

Making the Case for Green Remediation

The U.S. Environmental Protection Agency is continuing to promote its' Green Remediation Initiative, which encourages decision makers to consider all of the environmental and community impacts in clean-up actions. The primary goal of green remediation is to integrate sustainable practices into remedial decision making, thereby increasing the environmental, economic, and social benefits of the remedial actions or restoration efforts.

Green remediation is becoming more widely accepted and gaining support among many parties, including the states of California, Illinois, and New Jersey, the Army Corps of Engineers, and the American Society for Testing and Materials (ASTM). In addition, the Sustainability Remediation Forum (SuRF), composed of industry, regulatory agencies, and consulting firms, is developing protocols for evaluating green remediation alternatives.

Integrating sustainable practices into clean-up actions presents PRPs with opportunities and challenges. The opportunities stem from encouraging a complete analysis of remedial approaches including using less invasive, passive remediation approaches, and minimizing ecological footprints. Other opportunities include increasing the likelihood for land re-use and job creation.

A challenge is to analyze the range of environmental, economic, and social benefits in a framework that is acceptable to site regulators and internal and external project stakeholders. ENTRIX has developed a NECBA process to help clients assess alternative actions using the EPA's nine criteria framework (Figure 1). NECBA uses decision analysis techniques to identify and assign weights to key criteria and provides "scores" for each alternative (Figure 2). The process can help make sure that the analysis of remedial alternatives fully reflects all of the risks, benefits, and trade-offs of alternate strategies.

Figure 1

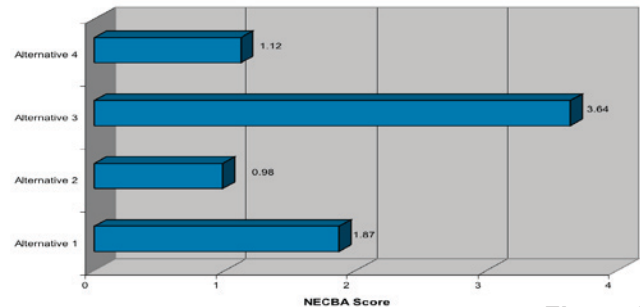
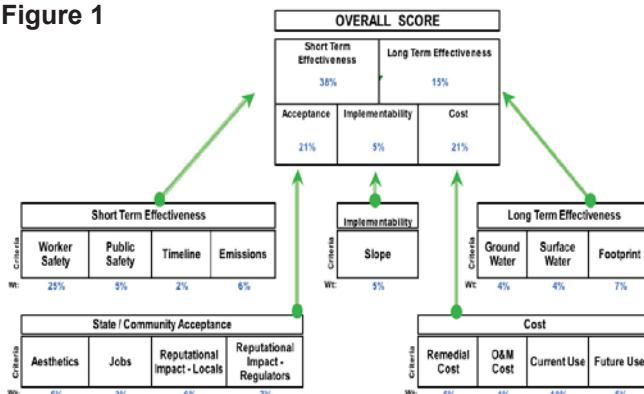


Figure 2

The NECBA approach can be used at any of three levels:

Internal client use: Develop a rigorous basis for "right sizing" the re-development plans and the remedial approach. The results can be shared with the regulators or used only to formulate strategy.

Active participation with regulators: The NECBA model can be developed working in conjunction with regulators to help build consensus about the remedial approach.

Active community participation: Green remediation also emphasizes public acceptance of clean-up actions. NECBA provides a structured process for collecting and analyzing community impacts.

ENTRIX has helped clients apply NECBA in a variety of settings:

Greenfield Development

ENTRIX worked with an energy company to assess the potential value of developing an alternative energy facility at a mining site. The analysis is assessing potential financial, environmental and community impacts of alternative facility sizes and developing a strategy for addressing regulatory approvals.

Brownfield Development

Worked with a manufacturing company to develop a strategic plan for closing an old manufacturing plant. The client originally considered just closing the plant and performing the mandated remediation. The plan showed that an inter-modal facility would provide higher value to the client and the community with a lower cost of clean up.

Mining Reclamation Project

Working with a mining company to analyze alternative mine reclamation strategies. The goal is to provide the state and federal regulators with a rigorous, defensible analysis of the reclamation alternatives that accurately captures their full environmental, social, and economic impact.

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