

Climate Resiliency and Brownfields

NEWMOA
Brownfields States Meeting

June 2017



Why Consider Resiliency?

Minimize Cleanup Vulnerabilities to Observed and Forecasted Extreme Weather Events

It is our responsibility to maximize the effectiveness of our remedies and protect public health and the environment from unintended consequences from our remedial actions due to changing and extreme weather events.



Example: Northeast Trends

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.

On the Web: <http://nca2014.globalchange.gov/report/regions/northeast>



EPA Office of Site Remediation and Restoration (OSRR) Climate Change Vulnerability Mapping Exercise

- Started with larger, longer term projects (NPL, federal facilities, etc.)
- Looked primarily at flooding risks, including projected increased flooding.
- Does not currently include brownfields.



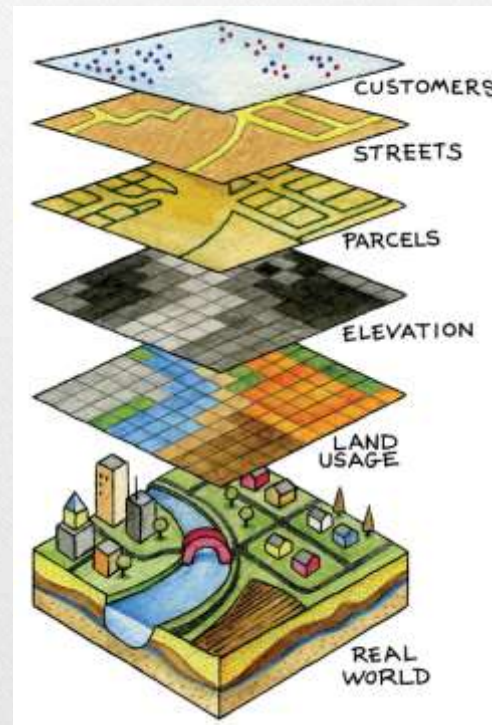
Waterbury, CT Pilot ORD/OLEM Vulnerability to Extreme Weather Event Research

- ORD is in the second phase of an ongoing research project.
- Pilot communities – Phoenix, AZ & Waterbury, CT
- Mapping known sites with hazardous materials, with potential extreme weather event datalayers, and potential sensitive receptors (habitat, EJ communities, etc.)
- Developing an indicator based approach to evaluating vulnerabilities that can potentially be used in other communities.



Challenges of Mapping EPA Brownfields Vulnerability

- Short timeframe of EPA projects.
- By the time sites are in ACRES, utility of vulnerability mapping may be minimal.
- Large number of sites and new sites continually being added.



Vulnerability to Asset: Utilizing Brownfield Sites for Flood Mitigation

- “Built-out” communities and densely populated areas along rivers and on the coast
 - often exist in those locations due to an industrial purpose
 - can have limited options for addressing flood storage from extreme weather events and sea level rise.
 - the need to expand or update their infrastructure may require utilizing their vacant and underutilized land (brownfields) for solutions.



"Yes, sir. I'm a fully-experienced flood relief volunteer..."

Without Mapping, How Does Climate Adaptation/ Resiliency Fit into an EPA Brownfields Project?

A Site-by-Site Approach:

- Proposal
- Work Plan
- RFP and Contracting
- **Analysis of Brownfields Cleanup Alternatives (ABCA)**
- Public Engagement
- Quarterly Reporting



Climate Change Impacts - Analysis of Brownfields Cleanup Alternatives (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 (both of the above are available through our website)



Climate Change Adaptation Requirements and Guidance

Requirement:

- Term & Condition for Cleanup and RLF Grantees starting in FY13.
- Area-Wide Planning (AWP) Grantees starting in FY14.

Supporting Guidance:

- Two New Guidance Documents (with suggested checklists); one for cleanup programs, one for AWP.
- Remedy Specific Fact Sheets
- **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>



Take Away Message:
GIS Mapping is a Tool, but not a
Feasible Means To-Date for Program-
Wide Evaluation of Cleanup
Vulnerabilities to Observed and
Forecasted Climate Change

Any Questions?

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