

NEPA Indicators as an Agency's Scorecard

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Choosing accurate and revealing measurement indicators for NEPA impacts has been and remains a challenge. Often, a resource specialist declares that impacts will occur but finds it difficult to measure these impacts quantitatively. And then the specialist needs to interpret such quantitative values for readers of National Environmental Policy Act (NEPA) documents.

The September 2004 issue of *Environmental Practice* recounts how the Northwest Environment Watch (NEW), a nonprofit group, began five years ago to develop an environmental scorecard. Their intent was to monitor and to record through the use of indicators environmental progress in the Pacific Northwest, including both Canadian and U.S. lands.

Leigh Sims, the author of the *Environmental Practice* article (pp. 204-206), lists seven selection criteria for potential NEW indicators. These criteria are not new, but several do merit repeating, especially because the choice of NEPA indicators remains a troublesome legal hurdle for many NEPA specialists. NEW criteria with special relevance to NEPA include the following:

- An indicator must measure (quantitatively) change ("progress" in the NEW context).
- An indicator must be both reliable and cost effective.
- An indicator must be "intuitively compelling" (p. 204)—that is, the public must understand its usefulness and find it "interesting."

Measurable indicators

Measurable change for NEW means that they actually measure such things as average human lifespan or the number of clear-cut acres in the Northwest. Notice that NEW is essentially monitoring existing conditions (the existing environment from a NEPA perspective) and that these indicators have numerical values.

NEPA practitioners must also measure existing conditions, but within the NEPA context, specialists then must extend these conditions into forecasts of future conditions. NEW staff did not attempt to forecast the future.

Measurable forecasts are the difficult step in NEPA. An hydrologist can easily measure current sediment in a stream or record the water temperature. But NEPA then mandates that the hydrologist calculate/estimate the sediment and temperature at some future date (perhaps 5 or 10 years in the future). If no good models are available, the specialist might have to guesstimate future numerical values for the sediment and temperature.

Good models are a better solution, but the best models are speculative and often reflect debatable assumptions. Such models often don't accurately fit an actual on-the-ground situation.

With uncertain models, specialists may resist quantifying potential impacts. They may feel, for example, that all they can say is that the stream will experience adverse impacts. But without some estimated values, such a forecast is weak. It fails to give the public an understandable message as to the projected stream conditions for the year

in question. From a NEPA perspective, a quantified impact gives readers a context and an estimated intensity for the impact.

Measurable NEPA indicators are essential to a full and honest disclosure of impacts.

Reliable and Cost-Effective Indicators

Reliable NEW indicators are ones that are an accurate reflection of current conditions. And further, they measure environmental conditions consistently year after year.

NEW also wanted their indicators to be cost effective. The necessary data for such an indicator should be accessible without unreasonable costs or an extended timeframe for the collection of data.

NEPA indicators should also be reliable and cost effective. Reliability is an obvious benefit, especially when a NEPA specialist confronts complex natural conditions. The chosen NEPA indicator should be an accurate tool for both measuring current conditions and forecasting future conditions.

Cost-effective NEPA indicators are ones that don't require months of additional field work or a series of annual baseline surveys. Such requirements would break an agency's budget and delay project implementation. So cost-effectiveness is a necessary criterion for NEPA specialists to consider as they choose appropriate indicators for a site-specific project. In many instances, their choice for an indicator is likely to be a compromise between the most scientifically rigorous and a less rigorous, but less costly or time-consuming indicator.

“Intuitively Compelling” Indicators

This NEW criterion was perhaps the most interesting from a NEPA perspective. Often NEPA specialists rely on technically sophisticated indicators. But an indicator, if very sophisticated, may fail to communicate the required impact information to lay readers.

Lay readers need and appreciate indicators that are “intuitively compelling” from the NEW perspective. In a NEPA context, this phrase would lead specialists to choose an indicator that makes intuitive sense to lay readers. Measurements using such an indicator would be persuasive or compelling to readers because the indicator itself is understandable and sensible.

For example, lay readers are likely to understand a recreation impact if it is expressed in an estimated People at One Time (PAOT) value. The more people at one time, the more crowded and noisy a site becomes. The cause-and-effect relationship is clear. Recreation specialists might feel, however, that a PAOT value is only a rough or inaccurate measure of total recreational satisfaction.

But contrast a PAOT value with a visual experience that is discussed in terms of a “modification” or “major modification” of the visual scene. Readers must go back to the definition of “modification” and “major modification” and then attempt to match the definitions to the actual impacts at the project area. These impacts from a reader's perspective are difficult to translate into an understandable recreational experience.

Similarly, a complex numerical rating system may be accurate from a modeling perspective, but numerical values always seem to be artificial or

forced to a lay person unless they are skillfully explained. Instead, a lay reader would appreciate a simple comparison of different acres available under different alternatives.

This problem with complex numerical systems is why most current NEPA practitioners avoid impact evaluation systems using pluses and minuses, filled in quadrants within circles, or a purely numerical weighting scheme. All such methods are not intuitively clear to readers, who likely suspect the agency of recording impacts with a bias.

Clear and understandable impact estimates are why the National Park Service has recently begun to ask all NEPA analysts (including contractors) to label impacts using one of four common terms: “negligible,” “minor,” “moderate,” and “major.” Naturally, analysts must explain why the chosen label is appropriate for a specific impact level on each separate resource. After all, a minor adverse impact on a cultural site has different legal implications than a minor adverse impact on elk habitat.

Conclusion

Under NEPA, agency specialists must define and interpret potential resource impacts. This process would surely profit from well-chosen measurement indicators—ones that speak intuitively and persuasively to the public.

(The full citation for the article mentioned in the opening paragraphs is as follows: Leigh Sims, “Measuring What Matters in the Pacific Northwest: The Cascadia Scorecard,” *Environmental Practice* 6 (September 2004), 204-206.)