	2	18.1
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	11	99.8

Q5. How concerned are you about forest fires damaging/destroying your home and/or property? **Check ONE answer**

	n	Valid Percent
A Lot	8	73.0
Some	1	9.0
A Little	2	18.1
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	11	100.1

Q6. How much have you done to protect your property from forest fires?
Check ONE answer

	n	Valid Percent
A Lot	8	73.0
Some	3	27.2
A Little	0	0.0
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	11	100.2

Q7. How often do you use the Coconino/Kaibab National Forests for recreation? **Check ONE answer**

	n	Valid Percent
A Lot	9	82.0
Some	2	18.1
A Little	0	0.0
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	11	100.1

Q8. Based on your personal experience, if any, what level of smoke are you willing to accept as a byproduct of prescribed burning? **Check ONE answer**

	n	Valid Percent
Heavy Smoke *	5	45.4
Moderate Smoke **	6	55.0
Light Smoke ***	0	0.0
No Smoke	0	0.0
Total	11	100.4

* According to the Environmental Protection Agency (EPA): At risk adults and children should reduce prolonged or heavy activity

** EPA: May be a health concern to unusually sensitive population

*** EPA: Not considered a health impact

Q9. How many days per month you are willing to tolerate smoke from prescribed fire at each different smoke level. **Circle ONE answer for EACH level – light, moderate and heavy**

Number of Days	0		1-3		4-6		7-9		10+		Total	
	n	Valid %	n	Valid %	n	Valid %	n	Valid %	n	Valid %	n	Valid %
Light Smoke	0	0.0	1	9.1	2	18.1	3	27.2	5	45.4	11	99.8
Moderate Smoke	0	0.0	2	18.1	4	36.3	3	27.2	2	18.1	11	99.7
Heavy Smoke	1	9.1	7	63.6	1	9.1	1	9.1	1	9.1	11	100.0

Q10. Based on smoke levels from this last year (prescribed fire and wildfire) in your community, how do you perceive the impacts on your community as a whole?

Check ONE answer

	n	Valid Percent
Very Negative	0	0.0
Negative	2	18.1
Slightly Negative	2	18.1
Neither Negative nor Positive	2	18.1
Slightly Positive	0	0.0
Positive	1	9.0
Very Positive	2	18.1
Don't Know/Not Applicable/Answer missing	2	18.1
Total	11	99.5

Q11. Before you attended this focus group today, how have you heard about the Four Forest Restoration Initiative (4FRI) Project? *Select all that apply.*

	n	Valid percent
Hadn't heard about 4FRI until I was invited to the focus group	3	11.1
Newspaper	6	22.2
Radio	3	11.1
A presentation or program	2	7.4
Four Forest Restoration Initiative Stakeholders Website	2	7.4
Forest Service Website	2	7.4
Other website on the Internet	0	0.0
Word of mouth (from a friend or colleague)	6	22.2
Other (please specify):	2	7.4
Total	27	96.2

Demographics:

Q12. Are you a part time or full time resident?

(Fulltime resident: lives in the area for 6 months or more each year)

	n	Valid Percent
Part time resident	1	9.0
Full time resident	10	91.0
Total	11	100.0

Q13. Do you rent or own your home?

	n	Valid Percent
Rent	0	0.0
Own	11	100.0
Total	11	100.0

Q14. How long have you lived in the Greater Flagstaff area?

	n	Valid Percent
Less than one year	0	0.0
1-2 years	0	0.0
3-5 years	1	9.0
6-8 years	0	0.0
9-15 years	3	27.2
16-20 years	1	9.0
21-30 years	2	18.1
More than 30 years	4	36.3
Total	11	99.6

Q15. How close is your residence to the forest?

	n	Valid Percent
Directly adjacent to the forest	6	55.0
Within a quarter mile	2	18.1
Within a half mile	1	9.0
Within 1 mile	1	9.0
2-3 miles	1	9.0
4-5 miles	0	0.0
6-10 miles	0	0.0
More than 10 miles	0	0.0
Total	11	100.1

Q16. Are you?

	n	Valid Percent
Male	6	55.0
Female	5	45.4
Total	11	100.4

Q17. Select the best category that describes your age.

	n	Valid Percent
18-29	0	0.0
20-29	0	0.0
30-39	1	9.0
40-49	0	0.0
50-59	3	27.2
60-69	5	45.4
70 or older	2	18.1
Total	11	99.7

Q18. What is the highest year of school you have completed or the highest degree you have earned?

	n	Valid Percent
Some school, but did not receive a high school diploma	0	0.0
High school diploma	0	0.0
Associates degree (2 year college degree)	1	9.0
Bachelors degree (4 year college degree)	4	36.3
Masters degree	4	36.3
PhD or equivalent (e.g. MD or Law)	2	18.1
Total	11	99.7

Appendix B-7

Q19. Describe your occupation:

Physician - 1

Business owner -1

Insurance salesman - 1

Bookkeeper - 1

General manager - 1

Retired - 6

**Annotated Survey
4FRI Focus Group Participant Written Survey
Williams, AZ November 2012**

Q1. How much do you know about forest health and restoration?

Check ONE answer

	n	Valid Percent
A Lot	2	15.3
Some	6	46.1
A Little	4	31.0
Nothing At All	1	8.0
Don't Know/ Not Applicable/ Answer Missing	0	0.0
Total	13	100.4

Q2. Before you were invited to this focus group, how much have you heard About the Four Forest Restoration Initiative Project through the media or from other sources? **Check ONE answer**

	n	Valid Percent
A Lot	4	31.0
Some	2	15.3
A Little	5	38.4
Nothing At All	2	15.3
Don't Know/ Not Applicable/ Answer Missing	0	0.0
Total	13	100.0

Q3. How much confidence do you have in the Forest Service to plan and implement the Four Forest Restoration Initiative Project successfully?

Check ONE answer

	n	Valid Percent
A Lot	5	38.4
Some	6	46.1
A Little	1	8.0
Nothing At All	0	0.0
Don't Know/ Not Applicable/ Answer Missing	1	8.0
Total	13	100.5

Appendix B-8

Q4. Knowing the Forest Service is working with the Four Forest Restoration Initiative Stakeholder collaborative group, how much does this improve your confidence in the project's success? **Check ONE answer**

	n	Valid Percent
A Lot	3	23.0
Some	4	31.0
A Little	5	38.4
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	1	8.0
Total	13	100.4

Q5. How concerned are you about forest fires damaging/destroying your home and/or property? **Check ONE answer**

	n	Valid Percent
A Lot	8	62.0
Some	2	15.3
A Little	2	15.3
Nothing At All	0	0.0
Don't Know/ Not Applicable/Answer Missing	1	8.0
Total	13	100.6

Q6. How much have you done to protect your property from forest fires? **Check ONE answer**

	n	Valid Percent
A Lot	7	54.0
Some	3	23.0
A Little	2	15.3
Nothing At All	1	8.0
Don't Know/ Not Applicable/Answer Missing	0	0.0
Total	13	100.3

Q7. How often do you use the Coconino/Kaibab National Forests for recreation? **Check ONE answer**

	n	Valid Percent
A Lot	7	54.0
Some	4	31.0
A Little	0	0.0
Nothing At All	1	8.0
Don't Know/ Not Applicable/Answer Missing	1	8.0
Total	13	101.0

Q8. Based on your personal experience, if any, what level of smoke are you willing to accept as a byproduct of prescribed burning? **Check ONE answer**

	n	Valid Percent
Heavy Smoke *	3	23.0
Moderate Smoke **	6	46.1
Light Smoke ***	2	15.3
No Smoke	1	7.6
Don't Know/ Not Applicable/Answer Missing	1	7.6
Total	13	99.6

* According to the Environmental Protection Agency (EPA): At risk adults and children should reduce prolonged or heavy activity

** EPA: May be a health concern to unusually sensitive population

*** EPA: Not considered a health impact

Q9. How many days per month you are willing to tolerate smoke from prescribed fire at each different smoke level. **Circle ONE answer for EACH level – light, moderate and heavy.**

Number of Days	0		1-3		4-6		7-9		10+		Don't Know/ Not Applicable/ Answer Missing		Total	
	n	Valid %	n	Valid %	n	Valid %	n	Valid %	n	Valid %	n	Valid %	n	Valid %
Light Smoke	0	0.0	3	23.0	5	38.4	2	15.3	1	7.6	2	15.3	13	99.6
Moderate Smoke	1	7.6	5	38.4	3	23.0	1	7.6	1	7.6	2	15.3	13	99.5
Heavy Smoke	4	30.7	3	23.0	4	30.7	0	0.0	1	7.6	1	7.6	13	99.6

Q10. Based on smoke levels from this last year (prescribed fire and wildfire) in your community, how do you perceive the impacts on your community as a whole?

Check ONE answer

	n	Valid Percent
Very Negative	1	7.6
Negative	1	7.6
Slightly Negative	5	38.4
Neither Negative nor Positive	2	15.3
Slightly Positive	1	7.6
Positive	2	15.3
Very Positive	0	0.0
Don't Know/ Not Applicable/Answer Missing	1	7.6
Total	13	99.4

Q11. Before you attended this focus group today, how have you heard about the Four Forest Restoration Initiative (4FRI) Project? *Select all that apply.*

	n	Valid Percent
Hadn't heard about 4FRI until I was invited to the focus group	3	12.0
Newspaper	6	23.0
Radio	1	4.0
A presentation or program	4	15.3
Four Forest Restoration Initiative Stakeholders Website	1	4.0
Forest Service Website	1	4.0
Other website on the Internet	0	0.0
Word of mouth (from a friend or colleague)	7	27.0
Other (please specify):	3	12.0
Total	26	101.3

Demographics:

Q12. Are you a part time or full time resident?
(*Fulltime resident: lives in the area for 6 months or more each year*)

	n	Valid Percent
Part time resident	0	0.0
Full time resident	13	100.0
Total	13	100.0

Q13. Do you rent or own your home?

	n	Valid Percent
Rent	3	23.0
Own	10	77.9
Total	13	100.9

Q14. How long have you lived in the Greater Williams'' area?

	n	Valid Percent
Less than one year	0	0.0
1-2 years	2	15.3
3-5 years	0	0.0
6-8 years	0	0.0
9-15 years	4	31.0
16-20 years	0	0.0
21-30 years	2	15.3
More than 30 years	5	38.4
Total	13	100.0

Q15. How close is your residence to the forest?

	n	Valid Percent
Directly adjacent to the forest	6	46.1
Within a quarter mile	3	23.0
Within a half mile	1	7.6
Within 1 mile	1	7.6
2-3 miles	2	15.3
4-5 miles	0	0.0
6-10 miles	0	0.0
More than 10 miles	0	0.0
Total	13	99.6

Q16. Are you?

	n	Valid Percent
Male	8	62.0
Female	5	38.4
Total	13	100.4

Q17. Select the best category that describes your age.

	n	Valid Percent
18-29	0	0.0
20-29	0	0.0
30-39	0	0.0
40-49	3	23.0
50-59	2	15.3
60-69	4	31.0
70 or older	4	31.0
Total	13	100.3

Q18. What is the highest year of school you have completed or the highest degree you have earned?

	n	Valid Percent
Some school, but did not receive a high school diploma	0	0.0
High school diploma	5	38.4
Associates degree (2 year college degree)	0	0.0
Bachelors degree (4 year college degree)	4	30.7
Masters degree	3	23.0
PhD or equivalent (e.g. MD or Law)	0	0.0
Don't Know/ Not Applicable/Answer Missing	1	7.6
Total	13	99.7

Appendix B-8

Q19. Describe your occupation:

Contractor - 2

Landlord - 1

Entrepreneur - 1

Retired - 4

Real estate broker - 2

Newspaper publisher - 1

Chamber of Commerce president - 1

City clerk - 1

4FRI Focus Group Protocol Outline
NFF funded Socioeconomic Monitoring
Locations: Flagstaff and Williams, AZ
November 2012 (2 hrs.)

I. Intro. 6:30-6:45 (15 minutes)

Ground rules/Introductions:

- Want everyone to have a chance to voice his or her opinions, so as the facilitator, I may stop you if I feel we are running out of time. In addition, for those who are quiet, I may call on you. Each section is timed, so I will move on to another subject when the time has lapsed.
- There are 5 subjects that I will guide you through and we'll spend 15 to 20 minutes on each subject. I would like for you to stay on the subject as it is raised. At the end, you will have a chance to discuss other issues that we have not covered in the session. Don't be afraid to voice your views; we want to know your honest opinions. The information gathered here will be reported as a group response. None the answers you provide will be connected to your identifying information in any way.
- If you need to use the restroom, please leave if necessary, but there will not be a break during the session. They are located at _____
- Introductions: State your name and your occupation or interest in the community.

Background:

The Four Forest Restoration Initiative, otherwise known as the "4FRI," is a collaborative effort to restore forest ecosystems on portions of four National Forests - Coconino, Kaibab, Apache-Sitgreaves, and Tonto - along the Mogollon Rim in northern Arizona.

These forests have been degraded by unsustainable historical land uses and fire exclusion. The result is overgrown forests with thin, unhealthy trees and the threat of unnaturally severe wildfire.

The vision of 4FRI is restored forest ecosystems that support natural fire regimes, functioning populations of native plants and animals, and forests that pose little threat of destructive wildfire to thriving forest communities, as well as support sustainable forest industries that strengthen local economies while conserving natural resources and aesthetic values.

The Coconino and Kaibab National Forests are in the 1st analysis area in the 4FRI project. Over a ten-year period, approximately 400,000 acres will be thinned, and between 175,000 to 600,000 acres will be control burned. In addition, springs, meadows, Aspen groves and watersheds will be restored.

All of you are here to gauge your opinions and perceptions of how his project will affect you and your community.

II. Fire 6:45- 7:05 (20 minutes) – as it relates to restoration and its return to the ecosystem

The 4FRI project has developed a number of goals for the project. I am first going to read you a set of goals and, based on these, ask you questions related to these goals.

I. GOAL: There is broad public awareness, understanding, knowledge and support for collaboratively based forest restoration decisions, processes, and outcomes, including the use of fire as a management tool.

III. GOAL: The public understands, accepts, and supports fire's natural role in forest ecosystems.

Q1: Can you tell me what you know about fire's natural role in the ponderosa pine forests' ecosystem?

Q2: How do you think fire should be used as a management tool?

IV. GOAL: Rural communities are protected from high-severity fire and their quality of life is enhanced through forest restoration.

Q3: As the 4FRI forest restoration projects progress, to what degree do you believe your community will be protected from high-severity wildfires?

III. Smoke 7:05-7:25 (20 minutes)

II. GOAL: The public is knowledgeable/understands, accepts/supports the byproduct of smoke from prescribed and managed fires.

PA Comment Issue: Prescribed Burning Smoke

Q1: What are your major concerns with smoke in the implementation of 4FRI and how do you balance these against other benefits and impacts of forest restoration?

Q2: What tradeoffs do you see and, are you willing to make them?

Q3: [If time allows] How do you feel about prescribed and managed fires-those that start naturally from lightening strikes, but are managed and allowed to burn?

IV. Logging trucks 7:25-7:40 (15 minutes) – increased traffic on the road

Source: 4FRI Press conference contractor announcement-Little America

Q1: The 4FRI project will occur over the next 10 years in the Coconino and Kaibab National Forests. When implementation is in full swing, it's estimated that 120,000 logging trucks will be on the roads each year (source: SE Section Draft DEIS). This translates to approximately 460 trucks each day dispersed on the roads throughout both Forests. How do you feel about the logging trucks on the road?

V. Large trees 7:40-7:55 (15 minutes)– protection, enhancement, don't cut trees mentality

PA Comment Issue: Conservation of large trees and issues

Q1: Forest thinning involves cutting many of the trees in the forest; however, most trees that will be thinned will be less than 16 inches diameter at breast height. The larger trees that are cut (over 16" DBH) will be diseased trees, trees that are hazardous, trees in areas where the managements goals are to restore seeps and springs, meadows or aspens and trees will be thinned in areas where there are a

large proportion of mid-sized trees with a high fire risk. How do you feel about this type of forest thinning?

VI. Recreational values 7:55-8:10 (15 minutes)

V. GOAL: Social values and recreational opportunities are protected and/or enhanced through forest restoration activities.

Q1: How do you think the 4FRI project will affect recreational opportunities such as, hiking and biking trails, camping, wildlife viewing, hunting and water recreation activities, such as fishing that occur at lakes, streams and other waterways?

Q2: How do you think the 4FRI project will affect other forest's aesthetic values, such as hiking views, forest landscapes, and archeological sites?

VII. What are the other issues? 8:10-8:30 (20 minutes)

Q1: Now that we've had a chance to discuss several issues that will arise from the 4FRI Project, are there other topics that you can think of that we have not covered this evening?

VIII. Wrap up: Anne's contact info (business card) – can contact me with any thoughts you'd like to add (phone, e-mail, mail)

IX. Drawing for \$100

Sources:

* *GOALS: Source: SE Monitoring Framework 4FRI Social Systems Framework*
Erik Nielsen and Katie Sauerbrey's Community Forums (spreadsheet)
PA Comments
4FRI Contractor Press Conference – Little America Hotel

4FRI Interview Protocol (USFS Personnel)
NFF funded Socioeconomic Monitoring
May 2013
(1 hour)

These questions will be asked in a conversational style, varying the order and exact wording based on the direction of the interview and the type of person being interviewed.

I. Intro. Purpose of the Interview:

a. Verbal Consent

My name is Anne Mottek Lucas from Mottek Consulting. The National Forest Foundation is funding this project for the 4FRI. Today you will be participating in an interview, which will take about an hour. Your participation is voluntary, you can refuse to answer any question, and you have the option of stopping the interview at any time. I would like to audio-record this interview. I will use the recording in the data analysis but we will not play the recording or show the transcripts to people outside of our research team. Would that be okay? Yes _____ No _____

We may use short quotes in our publications; however, we will not identify them with your name if that is acceptable to you. Is this okay? Yes _____ No _____

Taking part in this interview is your agreement to participate.

Do you have any questions for me before we start?

b. Purpose

The 4FRI project represents an opportunity to better understand the social and economic benefits that may be realized. In assessing social systems affected by the 4FRI project, understanding the general public's perceptions that include awareness, knowledge and support is critical to the project's success. Your interview is one of six personal interviews we will conduct with Forest Service personnel in the 1st Analysis Area. These interviews will assist in implementing the Phase I component of social and economic monitoring. Information we collect in these interviews will be added to the qualitative data we've already collected in two focus groups of the general public conducted in Williams and in Flagstaff. Results from this first phase will provide a basis to conduct Phase II, which will be a more structured study. Issues that were raised in the focus groups and in these interviews will be applied to understand broad public opinion and attitudes towards the 4FRI project before implementation begins. Results will be reported as a group response and individuals will not be identified by name. A final report will be submitted to the National Forest Foundation and the 4FRI Stakeholders.

All the questions I ask today are in the context of the 4FRI project.

USFS' Role in the Community

1. As you think about the 4FRI project, can you describe the Forest Service's role in maintaining and enhancing the social conditions of the community?
2. As you think about the 4FRI project, can you describe the Forest Service's role in maintaining and enhancing the economic conditions of the community?
3. How broadly do you define the community your Forest serves?

Issues/Concerns/Opportunities with the General Public

4. Currently, what are the main issues the public has with the USFS?
 - a. What issues do they complain about the most?
 - b. How can the USFS address these issues?
 - c. How can the USFS work with collaborative partners to address these issues?
 - d. Currently, what opportunities are there to improve the USFS' relationship w/the general public?

5. Once 4FRI implementation occurs, what do you think will be the main issues the public has with the USFS? Are they the same as you just described or do you think they will be different?
 - a. What issues will they complain about the most?
 - b. How can the USFS address these issues?
 - c. How can the USFS work with collaborative partners to address these issues?
 - d. Once 4FRI implementation occurs, what opportunities are there to improve the USFS' relationship w/the general public?

6. In thinking about working with the general public as the 4FRI project progresses, what are your main concerns?
 - a. How can the USFS address these?
 - b. How can the USFS work with collaborative partners to address these?
 - c. In this context, are there opportunities we haven't discussed?

7. Can you describe any other issues in working with the public that you believe will arise in the future; say five, ten years from now regarding the 4FRI project?
 - a. How can the USFS address these?
 - b. How can the USFS work with collaborative partners to address these?
 - c. What opportunities do you foresee in working with the public in the future, say five, ten years from now?

Monitoring

8. In the current social monitoring plan developed by the 4FRI Stakeholder group there are a number of measures for public awareness, knowledge and support, such as the role of fire, smoke, restoration and fire as a management tool as well as the adoption of Fire Wise and defensible space actions. In thinking about issues identified by socioeconomic monitoring results, can you describe what the USFS plans to do to address these through public outreach?

9. What do you think are the most important social monitoring questions we should answer as we develop our social monitoring plan?

10. Part of this project is to streamline expenditure, revenue and employment data reporting by collaboratively designing prepared protocols and contractor reporting forms to capture relevant economic data. What do you think are the most important

economic monitoring metrics we should collect as we develop our contractor protocol and data reporting form?

11. How do you see socioeconomic monitoring fitting into adaptive management?
 - a. In terms of socioeconomic effects, how will the USFS apply the monitoring information to improve the process through adaptive management? How do you envision initiating this and developing a protocol?

Prospect on Success of the 4FRI Project:

[If there's time]

12. As you know, one of the main goals of the 4FRI project is restored forest ecosystems that support natural fire regimes and reduce the threat of destructive wildfire to communities.

- a. Can you describe whether you believe this is achievable?
- b. Can you describe whether you believe this is sustainable?
- c. What needs to happen to make this a reality?

13. Another main goal of the 4FRI project is to support sustainable forest industries that strengthen local economies.

- a. Can you describe whether you believe this is achievable?
- b. Can you describe whether you believe this is sustainable?
- c. What needs to happen to make this a reality?

Four Forest Restoration Contractor Reporting Protocol

Data Reporting

1. Data will be reported by the following entities:
 - a. Contractor's mill
 - b. Concord Blue's biomass energy conversion facility
 - c. Logging subcontractors (estimated at 12)
2. Data will be reported for the calendar year.
3. The contractor will collect the data from entities listed above, compile and submit one report on an annual basis.
4. The report will be submitted at the end of December of each calendar year.
5. Local is defined as a 50-mile radius.
6. This Protocol and Contractor Reporting Form will be administered and revised to meet economic data collection needs as arise through initial data collection efforts.
7. In order to ground truth IMPLAN, the following metrics are required:
 - a. Average annual employment (full-time and part-time)
 - b. Average annual labor income (including proprietors' income)
 - c. Volume of forest products processed, by type (e.g., biomass or sawlogs)
 - d. Percentage of volume processed attributable to NFS lands

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**Contractor/Sub Contractor Reporting Form
Four Forest Restoration Initiative**

General Business Information	
Contractor Business Name:	First & Last Name of Principal Completing Report and Business Title:
Address (where main operations occur):	Principal's Telephone:
City and State:	Principal's Fax:
Zip Code:	Principal's E-mail:
Number of milling businesses reporting:	
Number of logging businesses reporting:	
Number of biomass conversion businesses reporting:	

Appendix D-2

Milling - Employment Information <i>Please complete the following table for the reporting calendar year</i>									
Full-Time Year-Round Employees (work an avg. of 40 hour/week)									
# of year-round full-time (FT) employees ?	Avg. length of FT employment (months)?	Total # of FT hours worked?	Total labor income FT (including proprietor s' net income)?	# of FT employees with health benefits (or payment in lieu of)?	# of FT employees who completed on-the-job training?	# of FT employees who had job related illnesses/injuries resulting in lost work time?	What are the zip codes of FT employee's residence?	FT Employee Demographics:	
								# FT employees of Hispanic Origin?	# FT employees who are male/female?
								Ethnicity: # of FT employees: White, African American, American Indian/Alaskan Native, Asian, Pacific Islander or Other (specify)?	
Part-Time Year-Round Employees (work less than an avg. of 40 hour/week)									
# of year-round part-time (PT) employees ?	Avg. length of PT employment (months)	Total # of PT hours worked?	Total labor income PT?	# of PT employees with health benefits (or payment in lieu of)	# of PT employees who completed on-the-job training?	# of PT employees who had job related illnesses/injuries resulting in lost work time?	What are the zip codes of PT employee's residence?	PT Employee Demographics:	
								# PT employees of Hispanic Origin?	# PT employees who are male/female?
								Ethnicity: # of PT employees: White, African American, American Indian/Alaskan Native, Asian, Pacific Islander or Other (specify)?	
Seasonal Employees (Do not work year-round)									
# of seasonal employees ?	Avg. length of seasonal employment (months)?	Total # of seasonal hours worked?	Total labor income seasonal?	# of seasonal employees with health benefits (or payment in lieu of)	# of seasonal employees who completed on-the-job training?	# of seasonal employees who had job related illnesses/injuries resulting in lost work time?	What are the zip codes of seasonal employee's residence?	Seasonal Employee Demographics:	
								# seasonal employees of Hispanic Origin?	# of seasonal employees who are male/female?
								Ethnicity: # of seasonal employees: White, African American, American Indian/Alaskan Native, Asian, Pacific Islander or Other (specify)?	

Appendix D-2

Logging - Employment Information <i>Please complete the following table for the reporting calendar year</i>									
Full-Time Year-Round Employees (work an avg. of 40 hour/week)									
# of year-round full-time (FT) employees ?	Avg. length of FT employment (months)?	Total # of FT hours worked?	Total labor income FT (including proprietor s' net income)?	# of FT employees with health benefits (or payment in lieu of)?	# of FT employees who completed on-the-job training?	# of FT employees who had job related illnesses/injuries resulting in lost work time?	What are the zip codes of FT employee's residence?	FT Employee Demographics:	
								# FT employees of Hispanic Origin?	# FT employees who are male/female?
								Ethnicity: # of FT employees: White, African American, American Indian/Alaskan Native, Asian, Pacific Islander or Other (specify)?	
Part-Time Year-Round Employees (work less than an avg. of 40 hour/week)									
# of year-round part-time (PT) employees ?	Avg. length of PT employment (months)	Total # of PT hours worked?	Total labor income PT?	# of PT employees with health benefits (or payment in lieu of)	# of PT employees who completed on-the-job training?	# of PT employees who had job related illnesses/injuries resulting in lost work time?	What are the zip codes of PT employee's residence?	PT Employee Demographics:	
								# PT employees of Hispanic Origin?	# PT employees who are male/female?
								Ethnicity: # of PT employees: White, African American, American Indian/Alaskan Native, Asian, Pacific Islander or Other (specify)?	
Seasonal Employees (Do not work year-round)									
# of seasonal employees ?	Avg. length of seasonal employment (months)?	Total # of seasonal hours worked?	Total labor income seasonal?	# of seasonal employees with health benefits (or payment in lieu of)	# of seasonal employees who completed on-the-job training?	# of seasonal employees who had job related illnesses/injuries resulting in lost work time?	What are the zip codes of seasonal employee's residence?	Seasonal Employee Demographics:	
								# seasonal employees of Hispanic Origin?	# of seasonal employees who are male/female?
								Ethnicity: # of seasonal employees: White, African American, American Indian/Alaskan Native, Asian, Pacific Islander or Other (specify)?	

Appendix D-2

Logging - Operational Costs of Treatment (non-payroll expenditures) _____ Check here if does not apply	
<i>Please complete the following table for the reporting calendar year</i>	
Operation	Annual Cost
Mobilization: move equipment from site to site, to move operators (daily) from home base to site.	
Loading: cutting, skidding, delimiting, piling slash, and loading stems.	
Hauling: transport costs from landing to processing site (time & distance); vehicle maintenance/parts	
Equipment: (new)	
Other overhead	

Milling - Production Costs _____ Check here if does not apply	
<i>Please complete the following table for the reporting calendar year</i>	
Type	Annual Cost
Raw material	
Mill equipment	
Mill parts	
Heavy equipment	
Heavy equipment parts	
Utilities	
Other (specify): _____	
Total	

Appendix D-2

Milling - Type of Product _____ Check here if does not apply	
<i>Please complete the following table for the <u>reporting calendar year</u></i>	
Type	Green Tons *
Log Processing (Finished Product)	
Biomass (Fuel-Petroleum Products)	
Biomass (Energy)	
Other (specify): _____	
Total	

* Green tons reported from USFS scale.

Milling - Type/Volume/Value _____ Check here if does not apply			
<i>Please complete the following table for the <u>reporting calendar year</u></i>			
Type wood biomass material utilized	Volume utilized/processed (Green Tons)	\$ value of wood products	Percent of volume harvested from USFS lands
Clean chips			
Dirty chips			
Round wood			
Saw timber			
Other (specify) _____			
Total			

Appendix D-2

Milling - Production			___ Check here if does not apply
<i>Please complete the following table for the reporting calendar year</i>			
Type of products *	Volume utilized/processed (Green Tons)	Percent sold/distributed within a 50 mile radius	\$ value of wood products
<i>Finished wood products</i>			
<i>Panels</i>			
<i>Biomass-energy</i>			
<i>Biomass-petroleum products</i>			
Pellets			
Pallets			
Molding			
Small lumber			
Livestock bedding			
Soil fertilizers			
OSB			
Plywood			
Particle board			
Fiberboard			
Round wood products			
Other (specify) _____			
Total			

* Top four categories are expected to be the majority of production. ** Metrics in red – necessary to ground-truth IMPLAN

Note: In order to ground truth IMPLAN, will need the following information from the contractors/subcontractors:

1. Average annual employment (full-time and part-time)
2. Average annual labor income (including proprietors' income)
3. Volume of forest products processed, by type (e.g., biomass or sawlogs)
4. Percentage of volume processed attributable to NFS lands

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