

# Implementing Sustainable Remediation at a Portfolio Level

**Gerlinde Wolf, PE**

**Sustainable Remediation Forum (SURF)**

**President, 2018**

**June 2018**



## Who Is SURF?

- Founded in 2006
- Mission: to maximize the overall environment, societal, and economic benefits from the site cleanup process by:
  - Advancing the science and application of sustainable remediation
  - Developing best practices
  - Exchanging professional knowledge
  - Providing education and outreach

Thought leadership group that collaborates with environmental professionals from all disciplines to develop and advance sustainable remediation principles and practices.

<http://www.sustainableremediation.org>

## Drivers for a Programmatic Approach to Sustainable Remediation (SR)

- Increasing focus on corporate and agency sustainability goals
- Desire for consistent approach for application of sustainability
- Increasing energy costs
- Proliferation of regulatory and industry guidance and frameworks
- Federal and state regulations
- Recognition that impacts and decisions may be bigger than just the site and surrounding area
- SR can be an effective communication tool and stakeholder engagement mechanism



## Example Approach for SR Program Development

1. Decide on SR program goals/objectives and priority metrics
2. Identify SR tools for metric tracking and sustainability evaluations
3. Develop a guidance document describing the program
4. Develop metric tracking and reporting methodology
5. Pilot test identified tools and framework



# AECOM Developed Comprehensive SR Program for North American Class 1 Railway Company

- Provides consistent application of SR analysis and implementation using transparent tools across entire portfolio of sites
- Program based on a tiered approach that is scalable depending on site and management specific goals
- SR implemented throughout all stages of remediation project lifecycle
- Tools developed for metric tracking and reporting, aligning with corporate goals



## Example Priority Metrics

- Air Emissions (GHG, NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>)
- Water Consumption
- Electricity Usage
- Landfill Disposal (Hazardous & Non-Hazardous)
- Topsoil Consumption
- Cost
- Lost Hours – Injury
- Percent Electricity from Renewable Sources

### *Remedy Evaluation Criteria Under CERCLA*

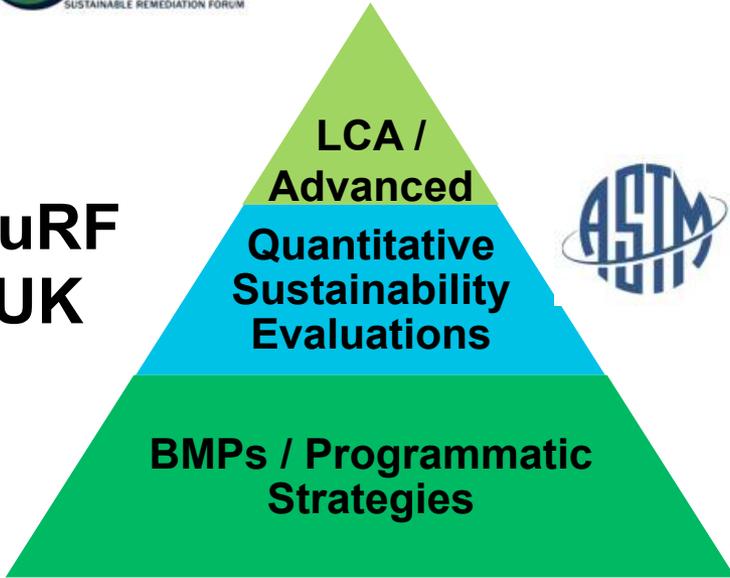
- ✓ *Overall protection of human health and the environment;*
- ✓ *Compliance with [applicable or relevant and appropriate requirements (ARARs)];*
- ✓ *Long-term effectiveness and permanence;*
- ✓ *Reduction of toxicity, mobility, or volume;*
- ✓ *Short-term effectiveness;*
- ✓ *Implementability;*
- ✓ *Cost;*
- ✓ *State acceptance; and*
- ✓ *Community acceptance*

- These metrics go beyond the standard CERCLA evaluation criteria, and state requirements

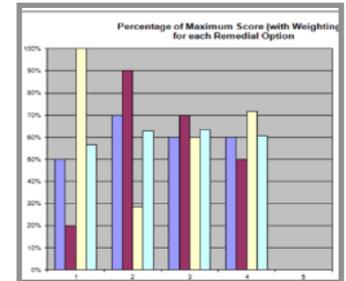
# Frameworks & Tools to Consider



SuRF  
UK



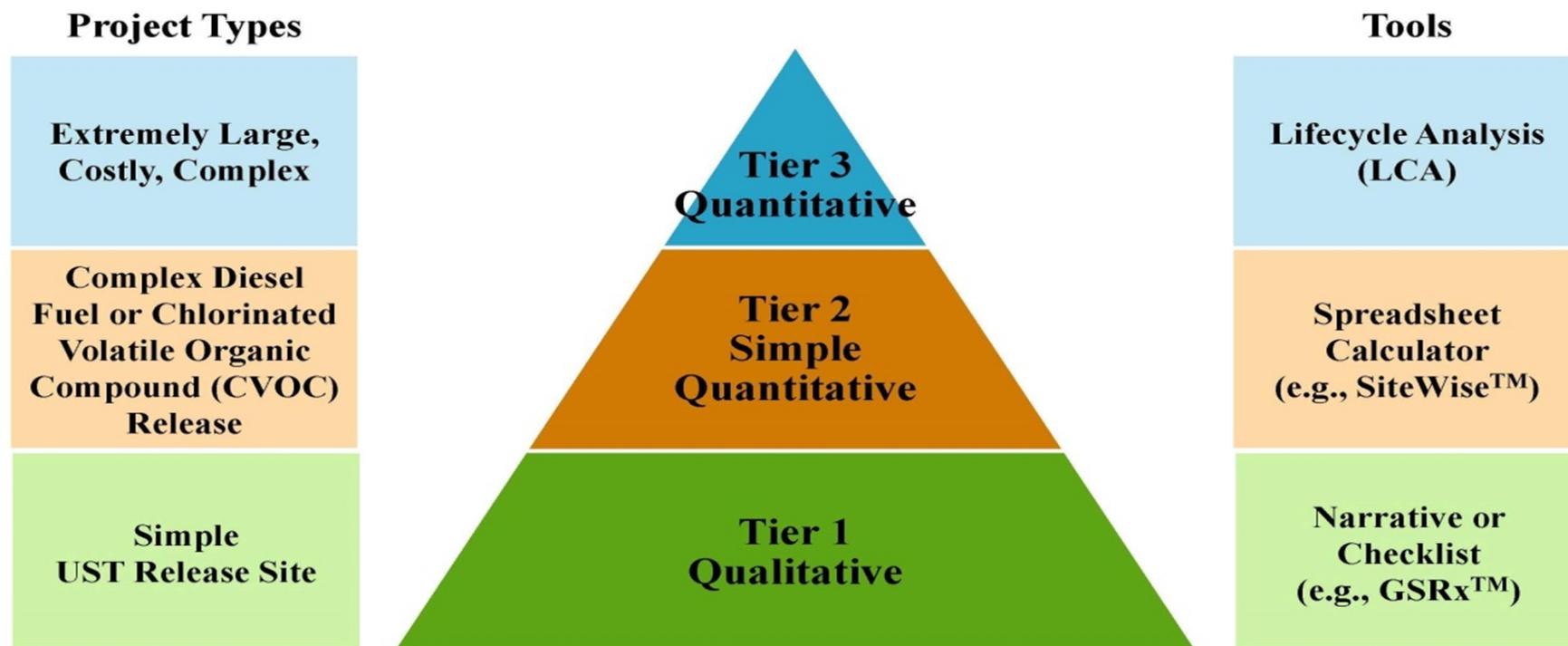
EPA  
SEFA



Remedial Option	Criteria	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Value 10
1	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	...	...	...	...	...	...	...
4	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	...	...	...

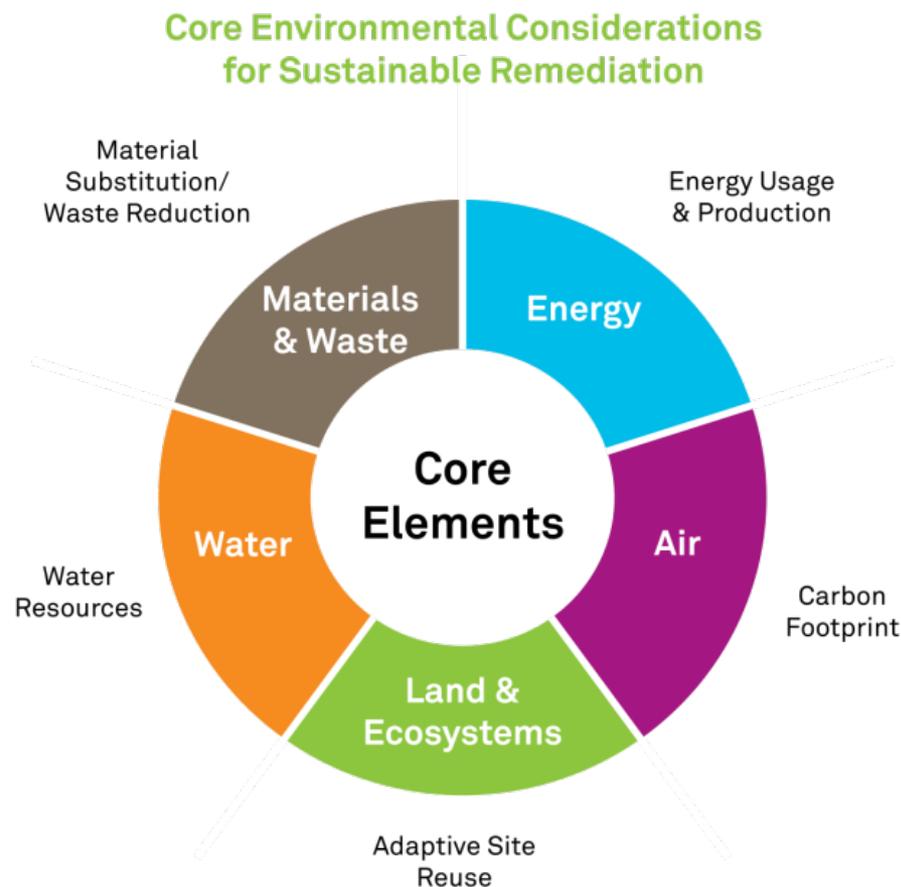


## Example Tiered SR Approach



## Programmatic Implementation of Best Management Practices

- BMP: An action or practice that improves an environmental, social and/or economic aspect of a site.
- Resources for BMPs
  - SURF
  - USEPA
  - US State Agencies
  - US Department of Defense
  - ASTM Guidelines
- BMPs may be qualitative or quantitative



## Programmatic SR Implementation and Metric Tracking

- Important to consider on project scale and portfolio scale
- Qualitative assessments can still have quantitative benefits
  - Recycling
  - Travel Miles Saved
  - Beneficial Reuse of Materials
  - Idle Reduction Time
  - Cost Savings
  - Waste Reduction
  - Ecosystem Benefits
- Tracking on project level leads to large scale programmatic impact



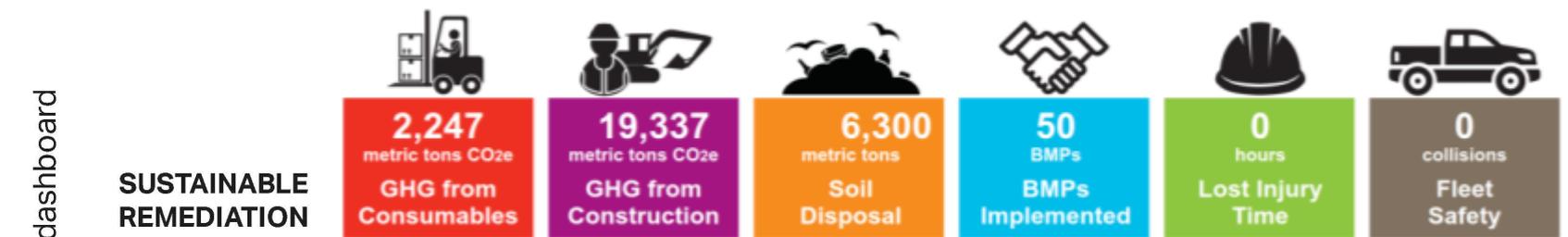
## Programmatic Lessons Learned

- Starting discussion early on with contractors, i.e. during the bid walk, sets up expectations and clearly shows SR program requirements
- Incorporation of sustainability into daily tailgate meetings keeps field staff engaged and focused
- Frequent discussion of sustainability goals during project status calls helps track progress and identify areas of improvement
- Field implementation of selected BMPs can sometimes be challenging
  - Recycling



## The Broader Perspective – Value of SR Programs

- Corporate philosophies of sustainability and environmental stewardship
- Desire for consistent approach for application of sustainability
- Corporate sustainability reporting now widely practiced
- Many sustainability benefits are linked
  - Gaining efficiency often results in cost savings
  - Cost saving measures may lead to environmental and social benefits



# Thank You!

Questions?

Gerlinde Wolf, PE  
[Gerlinde.Wolf@aecom.com](mailto:Gerlinde.Wolf@aecom.com)  
518-951-2370