Green and Sustainable Remediation

2016 New Grantee Training

June 15, 16, and 30, 2016

What is Green and Sustainable Remediation?

- Green and Sustainable Remediation (GSR) –

  the site-specific employment of:
  products, processes, technologies, and procedures
  that mitigate contaminant risk to receptors
  while making decisions that are cognizant of
  balancing: 1) community goals,
  2) economic impacts, and
  3) net environmental effects.

- Minimizing:
  - environmental footprint of your project and
  - the adverse impacts it may have on the needs of current and future generations.

GSR in Brownfields - What are we asking you to do?

Identify practical, inexpensive ways to make your project greener and more sustainable!

- Minimize impacts
- Maximize efficiencies
- Ensure Long-term Benefits

Where does GSR fit in the Brownfields process?

- All Stages
- Plan, Implement, Document

GSR principles apply to Assessment, Cleanup and RLF Grants!

Green & Sustainable Remediation in Brownfields

Terms and Conditions (T&C)

T&C's within your award document will contain GSR language that will require:

- Use of a quarterly report template that includes a section on GSR achievements.
- Including **resilience** risk factors in the evaluation of cleanup alternatives in the ABCA.
- Considering how GSR practices may optimize a selected cleanup alternative to minimize waste and adverse impacts.

GSR and Resiliency Resources

Guidance	Standard
• *"Suggestions/Ideas for Green Remediation Incorporation into Brownfields Assessments and Cleanups – EPA Region 1"* • Green Remediation Best Management Practices (BMPs) • Climate Change Resiliency Guidance Document and Checklist NEW	• ASTM's Standard Guide for Greener Cleanups E2893 (2013) - *optional* NEW

Where do GSR and Climate Change Adaptation Considerations Fit?

- Proposal – *use any sustainability goals and observed or forecasted climate change impacts you identified in your successful proposal as a starting point.*

- Workplan
- Request for Proposals (RFP) and Contracting
- **Analysis of Brownfields Cleanup Alternatives (ABCA)**

- Public Engagement
- Quarterly Reporting

Don't forget to share your goals and achievements with both us and your community!

GSR in Your Workplan and RFP

Your Workplan:

- **Sets You Up to Comply with GSR/Resiliency T&Cs and Maximize GSR Benefits**

  Identify tasks and targeted outcomes that will lead to:

  - Greener and more sustainable
    - site assessment techniques utilized
    - plans for cleanup
  - Greener, more sustainable and resilient
    - Cleanups
    - Site reuse

Your RFP:

- **Ensures You have the Expertise Needed to Achieve the GSR Goals Stated in your Workplan**

  - Your Project Officer can help with suggested language to be put into your RFP
  - Also see the GSR Guidance document regarding incorporating GSR into the contracting process

Green & Sustainable Remediation in the ABCA

- Included as part of the Effectiveness evaluation of an ABCA:
  - Climate Change Impacts
- Included subsequent to the alternatives analysis to optimize the efficiency and effectiveness of a preferred alternative:
  - ASTM BMP Process and/or EPA GSR Guidance

The Resiliency CHECKLIST:

At Its Core, Just Three Basic Questions:

1. Identify observed and potential changing climate conditions for the region

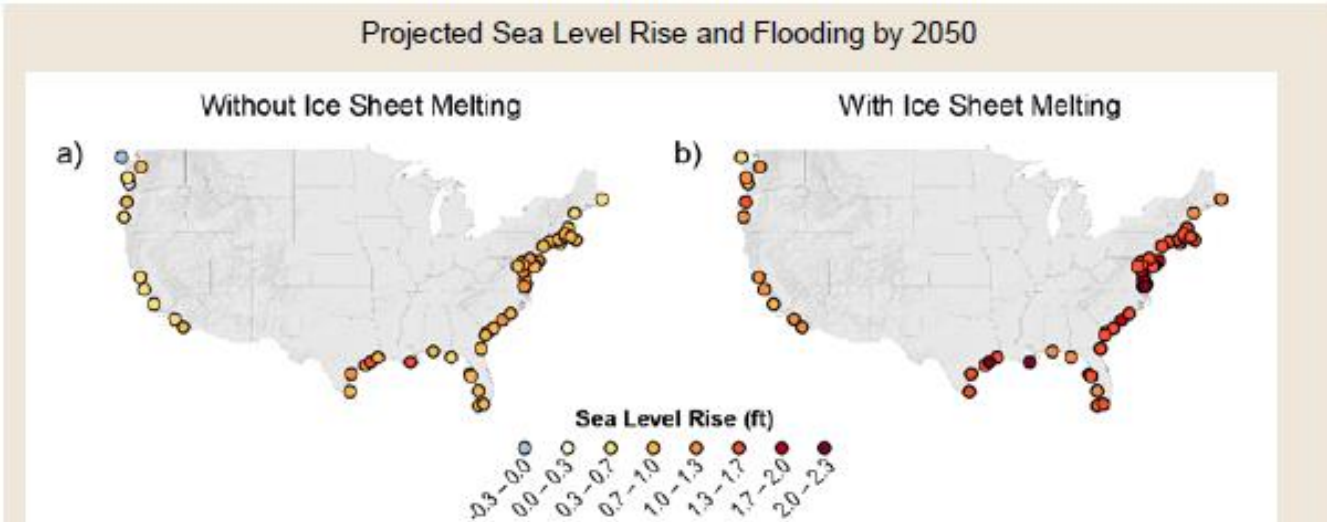
2. Identify the risk factors specific to your cleanup site

3. Evaluate how well each cleanup alternative can accommodate the identified climate change risk factors

Document the Consideration of each Question in the ABCA

Example:

Coastal Regions & Northeast



Key Messages

1. Heat waves, coastal flooding, and river flooding will pose a growing challenge to the region's environmental, social, and economic systems. This will increase the vulnerability of the region's residents, especially its most disadvantaged populations.

2. Infrastructure will be increasingly compromised by climate-related hazards, including sea level rise, coastal flooding, and intense precipitation events.

3. Agriculture, fisheries, and ecosystems will be increasingly compromised over the next century by climate change impacts. Farmers can explore new crop options, but these adaptations are not cost- or risk-free. Moreover, adaptive capacity, which varies throughout the region, could be overwhelmed by a changing climate.

4. While a majority of states and a rapidly growing number of municipalities have begun to incorporate the risk of climate change into their planning activities, implementation of adaptation measures is still at early stages.

Analysis of Brownfields Cleanup Alternatives (ABCA)

Complete Alternatives Evaluation (including Resiliency)

Select Recommended Alternative

ADD GSR LANGUAGE within ABCA by either:

a) Add a new section:

"Green and Sustainable Remediation Measures" or

b) Just add a few sentences discussing plans to make it greener (more sustainable).

Example –Hartford ABCA

Background: UST site with soil and free-phase petroleum contamination

Resiliency Context: Regional trends show increased and extreme precipitation. Site is 50 feet higher elevation than river so flooding unlikely, but potential for increased runoff and erosion exists.

Alternatives: ♦ No Action ♦ Remove UST/In-situ Bioremediation
♦Remove UST/Excavate Soil/In-situ Bioremediation

Analysis: No difference in effectiveness of active alternatives due to forecasted climate vulnerabilities (stormwater/erosion controls to be used and excavation planned for dry months to reduce dewatering)

Recommended Alternative: Remove UST/Excavate Soil/In-situ Bioremediation

GSR Measures for Recommended Alternative:

- States that BMPs in ASTM Greener Cleanups Standard will be referenced
- Idle-reduction policy and heavy equipment with advanced emissions controls
- Minimize mobilizations and use erosion control measures
- Ask bidding cleanup contractors to propose additional GR techniques in proposal

Example – Willimantic ABCA

Background: Contaminated soils from historic mill activities.

Resiliency Context: Portions of the site along the river are within the 100 year flood elevation. Regional trends show risk of increased and extreme precipitation.

Alternatives: ♦ No Action ♦ Soil Cap ♦ Targeted Excavation and Disposal, ELUR

Analysis: Appropriate erosion control measures during construction and armoring and grading to prevent future events from exposing soils along the river will protect against flood events for active alternatives. The proposed project results in an overall reduction in impervious surface which will also reduce run-off to the river.

Recommended Alternative: Targeted Excavation and Disposal, ELUR

GSR Measures for Recommended Alternative:

Use existing office building instead of trailer;

Vegetation will be utilized for erosion control where practical;

Erosion control measures will be conservative and protective of the adjacent river;

Native tree removal will be minimized;

Contractors will be required to adhere to an idling reduction program;

Soils will be pre-characterized to facilitate direct loading and reduce handling.

Green & Sustainable Remediation

Example

The Paul Cuffee School, Providence RI
(FY 2012 cleanup grant recipient)

Green Remediation Measures:

- Cleanup Contractor RFP
  - included suggestions for Green Remediation practices
- Reuse/Recycling
  - Removed asphalt recycled into RIDOT gravel base material
  - 1,670 tons treated soil reused at local Cranston Landfill
- On-site operations
  - Ultra-low sulfur diesel used in heavy equipment
  - No or minimal idling on-site
  - No field office established
  - Protected nearby waterways with silt fences, hay bales, etc.

Sustainable Reuse Goals:

Green and Sustainable Remediation

Take-Away (GSR in Brownfields)

1. GSR is integrated in our program and resiliency considerations are required in all ABCAs
2. There are practical, and at times cost saving or inexpensive GSR actions that can improve the outcomes of your project.
3. We are here to support your GSR goals and want you to get full credit for your achievements.

QUESTIONS 

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