BROWNFIELDS PROCESS OVERVIEW

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**Center for Creative Land Recycling**

- Workshops & Webinars
- Policy & Research
- Consulting
- Technical Assistance
  *EPA TAB grantee*
- Online at www.cclr.org

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• Opportunities & Public Policy Goals
  o Growth management
  o Economic development
  o Efficient use of existing infrastructure
  o Minimize environmental impacts of growth
Redevelopment | Urban Infill or Agricultural

• Challenges
  o Costs of Development Compared to Greenfield Sites
  o Potential To Encounter Environmental Contamination
• Future Use Drives the Cleanup
• Preventing Exposure vs. Clean
• Redevelopment can be the Remedy
Brownfield Value over Time and (Un)Certainty
Getting from out of the “Red”
Nurture Relationships

- Public Investments - and relationships
- Coordinate otherwise disparate investments
- Leverage public/institutional anchors
Planning/Broader Investments

- Create structure for future development
- Support greater intensity
- Public amenities with broad-based benefits
Seed Investments

- Improve Urban Fabric
- Attract/Foster Urban Pioneers
- Catalyze Small Projects
- Activate Public Spaces
- Prepare for redevelopment – of infill sites
Legal Framework

• **CERCLA** or Superfund: Comprehensive Environmental Response, Compensation & Liability Act (1980)

• Liability: *Owner, Operator, Arranger, Transporter*
  - Strict—Regardless of fault, lack of diligence or ignorance
  - Joint & Several—All parties responsible for all costs
  - Retroactive

• Other laws
  - Resource Conservation and Recovery Act (RCRA)
  - Toxic Substances Control Act (TSCA)
  - LUST/UST – Leaking Underground Storage Tanks
  - Laws governing lead and asbestos

• State Laws
How It All Began

- Industrialization absent of regulation
- Cuyahoga River (OH) and Love Canal (NY)
- 1980’s to early 1990s – Superfund chill
  - Enforcement and fear of cost and liability
  - 1990’s: Evolution of brownfield programs
  - Redevelopment, not enforcement
- EPA administratively encourages shift in practical responsibility to states, thru policy guidance and funding
- 1993: first “brownfield pilots” to more than 500 (2001)
- Acceptance of “risk-based” cleanups and “institutional controls”
Formalizing the Brownfields Program

• 2002 Brownfields Revitalization Act
  • Under CERCLA
  • Authorizes program funding
  • Clarifies liability for innocent landowners, contiguous property owners, and prospective purchasers
    • Leads to All Appropriate Inquiry (AAI) rule

• Innovations
  • Development of responsive grant programs
  • Partnerships with other Federal agencies

• BUILD Act of 2018
  • Reauthorizes Brownfields program
  • Made changes to our brownfields grants, ownership and liability provisions, and state and tribal response programs
What Are Brownfields?

Practical impact of this definition –

- Includes all types of sites, in large cities, small towns everywhere

- Can include:
  - Abandoned factories, strip shopping centers, gas stations, grocery stores, foundries, power plants, old apartment buildings, dry cleaners, orchards, vacant lots, corporation yards, landfills, waterfront sites, rail yards, etc.
  - And sites adjacent to these uses

- Formal estimates indicate 500,000 to 1 Million
What do brownfields look like?
Definitions

• Brownfields

Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant

• Land Recycling, Reuse or Redevelopment

The reuse of abandoned, vacant, or underused properties for redevelopment

• Our objective

Using Federal, State and Local Tools to Revitalize Blighted Areas
Brownfields Impacts

• Economic
  • Abandon potential assets
  • Tax base and property value loss
  • Domino effect
  • Job stagnation / loss
  • Opportunity cost and lost leveraging

• Social
  • Blight
  • Public Service impacts: crime, fire, public works
  • Public health risks
  • Environmental justice

• Environmental
  • Land Use Conflicts
  • Air quality
  • Water quality
  • Sprawl
    • Loss of open space
    • Land Use Conflicts
    • Air quality from additional vehicle miles traveled
    • Water quality from runoff
Benefits of Land Recycling

- **Economic**
  - Increases property values
  - Creates commercial/retail and jobs
  - Leverages investment & employment

- **Social**
  - Removes health and safety hazards
  - Creates housing, open space and services
  - Decreases crime
  - Improves public health outcomes

- **Environmental**
  - Preserves open space
  - Promotes infill development
  - Removes threat to environment

- **EPA studies show:**
  - A 32-57% reduction in VMT between brownfield and greenfield development
  - Fewer VMT reduces pollution emissions including greenhouse gases
• So you want to use Federal tools and resources?
  • To be eligible for an EPA Brownfield and other Federal programs, entities must demonstrate they are not liable for the contamination under CERCLA
  • To claim protection from liability, prospective purchasers/property owners must conduct All Appropriate Inquiry (AAI)
  • AAI also required by lenders for property transactions
• But why do you even need these resources?
## Redevelopment Barriers

<table>
<thead>
<tr>
<th>Description</th>
<th>Implication</th>
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<tbody>
<tr>
<td>Market Value Exceeds Cleanup Costs</td>
<td>Private Market Completes Cleanup &amp; Redevelopment</td>
</tr>
<tr>
<td>Value Close to Covering Development &amp; Cleanup Costs</td>
<td>Targeted Public Investment Can Make Project Feasible</td>
</tr>
<tr>
<td>Environmental Liability Far Exceeds Property Value</td>
<td>Requires Significant Public Investment or Market Change</td>
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</table>

- Uncertainty of **Cost**
- Fear of **Liability**
- Uncertainty of **Timing**
Integrating Cleanup & Redevelopment

Redevelopment Assessment
- Infrastructure
- Topography
- Natural Resources
- Demographic and Market Study

Future Use Vision
- Land use(s)
- Conceptual Site Layout

Design
- Site Improvements
- Vertical
- Economics

Community Involvement

Environmental Due Diligence and Assessment
- Phase I
- Phase II’s

Analysis of Cleanup Options
- Risk Assessment
- Feasibility Study

Cleanup Action Plan
- Cost
- Implementation

Risk Management
Due Diligence & Cleanup Process

Phase I Environmental Site Assessment (ESA)
Do potential environmental issues exist?

Phase II ESA, Risk Assessments, Feasibility Studies
Does contamination exceed regulatory levels?

Analysis of Brownfield Cleanup Alternatives (ABCA)
Compare Cleanup Options’ Cost, Impacts, Benefits

Remedial Action Plan (RAP) / Cleanup Plan
Develop RAP for Preferred Cleanup Method

Remedial Action
Implement RAP

No Further Action (NFA) Determination
Contamination is below regulatory levels

Redevelop Site
Purpose of a Phase I ESA

- Liability Defense—AAI
- Support go/no go decision making
- EPA Brownfield Grant and Lender requirement
- Follow ASTM standards
  - D1527-13
  - D2247-16
- Environmental Records Review
- Review of Historical Land Use Sources
- Site Reconnaissance
- Interviews
- Report
Phase I ESA Outcomes

- Recognized Environmental Conditions (RECS)
- Controlled RECS
- Historical RECS
- Phase I ESAs must be completed prior to closing
- Phase I ESAs are valid for 180 days
- ~$5000, depending on location, size and complexity
• Sampling and data analysis to evaluate RECS
• Assess exposure pathways and cleanup scenarios
• Cost depends on sampling and analysis requirements
• Understand the nature and extent of contamination to develop and evaluate cleanup alternatives
• Iterative process of sampling and data gap analysis
• Outcomes: Cleanup necessary?
• Enter regulatory program? Voluntary Cleanup?
• Agreements among parties? Prospective Purchaser?
OTHER STUDIES

• Feasibility Study
  • Evaluate cleanup action alternatives to be selected
  • Evaluates Short- and Long-term risk

• Analysis of Brownfields Cleanup Alternatives (ABCA)

• Risk Assessment
  • Establishes site-specific cleanup goals

• Hazardous Building Materials Survey (Lead / Asbestos)

• Indoor Air

• Historic building evaluations
Cleanup Action Plan / Remedial Action Plan

• To outline the preferred cleanup approach
• Implement selected/combination of response actions
• Engineering Design Report / Plan Set & Specifications
Cleanup Options

- Natural attenuation
- Removal actions, source controls & containment, engineered treatments
- Institutional controls and site management/monitoring

**Soil**

- Excavation (dig & haul)
- In situ: Soil Vapor Extraction (SVE), Thermal, Bioremediation, Stabilization
- Contain & Manage - Engineered “cap” remedies; Vapor mitigation systems

**Groundwater**

- Removal: Pump & Treat
- Hydraulic or Physical Controls
- Air Sparging - Liquid to Vapor
- Dual-Phase Extraction
- In-situ: Bioremediation, chemical oxidation
Property No Further Action (NFA)
- Cleanup levels met on a specific parcel
- Site status remains “Cleanup Started”
- Often accepted by lenders

Site NFA
- Cleanup levels met throughout the Site
- Site removed from CSCS List

NFA with Environmental Covenant
- Institutional control that runs with property deed
- Recorded with County Assessor
- Monitoring, inspections, 5-year periodic review
Reuse Trends

• Equitable development
  • Affordable housing
  • “Healthfields” and Quality of Life
  • Rural and tribal

• Sustainable development
  • In-fill and Transit Oriented Development
  • Adaptive reuse
  • Brightfields
  • Adaptation - Bluefields

• Economic development
  • Jobs – Manufacturing and commercial
  • Mixed-use
## Assessment, Cleanup & Redevelopment Resources

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<th>Program</th>
<th>Purpose(s)</th>
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<td><strong>EPA programs</strong></td>
<td>Grants planning and environmental assessment and remediation; technical assistance; capacity building; sustainable development</td>
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<td><em>Note: Look out for ARC MARC grants October 2020</em></td>
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<tr>
<td><strong>State programs (varies)</strong></td>
<td>Grants planning and environmental assessment and remediation; technical assistance; sustainable development</td>
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<tr>
<td><strong>Commerce (EDA)</strong></td>
<td>Infrastructure, planning, utilities, improvements</td>
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<tr>
<td><strong>USDA</strong></td>
<td>Business, infrastructure, utilities, feasibility studies</td>
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<tr>
<td><strong>HUD</strong></td>
<td>Housing, infrastructure, planning</td>
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<td><strong>Treasury</strong></td>
<td>Tax credits and forgiveness: loans (NMTC) and equity programs (Opportunity Zones), historic rehabilitation</td>
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<td><strong>Energy</strong></td>
<td>Feasibility, capacity building, construction</td>
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<tr>
<td><strong>Insurance / Deal structure</strong></td>
<td>Remediation, Site monitoring and management, cost recovery/off-setting</td>
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What has worked?

Leadership with perseverance and commitment to bring a team and partnerships that can leverage resources to carry out long-range visions and sound implementation plans.