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**A GUIDE FOR DEVELOPING SOCIO-ECONOMIC  
MEASURES FOR OREGON'S WATERSHED COUNCILS**

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# *A Guide to Developing Socio-Economic Measures For Oregon's Watershed Councils*

## **Introduction**

The central purpose of Oregon's watershed councils (WSCs) is environmental restoration and management. At the same time, most WSCs recognize and embrace the idea that environmental and economic health are inter-dependent. That idea is captured in Oregon law, which declares (ORS 541.353) 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). It is also reflected in the mission statement of the Oregon Watershed Enhancement Board (OWEB), the state agency with primary responsibility for assisting and promoting watershed councils, which says that OWEB's purpose is "to help create and maintain healthy watersheds and natural habitats that support thriving communities and strong economies" (emphasis added).

As watershed councils have taken hold, there is growing interest in assessing the effectiveness of their efforts, for purposes of public education, planning and management, and accountability. This is part of a wide-ranging trend over the past fifteen years to try to improve the performance of public organizations by measuring their activities and results. Along those lines, watershed councils – with support from OWEB – have made substantial investments in the development of bio-physical monitoring capacity. Given the acknowledged connection between healthy ecosystems and thriving communities and economies, it makes sense to develop a parallel capacity for socio-economic monitoring.

As a first step toward building the capacity for socio-economic monitoring, IPRI has produced this ***Guide to Developing Socio-Economic Measures for Oregon's Watershed Councils***. Its purpose is to explain and illustrate how an interested watershed council can create a set of individualized measures geared toward its own specific situation. While this *Guide* is aimed at Oregon's watershed councils, we hope it will be useful to other community-based natural resource management organizations.

This *Guide* is organized into three parts:

- 1) Metrics as a planning and management tool for watershed councils
- 2) Developing metrics
- 3) Examples of possible metrics and their utility for watershed councils

## Metrics as a Planning and Management Tool

Metrics, or measures, are in widespread use in our society. Metrics are simply an attempt to measure the condition of something that is of interest. An individual on a diet is interested in their caloric intake and their weight. A business owner asks an accountant to provide a variety of measures of the financial status of the firm. A community's citizens are interested in such metrics as rainfall, high school drop-out rate, and the cost of living.

A variety of types of metrics are in wide use. Some of the most common are:

- **Inputs** – Inputs are the resources or factors of production that an organization processes in order to accomplish its goals. Types of inputs include physical, human, and financial capital. For example, the knowledge, skills and labor hours of employees, financial resources and funding, and buildings computers and land are all forms of input. Inputs are not really evaluative metrics so are not considered any further in this *Guide*.
- **Outputs** – Outputs are the services, publications and programs that an organization produces by utilizing its inputs. Outputs also include the tangible affects that the organization's programs had on their target audience. Examples of outputs include publications and community outreach programs, as well as the tangible measures of those program's affects.
- **Outcomes** – Outcomes are specific changes in the socio-economic and natural environments that can be reasonably tied to an organizations projects and related activities. Outcomes are generally less tangible and harder to measure. Examples of outcomes include, improved water quality, increased salmon runs, and other environmental benefits.
- **Performance Measures** – Performance measures evaluate an organization's efficiency or effectiveness in achieving its outputs. Performance measures are often a ratio of outputs to inputs: How many units of output were achieved per unit of input? For example, how many yards of stream bank plantings were accomplished per person-hour of labor?
- **Socio-Economic Indicators** – Socio-economic indicators measure long-term trends in community well being. Their purpose is to demonstrate how well the community's environmental, economic, and social systems are functioning. Indicators are not specific cause-and-effect outcomes. They measure the overall status of the system. It is up to the analyst to decide on appropriate actions. For example, a thermometer can tell you whether a person has a fever, but not what is causing it or what to do about it. An indicator can denote the existence of pollution in a watershed, but it cannot explain the causes but cannot prescribe the actions to resolve it.

Watershed councils can use socio-economic metrics for a variety of planning and management purposes.

- Strategic planning
- Decision making
- Evaluation
- Performance benchmarks
- Community education
- Civic engagement

When we begin to think in detail about their use, we see that effective metrics have several key characteristics. Metrics should be:

- **Specific** – They are specific enough to track progress throughout the process.
- **Relevant** – Provides information directly related to a relevant system.
- **Easy to Understand** – Even by people who are not experts. The non-professional community should be able to understand the meaning of the indicator and its relevance to the study.
- **Reliable** – You can trust source of the data and the information provided.
- **Based on Data** – The data collected should follow the following guidelines.
  - Accessible: The information is available, or can be collected reasonably quickly at an acceptable cost.
  - Time-series: Past information is available, and will be available in the future.
  - Objective: Factual, not personal opinion.

## Developing Metrics

Ideally, an organization should develop a set of socio-economic measures that includes all metric types – inputs, outputs, outcomes, performance measures, and indicators. The organization should use them together to develop a comprehensive picture of a community's socio-economic health.

Metrics should be scientifically reliable and relevant to the specific context (ecological, social, economic) of the watershed council. Thus, creating metrics is both a technical and a participatory process. In simplest terms, the process involves the following:

- **Consider Your Organization's Mission, Goals, and Objectives**
  - What broad socio-economic concerns are reflected in the mission?
  - What are the primary goals of your organization (restoration, education, etc.)?
  
- **Develop a Preliminary Set of Relevant Metrics**
  - Review existing data sources (governmental and private) to obtain a general sense of the kind of information that is available.
  - Brainstorm. Using a participatory process, the kinds of information that would be the most useful and how it would be used.
  - Select a preliminary set of possible metrics.
  
- **Consider Logistics**
  - Is the desired information available at the appropriate scale (e.g. watershed, county, state)?
  - Does your organization have the financial, human, technical resources to collect, maintain, and disseminate the desired information? Will original data collection be required? Can you make use of existing data collected by another organization?
  - Eliminate possible measures/metrics that are logistically problematic.
  
- **Reevaluate Preliminary Metrics for Your Organization**
  - Ensure that each metric will provide information appropriate to your organization's mission and interests.
  - Develop an operational definition for each metric
  - Re-review the rejected metrics: Think about whether they can be refined and added back into the set of metrics.
  - Depending on the size, scope, and capacity of your organization, it may be best to have only a few metrics. A general rule is whether the additional information is worth the additional resources necessary to collect it.

The following table illustrates one way of working through the metric development process.

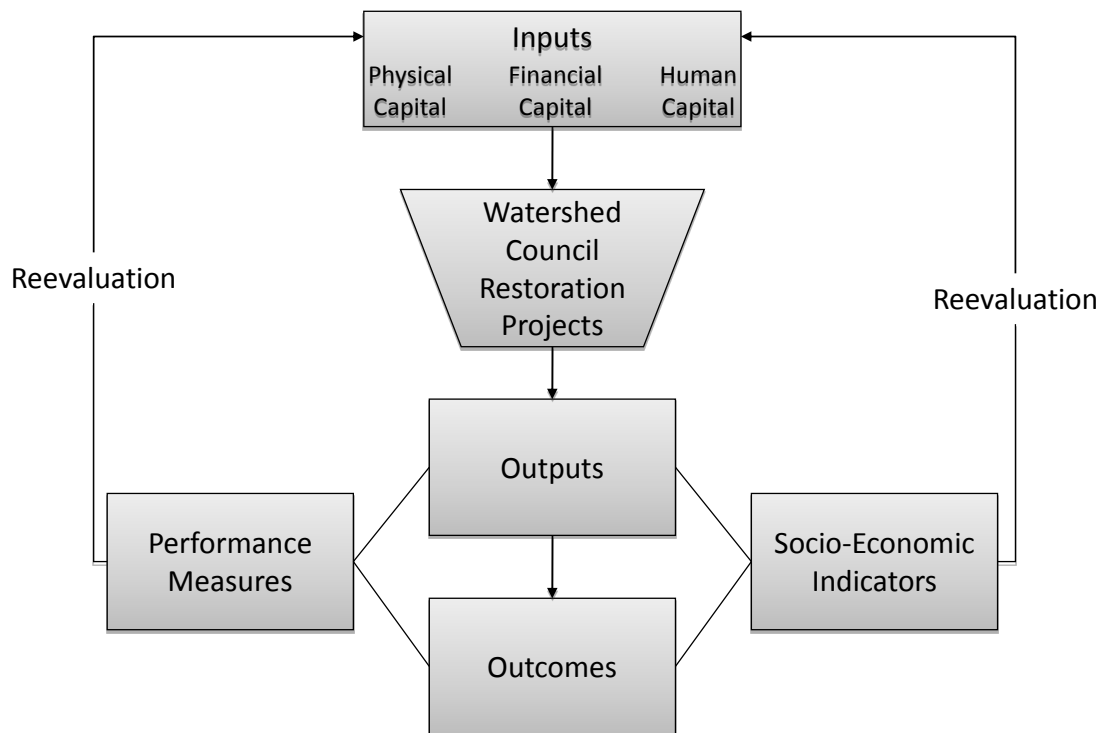
<b>Associated Organizational Goal/Objective</b>	<b>Metric (Indicators)</b>	<b>Purpose of the Indicator</b>	<b>Logistics of the Indicator</b>
Improving the economic well being of the watershed	Local Un-employment rate	Tells us how the economy is changing over time. Useful in helping decide how to target local fundraising programs and what kind of donations to expect. Also helps us think about watershed restoration programs that also provide job training.	Information available on the state's labor and market information system website. Easily accessible and can be downloaded annually to view yearly changes for both winter and summer, to reflect the seasonal nature of the work.
Community outreach and environmental education	Number of schools with an environmental education program	Helps assess the weaknesses and/or strengths of the local school system in providing environmental education. Can help decide which schools should be targeted. Also helps decide if educational opportunities needs to part of school curriculum or extracurricular activities.	Will have to be collected yearly by a staff member of the watershed council -- possibly through phone calls with the local school.



## Metric Tool Box

The Metric Tool box is intended for two purposes. It provides examples of possible metrics and explains how a watershed council could use them. While these specific metrics may be useful for some watershed councils, each situation is unique.

The intent of the Metric Tool Box is to assist watershed councils think about their goals and what types of metrics will be most useful for them. This set of metrics could be used for a variety of purposes, including: strategic planning, decision-making, evaluation, performance benchmarking, and community education.



## Output Measures

An output measure looks at specific products or changes that can be tied directly to the actions of the watershed council. To return to a previous example, if someone is on a diet, the direct result of dieting, or the weight lost, is an output measure.

Good output measures can be effective management tools for measuring the direct results of project. They help natural resource managers in strategic planning, decision-making, evaluation, and benchmarking performance. One of the significant benefits of using output measures is that most of the information is already available from internal records. The following table gives several examples of possible output measures and their uses.

<b>Output Measures</b>	<b>Type of Measure</b>	<b>Source of Information</b>	<b>What can be learned?</b>	<b>Significance to the WSC</b>
Number of WSC employees (FTE and headcount) in various income brackets	Economic	Watershed Council records	The impact of the watershed council on the job market	If one of the WSC goals is to create family wage jobs, it is important to know how their jobs compare with the larger socio-economic picture in the community.
Number of local (for example, within the county) contractors hired versus contractors hired from other locations	Socio-Economic	Watershed Council records	Are the funds being used for watershed restoration being allocated to local contractors?	If a significant portion of funds used are going to non-community organizations the council may want to encourage programs to help train local people to do restoration and related work.
Number of workers (FTE and headcount) employed by contractors on WSC projects	Economic	WSC and/or contractor records	How is the watershed council impacting the job market?	If one of the WSC goals is to create jobs, it is useful to know how many jobs are being supported by contracts.
Number of private land owners participating in stream restoration projects	Socio-Economic	Watershed Council records	Is there a growing number of landowners interested in watershed improvement	The change in the number of participants may represent the success of the year's program. It could also describe how the councils education and outreach programs are impacting landowners.
Number of annual WSC publications	Education	Watershed Council records	Indirect measure of WSC impact on community education.	Represents the watershed council's ability to distribute information to the community.
Number of people attending WSC outreach events	Education, Community Involvement	Event survey - Watershed Council records	How many people are attending WSC events? Are there trends in attendance?	This helps gauge how well recognized the WSC is in the community. Are people aware of and interested in council events? This would measure the level of involvement and commitment in the community

## Outcome Measures

Outcome measures aim to assess the results, impacts, or effects of outputs. To return to the example of the person on a diet, weight loss can lead to an overall improvement in health. An outcome measure might be reduced blood pressure.

In the case of a watershed council, outcome measures can be complex because of the myriad other factors that may be operating. For example, by completing a restoration project the WSC might hope for increased salmon runs. However, changes in a salmon run depend on other conditions in addition to the restoration project.

As with bio-physical measures such as salmon counts, socio-economic outcomes are also hard to measure. A restoration project might aim to increase the value of adjacent properties, or provide new agricultural opportunities because of improved groundwater conditions.

However, many other factors can also influence socio-economic outcomes. It is essential to recognize the existence of these external factors when developing socio-economic outcome measures. In addition, socio-economic outcomes are closely related to outputs, so the measures can be similar. For example, the number of workers employed by contractors doing restoration work can be both an output and an outcome. This table provides examples of possible outcome measures and their significance for watershed councils.

Outcome Measures	Type of Measure	Source of Information	What can be learned?	Significance to the WSC
Change in the number of workers (FTE and headcount) employed by contractors on WSC projects.	Economic	WSC and/or contractor records	Is the watershed council contributing to the economic vitality of the community?	Most outcome measures are meant to examine the long-term impacts of an organization's work. Providing employment is an important contribution to the economic vitality of the community.
Percentage of WSC and contractor employees who are local residents.	Economic - Community	Watershed Council and Contractor Reporting	Does the local workforce have the necessary training and skill to capture restoration and related work?	Over the long-term the WSC has the ability to provide the local workforce the knowledge and skills necessary to carry out environmental management and restoration projects.
Change in property values adjacent to restoration projects	Economic	County assessor; MLS	The economic value of restoration in the real estate market.	Demonstrates the external economic effects of restoration projects on the community.

<b>Outcome Measures</b>	<b>Type of Measure</b>	<b>Source of Information</b>	<b>What can be learned?</b>	<b>Significance to the WSC</b>
Percentage of local schools that have integrated curriculum on watershed restoration/management.	Education - Community	School District	Will young community members learn about the importance of watershed health? Are the educational programs in the schools supporting the mission of the WSC?	IF the community has more knowledge on the importance of watershed restoration, the community will be more likely to support WSC programs and projects.
The number of projects initiated by private landowners, as opposed to projects initiated by the WSC.	Community	Watershed Council	Is there a growing relationship between the community and the watershed council? Are landowners becoming more proactive in watershed restoration?	Building long term relationships between private, public, and non-profit partners is key to institutional longevity.

## Performance Measures

Performance measures are used to assess how effectively an organization is using its resources to accomplish its goals. For example, if a watershed council uses its entire budget to remove invasive species it may be working very hard and getting a lot done, but it is not fulfilling all of its objectives so is most likely not using its resources as effectively as possible. Performance measurement is often depicted in a ratio: how many units of output per unit of input. Performance measures are an important tool for strategic planning, decision making, and evaluation. This section gives several examples of performance measures, and their significance to a watershed council.

Performance Measures	Type of Measure	Source of Information	What can be learned?	Significance to the WSC as a Performance Measure
Number of new jobs added by the WSC; total payroll; total employees.	Organizational -Economic	Watershed Council Records	Is the watershed council growing as an organization?	How effective is the WSC in using its limited funds to promote economic development within the watershed?
Number of new farm/land owners engaged in watershed council projects as a ratio of the outreach budget.	Community	Watershed Council Records	Are the programs aimed to educate and increase participation working?	How effective are the outreach programs are in the community?
Number of monitoring contracts.	Economic	Watershed Council Records	Are there growing number of projects for the council?	How much on-the-ground work is being done, as opposed to using resources on outreach, and education?
Income from contracts as a fraction of the total budget	Economic	Watershed Council Records	Is the number of contracts increasing?	How diverse are the WSC's income sources?
The number of community partnerships as a ratio of the outreach budget?	Community	Watershed Council Records	Is the Watershed council improving its relationship with other community organizations?	Is the council meeting its goals to work with other organizations? Are there gaps in the system? Should the effort to coordinate be increased?
The number of projects/programs implemented with community partners.	Community	Watershed Council Records	How much work is the council accomplishing in collaboration with other entities?	Are community partners actual working partners?

<b>Outcome Measures</b>	<b>Type of Measure</b>	<b>Source of Information</b>	<b>What can be learned?</b>	<b>Significance to the WSC</b>
Number of and attendance at outreach events	Education and Community Involvement	Watershed Council Records	Is the watershed council actively engaged in promoting and educating the community about watersheds?	Is the WSC working out in the community and achieving its goals to educate the community and provide outreach? Is the staff and resources available capable of achieving these goals? Is the numbers of people attending events increasing?
Attendance as a ratio of event budget	Education and Community Involvement	Watershed Council Records	Is the watershed council actively engaged in promoting and educating the community about watersheds?	Is the staff and resources available capable of achieving these goals? Is the numbers of people attending events increasing? Is the council working strategically to promote watersheds?
Median tenure of staff	Organizational	Watershed Council Records	Are WSC employees dedicated to the council and members of the community?	This can be a gauge of how well run the organization is. A large number of long-term staff members may indicate that people are satisfied with their work and work environment.
Meeting attendance by executive council members	Organizational	Watershed Council Records	Are WSC board members actively engaged?	Active engagement by all board members indicates a healthy organizational structure.
Number of different sources of funds for the annual budget and percent of budget contributed by each source	Organizational	Watershed Council Records	What kind of funding is the council receiving and how are those funds being allocated within the organization (administration, monitoring, research and development)?	This metric shows how much funding is being received and how that funding is being used for administration, education, restoration, monitoring. It can help the council decide how they would like to seek funds or use funds in the future to meet goals.
Percentage of board positions filled	Organizational	Watershed Council Records	What level of interest in the watershed do community members have? Is the board being run effectively?	On a performance level, indicates how well the organization is being run. Shows how the council is perceived in the community. If the board is full with a large pool to choose from, that may indicate that outreach and education are successful. A full board shows that many stakeholders have a say in WSC decisions

## Socio-Economic Indicators

Having an idea of the overall socio-economic context is important for any organization. Socio-economic indicators can paint a picture of that overall context and can be used for strategic planning and management. They attempt to measure the overall health of the community. Tracking socio-economic indicators can help a watershed council know where to place its focus and resources. Significant changes in the socio-economic conditions of the community can have very large impacts on the watershed. For example, a recession may decrease the availability of funds, but it may increase the availability of volunteers. Regularly tracking these conditions can help the watershed council adjust its plans to the changing circumstances

Indicators	Type of Indicator	Source	What can be learned from the indicator?	Significance to the Watershed Council
Job earnings by income bracket in the community vs. region.	Economic and Social	Census Bureau	What income levels are growing and which are shrinking? Is the community becoming more or less economically distressed?	Indicates whether an economic change is affecting only the local community or the entire region. This income data is best used in conjunction with unemployment data.
Ratio of traditional resource extraction to environmental management and restoration jobs.	Economic and Sustainability	Census Bureau	Changes in the structure of the local economy, in the economic uses expected from resources and resource lands.	Changes in the structure of the local economy
Total acreage of certified farm and forest land. (Example Salmon Safe, Food Alliance, etc)	Environmental and Economic	Salmon Safe and other certification websites, or WSC data collection	The number of acres in the watershed that are being managed for economic and ecological.	Indicates changes in the attitudes of private landowners.
Agricultural and/or timber production in the county.	Economic	OSU Agricultural Extension Service	OSU Ag Extension reports farm gate sales by product. This can reveal if/how agricultural production is changing. Timber harvest data show if/how forest management is changing.	Indicates changes in the local agriculture and natural resource economy.

## **Conclusion**

Effectively using these tools will assist your watershed council in measuring their impact on the local economy.

By developing metrics specific to your organization, the watershed council will be able to more effectively monitor economic effectiveness while fulfilling its primary role of restoring and maintaining healthy watersheds.