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**SOCIO-ECONOMIC MEASURES FOR INTENSIVELY
MONITORED WATERSHEDS:
The Middle Fork John Day Effectiveness Monitoring Project**

Michael Hibbard and Susan Lurie

Report for the Oregon Watershed Enhancement Board

September 30, 2009

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Executive Summary

In recent years there has been substantial investment across the Pacific Northwest in efforts to recover salmon and steelhead populations. Stream restoration has been and will continue to be a major part of that effort. Restoration projects are aimed at improving salmon and steelhead habitats and increasing water quality and quantity.

One of the most active locations for restoration is the upper Middle Fork John Day River. Between 2007 and 2011, fifteen restoration projects are planned on the main stem of the upper Middle Fork and twenty-two are scheduled for the tributaries, with plans for a large number of additional projects of varying size and scope to be implemented over the next 10 years.

There is a significant need for systematic data on the effects of restoration projects. The National Oceanic and Atmospheric Administration (NOAA), in coordination with the Oregon Watershed Enhancement Board (OWEB) has designated the upper Middle Fork as an intensively monitored watershed (IMW). The intent is to track various conditions over at least the next ten years. Most IMW monitoring will be bio-physical (e.g., stream water temperature, fish populations, groundwater levels). However, there is also interest in the possible socio-economic effects of restoration. The purpose of this project was to develop a limited number of measures that can be used to monitor the socio-economic effects on the local community of the restoration efforts on the upper Middle Fork.

The original goals were to:

1. develop a set of 4-6 socio-economic indicators, in collaboration with the community, keeping in mind that indicators are not specific cause-and-effect measures. They aim to measure the socio-economic health of the system, not the specific consequences of specific watershed management activities; and
2. create a system to collect, assess, and report the indicator data

As the project went forward it became clear that those original goals were too limited, so they were expanded to encompass the following:

1. Produce three sets of measures:
 - Direct effects - measures of the socio-economic output from doing restoration projects on the upper Middle Fork John Day River
 - Outcome measures: measures of specific changes that have occurred, that can reasonably be tied to restoration projects and related activities.
 - Socio-economic Indicators: measures of the overall socio-economic health of the community

2. Develop data collection protocols for each measure
3. Produce a first round of data for each measure
4. Identify a “host organization” in the community to maintain and regularly update the data, and make it available to researchers, decision makers, and community groups

The literature on community-level socio-economic measures suggests three guiding principles, which we adopted for the upper Middle Fork IMW monitoring.

- The measures should be context-specific (i.e., the upper Middle Fork and Grant County).
- Both experts (including agency officials, scientists and academics) and local residents should be involved in the process of developing the measures.
- The measures should be useful for policymaking, management of the IMW, and public education/citizen action.

Following those principles, we used a highly participatory process to develop a total of seventeen measures, five direct effect measures, five outcome measures, and seven indicators.

Direct Effects

- Number and size (in dollars) of restoration contracts
- Local/non-local firm? (local = Grant County)
- % of contract dollars spent locally
- % of employees who are local residents (local = Grant County)
- Number of new “restoration-related” jobs

Outcome Measures

- Changes in land use/land management practices – on public, tribal and private lands throughout Grant County.
- Annual travel spending in Grant County
- Estimated number of jobs generated by travel spending in Grant County
- Total local lodging tax receipts for Grant County
- Camping activity

Socio-economic Indicators

- Total Population
- Population by Age
- Per capita personal income
- Median household income
- Non-Farm Employment
- Total Payroll
- Economic Diversification Index

We did a first round of data collection for fourteen of the measures. For the other three, camping activity, changes in land use/land management practices, and economic diversification index, data collection protocols and the first round of data collection will be carried out in 2010.

Finally, the North Fork John Day Watershed Council – which is an active participant in the IMW project – agreed to accept ongoing responsibility for collecting, storing, and updating the socio-economic measures, with Hibbard’s and Lurie’s continuing oversight. There is consensus community support for this.

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Introduction

In recent years there has been substantial investment across the Pacific Northwest in efforts to recover salmon and steelhead populations. Stream restoration has been and will continue to be a major part of that effort. Restoration projects are aimed at improving salmon and steelhead habitats and increasing water quality and quantity.

One of the most active locations for restoration is the upper Middle Fork John Day River. Between 2007 and 2011, fifteen restoration projects are planned on the main stem of the upper Middle Fork and twenty-two are scheduled for the tributaries, with plans for a large number of additional projects of varying size and scope to be implemented over the next 10 years.

There is a significant need for systematic data on the effects of restoration projects. The National Oceanic and Atmospheric Administration (NOAA), in coordination with the Oregon Watershed Enhancement Board (OWEB) has designated the upper Middle Fork as an intensively monitored watershed (IMW). The intent is to track various conditions over at least the next ten years. Most IMW monitoring will be bio-physical (e.g., stream water temperature, fish populations, groundwater levels). However, there is also interest in the possible socio-economic effects of restoration. The purpose of this project was to develop a limited number of measures that can be used to monitor the socio-economic effects on the local community of the restoration efforts on the upper Middle Fork.

Current thinking holds that the process of developing accurate community socio-economic measures requires meaningful involvement from the local community. In keeping with that thinking, we used participatory processes to engage a cross-section of Grant County residents as well as other people knowledgeable about the upper Middle Fork IMW project. The result was a collection of possible measures which we assessed for their technical feasibility. The technical assessment led to a set of proposed indicators that we circulated to the community. As the measures were being finalized, OWEB asked us to move beyond developing the measures and also do a first round of data collection on them.

The balance of this report consists of: 1) a discussion of the background issues and the study questions; 2) the research methods used; 3) the results of the research; 4) the final set of measures; and 5) some brief conclusions.

Background

Communities and the Restoration Economy

One of the most significant developments in natural resource planning and management in the past fifteen years has been the emergence of the restoration economy – also referred to as conservation-based development, sustainable livelihood, and the conservation economy, among other terms. The central focus of the restoration economy is resource management. However, it explicitly considers the local economy and community as well. It holds that “ecological integrity, economic opportunity, and community are inextricably linked in the long run” (von Hagen & Fight, 1999, 3). It entails projects, programs, and policies that aim to “meld ecology with economics and the needs of community . . . (Weber, 2000, p. 238).

The restoration economy is not just a wishful concept. Western Governors’ Association Policy Resolution 09-11 (<http://www.westgov.org/wga/policy/09/restoration.pdf>) points to a variety of tribal and state-level environmental maintenance, restoration, and enhancement policies and programs in Montana, Arizona, New Mexico, South Dakota, and Oregon, all aimed at restoring landscapes and contributing to local economies.

Oregon has been in the vanguard in this effort. A key example is the state’s experience with watershed restoration and specifically local watershed councils and the state agency that supports them, the Oregon Watershed Enhancement Board (OWEB). It is clear that the purpose of OWEB and the watershed councils is environmental restoration and management. At the same time, however, Oregon law (ORS 541.353) declares that “the long-term protection of the water resources of this state, including sustainable watershed functions, is an essential component of Oregon’s environmental and economic stability and growth” (emphasis added). Consistent with this, OWEB declares in its mission statement that its purpose is “to help create and maintain healthy watersheds and natural habitats that support thriving communities and strong economies” (http://www.oregon.gov/OWEB/about_us.shtml, emphasis added).

OWEB and the local watershed council are involved with many, though not all, upper Middle Fork restoration projects. Still, the level of restoration activity and the desire to monitor its socio-economic effects reflect Oregon’s interest in understanding the restoration economy. The restoration economy is not a substitute for such traditional industries as agriculture, timber, and mining, but can play an expanding role in diversifying the economy. When restoration is seen through the lens of economic opportunity, the argument around jobs versus the environment becomes moot.

It is argued that restoration can provide jobs throughout the restoration cycle, from initial studies, to engineering and design, to construction jobs during the on-the-ground phase. It is further claimed that upon completion, the restored landscapes provide new opportunities for businesses as well as cleaner water and healthier, diverse fish, wildlife, and plant communities.

However, restoration efforts have rarely included effectiveness monitoring programs to determine what benefits they have provided – either bio-physical or socio-economic – and so conclusions are largely based on intuition rather than empirical information. Socio-economic measures that focus on restoration activities and potential spillover effects such as increased local amenity and recreation values and business opportunities can help assess if and how restoration benefits the local economy and identify what workforce training might be useful to help local residents take advantage of new opportunities. In addition, socio-economic measures can increase awareness of the possible advantages to identifying and encouraging restoration work.

In sum, socio-economic measures serve two functions: they provide tangible evidence of restoration's economic contributions and they help local citizens think about and develop new relationships to their natural resource assets.

Socio-Economic Monitoring of Ecosystem Restoration

Socio-economic monitoring has a long history in the United States. The U.S. Census, first taken in 1791, is considered one of the most important sources of information on the social aspects of American growth and development (Innes 1990). Over the years socio-economic measurement has arisen in bursts of popularity and then waned, mainly because of the technical difficulties involved. It peaked in the 1920s, then in the 1960s, and now again (Guy and Kibert 1998).

There has been substantial research on the potential uses of socio-economic measures. McCool and Stankey (2004) find that they can help describe the existing conditions of systems, facilitate evaluation of the performance of various management actions, and alert users to impending changes in social, cultural, economic, and environmental systems. Other researchers emphasize the value of socio-economic measures for evaluation and performance assessment (Bowen and Riley 2003; Conley and Moote 2003). And finally, socio-economic measures can be used as educational or communicative tools to build community awareness (Beratan, et al. 2004, Rydin, Holman & Wolff 2003).

While technical difficulties in developing socio-economic measures remain, and there is some debate as to the level of technicality in which indicators should be created, research suggests that indicators should be transparent and embedded in the local culture and knowledge (Fraser, et al. 2006). The process of developing accurate community socio-economic measures requires meaningful involvement from the local community (McCool and Stankey 2004, Fraser, et al. 2006, Rydin, Holman and Wolff 2003).

Three guiding principles for community socio-economic monitoring on the upper Middle Fork IMW project can be distilled from the research.

- The measures should be context-specific (i.e., the upper Middle Fork and Grant County).

- Both experts (including agency officials, scientists and academics) and local residents should be involved in the process of developing the measures.
- The measures should be useful for policymaking, management of the IMW, and public education/citizen action.

Goals of this Project

The original goals of this project as described in the work plan were to:

1. develop a set of 4-6 socio-economic indicators, in collaboration with the community, keeping in mind that indicators are not specific cause-and-effect measures. They aim to measure the socio-economic health of the system, not the specific consequences of specific watershed management activities; and
2. create a system to collect, assess, and report the indicator data

As the project went forward, and especially as we engaged the community, it became clear that the original goals were too limited. First, the community and the IMW project need a broader array of measures than indicators alone. Second, creating a system to collect, assess, and report the data requires creating a set of protocols for collecting the data. Third, at OWEB's request we agreed to amend the original work plan to include an initial round of data collection for the measures that were developed.

The expanded goals are as follows. Details are described in the Methods section of this report.

1. Produce three sets of measures:
 - Direct effects - measures of the socio-economic output from doing restoration projects on the upper Middle Fork John Day River
 - Outcome measures: measures of specific changes that have occurred, that can be tied to restoration projects and related activities.
 - Socio-economic Indicators: measures of the overall socio-economic health of the community
2. Develop data collection protocols for each measure
3. Produce a first round of data for each measure
4. Identify a "host organization" in the community to maintain and regularly update the data, and make it available to researchers, decision makers, and community groups

Methods

Based on the three guiding principles discussed above, we created a five-step process to accomplish the project goals.

1. Organize a small “expert panel” of locally involved people from diverse backgrounds who are known to have a good understanding of how restoration and other watershed activities connect to the socio-economic health of the community.
2. Engage the expert panel in a workshop process to identify a draft set of measures.
3. Confirm the technical feasibility of the measures (are the data available and accessible at a reasonable cost in time and money?), develop data collection protocols, and conduct an initial round of data collection.
4. ground-truth the indicators through a community education/public involvement process.
5. Create a system to collect, assess, and report the measures.

We began with a review of relevant local plans and other documents, followed by open-ended interviews with twelve Grant County residents chosen for their knowledge of the local economy and/or environmental restoration efforts. The information thus gleaned informed the first meeting with our expert panel of eight Grant County leaders, chosen to give us a cross-section of viewpoints and expertise

- Sally Bartlett, Grant County Economic Development Coordinator
- Mike Billman, Malheur Lumber Company and Blue Mountain Forest Partnership
- Amy Charette, NFJD WSC Coordinator
- Jeff Fields, The Nature Conservancy
- Jason Kehrberg, Grant County SWCD Director
- George Meredith, rancher
- Rick Minster, OECDD Regional Development Officer
- Mark Webb, Grant County Judge

The outcome of the meeting was a preliminary set of proposed measures. From our initial analysis of the proposed measures as well as follow-up interviews, it became clear that we needed to move beyond socio-economic indicators and think about other types of measures. Drawing on a parallel project on socio-economic measures by Hibbard (Hibbard, Gurwitz, and Roark 2009), and on the literature generally, we developed three sets of measures: direct effects, outcomes, and indicators.

As we were conducting our technical analysis on the three types of measures, we presented and discussed them at a face-to-face meeting of the IMW Working Group. We followed up by circulating the measures for comments, questions, and suggestions to the expert panel and other Grant County community members.

Next we presented and discussed the proposed measures at meetings of the Grant County Chamber of Commerce and Grant County Court. In advance of those presentations, a draft of the possible metrics was circulated.

Before finalizing the measures and beginning to create a system to collect, assess, and report them, we met with Greg Sieglitz and Cyrus Curry of OWEB for an interim review. Following that, we presented and discussed the final measures with members of the expert panel and others in Grant County, for final sign-on.

As a final step, the North Fork John Day Watershed Council – which is an active member of the IMW Working Group – agreed to accept ongoing responsibility for collecting, storing, and updating the socio-economic measures, with Hibbard's and Lurie's continuing oversight. There is consensus community support for this.

Results: Developing the Measures

In this section we discuss each of the measures suggested for inclusion as part of the IMW's socio-economic monitoring and explain its disposition. The discussion is organized into the three types of measures : 1) Direct Effects of restoration and monitoring work; 2) Outcomes -- specific changes that have occurred, that can be tied to restoration projects and related activities; and 3) Indicators of overall community socio-economic health.

Direct Effects: measures of the socio-economic output from doing restoration projects on the upper Middle Fork John Day River

- Number and size (in dollars) of restoration contracts
- Local/non-local firm? (local = Grant County)
- % of contract dollars spent locally
- % of employees who are local residents (local = Grant County)

This information is available but has to be collected by hand, through an annual review of all restoration and monitoring contracts on all land in the upper MFJD watershed. Based on interviews and reviews of contract records across several organizations, it is apparent that ongoing collection of this data will require the development of work sheets to insure that the information is uniformly collected over time.

- Total CREP (Conservation Reserve Enhancement Program) and BPA dollars paid annually to landowners in the project study area

The aim of this suggested measure is to track the amount of subsidy flowing into the project area to support restoration-oriented land management practices. This could be a useful measure but evidently only two landowners in the project area are currently receiving CREP dollars. We recommend dropping the idea of using CREP dollars and

continuing to search for a more appropriate measure of the subsidy to landowners. One interesting possible measure is the Freshwater Trust’s water lease/acquisitions, funded through the Columbia Basin Water Transaction Program. The following table shows this program’s subsidies in the Middle Fork John Day IMW project area for the past several years.

Year	\$ Amount	# Agreements	Agreement Type
2001	25,000	1	Standard Lease
2002	30,000	1	Standard Lease
2003	50,000	1	Standard Lease
2004	69,000	2	Water Use Agreement
2005	68000	3	Water Use Agreement
2006	700,000	1	Forbearance Agreement
2007	90,000	1	Time Limited Transfer
TOTAL	1,032,000		

- Number of new agency contract support jobs

“Contract support jobs” proved to be an illusive concept. It was agreed to change this to “Restoration related jobs,” operationally defined as changes over time in the size and job titles of the principal local organizations actively involved in restoration work within the IMW project area.

- Sizes of contracting firms

“Size” of contracting firm is also an illusive concept. It might mean capitalization, market value, or number of employees, for example. In any case, this is generally not publicly available information. It was decided to drop this measure.

Outcome Measures: measures of specific changes that have occurred, that can be tied to restoration projects and related activities.

- Changes in land use/land management practices – on public, tribal and private lands throughout Grant County.

This proposed measure includes a wide variety of things, from land management agency policy changes and specific projects to shifts in ranch land management from stock and/or crop production to ecosystem management outcomes to housing subdivisions.

General trends in land use/management change are widely known among the relevant Grant County social networks, as are specific examples. However, no one is collecting the data necessary to systematically track these changes. Creating a system to do so would be highly desirable but would be expensive and time-consuming. Fortuitously, a Portland State University graduate student who is interested in socio-economic monitoring and in land use changes associated with environmental restoration has agreed

to take on the task of developing both qualitative and quantitative data for this measure. And she has her own grant funding to support the work over the next year (FY 2010).

- Tourism/outdoor recreation, such as fishing, birding, hiking, biking, motor biking, and hunting

We have been unable to locate reliable data on specific types of tourism/recreation activities in Grant County. However, overall travel impacts are tracked at the county level in several ways by Dean Runyan Associates, a firm engaged in economic and market research related to travel, tourism and recreation. It was agreed to use the following measures:

- Annual travel spending in Grant County
 - Estimated number of jobs generated by travel spending in Grant County
 - Total local lodging tax receipts for Grant County
- Camping activity: data such as “camping days” at federal, state and county facilities in Grant County.

There are numerous Forest Service campgrounds as well as one state campground in Grant County. We have data from the state and the Forest Service has promised to provide its data, but has not yet been able to supply it. The measure of camping activity will be included in the 2010 report.

- Job substitutions (i.e., declines in resource extraction paired with increases in ecology)

This proposed measure presents a variety of technical problems. The major one is that because of its small population most of the relevant employment and firm data for Grant County is not publicly available. It was decided to drop this measure.

- Crop productivity

This proposed measure could be thought of in terms of two geographic areas, the upper MFJD watershed itself – the IMW study area, and the downstream area to Kimberly. However, crop production on the upper MFJD is limited to a small amount of meadow hay. And downstream conditions are confounded by the presence of numerous other tributaries. It was decided to drop this measure.

- New business start-ups and relocations to Grant County, especially among firms directly or indirectly linked to restoration work

There is no systematic tracking of firms operating the Grant County. Such data sources as business licenses, tax records, and Oregon Bureau of Labor and Industry records capture very few of the small businesses in Grant County. It was decided to drop this measure.

Socio-economic Indicators: measure overall conditions in the community. They paint a picture of the general health or overall socio-economic context within which restoration work is being done.

- Population
 - Total
 - By age
 - By income
 - By education

The Portland State University Population Research Center makes annual estimates of total population and population by age for all Oregon counties. Two useful measures of income are available from the Oregon Business Development Department (formerly the Oregon Economic and Community Development Department), per capita personal income and median household income.

Data on educational attainment seem to be available only from the ten year census, which is not frequent enough to be useful. It was decided to drop this measure.

- Jobs by type
- Firms by type

These are closely related concepts, and data availability is a problem because of the small population of Grant County, as noted above. However, the Oregon Employment Department makes employment estimates in broad categories. It was decided to replace these proposed measures with the Employment Department metric, “Nonfarm employment.” It is organized into such categories as mining and logging, construction, manufacturing, leisure and hospitality, and retail trade.

- Overall county-level economic activity

There is no county-level equivalent to the national or state GDP. One good indicator of overall economic activity is total payroll, the data for which are also available in broad categories from the Oregon Employment Department.

- Economic diversification index

One measure of the socio-economic health of a community is the diversity of its economy. It is argued that a more diverse economy will have less ups and downs over time, and those ups and downs will be less extreme. A typical economic diversification index compares the employment distribution of a subject area (e.g., Grant County) with a reference area (e.g., Oregon as a whole). Although the data are available, creating an economic diversification index is expensive and time-consuming. It is impossible to put it into place for this report, but Hibbard has agreed to develop it during 2010.

To sum up, the process resulted in a total of seventeen measures, five direct effect measures, five outcome measures, and seven indicators.

Adopted Measures

Direct Effects

- Number and size (in dollars) of restoration contracts
- Local/non-local firm? (local = Grant County)
- % of contract dollars spent locally
- % of employees who are local residents (local = Grant County)

Summary of restoration contracts in the upper Middle Fork project area, 2007 and 2008.

	2007	2008
Total Dollars Spent on Restoration Contracts	1,251,839	924,719
Number of Restoration Contracts	13	14
Number of Local Contracting Firms	3	3
Number of Non-local Contracting Firms	6	9
% of Contract Dollars Spent Locally	31.29100467	62.93
Number of Local Contract Employees	13	17

- Number of new “restoration-related” jobs

Restoration-related jobs in Grant County, 2000 and 2009.

Organization	2000		2009	
	FTE	Employees	FTE	Employees
Grant County Soil and Water Conservation District	4	5	7.5	8
North Fork John Day Watershed Council	1.5	2	3.75	4
Confederated Tribes of Warm Springs	2	2	6.4	10
Oregon Department of Fish and Wildlife	27.25	29	30.5	33
The Nature Conservancy	1	1	2.5	3
US Forest Service- Malheur Forest Aquatics	6	6	7	7
Bureau of Reclamation	0	0	1	1
TOTAL	41.75	45	58.65	66

Outcome Measures

- Changes in land use/land management practices – on public, tribal and private lands throughout Grant County.

This measure will be developed during 2010.

- Annual travel spending in Grant County (in \$ millions), 2000-07 (most recent year available)

	2000	2001	2002	2003	2004	2005	2006	2007
Spending (in \$ millions)	7.8	8.2	8.3	8.5	9.2	9.1	9.4	9.8

Source: <http://www.deanrunyan.com/pdf/pdf/or07pspendbycou.pdf>

- Estimated number of jobs generated by travel spending in Grant County, 2000-07 (most recent year available)

	2000	2001	2002	2003	2004	2005	2006	2007
Jobs Generated	190	200	200	200	210	210	210	210

Source: <http://www.deanrunyan.com/pdf/pdf/or9107pemp.pdf>

- Total local lodging tax receipts for Grant County (in \$ thousands), 2000-07 (most recent year available)

	2000	2001	2002	2003	2004	2005	2006	2007
Total Tax Receipts (in \$ thousands)	49.8	50.3	53.5	53.5	48.2	63.4	92.7	98.4

Source: <http://www.deanrunyan.com/pdf/pdf/tot07p.pdf>

- Camping Activity

This measure will be developed during 2010.

Socio-economic Indicators

- Total Population

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Oregon	3,436,750	3,471,700	3,504,700	3,541,500	3,582,600	3,631,440	3,690,505	3,745,455	3,791,060
% Change (Previous Year)		1.02%	0.95%	1.05%	1.16%	1.36%	1.63%	1.49%	1.22%
Grant County	7,950	7,800	7,750	7,650	7,750	7,685	7,630	7,580	7,530
% Change (Previous Year)		-1.89%	-0.54%	-1.29%	1.31%	-0.84%	-0.72%	-0.66%	-0.66%

Source: <http://www.pdx.edu/prc/annual-oregon-population-report>

- Population by Age Groups (less than 18 Years, 18-64 Years, and 65 Years and Older)

Grant County	Ages 0-17		Ages 18-64		Ages 65 and Over		Total Population
	Pop	% of Pop	Pop	% of Pop	Pop	% of Pop	
As of 7/1/2008	1600	21.2%	4,553	60.5%	1,377	18.3%	7,530
As of 7/1/2002	1,925	24.8%	4,464	57.6%	1,361	17.6%	7,750

- Per capita personal income, 2000-2006 (most recent year available)

	2000	2001	2002	2003	2004	2005	2006
Oregon	\$28,096	\$28,518	\$28,931	\$29,565	\$30,621	\$31,599	\$33,299
Grant County	\$21,350	\$23,877	\$24,741	\$25,490	\$26,822	\$26,744	\$29,077
Grant as % of Oregon	76%	84%	85%	86%	88%	85%	87%

Source: <http://www.oregon4biz.com/p/pcpi.pdf>

- Median household income, 2000-06 (most recent year available)

	2000	2001	2002	2003	2004	2005	2006	2007
Oregon	\$41,662	41,752	41,796	42,593	42,568	43,065	46,228	48,735
Grant County	33,369	32,903	33,343	32,934	34,475	34,441	36,629	36,011
Grant as % of Oregon	80%	79%	80%	77%	81%	80%	79%	74%

Source: <http://www.oregon4biz.com/p/MedHouseInc.pdf>

- Grant County Non-Farm Employment

Grant Nonfarm Employment (Not Seasonally Adjusted)							
	Jul 2009	Jun 2009	Jul 2008	Change -month-	Change -year-	% Change -month-	% Change -year-
Total nonfarm employment	2,420	2,460	2,530	-40	-110	-1.6%	-4.3%
Total private	1,330	1,280	1,420	50	-90	3.9%	-6.3%
Mining and logging	30	30	30	0	0	0.0%	0.0%
Construction	140	130	150	10	-10	7.7%	-6.7%
Manufacturing	140	130	200	10	-60	7.7%	-30.0%
Trade, transportation, and utilities	380	360	370	20	10	5.6%	2.7%
Wholesale Trade	50	40	50	10	0	25.0%	0.0%
Retail trade	270	270	270	0	0	0.0%	0.0%
Transportation, warehousing, and utilities	60	50	50	10	10	20.0%	20.0%
Information	40	40	40	0	0	0.0%	0.0%
Financial activities	110	110	110	0	0	0.0%	0.0%
Professional and business services	100	90	130	10	-30	11.1%	-23.1%
Educational and health services	150	150	140	0	10	0.0%	7.1%
Leisure and hospitality	180	180	180	0	0	0.0%	0.0%
Other services	60	60	70	0	-10	0.0%	-14.3%
Government	1,090	1,180	1,110	-90	-20	-7.6%	-1.8%
Federal government	380	360	380	20	0	5.6%	0.0%
State government	170	170	170	0	0	0.0%	0.0%
Local government	540	650	560	-110	-20	-16.9%	-3.6%

Source: <http://www.qualityinfo.org/olmisj/CES?action=rs54&areacode=04000023>

- Grant County Total Payroll

Grant County 2008 Covered Employment and Wages Summary Report						
NAICS	Industry	Ownership	Units	Employment	Payroll	Avg Pay
-	Total All Ownerships	All	343	2,413	\$71,306,953	\$29,551
-	Total Private Coverage	Private	279	1,393	\$33,798,600	\$24,263
-	Natural Resources & Mining	Private	35	144	\$4,187,177	\$29,078
111	Crop production	Private	2	(c)	(c)	(c)
112	Animal production	Private	7	(c)	(c)	(c)
113	Forestry and logging	Private	13	(c)	(c)	(c)
115	Agriculture and forestry support activity	Private	13	61	\$2,355,671	\$38,618
-	Construction	Private	41	128	\$3,206,870	\$25,054
236	Construction of buildings	Private	17	26	\$478,723	\$18,412
237	Heavy and civil engineering construction	Private	8	65	\$1,914,631	\$29,456
238	Specialty trade contractors	Private	16	37	\$813,516	\$21,987
-	Manufacturing	Private	7	172	\$5,466,791	\$31,784
311	Food manufacturing	Private	1	(c)	(c)	(c)
321	Wood product manufacturing	Private	2	(c)	(c)	(c)
332	Fabricated metal product manufacturing	Private	2	(c)	(c)	(c)
339	Miscellaneous manufacturing	Private	2	(c)	(c)	(c)
-	Trade, Transportation. & Utilities	Private	62	357	\$8,962,534	\$25,105
-	Wholesale	Private	9	45	\$1,064,224	\$23,649
423	Merchant wholesalers, durable goods	Private	2	(c)	(c)	(c)
424	Merchant wholesalers, nondurable goods	Private	5	40	\$923,201	\$23,080
425	Electronic markets and agents and broker	Private	2	(c)	(c)	(c)
-	Retail	Private	36	257	\$5,328,347	\$20,733
441	Motor vehicle and parts dealers	Private	4	33	\$1,123,109	\$34,034
442	Furniture and home furnishings stores	Private	1	(c)	(c)	(c)
443	Electronics and appliance stores	Private	1	(c)	(c)	(c)
444	Building material and garden supply stores	Private	6	32	\$615,196	\$19,225
445	Food and beverage stores	Private	6	(c)	(c)	(c)
446	Health and personal care stores	Private	3	28	\$528,381	\$18,871
447	Gasoline stations	Private	3	12	\$101,239	\$8,437
448	Clothing and clothing accessories stores	Private	2	(c)	(c)	(c)
452	General merchandise stores	Private	2	(c)	(c)	(c)
453	Miscellaneous store retailers	Private	5	(c)	(c)	(c)
454	Nonstore retailers	Private	3	(c)	(c)	(c)
-	Transportation, Warehousing & Utilities	Private	17	54	\$2,569,963	\$47,592
221	Utilities	Private	2	(c)	(c)	(c)
484	Truck transportation	Private	12	16	\$458,435	\$28,652

(Continued)

NAICS	Industry	Ownership	Units	Employment	Payroll	Avg Pay
491	Postal service	Private	1	(c)	(c)	(c)
492	Couriers and messengers	Private	2	(c)	(c)	(c)
-	Information	Private	7	41	\$1,444,264	\$35,226
511	Publishing industries, except Internet	Private	2	(c)	(c)	(c)
515	Broadcasting, except Internet	Private	2	(c)	(c)	(c)
517	Telecommunications	Private	3	23	\$1,011,259	\$43,968
-	Financial Activities	Private	25	86	\$2,343,022	\$27,244
-	Finance & Insurance	Private	12	68	\$1,935,679	\$28,466
522	Credit intermediation and related activities	Private	7	52	\$1,546,606	\$29,742
524	Insurance carriers and related activities	Private	5	16	\$389,073	\$24,317
-	Real Estate Rental & Leasing	Private	13	18	\$407,343	\$22,630
531	Real estate	Private	11	(c)	(c)	(c)
532	Rental and leasing services	Private	2	(c)	(c)	(c)
-	Professional & Business Services	Private	25	100	\$2,408,726	\$24,087
-	Professional, Scientific & Technical Svcs	Private	18	58	\$1,492,115	\$25,726
-	Admin. & Support, Waste Mgmt & Remediation Svcs	Private	7	42	\$916,611	\$21,824
561	Administrative and support services	Private	5	(c)	(c)	(c)
562	Waste management and remediation service	Private	2	(c)	(c)	(c)
-	Education & Health Services	Private	21	129	\$2,582,247	\$20,017
-	Leisure & Hospitality	Private	28	170	\$1,903,696	\$11,198
-	Other Services	Private	29	67	\$1,278,273	\$19,079
811	Repair and maintenance	Private	6	24	\$574,012	\$23,917
812	Personal and laundry services	Private	1	(c)	(c)	(c)
813	Membership associations and organization	Private	18	39	\$639,911	\$16,408
814	Private households	Private	3	(c)	(c)	(c)
-	Private Non-Classified	Private	0	(c)	(c)	(c)
-	Total All Government	All Govt.	64	1,020	\$37,508,353	\$36,773
-	Total Federal Government	Federal Govt.	15	252	\$13,102,813	\$51,995
-	Natural Resources & Mining	Federal Govt.	2	197	\$10,848,584	\$55,069
-	Trade, Transportation. & Utilities	Federal Govt.	9	21	\$778,147	\$37,055
-	Leisure & Hospitality	Federal Govt.	1	22	\$860,664	\$39,121
-	Public Administration	Federal Govt.	3	12	\$615,418	\$51,285
-	Total State Government	State Govt.	13	135	\$4,890,643	\$36,227
-	Construction	State Govt.	2	19	\$791,399	\$41,653
-	Education & Health Services	State Govt.	2	32	\$744,749	\$23,273
-	Public Administration	State Govt.	8	82	\$3,258,044	\$39,732
-	Total Local Government	Local Govt.	36	633	\$19,514,897	\$30,829
-	Trade, Transportation. & Utilities	Local Govt.	2	17	\$259,993	\$15,294

(Continued)

NAICS	Industry	Ownership	Units	Employment	Payroll	Avg Pay
-	Education & Health Services	Local Govt.	14	395	\$13,612,560	\$34,462
-	Leisure & Hospitality	Local Govt.	2	13	\$166,908	\$12,839
-	Other Services	Local Govt.	5	5	\$25,536	\$5,107
-	Public Administration	Local Govt.	13	202	\$5,449,900	\$26,980
(c) - Confidential						

Source: <http://www.qualityinfo.org/olmisj/CEP?areacode=04000023&periodcode=01002008&action=summary&submit=Get+Report>

- Economic Diversification Index

This measure will be developed during 2010.

Ongoing Socio-Economic Monitoring

This project has accomplished its purposes. It has engaged key members of the Grant County community in a significant discussion of the restoration economy in Grant County and eastern Oregon more broadly. It has identified a robust set of measures that can help explain the socio-economic effects of restoration projects in the upper Middle Fork on the local community. And it has enlisted a local organization to accept ongoing responsibility for collecting, storing, and updating the socio-economic measures. But that is just the beginning of what should be an ongoing process.

Socio-economic measures have no intrinsic meaning. They only take on meaning when they are used to inform public discussions and decisions – for policymaking, for management of the IMW, and for public education/citizen action. Having tangible measures that illustrate the potential of the restoration economy can help the local community realize its contribution; however, designing appropriate ones that can be reasonably monitored and interpreted is not a straight-forward task. This first iteration is based on expert guesswork about what measures are likely to be useful. As the community engages the measures for these purposes they will need to change and evolve. The community will learn which of the measures are helpful, which need to be revised, and which should be abandoned. As well, they will identify possible new measures that need to be tested. That is why the community needs to embrace the IMW socio-economic monitoring project. It is a work-in-process, under construction by the community, to be used by the community in the service of building a local restoration economy that makes sense to them.

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