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Evaluation of Implementation of the Superfund *Green Remediation Strategy*

Summary Fact Sheet

Introduction

- EPA's Superfund program is working to advance greener cleanups at Superfund sites.
- Central to this effort is the Superfund *Green Remediation Strategy (GR Strategy)*, which was published in final form in September, 2010.
- The *GR Strategy* outlines 40 action items across three main areas with the ultimate goal of reducing the environmental footprint associated with cleaning up contaminated sites.
- EPA's Office of Superfund Remediation and Technology Innovation (OSRTI) and the Office of Policy's Evaluation Support Division (ESD) sponsored this program evaluation to: 1) assess EPA experiences to date in implementing the *GR Strategy;* 2) determine a baseline against which to measure EPA progress in implementing the *GR Strategy;* and 3) determine the best metrics for measuring the program's success in implementing GR practices.

Evaluation Questions

- Does EPA have clearly defined goals and objectives for the *GR Strategy*? Should they be refined and improved to enhance usefulness (e.g., for management decision making, planning and budgeting, EPA's Strategic Plan)?
- Which initial activities or initiatives from the *GR Strategy* have been most effective in increasing awareness, adoption and/or implementation of the *GR Strategy*?
- How do Remedial Project Managers (RPMs) factor the *GR Strategy* into their approach to planning site cleanup?
- What effect has the *GR Strategy* had on the practice of using green remediation techniques at Superfund sites?
- What lessons have been learned as a result of implementing the *GR Strategy* at sites?
- What options can we identify for developing a baseline?
- What performance measures are appropriate for measuring the effectiveness of the *GR Strategy* in achieving intended outcomes at a regional or national level?
- What are the best means for measuring the effectiveness of the *GR Strategy* in reducing the environmental footprint at sites that have implemented GR practices with respect to the five core elements of the *GR Strategy*?
- Where are the primary data gaps and limitations that inhibit a better understanding of the results of implementing the *GR Strategy*?

Evaluation Methods

- The evaluation used several research methods to answer the evaluation questions.
- The analytical approach for this evaluation combines content analysis of interview responses with examination of data from surveys, studies, literature, and databases to answer the evaluation questions.
- The evaluation team collected new data through interviews with key EPA personnel involved in implementing GR techniques and the *GR Strategy*, other federal agency, and state government officials.
- The evaluation team also conducted a review of existing data including GR literature, site-specific data, and documents and publications specific to the *GR Strategy* prior to the interviews to inform interview guides and resolve issues that arose during the interviews.

http://www.epa.gov/evaluate

For more information on completed evaluations at EPA or the Evaluation Support Division, visit the above link.

Key Findings

Assess EPA experiences to date in implementing the *GR Strategy*

- Overall, responses were uniformly positive of the *GR Strategy* structure and purpose, though some differences of opinion in how best to present "goals" and objectives were identified. Many respondents noted that a more precise goal statement could be used to increase awareness and focus further implementation of the *GR Strategy*.
- In the strongest finding, responses were very positive about several tools and products of the *GR Strategy*, which have been a key driver in facilitating an expansion of GR activities. Awareness of the *GR Strategy* document was more limited, though the *GR Strategy* is facilitating GR implementation by raising its national profile.
- Regional responses indicate that RPMs typically do not use the *GR Strategy* directly in their decision-making for GR implementation, though they use many of the tools and products developed as part of the *GR Strategy*. The *GR Strategy* document itself appears to be a more important tool for managers than for RPMs.
- Assessing the distinct contributions of the national *GR Strategy* and individual regional policies is difficult because they influence each other, and because limited time has passed since the *GR Strategy* publication. A snapshot of GR activities from regional surveys suggests that GR training and outreach has increased as the *GR Strategy* has developed.
- GR implementation is challenged by the level of funding and support for *GR Strategy* personnel and project efforts, concern about policy and liability uncertainty, and limited participation from managers and other key staff.

Determine a baseline against which to measure EPA progress in implementing the *GR Strategy*

- Most regions have not yet focused on developing a baseline for GR implementation. Respondents in eight regions described their GR implementation as just beginning, and feel that current practices still reflect pre-*GR Strategy* practices. Complexity arises in the regions where the *GR Strategy* clearly post-dates regional activities, and in cases where people are "doing" GR without calling it GR. Findings suggest that a single baseline may be adequate to capture *contribution*, but different regional baselines for site-specific actions may be needed for *attribution*.

Determine the best metrics for measuring the program's success in implementing GR practices

- A review of the *GR Strategy* logic model suggests that appropriate performance measures should assess changes in awareness (short-term outcomes), behavior (medium-term outcomes), and site practice/impacts (long-term outcomes). Metrics should also assess how effectively the *GR Strategy* is implemented and integrated throughout the remediation process. Successful metrics should be easily quantifiable and require limited data collection.
- Review of existing and emerging tools suggests EPA's footprint methodology's metrics are comprehensive and reasonable. Use of footprint-based metrics for program performance may require that OSRTI estimate typical site values to minimize data collection from regions.
- Respondents noted key challenges to understanding and implementing GR. These include the need for policy guidance on legal authority and implementation strategy for GR, concerns about resource constraints to conduct footprint analyses, and the need to maintain momentum and signal priorities in implementing the *GR Strategy*.

Recommendations

The evaluation team suggests that EPA:

- Focus on clarity of goals and implementation objectives.
- Continue emphasis on practical tools for GR implementation.
- Increase focus on policy and legal information and tools, or on other HQ "signaling."
- Consider the following as a starting point for establishing two baselines:
    - A region-specific baseline for documenting site-level changes and attributing change to the *GR Strategy*.
    - A national baseline for documenting integration of GR practices into EPA cleanup culture.
- Work with regions and develop guidance on how and when to conduct footprint analyses.
- Start a dialogue with each of the regions to agree on the best way to leverage case study and other available data to develop an estimation tool or "average" values for GR practices.
- Select metrics to measure program success based upon appropriate EPA criteria.

Report Link: http://www.epa.gov/evaluate/reports.htm