Green and Sustainable Remediation (GSR) and Resiliency

2017 New Grantee Training

June 21 and 28, 2017

What is Green and Sustainable Remediation?

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

What is Resiliency?

- **Minimizing Vulnerabilities** of cleanups to extreme weather events and
- **Maximizing Adaptive Capacity** of our projects by taking into account forecasted environmental change.

GSR and Resiliency in Brownfields

Terms and Conditions (T&C)

T&C's within your award document will contain GSR and resiliency 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.

Where do GSR and Resiliency Considerations Fit?

GSR principles apply to Assessment, Cleanup and RLF Grants

- 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!*

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).

GSR and Resiliency Resources

Guidance

- Climate Change Resiliency Guidance Document and Checklist
- *"Suggestions/Ideas for Green Remediation Incorporation into Brownfields Assessments and Cleanups – EPA Region 1"*
- Green Remediation Best Management Practices (BMPs)

- EPA Climate Smart Brownfields Manual - https://www.epa.gov/sites/production/files/2017-01/documents/final_climate_smart_brownfields_manual_online_version.pdf
- EPA Smart Growth: Flood Resilience Checklist - https://www.epa.gov/sites/production/files/2014-07/documents/flood-resilience-checklist.pdf

STANDARD (optional, but useful)

- ASTM's Standard Guide for Greener Cleanups E2893 (2013) - *optional*

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 –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 GSR 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 

Brownfields
Green Remediation Lead:
Laurie O'Connor
617-918-1605
oconnor.laurie@epa.gov

Brownfields
Sustainability Lead:
Jessica Dominguez
617-918-1627
dominguez.jessica@epa.gov