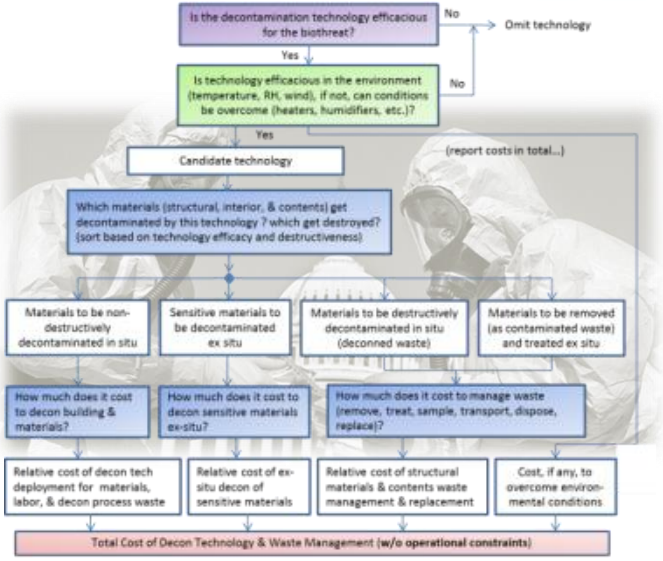

Decontamination Strategy and Technology Selection Tool (DeconST)

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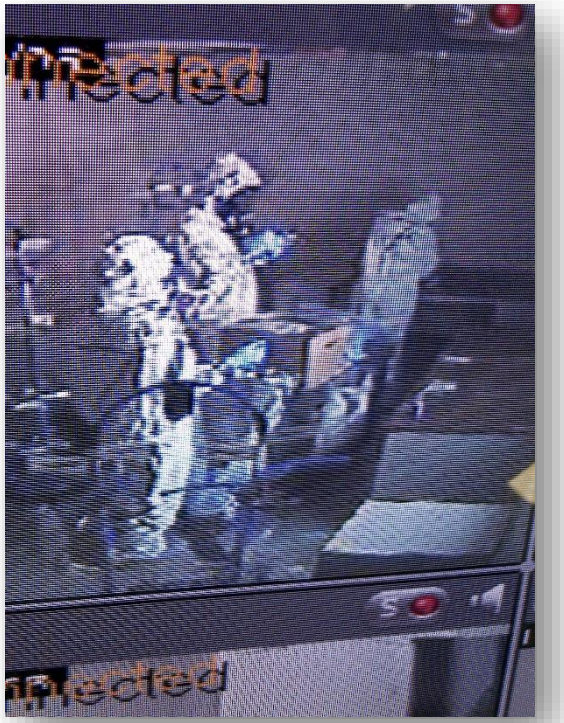
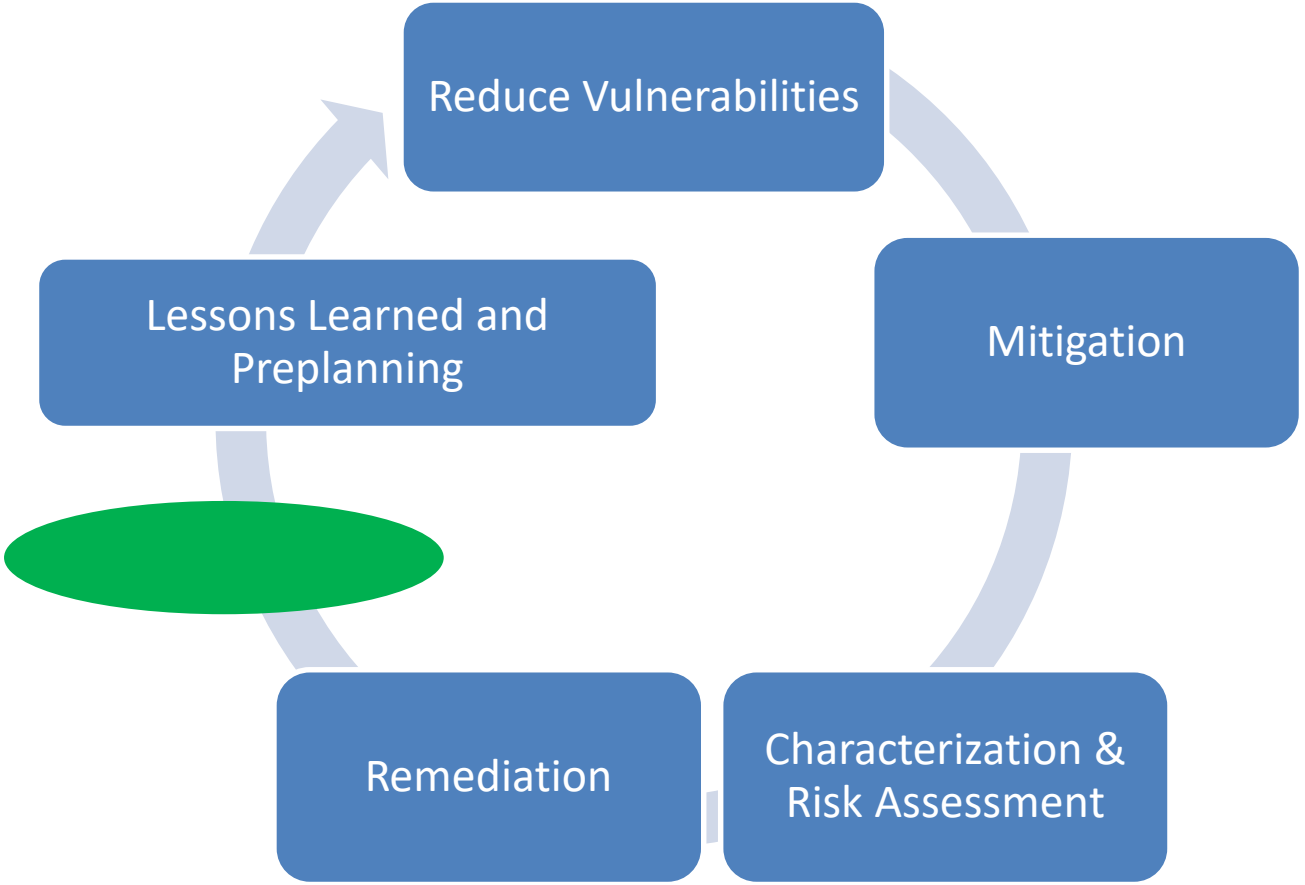
ORD's Homeland Security Research Program

Mission: to conduct research and develop scientific products that improve the capability of the Agency to carry out its homeland security responsibilities

Indoor/Outdoor Cleanup

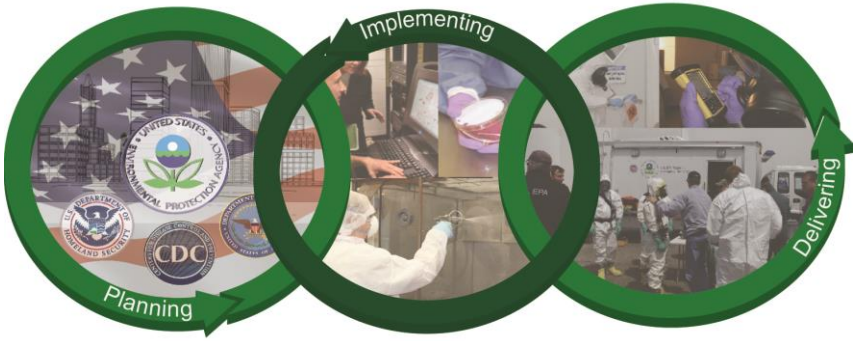
Systems Approach





Research Products

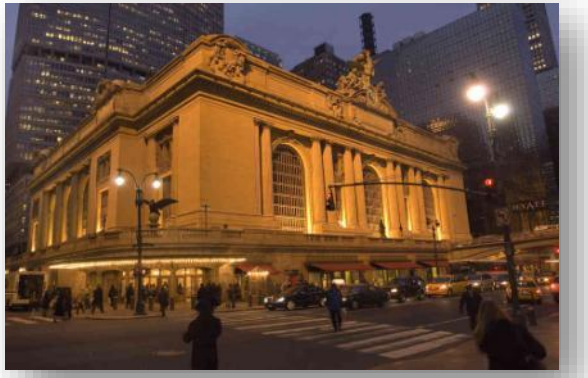
- Sampling and analysis method assessments and development
- Efficacy testing results of products against *B. anthracis* and other CBR agents
- Material compatibility studies
- Waste management
- Sampling and effectiveness determination strategies



Products available at www.epa.gov/nhsrc

Remediation - Decontamination

- What clean up technologies are most effective for contaminants on surfaces?
- How is efficacy changed by real world variations in environmental, process and agent characteristics?
- What are the impacts of decontamination methods?
- Options for sensitive equipment, high- value, or historical items?
- Options for critical infrastructure?



Example: Decontamination Efficacy

Challenge: products informing remediation decisions for contaminated areas.

Goal: reduce remediation cost/time while protecting workers and nearby residents.

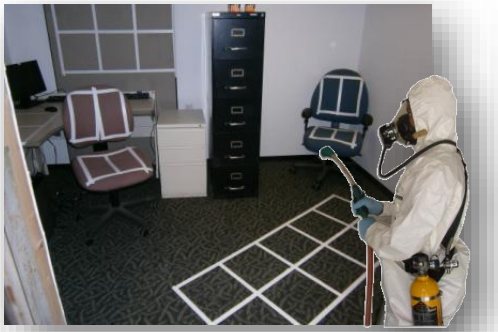
Assess performance of fumigant, liquid and foam technologies for efficacy against *B. anthracis* spores

Results tabulated to rapidly identify the most effective method for specific decontamination situations.

Factors That Influence Decontaminant Effectiveness

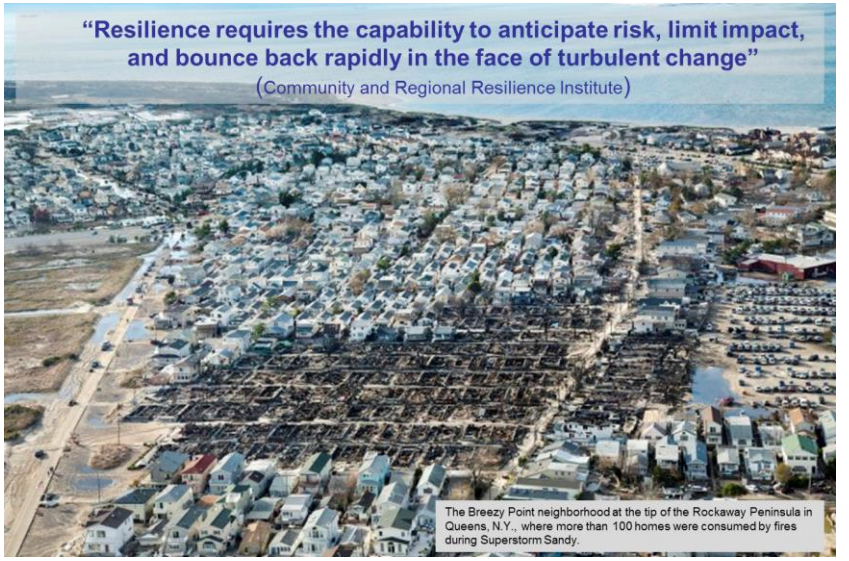
- Temperature and relative humidity
- Characteristics and amount of the biological agent on the surface
- Material characteristics
- Decontaminant, concentration, and contact time





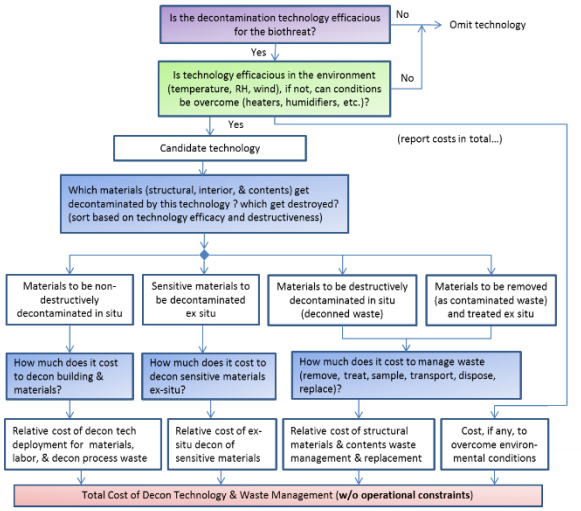

Supporting Remediation Decision Making

- No universal remediation solution; site specific based upon pros/cons of options
- Inter-relationship between remediation activities:
  - Hazard mitigation/containment
  - Characterization sampling
  - Decontamination
  - Post-decontamination efficacy assessment
  - Waste management
- How can latest science on remediation options be presented to decision makers, incorporating systems thinking?



DeconST

- Collaborative effort between EPA, DHS S&T, and Sandia National Laboratories under the DHS-funded Wide Area Recovery and Resiliency Program (WARRP)
- Designed to support ICS, use by TWG
- Provides facility-specific cost-benefit comparison of remediation options
- Systematically and simultaneously considers efficacy, cost, and waste generation
- Considers building materials & contents, leveraging EPA I-WASTE tool
- Relies on published data and subject matter expertise
- Flexibility to incorporate new technologies and data
- Ability to integrate EPA HSRP Program outputs in a systems tool



Accessing DeconST

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