

# Protective Remedies with a Lower Environmental Footprint

Building Sustainability Into Our Core Mission  
Through Greener Cleanups

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# Forward Momentum: Policy, Tools & Practice

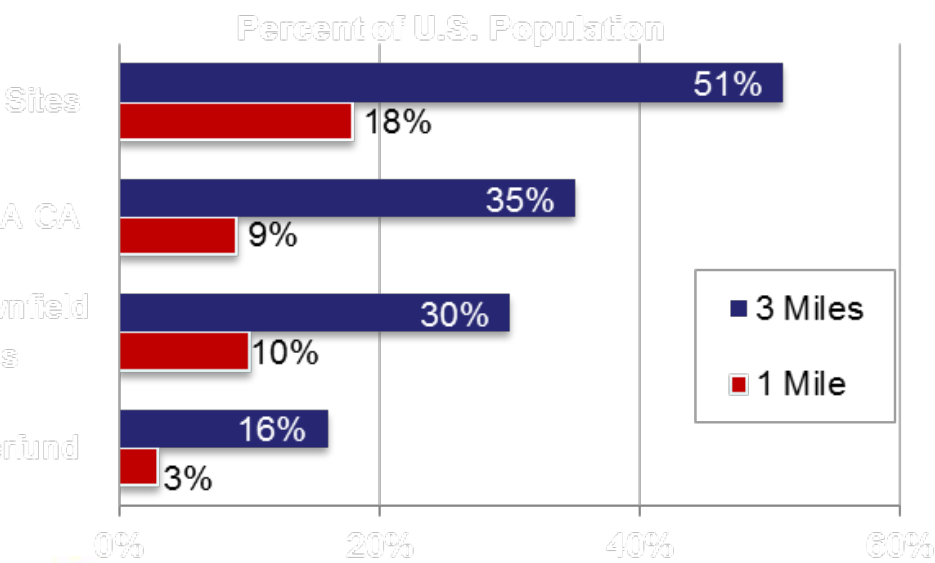
- Greener cleanups are consistent with Agency policy and authorities
- The ASTM Standard Guide for Greener Cleanups is an effective tool for all parties at the project level
- Site cleanup consulting and engineering companies are increasingly incorporating greener cleanup practices into their standard operations



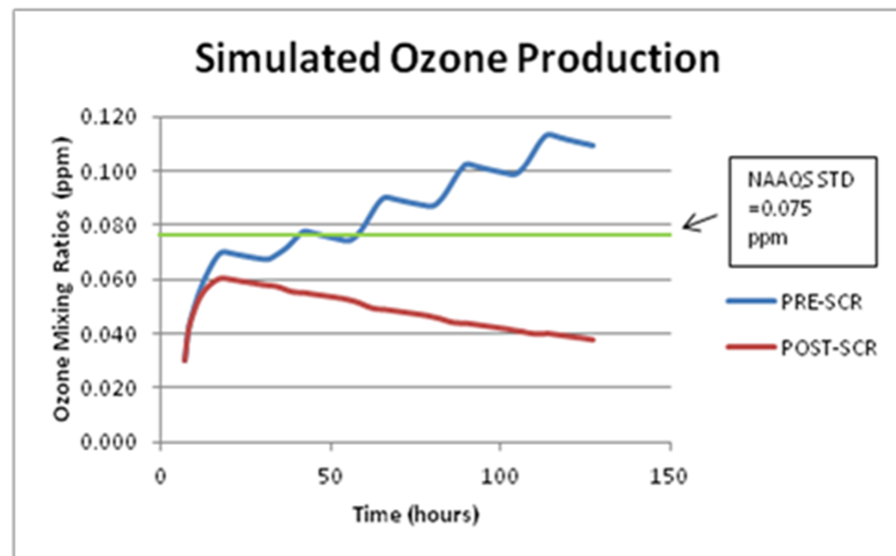


# EPA Cleanup Programs Address Contamination at Sites Near 51% of the U.S. Population

Population Within 1 and 3 Miles of RCRA CA, Brownfields, and Superfund Remedial Sites



- It's also a local question



Source: <https://clu-in.org/s.focus/c/pub/i/2545/>

Source: <https://www3.epa.gov/osweraccomplishments/story.html>  
<https://clu-in.org/s.focus/c/pub/i/2545/>





# Strong Agency Support for Greener Cleanups

- ◆ EPA Strategic Plan (2014-18):
  - » EPA's hazardous waste programs also are working to reduce the energy use and environmental footprint during the investigation and remediation of hazardous waste sites
- ◆ Encouraging Greener Cleanup Practices through Use of ASTM International's Standard Guide for Greener Cleanups (12/2013)
  - » I recommend that regions and OSWER programs facilitate and encourage use of ASTM's Standard Guide for Greener Cleanups in your efforts to implement greener cleanup practices.
- ◆ **New** - Consideration of Greener Cleanup Activities throughout the CERCLA Process (8/2016)





# Consideration of Greener Cleanup Activities in The Superfund Cleanup Process (8/2016)

- ◆ Links back to basic CERCLA authorities, but neither modifies nor amends the NCP
- ◆ Includes three main recommendations
  - » Consider greener cleanup measures in the life of a project
  - » Evaluate BMPs or need for Environmental Footprint
  - » Addresses Fund lead and PRP lead sites
- ◆ Provides key definitions & includes seven references to ASTM Standard Guide E2893





# Superfund Remedial Acquisition Framework

ASTM Referenced in Published Superfund Sources Sought/  
Request for Information\*

- ◆ ASTM E2893 Referenced in Two Suites of Contracts:
  - » Remediation Environmental Services Contract (RES)
  - » Environmental Services and Operations (ESO)
- ◆ SOW Requirements under section 1.4 Green Remediation
  - » "...the contractor shall explore and implement green remediation strategies..."
  - » Refers to ASTM International's *Standard Guide for Greener Cleanups* (E2893)



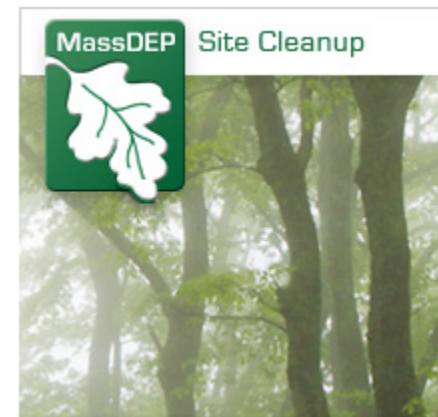
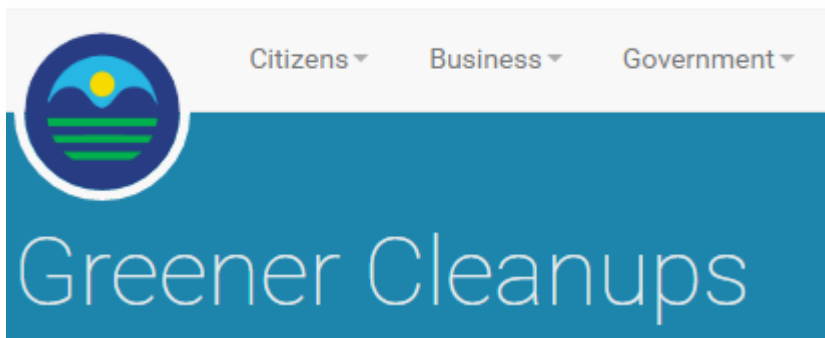
\* Published in FedConnect: The reference number is SOL-R1-14-00003 for ESO; SOL-HQ-14-00022 for DES and SOL-HQ-14-00023 for RES (posted 9/16/16)



# State Partners: Moving Greener Cleanups Forward



Illinois Environmental Protection Agency







# ASTM Standard Applied Across the Country: Sample BMPs



**Land & Ecosystems:** -  
Choose native vegetation  
needing little/no irrigation or  
other maintenance (OR  
**Superfund** site)

**Water / Land & Ecosystems:**  
Install earthen berms to  
prevent run-off or run-on in  
excavation areas (WA **TSCA**  
site)



**Water / Land & Ecosystems:** Construct  
wetlands for stormwater  
management and habitat  
creation (CT **RCRA-CA** site)

**Materials & Waste:** Mix  
reactive agents in situ to  
minimize material handling  
and transfer (IL  
**Brownfield**)







# Green Remediation: A Growing Practice

Examples of companies with green remediation on corporate websites\*

**AECOM**

**AEROJET  
ROCKETDYNE**

**Avanti**  
CORPORATION

**Aztech**  
Environmental  
TECHNOLOGIES

**BB&E**  
CONSULTING ENGINEERS  
& PROFESSIONALS

**BOEING**

**Brown AND  
Caldwell**

**CARDINAL**  
RESOURCES

**CDM  
Smith**

**ch2m**

**Cox-Colvin**  
ASSOCIATES, INC.  
ENVIRONMENTAL SERVICES

**EA**  
EA Engineering, Science,  
and Technology, Inc., PBC

**ERM**

**F E A**  
FENNELLY ENVIRONMENTAL ASSOCIATES, LLC

**GeoInsight**

**Geosyntec**  
consultants

**GROUP DELTA**  
ENVIRONMENTAL SERVICES

**HCR**  
HANDIX CONSULTING  
& REMEDIATION, LLC

**HDR**

**IRWIN Engineers**  
CHEMICAL & ENVIRONMENTAL

**Mott MacDonald**

**Nobis**

**PARSONS**

**PG&E**

**PLANTECO**

**Reterro**  
Cleaning Earth

**TRC**  
Results you can rely on

\* Based on query  
conducted June  
2016



In Closing: At EPA cleanup programs we see greener cleanups as a means to build sustainable practices into our core mission: to protect human health and the environment

Thank You!!

[www.epa.gov/greenercleanups](http://www.epa.gov/greenercleanups)

