Colorado Front Range Collaborative Forest Landscape Restoration Project:

Social and Economic Monitoring Report for 2013

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Executive Summary

Colorado's Front Range landscape holds tremendous social, economic, and ecological value. The Colorado Front Range Collaborative Forest Landscape Restoration Project (FR-CFLRP) intends to protect these values through forest restoration across the 1.5 million-acre collaboratively identified landscape identified in its CFLRP proposal and work plan. The FR-CFLRP is overseen by the Front Range Roundtable (FRR), a longstanding forest collaborative, in conjunction with the Arapaho-Roosevelt and Pike-San Isabel National Forests.

This report presents the findings of the social and economic monitoring assessment of the FR-CFLRP for calendar year 2013-2014. This project-level assessment summarizes the funding and accomplishments outlined in the fiscal year (FY) 2013 annual report, and identifies the local economic contributions and wood utilization associated with the FR-CFLRP task orders in calendar year 2013.

FR-CFLRP Funding and Accomplishments

Each Regional Forester is required to prepare an annual report describing the work accomplished and the sources of funding of the CFLR projects. This section provides an overview of the information provided in the FY 2013 annual report for the FR-CFLRP to provide readers with an improved understanding of the funding, as well as the collaborative accomplishments the group has achieved.

The primary source of funding toward the CFLR projects is the Congressional appropriations. A total of $2,494,072 was appropriated to the FR-CFLRP by Congress for fiscal year 2013. USFS Chief Tidwell supplemented the $2.5 million appropriated funds with $847,442 carryover funds from the previous year. The resulting $3,341,514 total of CFLR funds was used to complete work in the FR-CFLRP project area in FY 2013 with a total of 2,978 acres treated on National Forest System land.

A total of $3,919,618 in matching funds was also used to complete work for the FR-CFLRP in fiscal year 2013. This included: 1) $2,022,968 in USFS matching funds, which were primarily used to accomplish watershed restoration, road decommissioning, noxious weed control, and reforestation activities; 2) 'Funds contributed through agreements' with partner organizations to implement and monitor efforts within the CFLR project area totaling $1,710,902; 3) 'Partner In-Kind Contributions' that totaled $153,705 and went toward monitoring efforts and collaborative meeting attendance; and 'Service work accomplishment through goods-for services funding…', which are the stewardship credits the contractor submits in return for removing value-added biomass, equal to $32,043 in fiscal year 2013.

Leveraged funds, which are funds used by partners to accomplish restoration activities on non-National Forest System lands associated with the FR-CFLRP project area, totaling $35,874,593 were

contributed by six partners: The Coalition for the Upper South Platte, Denver Water, The Colorado State Forest Service, Colorado Springs Utilities, The Natural Resources Conservation Service, and The Waldo Recovery Group.

Although the annual report identifies over two dozen performance measures for the CFLRPs, three significant accomplishments were identified by the USFS project leaders in addition to the treatment and fund matches identified above:

- 5,758 acres of forest vegetation improvements;
- 3,003 acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions; and
- 9,625 acres of wildland-urban interface high priority hazardous fuels treatment.

Economic Contributions

The opportunity to create jobs and support local economies is a high priority for the FR-CFLRP. A detailed analysis of the contract-level economic contributions in calendar year 2013 was carried out to identify the extent these economic goals had been met. It should be noted that the economic impact estimates in this analysis contrast with the estimates reported in the *FY 2013 Front Range CFLRP Annual Report* due to differences in methodologies and data assumptions (USFS 2013; outlined in Appendix C).

The FR-CFLRP contractor accomplished work on six task orders in calendar year 2013. Three task orders associated with the FR-CFLRP were initiated in 2013, with one of these task orders fulfilled and two partially completed by the year's end. An additional three task orders initiated in 2012 were completed in 2013. In addition, the Colorado Forest Restoration Institute received CFLR funding for monitoring and consulting services, and the Arapaho-Roosevelt and Pike-San Isabel National Forests spent approximately $80,000 for common stand exams in the treatments areas.

The economic effects of the restoration activities and monitoring efforts were identified using Input-Output (I-O) modeling of pertinent operational expenditure and labor information obtained from the contractors. Our analysis estimates the restoration and monitoring activities contributed approximately $276,760 in labor income and $524,672 in GDP to the local economy in calendar year 2013 (Table 1). These contributions to the local economy were stimulated by expenditures as well as labor income.

Table 1. Economic Contributions of Front Range CFLR Task Orders and Monitoring in 2013

	Employment (Full- and part-time jobs)	Labor Income	Value Added (GDP)
FR-CFLRP Task Orders:	11.0	$243,067	$463,942
FR-CFLRP Monitoring:	3.9	$33,693	$60,730
Total:	14.9	$276,760	$524,672

In addition, nearly 15 full- and part-time jobs were calculated. All of the primary employees reside within Colorado and are able to commute to work. The FR-CFLRP forest contractor subcontracts with other companies to assist with forest management and road operations. The FR-CFLRP forest contractor was responsible for 44 percent of the total number of hours billed, with most of the mechanical work being completed by the contractor and a majority of the manual work completed by subcontractors based in Colorado, Oregon, Florida, California, and Montana.

Recommendations for Future Monitoring – Economic Contributions

1. The 2011, 2012, and 2013 FR-CFLRP monitoring of local economic impacts used labor and operational expenditures obtained directly from the contractor. This analysis adds to the national fiscal year report by providing a more locally-based understanding of the project's social and economic impact. This project-level analysis should continue on an annual basis so economic trends can be tracked over time.

Wood Utilization

A total of 1,811 acres were treated under the FR-CFLRP in 2013, with 718 acres treated on the Pike-San Isabel National Forest and 1,093 acres treated on the Arapaho-Roosevelt National Forest. The majority (66 percent) of the materials from the Pike-San Isabel was removed through mechanical treatments and 34 percent were removed through manual treatments. In contrast, 23 percent of the treatments on the Arapaho-Roosevelt were completed mechanically and 77 percent were completed through manual treatments. The material harvested manually was not available for value-added uses, whereas 99 percent of the materials in the mechanized units were. This is due to the types and quality of materials removed and the location of these treatments. These treatment prescriptions were identified to meet the restoration goals outlined by the FR-CFLR collaborative and the Pike & San Isabel and Arapaho & Roosevelt National Forest plans.

All of the value-added materials removed from these forests through the Colorado Front Range CFLR project were purchased by three Colorado businesses. Two businesses purchased materials from the PSI contract work, and another business purchased materials coming from both the PSI and the AR. These businesses were located within or adjacent to the counties where work was completed – Fremont, Pueblo, and Weld Counties. Estimates of the types of products developed from these materials were provided by the contractor; all of the biomass material was sold as saw-timber and is assumed to have been processed into dimensional lumber, a high value product.

Recommendations for Future Monitoring – Wood Utilization

1. We recommend conducting additional analysis to calculate the local economic effects of wood utilization associated with the FR-CFLRP task orders.

Collaboration

Collaboration is a key component of the Front Range Roundtable. A baseline measure of collaboration was established through key informant interviews conducted by the Colorado Forest Restoration Institute for a 2012 collaboration case study. Additional interviews with key informants will be conducted every 3-5 years to track the challenges, achievements, and lessons learned associated with the FR-CFLRP collaborative process.

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Goals and Indicators

The Colorado Front Range Collaborative Landscape Restoration Project (FR-CFLRP) is one of 23 projects funded nationally under the Collaborative Forest Landscape Restoration program of the USDA Forest Service (USFS). It is intended to accelerate ongoing forest restoration treatments that provide long-lasting ecological, social and economic benefits across a 1.5 million-acre landscape covering parts of the Arapaho-Roosevelt and Pike-San Isabel National Forests in Colorado. This project will facilitate additional treatment of approximately 32,000 high-priority acres on National Forest System (NFS) lands within the Front Range Roundtable's designated 800,000-acre restoration zone and will be enhanced by existing and future treatments on adjacent federal and non-federal lands. A large portion of the 800,000 acre restoration zone is within the wildland-urban interface and will be the focus of the 32,000 acres of treatment.

More than 70 percent of the forests (both federal and non-federal) within this proposed area exhibit a high to very high degree of ecological departure from historic norms and are susceptible to uncharacteristic high intensity wildfire and insect and disease infestations. These conditions increasingly threaten human health and well-being, as well as critical ecosystem services throughout the region. Through strategic placement of treatments, the FR-CFLRP plans to restore historic fire regimes, including low intensity wildland fires, with a goal of reducing risks to the ecosystem and communities and lowering suppression costs. Much of the area is deemed critical for protecting communities and municipal watersheds (which supply drinking water to over 75 percent of Colorado's population) from the impacts of uncharacteristic fire.

Project treatments are being strategically placed to maximize timely implementation and benefits on the ground. The first three years of treatment have focused on areas within the Roundtable's restoration zone where: 1) National Environmental Policy Act (NEPA) review is complete; 2)

complementary work has already occurred or is underway and can be leveraged for a larger-scale outcome; 3) both ecological and community protection priorities can be simultaneously addressed; 4) work by non-federal partners on adjacent lands will complement management on federal lands; and/or 5) opportunity exists to create jobs and support local economies.

Opportunities for job creation, business support and development, and meaningful biomass utilization are emphasized in the design and implementation of treatments. The goal of the socioeconomic monitoring for 2013-2014 was to measure the wood utilization and economic contributions of the FR-CFLRP project study area and to further develop a baseline measure for future monitoring efforts. The socioeconomic monitoring plan was established upon: 1) topics and indicators identified by the FR-CFLRP monitoring group, and 2) national CFLR program monitoring outcomes and indicators. The monitoring plan identifies three key objectives for the 2013 socioeconomic assessment:

1. Provide a detailed narrative of the *FY2013 CFLRP Annual Report*.
2. Determine the economic contributions associated with the FR-CFLRP project funded task orders and monitoring efforts.
3. Measure the types and amounts of wood utilization that occurred as a result of these funded task orders.

The remainder of this report presents the findings associated with each objective. Subsequent appendices provide background information to the Collaborative Forest Landscape Restoration program and the Front Range Roundtable, and the methods used to obtain this data.

Findings

The following subsections describe the FR-CFLRP funding and accomplishments for fiscal year 2013, and outline the economic contributions and wood utilization associated with the FR-CFLRP in calendar year 2013.

FR-CFLRP Funding and Accomplishments

This section provides an overview of the sources of funding and key accomplishments identified in the USFS *Colorado Front Range CFLRP Annual Report* for Fiscal Year 2013 (USDA Forest Service, 2014). The regional foresters are required to prepare an annual report describing the work accomplished and an evaluation of progress for each CFLR project within their region. The annual report records the sources of funding and the accomplishments of the CFLR projects.[1] Six funding sources are documented in the report – the amount of appropriated funding, four types of matching funds, and leveraged funds. This section provides an overview of the information provided in the annual report for fiscal year 2013 to provide readers with an improved understanding of the funding, as well as the collaborative accomplishments achieved.

Collaborative Forest Landscape Restoration Funds

The Collaborative Forest Landscape Restoration (CFLR) funds are appropriated by Congress on an annual basis to each of the CFLR projects. A total of $2,494,072 was appropriated to the Front Range CFLRP (FR-CFLRP) by Congress for FY2013. USFS Chief Tidwell supplemented the $2.5 million with $847,442 carryover funds from the previous year. The resulting $3,341,514 total of CFLR funds were

[1] The annual report records: the sources of funding; how the CFLR work has contributed toward meeting performance measures outlined in the USFS 10 year Comprehensive Strategy Implementation Plan (2006); the assumptions used to generate numbers and/or percentages entered into the TREAT model; A description of other community benefits achieved; a description of the multiparty monitoring efforts; the Fiscal Year accomplishments; a description of the total acres treated during the CFLRP process; the fire management activities which have occurred in the project area; a description of challenges associated with implementing the CFLRP; and anticipated management activities for the following fiscal year.

used to complete hazardous fuels reduction and restoration activities in the FR-CFLRP project area in FY2013, with a total of 2,978 cumulative footprint acres treated on National Forest System lands.

Matching Funds

A total of $3,919,618 in matching funds was reported for FY2013. The matching funds are defined as any non-CFLR funds from within the USDA Forest Service and/or external partners used to conduct work on national forest system lands associated with the CFLR project. There are four types of matching funds reported. The first are Forest Service matching funds, defined as any non-CFLR funds that are used to complete work in the CFLR project area. In fiscal year 2013 the FR-CFLRP used a total of $2,022,968 Forest Service matching funds. The Forest Service matching funds were used to purchase smoke permits for pile burning and to accomplish watershed restoration, road decommissioning, noxious weed control, and reforestation activities.

The second type of matching funds reported are 'Funds contributed through agreements' with partner organizations to implement and monitor efforts on National Forest System lands within the CFLR project area. The total amount of funds contributed through agreements was $1,710,902 in fiscal year 2013. The partner contributions included:

- Denver Water contributed $813,150 to the Pike National Forest for 1,400 acres of reforestation and 3,120 acres of hazardous fuel reduction treatments;
- Denver Water also contributed $607,276 to the Arapaho Roosevelt National Forest for forest restoration and hazardous fuel reduction treatments completed on 620 acres neighboring Denver Water's property and/or infrastructure;
- The Arbor Day Foundation donated $92,460 to the Pike National Forest to purchase seedlings for reforestation efforts on approximately 2,000 acres; and
- Colorado Springs Utilities contributed $198,016 to the Pike National Forest for National Environmental Policy Act (NEPA) preparation, which included archeological and biological contract surveys, and boundary management for the Upper Monument Creek project.

The third type of matching funds reported is 'Partner In-Kind Contributions,' which totaled $153,705 in fiscal year 2013. The Colorado Forest Restoration Institute contributed $29,685 and Rocky Mountain Tree-Ring Research contributed $22,500 of in-kind contributions for salaries related to monitoring activities and historic stand reconstruction research efforts. The majority of the partner in-kind contributions for FY2013 came from Front Range Roundtable member involvement, totaling $101,520, through their monitoring activities and their roundtable quarterly and sub-group meeting attendance. This was calculated from attendance records and associated estimates of hours, averaging between $40 and $50 per hour for each member.

The fourth type of matching funds reported are 'Service work accomplishments through goods-for-services funding within a stewardship contract.' These funds are the stewardship credits a contractor receives for completing service agreement work within a stewardship contract. The matching fund amount recorded equals the amount of stewardship credits the contractor reimburses the national forests for in return for timber product removal (i.e. trading goods for services). In fiscal year 2013 a total $32,043 stewardship credits were reimbursed through seven stewardship contract task orders – Messenger Gulch 2 (425 acres), Broken Wheel (406 acres), Crystal Creek (412 acres), Ponderosa (229 acres), Red Feather 2 (1,456 acres), Gold Hill (80 acres), and Lazy Z (288 acres).

Leveraged Funds

Leveraged funds are those funds used by partners to accomplish restoration activities on non-National Forest System lands associated with the FR-CFLRP project area. This information was obtained from partner organization representatives through a request for the number of acres treated and treatment costs in areas associated with the FR-CFLRP. A total of $35,874,593 in leveraged funds was contributed to the FR-CFLRP through work accomplished by six partners on private, state, and local government land in fiscal year 2013. The leveraged funds included:

- The Coalition for the Upper South Platte, which conducted $383,000 of work on 292 acres near Pike National Forest;

- Denver Water, which completed $68,750 of hazardous fuel and forest restoration work on 201 acres near Woodland Park;
- The Colorado State Forest Service, which conducted $1,975,458 worth of hazardous fuel and forest restoration work on 2,985 acres in Teller, El Paso and Park Counties;
- Colorado Springs Utilities completed approximately $4 million worth of hazardous fuel and forest restoration work on 4,000 acres near Pikes Peak;
- The Natural Resources Conservation Service conducted $2 million for approximately 1,400 acres of hazardous fuel and forest restoration work on private lands throughout the entire FR-CFLRP boundary; and
- The Waldo Recovery Group, a partnership made up of over 30 local, state, and federal agencies, non-profit organizations and private interests, contributed $27,477,385 toward post-fire rehabilitation and restoration efforts in the Waldo Canyon fire area (A summary of accomplishments is provided in Table 2).

Table 2. Summary of Waldo Recovery Group accomplishments (USDA Forest Service, 2014, p. 5)

Sub Watershed	Detention Basins (number)	Detention Basins (acres)	Channel Work (feet)	Channel Work (acres)	Channel Length (miles)	Road/Trails (miles)	Road/Trails (acres)	Hillslope Treatments (acres)
Forest Service	41	21	19,760	101	22.27	48	275	82
Private	13	7	12,300	63	Not calc.	0	0	7
Total	54	28	32,060	164	22.27	48	275	89

FY2013 Accomplishments

A total of 11,331 acres have been treated on National Forest System land through the CFLR-appropriated funding since the beginning of the FR-CFLR project. This is the cumulative footprint of CFLR-funded treatments occurring on the national forests from fiscal years 2010 through 2013. A total of 2,978 acres were treated on the FR-CFLR national forests through the CFLR-appropriated funding in

fiscal year 2013. It is important to note this total does not include the acres accomplished through matching or leveraged funds, only the appropriated funding.

The *FY2013 Colorado Front Range CFLRP Annual Report* provides a detailed review of the FR-CFLRP accomplishments for fiscal year 2013 through 28 performance measures (USDA Forest Service, 2014, pp. 11-13). The accomplishments reported include all work completed by the USFS and partner organizations on National Forest System lands within the FR-CFLRP area. It therefore includes work funded through each of the categories identified above except for leveraged funding. In addition to the treatment and funding accomplishments identified above, interviews with the USFS project team leaders indicate the FR-CFLRP's significant accomplishments for FY2013 include:

- 5,758 acres of forest vegetation improvements;
- 3,003 acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions; and
- 9,625 acres of wildland-urban interface high priority hazardous fuels treatment.

One challenge to understanding the performance measures listed in the annual report is the potential overlap of several of the accomplishments. For example, the row identifying 'acres of forest vegetation improved' includes information from several additional performance measures listed, including 'volume of timber sold,' 'green tons from small diameter and low value trees …,' and 'acres of hazardous fuels.' It is important to note that although some overlap occurs within the accomplishments table, all of the total treatment cost numbers are accurately reported in the "total funds expended" category in Table 1 of the Annual Report. Resolving this challenge would improve the ability to measure the national CFLRP program accomplishments.

Economic Contributions: Treatments

The CFLR program funding proposal requirements sent to Regional Foresters identified multiple topics to be addressed. The investments section specifically asks: "Will jobs be created? If so, what kind, how many, and for how long?" The following analysis estimates the economic effects resulting from the implementation of CFLR program funded restoration treatments on the Pike-San Isabel and the Arapaho-Roosevelt National Forests in calendar year 2013.

The FR-CFLRP contractor accomplished work on six task orders associated with this project in 2013. Three task orders associated with the FR-CFLRP were initiated in 2013, with one of these task orders fulfilled and two partially completed by the year's end. Three additional task orders that had been initiated in 2012 were completed in 2013.

The economic effects of these restoration activities were identified using IMPLAN® (IMpact analysis for PLANing), a regional economic impact analysis system commonly used by the Forest Service to model pertinent operational expenditure and labor information obtained from the contractor. This analysis estimated the restoration activities contributed approximately $243,067 in labor income and $463,942 in value-added (i.e. Gross Domestic Product or GDP) contributions to the local economy in 2013 (Table 3). These contributions to the local economy were stimulated by the contractors' operation expenditures as well as labor income.

Labor income includes all forms of employment income (wages, benefits, and proprietor income). The value-added contributions consist of: (1) employee compensation – wages and salaries plus benefits paid by local industries; (2) proprietor income – income from self-employment; (3) other property income – corporate income, rental income, interest and corporate transfer payments; and (4) indirect business taxes – sales, excise, fees, licenses and other taxes paid, including non-income based payments to the government.

Table 3. Economic Contributions of Front Range CFLR Task Orders in calendar year 2013

Employment (Full- and part-time jobs)	Labor Income (2013 USD)	Value Added (2013 USD)
11	$243,067	$463,942

A total of 11 full- and part-time jobs were calculated. Jobs reported in IMPLAN are annual averages of both full- and part-time total wage and salary employees, as well as self-employed jobs. This method of counting employment is a standard convention and consistent with methods used by the U.S. Bureau of Labor Statistics. However, one cannot discern the number of hours worked or the proportion of work that is full-time time vs. part-time. It is also important to reiterate the employment contributions calculated are reported simply as jobs, not full time equivalents (FTEs). The impacts include both full- and part-time employment; therefore a person with more than one job could show up more than once in the data. This prohibits comparisons to population data and inferences about the effect on unemployment rates. It is also important to note that IMPLAN is a static model representing a snapshot in time.

In addition to the economic contributions data, the contractor also supplied information concerning the location of their employees and subcontractors. The company employees all reside within Colorado and are able to commute to work on a daily or weekly basis (some crews prefer to live on site during the week). The initial long-term stewardship contract awarded in 2009 (prior to the FR-CFLRP project being funded) allowed the contractor to hire additional permanent employees, from both in- and out-of-state locations.

The contractor implements much of the contract work but did subcontract with other companies to complete part of the forest management operations. In 2013 the contractor was responsible for 44 percent of the total number of hours billed (both mechanical and manual labor). Seven subcontractors

were hired to conduct manual forest treatments, road clearing, skidding, and processing operations to complete work on the Messenger Gulch 2 and the Red Feather 2 task orders. Three of the subcontractors are based in Colorado, while the others are based out of Oregon, Florida, California, and Montana, with a mixture of Colorado based and out-of-state employees.

Economic Contributions: Monitoring

In addition to monitoring the economic impacts of the FR-CFLRP task orders we conducted an analysis of the FR-CFLRP's monitoring efforts. There has been strong interest from the FR-CFLRP collaborative to identify additional economic impacts of the FR-CRLR projects outside of the task orders. The ability to identify additional economic impacts is complicated by ever-changing forest and regional budgets, as well as USFS funding codes. The social and economic monitoring team decided to measure the monitoring funding associated with the FR-CFLRP for two primary reasons. First, the funds associated with monitoring provide an identifiable category of expenses. Second, the monitoring funds expended would not have been spent without the CFLRP (i.e. there would not have been post-treatment monitoring or social-economic monitoring, or detailed common stand exams).

Two sources of information were used to measure the additional impacts related to monitoring: 1) identifying the amount of funding the Arapaho-Roosevelt and the Pike-San Isabel National Forests spent on common stand exams associated with the FR-CFLRP; and 2) conducting an economic analysis of common stand exams and the funding provided to partner organizations to conduct social-economic and ecological monitoring efforts.

The amount of monitoring funding expended on common stand exams by the USFS provides a good measure of additional economic impact because this monitoring would not have occurred without the FR-CFLRP. The Arapaho-Roosevelt and the Pike-San Isabel National Forests both spent approximately $40,000 in FY2013 for common stand exams related to work completed in the FR-CFLRP area. The common stand exam is a type of monitoring conducted by the USFS before and after forest treatments

used to determine how well the treatment has met the intended objectives or prescription. Over 1,500 monitoring plots were used on the two national forests in 2013.

The FR-CFLRP collaborative monitoring group conducted social, economic, and ecological monitoring in addition to the USFS common stand exams. An analysis of these monitoring efforts provides additional insight toward the economic impacts of the FR-CFLRP. In 2013 the Colorado Forest Restoration Institute (CFRI) at Colorado State University contracted with the USFS to conduct social, economic and ecological monitoring for $50,000.

Our economic analysis estimated monitoring activities conducted by the USFS and its partners contributed approximately $33,693 in labor income and $60,730 in value-added (i.e. Gross Domestic Product or GDP) contributions to the local economy in 2013, with a total of nearly 4 full- and part-time jobs calculated (Table 3). These contributions to the local economy were stimulated by the monitoring expenditures as well as labor income.

Table 3. Economic contributions of Front Range CFLRP monitoring efforts in 2013

Employment (Full- and part-time jobs)	Labor Income (2013 USD)	Value Added (2013 USD)
3.9	$33,693	$60,730

It is important to note the economic contributions of the FR-CFLR task orders and monitoring efforts reported in the project-level social and economic vary from 2011 to 2013 due to a number of factors. These factors include variation in the amount of appropriated CFLR funding, matching and leveraged funding, and funding for monitoring contracts and common stand exams. Much of the variation can be attributed to the number of acres treated, the number of in-state and out-of-state subcontractors hired, the location of the treatments, and the types of treatments (mechanical or manual) associated with FR-CFLRP task orders. Variations may also be attributed to slightly different analytic approaches used across reports.

Wood Utilization

The following section reports the number of acres treated by treatment type, the types of materials sold, the products produced from those materials, and the number and location of the businesses to which the materials were sold.

A total of 1,811 acres were treated through FR-CFLRP task orders in 2013, with 718 acres treated on the Pike-San Isabel National Forest (PSI) and 1,093 acres treated on the Arapaho-Roosevelt National Forest (AR) (Table 4). The amount of material available for wood utilization largely depends upon the type of forest treatment used – mechanical and manual. Mechanical treatments involve the use of heavy machinery and are less cost prohibitive and less labor intensive than the manual treatments which involve individual sawyers removing trees and brush designated by the USFS prescription. Manual treatments are often used in areas that are inaccessible to mechanical treatments due to steep and/or rocky terrain. The majority (66 percent) of the material was removed on the PSI through mechanical treatments and 34 percent was completed through manual treatments. In contrast, 23 percent of the treatments on the AR were completed mechanically and 77 percent were completed through manual treatments.

There is a large difference in the availability of value-added materials based upon whether the treatments are mechanical or manual. Although manual treatments have a lower initial environmental impact, none of the material harvested manually was available for value-added use and 99 percent of this material was piled and burned (not as prescribed burns). This is due to the location of the treatments, as well as the types and quality of materials removed through these treatments. These treatment prescriptions were identified to meet the restoration goals outlined by the FR-CFLR collaborative and the Pike & San Isabel and Arapaho & Roosevelt National Forest plans.

There was a much higher level of utilization in mechanized units with 99 percent of the material mechanically harvested being available for value-added uses. The remaining one percent was piled and

Table 4. Number of acres treated in 2013 by treatment type and task order

National Forest	Task Order	Location (County)/ Ranger District	Treatment Acres	
			Mechanical	Manual
Pike – San Isabel	Buffalo Creek 1	Jefferson/ South Platte RD	80	0
	Catamount 1	El Paso/ Pikes Peak RD	0.53	0
	Long John	Teller/ Pikes Peak RD	21.50	0
	Messenger Gulch 2	Park/ South Park RD	255.44	242
	Phantom Creek 4	Teller/ Pikes Peak RD	118	0
Sub-total:			*475.47*	*242*
Arapaho– Roosevelt	Red Feather 2	Larimer	247	846
		TOTAL:	*722.47*	*1,088*

burned. It was estimated that approximately 5-10 tons/ acre were left for wildlife habitat for both types of treatments.

What types of materials were sold?

Unlike previous years, sawtimber was the only type of wood material sold from the FR-CFLRP in 2013 (Table 3). Note the amounts were reported in cubic feet (CCF) for 2013, in contrast to green ton amounts provided for 2011 and 2012.

Table 3. Types of materials sold in calendar year 2013

National Forest	Material	CCF
Pike-San Isabel	Sawtimber	1,100
Arapaho-Roosevelt	Sawtimber	418
	Total:	*1,518*

Who purchased these materials?

Three Colorado-based companies purchased the available value-added materials from the FR-CFLRP treatments in 2013. Two businesses purchased materials from the PSI contract work, and another business purchased materials coming from both the PSI and the AR. These businesses were located within or adjacent to the counties where work was completed – Fremont, Pueblo, and Weld Counties.

What was created from these materials?

Assessments of the types of products developed from these materials were provided by the contractor (Table 4). The value-added materials from both forests was sold as saw-timber and the contractor assumed this has been processed into dimensional lumber, a high value product.

Table 4. Products created in 2013

National Forest	Products created	Product Value	Percent of total material sold		
			2011	2012	2013
Pike - San Isabel	Dimensional lumber	High	2	4	100
	Mulch	Medium	23	36	0
	Pallets & Crates	Medium	38	16	0
	Compost	Medium	14	10	0
	Wood shreds (for post fire restoration)	Low	0	23	0
	Wood chips	Low	21	0	0
	Bark Fines (Landscaping)	Low	0	8	0
	Firewood	Low	1	3	0
	Soil Fertilizer/ Biochar	Low	1	0	0
			100%	*100%*	*100%*
Arapaho - Roosevelt	Dimensional lumber	High	0	20	100
	Playground/ landscaping material	Low	71	0	0
	Wood shreds (for post fire restoration)	Low	0	59	0
	Pallets & Crates	Medium	17	6	0
	Posts/ poles	Medium		15	0
	Firewood	Low	7	0	0
	Wood fuel pellets	Low	5	0	0
			100%	*100%*	*100%*

Appendix A – The Collaborative Forest Landscape Restoration Program

The Collaborative Forest Landscape Restoration (CFLR) Program was established by Congress under Title IV of the Omnibus Public Land Management Act of 2009. The primary purpose of the CFLR program is to support collaborative science-based restoration of priority forest landscapes, while encouraging ecological, social, and economic sustainability. It provides a mechanism to promote wood utilization as a way to offset treatment costs and to benefit local rural economies while improving forest health. It also promotes the reduction of wildfire management costs by reducing the risk of uncharacteristic wildfire and re-establishing natural fire regimes. This is meant to be accomplished by leveraging local, national and private resources. For additional information on the CFLR program see: http://www.fs.fed.us/restoration/CFLRP.

Appendix B – The Front Range Roundtable

The Front Range Roundtable is a coalition of state and federal agencies, local governments, environmental and conservation organizations, the academic and scientific communities, industry, and user groups. The convening force of this coalition is a commitment to forest health and fire risk mitigation along Colorado's Front Range. The Roundtable's focus area encompasses 10 Front Range counties: Boulder, Clear Creek, Douglas, El Paso, Gilpin, Grand, Jefferson, Larimer, Park and Teller Counties.

The Front Range Roundtable convened for the first time in May 2004. This precedent-setting meeting included representatives from 30 diverse organizations who wanted to engage communities and foster support for the implementation of forest management goals that help protect communities and restore forest health across all jurisdictions. Roundtable members also cultivated support for the work of the Front Range Fuels Treatment Partnership, an interagency partnership with the goal of reducing wildland fire risks through sustained fuels treatment. The Front Range Fuels Treatment Partnership was formed following the extensive 2002 fire season. During its first year, the Roundtable supported the Partnership by sharing information about accomplishments with important constituent groups and decision-makers.

A major collaborative accomplishment of the Front Range Roundtable was the development of the "Living with Fire: Protecting Communities and Restoring Forests" Vision Document in 2006. The Roundtable established four working groups with groups focused on community engagement, ecology, economics and policy. These groups developed information and data to foster discussion and support for the adoption and implementation of a Front Range vision focused on community protection and forest health. This vision document was the result of a rigorous, science-based process during which the FRR identified a 1.5 million acre area for treatment on Colorado's Front Range. This area consists of 400,000 acres where treatment is needed to both protect communities and restore forest ecosystems,

700,000 acres of treatment primarily for community protection and 800,000 acres in need of treatment to restore ecological conditions. Since the publication of this document the Front Range Roundtable has focused its efforts on promoting treatment on these collaboratively identified areas in need of treatment and on pursuing additional policy and economic solutions to ensure our goals can be accomplished.

After the Collaborative Forest Landscape Restoration Program was established under the Omnibus Public Land Management Act of 2009 the FRR partners were introduced to this opportunity and agreed to submit a proposal. A small sub-group of the FRR developed a draft proposal for the CFLRP using the 2006 vision document. The proposal was circulated to the full FRR for revisions and submitted by the Pike-San Isabel and Arapaho-Roosevelt National Forests. The Colorado Front Range Landscape Restoration Initiative was one of the first collaborative groups to receive a CFLR projects awarded in 2010. For additional information on the Front Range Roundtable see: http://frontrangeroundtable.org.

Appendix C – Methods

A key component of the FR-CFLRP proposal was to measure the socioeconomic impacts associated with the Front Range project. The socioeconomic monitoring component of the FR-CFLRP project was further developed through a multi-party monitoring effort after the proposal was accepted.

The initial multi-party monitoring plan identified five potential key goals of the socioeconomic monitoring: 1) enhance community sustainability; 2) improve local restoration business and workforce skills; 3) improve or maintain local quality of life; 4) improve capacity for collaboration; and 5) build support for forest restoration. Objectives related to these goals were later refined by the multi-party monitoring team to further develop the goals and indicators previously outlined. Implementation of the socioeconomic monitoring has been conducted by a collaborative team from the Forest Service's Rocky Mountain Regional Office (Julie Schaefers) and Washington Office (Kawa Ng) and the Colorado Forest Restoration Institute (Tony Cheng, Torsten Lund Snee, and Kathie Mattor).

The following sections outline the methods used by the socioeconomic monitoring team to measure the economic contributions, the levels of wood utilization, and effective outreach methods related to the FR-CFLRP project.

Economic Contributions Analysis

The annual report, which records the sources of funding and the accomplishments of the CFLR projects, provided information for the economic narrative. Additional detail and insight on the FR-CFLRP funding, accomplishments, and the annual reporting were obtained through interviews with the USFS FR-CFLRP representatives: Mark Martin, Ecosystem Group Leader, Arapaho and Roosevelt National Forests; and Sara Mayben, Renewable Resource Staff Officer, Pike and San Isabel National Forests.

The overall economic contributions analysis estimated the economic effects resulting from the implementation of CFRLP funded vegetation restoration treatments and monitoring efforts on the Pike-

San Isabel and the Arapaho-Roosevelt National Forests in 2013. The economic contributions to the regional economy in terms of employment, labor income and value added are estimated with an Input-Output model using primary data provided by the contractor. The following paragraphs briefly describe the estimation methodology and results.

Economic effects of the FR-CFLRP were analyzed in terms of employment, labor income and value-added resulting from vegetation restoration treatment activities and monitoring efforts on National Forest system lands. It was therefore important to model these effects from the amount of expenditures and labor actually required to carry out the task orders[2] during the 2013 calendar year, instead of relying on the amount of funding distributed[3]. Pertinent operational expenditure and labor information was collected from the contractor to appropriately model the economic contributions using an input-output model. The contractors were provided with a list of questions, which were reviewed with the team and the contractor before and after providing expenditure and labor information (See Appendix D). These reviews helped the contractor better understand what information the team was requesting and how the results would be used, as well as helping the team understand how the contractor interpreted the questions and reported the information. Since the FR-CFLRP only utilized a single contractor to carry out vegetation treatment task orders, the results in this report have been aggregated to not disclose any detailed or sensitive information collected during the modeling process. Rather than assuming all expenditures for a project are incurred in the same location, the pertinent information collected to

[2] "A 'Task order contract' means a contract for services that does not procure or specify a firm quantity of services (other than a minimum or maximum quantity) and that provides for the issuance of orders for the performance of tasks during the period of the contract." (U.S. Federal Acquisition Regulation (FAR), https://www.acquisition.gov/far/).

[3] Unlike the Colorado Front Range FY2011 report compiled by the National CFLRP team (available at: http://www.fs.fed.us/restoration/CFLRP/results.shtml#annualreports), which estimates the economic impact based upon the funding distributed, our analysis focused on detailed expenditure and operational data obtained from the contractor. Our analysis therefore focuses on just one component of the distribution of FR-CFLR funding. The calendar year was used because this is the method used by the contractors we obtained information from.

model inputs included the location (county) where task orders are performed, where operational expenses are incurred, and where labor hours and costs required for each task orders as well as non-labor expenses such as equipment and fuel are incurred.

The Input-Output Model

This analysis used Input-Output (I-O) modeling in order to estimate the economic effects of restoration activities. The U.S. Forest Service routinely uses I-O models to estimate local economic contributions of agency activities as part of the social and economic impact assessment in the environmental impact assessment required by NEPA. The I-O model used in this analysis is built using IMPLAN® software and its 2011 county-level data. IMPLAN® (IMpact analysis for PLANing, Minnesota IMPLAN Group, Inc.) is a regional economic impact analysis system. It is capable of determining the extent to which a given activity such as logging, contributes to the local economy in terms of jobs, income, output and value-added. The model accomplishes this by tracing interactions among different sectors within the local economy and calculates the economic effects resulting from a direct impact on the economy. In this analysis, the direct impacts refer to both labor and non-labor operation expenditures incurred by the contractor.

Study Area

The first step in building the I-O model is to select the counties to be included (i.e. the Study Area). The relative size of the economy plays an important role in the estimate of contributions on jobs and income; include too many counties and the results may be washed out, include too few counties and the full impact of the activity may not be accounted for in the model area. The study area for this analysis

included counties that were identified by the contractor as locations where vegetation treatment task orders/expenditures have occurred. This included seven counties in Colorado[4]:

Boulder	El Paso	Jefferson	Teller
Delta	Jackson	Larimer	

Calculating economic effects with the IMPLAN model

In order to estimate the economic effects of contractor expenditures, IMPLAN is used to generate "response coefficients" for a range of expenditure categories. Response coefficients, or more intuitively 'the rates of economic activity', represent how that activity would ripple through the economy and impact employment and income levels. They are expressed in term of the impacts to jobs, income and value-added per a specified unit of an activity (for example the dollar amounts in final demand). Based on data collected from the contractor, twelve categories[5] of response coefficients were generated[6]:

1. commercial and industrial machinery equipment (including repair and maintenance service),
2. petroleum refineries,
3. agriculture and forestry support activities (edited Industry Spending Pattern),
4. retail stores,
5. hand tool,
6. other crop farming products,
7. lodging,

[4] Delta county was also included via a method call MRIO (Multi-Regional Input-Output analysis), which allowed for linkage among non-contiguous counties in the same model.

[5] The categories correspond to IMPLAN sectors which are based on NAICS (North American Industry Classification System) sectoring.

[6] Based on information collected from the contractor, additional adjustments have been made by editing the activities in IMPLAN in order to further refine the model. For example, if only a proportion of the expenditure occurred in the study area, the LPP (local purchase percentage) in the IMPLAN model is adjusted accordingly.

8. car rental and leasing; and
9. restaurants.

In addition to the industry sector coefficients, four separate groups of response coefficients representing different household income groups were also generated using IMPLAN. These response coefficients are used to track how direct labor income (paychecks received by laborers hired by contractor) can be re-circulated through the household spending patterns causing further local economic activity. The groups are based on the estimated annual salaries for different types of workers in the contractor's firm, including office administration, project manager, forester, mechanic, trucking, manual hand crew, and equipment operator. Similar designations were made to distinguish between salary types for workers employed in monitoring activities. Direct labor hour requirements for the task orders were also collected from the contractor, and were used to calculate the total direct jobs.

The Colorado Model

It should be noted that the economic impact estimates in this analysis contrasted with the estimates reported in the FY2013 CFLRP Annual Report (USFS 2014) due to differences in methodologies and data assumptions.

The FY2013 CFLRP Annual report employed an Excel-based tool called 'Treatments for Restoration Economic Analysis Tool' (*TREAT*) for its analysis of all CFLR projects (USFS 2010). The Excel tool *TREAT* relies on existing response coefficients from IMPLAN and therefore is also able to estimate jobs and income. *TREAT* was designed to streamline data entry and preparation for the generation of economic impact tables to be used in the CFLRP proposals. The goal for this tool is to assist teams with estimating the economic impacts of restoration activities while providing a standard approach during the development of CFLR project proposals (USFS 2010).

Since this social-economic analysis aims to serve as part of a project-level monitoring reporting effort, *TREAT* was not used to complete this analysis. Instead, a customized IMPLAN model was built

using data inputs from the contractors. This customized IMPLAN model will be referred to as *'The Colorado model'* henceforth. The following section highlights the major dissimilarities between *TREAT* and *The Front Range model*.

IMPLAN model study area: *The Colorado Model* was built using counties where contractor expenditures have occurred, with linkage to the county where office operation expenditures occurred via the Multi-Regional Input-Output (MRIO) modeling technique. *TREAT*, on the other hand, used counties where task orders are proposed to occur (excluding the contractor's home office county).

Model / data year: *The Front Range Model* is based on IMPLAN data from calendar year 2011, using contractor's expenditure information from calendar year 2013 as inputs. All figures adjusted with GDP deflator. *TREAT* is based on IMPLAN data from calendar year 2009, while using the total awarded funding amount from fiscal year 2013 as inputs.

Economic impacts from matching funds and USFS employee salaries: *The Colorado Model* focused exclusively on impacts derived from CFLR funded task orders. *TREAT* on the other hand, included impacts derived from matching funds, as well as induced effects from USFS force salary by assuming a fairly substantial Forest Service FTEs allocated to CFLR responsibilities.

Modeling restoration activities: *The Colorado Model* obtained detailed expenditure and operational data from the contractor. These include the dollar amounts spent on various non-labor expenditures such as equipment maintenance or daily use rates, gasoline, office, tools, seeds and other operation costs. For labor, information on salaries and hours worked for different types of workers in the contractor's firm were collected, including office administration, project manager, forester, mechanic, trucking, manual hand crew, and equipment operator. Next, using the above information, analysis-by-parts modeling method was used to estimate impacts from various IMPLAN sectors. The *TREAT* model begins with the

total awarded funding amount, and then estimates the impacts to the logging and supporting forestry sectors, by proportioning a percentage of the award that is going to be used for contracted work by Regional firm(s).

Conclusion

It is worth noting that both methods utilized IMPLAN at one point during the analytical process and that any multipliers IMPLAN produced are simply projections of impacts from various economic activities based on static models. While a genuine attempt at modeling the impacts from implementation (actual expenditures and labor entering the economy as outlined in this *Colorado Model)* should be taken at the project monitoring stage rather than projecting impacts from the total funds awarded, it is evident that the customized *Colorado Model*, constructed using expenditure data from the contractor, required greater commitments of time and effort. Considering these increased commitments, *TREAT* is by far a more streamlined and easy-to-use tool based out of Excel. *TREAT* is unquestionably the tool of choice when the extra effort of a customized model (such as *The Colorado Model*) proves unwarranted given the time, budget and expertise constraints being faced.

References

USDA Forest Service (USFS). 2010. Treatments for Restoration Economic Analysis Tool: User Guide. *An internal technical guide*. United States Forest Service.

USDA Forest Service (USFS). 2014. Front Range CFLRP Annual Report, FY2013. Available online at: http://www.fs.fed.us/restoration/CFLRP/results (last accessed December 4, 2014).

Wood Utilization Analysis

The goals of the wood utilization analysis were to:

1. Identify the types of materials taken off of the National Forest according to the FR-CFLRP vegetation treatment task orders.
2. Determine the number and location of businesses purchasing these forest product materials.
3. Identify the types and values of wood products produced.

The contractor was provided with another list of questions, which was reviewed with the contractor and the team before and after providing information (See Appendix E). These reviews helped the contractor better understand what information the team was requesting and how the results would be used, as well as helping the team understand how the contractor interpreted the questions and reported the information. The data from the contractor was then compiled and analyzed using basic statistical analyses.

Appendix D –

Economic Impacts of Restoration: Questions for Contractors

1. **Name of the restoration site and the project(s) you worked on:_____**
   Please list all task orders associated with CFLR during calendar year 2011
   (if more than one forest, please indicate; add more lines as needed)

Forest 1:_____	**Ranger District**	**County**	**Mechanical Acres**	**Manual Acres**	**Date signed**	**Date started**
Project	*_____Ranger District*		###	###		
____ NF Total			**_____**	**_____**		

2. **Check if you are responding for all of the work conducted on the restoration site or for specific site-related project(s) within a restoration site:**

   _____ Entire restoration site
   _____ Site-related restoration project(s)

3. **Site/project(s) and firm location:**
   Use the following table to list the location of the site/project(s) that you worked on and any off-site locations for your firm that worked on ***this restoration site/project(s)***. If there are more than two off-site locations, please choose the top two locations.

Site/Project(s) Location	**State**	**County**
Off-site Location 1		
Off-site Location 2		

4. **What type of restoration work did this site/project(s) include *(check all that apply)*:**

_____Ag/grazing
_____Air quality
_____Fresh surface water
_____Groundwater
_____Sediments
_____Shoreline
_____Wetland/marsh
_____Woodland/forest
_____Bird habitat/populations
_____Fish habitat/populations
_____Mammal habitat/populations
_____Reptile/amphibian habitat/populations
_____Other_____
_____Other_____
_____Other_____
_____Other_____

5. Did the site/project(s) have any chemical disturbance (e.g. oil spill, Superfund site)?

_____Yes
_____No

6. Which of the following roles did your firm play in this restoration project *(check all that apply)*:

_____Project management
_____Management consulting
_____Restoration planning/design
_____Site Surveying
_____On-site construction
_____Other project implementation
_____Monitoring
_____Product vendor
_____Other_____
_____Other_____

7. Please describe your role in the project:

8. Subcontracting:

a. Did you contract out any tasks to subcontractors? Yes_____ No_____

b. If yes, please provide:
   i. the name(s) of the subcontractor(s):
   ii. a description of the work performed by the sub-contractor(s):
   iii. where the sub-contractor(s) are based:

c. If necessary, can we have your permission to contact the subcontractor(s)? If yes, please provide the appropriate contact information.

9. Direct employment for this project:

Please indicate the total number of labor hours (including employees and managers) that worked on ***this restoration site/project(s)*** in each location (please refer to the locations identified in Question #2)**.**

Task Order	Number of **Acres completed** for this task order:	Number of labor hours for employees working primarily at the **Site/Project(s) Location:**	Number of labor hours for employees working primarily at **Off-Site Location 1:**	**Total** number of labor hours for this restoration project:
				(Sum)
Total:				

a. Do the above labor hours include work done by subcontractors? Y__ N__
b. If yes, what is the total number of labor hours billed by the subcontractor(s)? _____

10. Overall breakdown of costs:

Use the following table to identify the percent split between labor and non-labor costs for **this restoration site/project(s)**. Labor costs include benefits, wages, and proprietor's income. Non-labor costs include all other expenses including overhead, administration and subcontracting.

Expenditure Category	**% of total site/project(s) cost**
Labor Costs	
Non-Labor Costs	
	100%

11. Breakdown of non-labor costs:

Use the columns in the table below to answer the following two questions about non-labor expenses for ***this restoration site/project(s).*** If you are unable to provide exact percentage breakdowns, please use your professional judgment to provide best-known estimates.

Column 1: What percentages of total non-labor expenses were spent on the following types of expenses for this project? This column should add to 100%.

Column 2: What percentages of these non-labor expenses were purchased within the local area surrounding the project location? ***(Note: the local area is defined as a reasonable commuting distance).***

***Note:** Equipment refers to durable goods such as vehicles and machinery. Materials refer to goods purchased as inputs specifically for this project (e.g. gravel, fencing, office supplies, etc.)

Non-Labor Costs	**Column 1** Percentage of total non-labor expenses:	**Column 2** Percentage expended within the local area surrounding the site/project(s) location:
Equipment rental / leasing / daily use rates		
Equipment maintenance and repair		
Materials		
Travel		
Overhead /Administration		
Other (please describe)		
	100%	

12. Breakdown of travel costs:

If you had travel costs for this project, use the columns in the table below to answer the following two questions about travel expenses for ***this restoration site/project(s)***. If you are unable to provide exact percentage breakdowns, please use your professional judgment to provide best-known estimates.

Column 1:	What percentages of total travel costs where spent on the following types of expenses for this project? This column should add to 100%.
Column 2:	What percentages of these non-labor expenses were purchased within the local area surrounding the project location? ***(Note: the local area is defined as a reasonable commuting distance)*.**

Travel Costs	**Column 1** Percentage of total travel costs:	**Column 2** Percentage expended within the local area surrounding the site/project(s) location:
Per diem		
Car/truck rental (for travel)		
Gas (for travel)		
Other (including airfare)		
	100%	

13. Breakdown of materials costs:

Please use the table on the following page to indicate the types of materials used for ***this restoration site/project***. Place a check mark next to all materials that were used in the project. **Please complete columns 1 and 2 *only* for the materials used in the project.**

Column 1: Please indicate the percent of total material costs spent on each material. This column should add to 100%. If you are unable to provide exact percentage breakdowns, please use your professional judgment to provide best-known estimates.

Column 2: Please use the check boxes to indicate if the material was purchased from a retailer.

Materials	**Column 1** Percentage of total materials cost:	**Column 2** Purchased from a retailer? **Yes**	**No**
___General retail merchandise (e.g. food, clothes, work gloves)			
___Office Supplies			
___Gasoline			
___Tools and Parts (for equipment and vehicles)			
___Seeds			
___Communications equipment			
___Other_____			
___Other_____			
___Other_____			
___Other_____			
	100%		

14. **Breakdown of labor costs:**

What percentage of total labor costs (direct wages and non-payroll) typically go to the following types of workers? The column should add to 100%.

Type of Worker	**Percentage of total labor costs that go to labor for the following worker types:**
Project Managers	
Forester/ Biologists/ecologists/other	
Engineers and other planners/designers	
Mechanics	
Administrative Staff	
Machine and equipment operators	
Truck drivers	
Manual laborers	
Technicians	
Others (please describe)	
Others (please describe)	
	100%

Appendix E – Wood Utilization Survey

1. **Name of the restoration site and the project(s) you worked on:**
   Please list all task orders associated with CFLR during calendar year 20___
   (if more than one forest, please indicate; add more lines as needed)

Forest 1:_____	**Ranger District**	**County**	**Mechanical Acres**	**Manual Acres**	**Date signed**	**Date started**
Project	*_____Ranger District*		###	###		
____ NF Total			**_____**	**_____**		

2. **What percentage of the total amount of material harvested is:**

   ***Manual* (out of 100%)**
   - **a.** Available for value-added use? _____%
   - **b.** Piled and burned (not for prescribed burn) _____%
   - **c.** Left for wildlife habitat? _____% or _____ tons/acre

   ***Mechanical* (out of 100%)**
   - **a.** Available for value-added use? _____% (Sawtimber, POL and biomass)
   - **b.** Piled and burned (not for prescribed burn) _____%
   - **c.** Left for wildlife habitat? _____% or _____ tons/acre

3. **How many businesses purchase material from you (specifically related to this project)?**

   Forest 1: _____ (Copy for additional forests)

   a. Total businesses: _____

   b. Colorado businesses: _____

   c. Other states: (please specify state and number of businesses): _____

   Overlap?

   If there are two or more forests associated with this project, are there any businesses that purchase from multiple forests? If yes, how many businesses? _____

4. **What types of materials did you sell from the restoration site and project(s)? Where did these materials go?**

Forest 1: _____ (Copy table for additional forests)

Materials Sold			**Locations material was sold to:** (please identify locations)		
	Amount (Green Tons)	The county the project was located in	County in CO	State outside of CO	County outside of CO (if available)
Sawtimber *(Specs? _____)*					
Small diameter timber *(Specs? _____)*					
Blue stain					
Products other than logs (POL) Limbs/ brush					
Bark Fines					
Other *(please specify):*					
Total:					

5. **What percentage of the materials removed from the site went to each category of products? Where are the purchasers located? What is the value of the product?**

Forest 1: _____ (Copy table for additional forests)

Products created	**Column 1** Percent of total material sold:	**Column 2** Product Value (low, medium, high)	**Column 3** Locations material was sold to: (please specify location and percentage across row)				
			The county where the project was located:	Other county in CO:	State outside of CO:	County outside of CO:	
example: firewood	*10%*	*Low*	*Larimer, 5%*	*Moffat, 2%; Montrose 3%*	*n/a*	*n/a*	*100%*
Wood Fuel Pellets							100%
Biomass Electricity							100%
Firewood							100%
Pallets & Crates							100%
Dimensional lumber							100%
Logs - log homes							100%
Logs - other							100%
Beams & Timbers							100%
Trusses							100%
Posts/ poles							100%

Products created (continued)	**Column 1** Percent of total material sold:	**Column 2** Product Value (low, medium, high)	**Column 3** Locations material was sold to: (please specify **location** and **percentage** across row)			
			The county where the project was located:	Other county in CO:	State outside of CO:	County/ town outside of CO:
Flooring & Paneling						100%
Doors						100%
Windows						100%
Veneer						100%
Custom Cabinets						100%
Mass produced cabinets						100%
Mass produced furniture						100%
Custom furniture						100%
Siding & Decking						100%
Molding						100%
Holiday trees & transplants						100%
Paper products						100%

Products created (continued)	**Column 1** Percent of total material sold:	**Column 2** Product Value (low, medium, high)	**Column 3** Locations material was sold to: (please specify **location** and **percentage** across row)				
			The county where the project was located:	**Other county in CO:**	**State outside of CO:**	**County outside of CO:**	
Shavings							100%
Soil Fertilizer/ Biochar							100%
Animal Bedding							100%
Landscape ties							100%
Chips							100%
Mulch							100%
Compost							100%
Fencing							100%
Other - specify							100%
	100%						

About the Colorado Forest Restoration Institute

The Colorado Forest Restoration Institute (CFRI) was established in 2005 as an application-oriented program of the Department of Forest & Rangeland Stewardship in Warner College of Natural Resources at Colorado State University in 2005. CFRI's purpose is to develop, synthesize, and apply locally-relevant science-based knowledge to achieve forest restoration and wildfire hazard reduction goals in Colorado and the Interior West. We do this through collaborative partnerships involving researchers, forest land managers, interested and affected stakeholders, and communities. Authorized by Congress through the Southwest Forest Health and Wildfire Prevention Act of 2004, CFRI is one of three Institutes comprising the Southwest Ecological Restoration Institutes, along with centers at Northern Arizona University and New Mexico Highlands University.

The Colorado Forest Restoration Institute at Colorado State University receives financial support through the Cooperative and International Programs of the U.S. Forest Service, Department of Agriculture, under the Southwest Forest Health and Wildfire Prevention Act.

The Full Report is available at: http://coloradoforestrestoration.org/

Colorado State University