



Brownfield to Community Asset

Best Practices for Reclaiming Brownfield Sites
for Urban Agriculture & Greening Reuses

ACGA National Conference
August 5th, 2016



Overview

- About Groundwork USA
- Groundwork Milwaukee: A case study
- Brownfield Basics
 - EPA Brownfields Program
 - Vacant Lot Background Check: DIY "Phase I"
 - Building will, partnerships; developing plans
- Best Practices for Gardening and Greening Safely
 - Minimize exposure, maximize productivity
- Discussion, Q&A



About Groundwork USA

We lead the only network of local organizations devoted to transforming the natural and built environment of and with marginalized communities.

- National enterprise, local roots
- Working where environment, equity and civic engagement intersect
- Broadening participation in building just, equitable communities for all



Our Commitment, Core Values

- Equity, justice, and barrier-free access to opportunity and well-being for all
- Everyone deserves a green, healthy and resilient neighborhood
- Leading by doing
- Investing in people and in place
- Everyone has a role to play





Groundwork USA's Brownfields TA Program

Assuring EJ and Equity

Our approach, informed by the Groundwork model, aims to:

- Correct historic and systemic disparities
- Engage local stakeholders meaningfully in project planning, prioritization and implementation over time
- Achieve environmental justice
- Encourage more equitable development planning, processes and outcomes

Our customized Technical Assistance services can include:

- **Testing feasibility of “implementation strategies”** (projects, programs, partnerships) identified in brownfield area wide planning processes
- Designing and sequencing **inclusive methods for engaging an array of local people** in brownfield transformation projects
- **Coaching grassroots and municipal leaders** in developing productive, cross-sector coalitions, and shaping (re)development projects to benefit all citizens

GWUSA delivers this TA/Community of Practice program in partnership with Training & Development Associates, a national TA/training provider that develops training curricula and delivers workshops on community development programs and activities.

What do we mean when we say “equitable development”?

- Everyone should benefit from (re)development, investment
- Inclusive, collaborative planning
- Meaningful community engagement
- Local residents valued as neighborhood experts
- Community defines “benefits”
- Mutual accountability to realizing those benefits
- Finding common ground (i.e., balancing community vision, developer and financing needs, regulatory environment)
- Building, honoring trust and relationships long-term
- No “finish line”



Groundwork Milwaukee:

A case study



Milwaukee Urban Gardens (MUG)

- Milwaukee = 3,000 vacant city lots; 90% former homes
- Transforming vacant land into community resources
- Nurturing local people, youth as environmental stewards
- Promoting food security
- Eliminating barriers to gardening



[B. Everson](#) Flickr Creative Commons

Challenges

- Scale of vacancy is significant
- Pressure to return vacant lots to taxable, productive reuse
- The “right-sizing” struggle is real
- City reluctance to test soils; concerns about potential liability, cost
- Testing slows down garden development timeline



Lessons Learned

- **Finding a safe solution** while working within constraints
- **Categorizing, prioritizing vacant lots by prior use** and contaminants (i.e., tannery vs former home)
- **Minimizing exposure** proactively, doing the homework
- **“Picking your battles”** strategically

Food for Thought

What is community development?

- Place-based investment?
- Remediation (soil cleanup)?
- Investing in people and families?

Paradigm shift: Complex, intertwined challenges require integrated, cross-sector solutions rooted in community





What is a brownfield?



EPA's definition

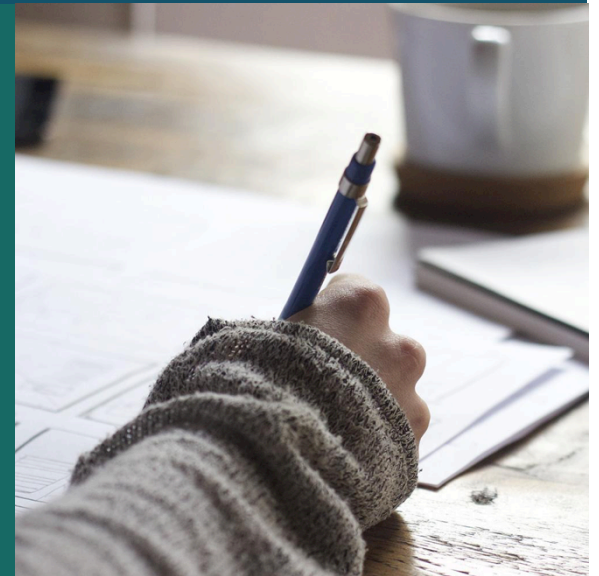
“Real Property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”

- Hazardous Materials
- Auto Shops
- Salvage Yards
- Illegal dump sites
- Dry Cleaners
- Mine Scarred Lands
- Illegal Drug Labs
- Petroleum Sites
- Gas Stations
- Fuel Terminals
- Tank Farms
- Comingled

Where are brownfields?

Concentrated in areas of former industrial use:

- 20% dry cleaner
- 5% gas plants
- 5% underground storage tanks (USTs)
- 2-3% landfills
- 2-3% junk yards
- 2-3% lumber yards
- Miscellaneous industries



Brownfields can be anywhere.

“Race and class are extremely reliable indicators as to where one might find the good stuff, like parks and trees, and where one might find the bad stuff, like power plants and waste facilities.”

- Majora Carter



**How did
brownfields
come to be?**



Brownfields can be a result of...

- Sanctioned industrial, commercial land uses
- Squatting; unregulated land uses
- Vacancy, abandonment, tax-title
- Structure fires
- Illegal dumping

Our industrial legacy





Why are brownfields a concern?



Brownfields' Impact on Communities

- **Hinders investment** in already long-marginalized neighborhoods
- **Perpetuates vacancy**, eyesores, illegal dumping
- Detracts from neighborhood pride, sense of place, quality of life, **health, safety** and **well-being**



Who is affected by brownfields?

Environmental Justice (EJ) populations are burdened disproportionately by brownfields:

- People of color
- Youth, elderly
- Low/moderate-income neighborhoods
- Areas of concentrated poverty



Federal EJ Mandate



Executive Order 12898 on Environmental Justice (1994): *“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”*



EPA Brownfields Program

Goals:

- Protect health and well-being
- Promote partnerships to facilitate brownfield reuse
- Strengthen the marketplace
 - Provide technical assistance
 - Provide financial assistance





EPA Brownfields Program Grants, Resources

	Local Gov'ts Eligible	Nonprofits Eligible	Both
Assessment	X		
Cleanup	X	X	X
Revolving Loan Funds (RLF)	X		
Area-Wide Planning	X	X	X
EJ Collaborative Problem Solving		X	
Enviro Workforce Development & Job Training	X	X	X



Targeted Brownfield Assessments

- Targeted Brownfields Assessment (TBA)
- Not a Grant – (EPA contracts directly with service provider)
- EPA contractor conducts environmental assessment activities
- Typically for entities without EPA Brownfields Assessment Grants



What can be done?

- Assessment (testing)
- Remediation (cleanup)
- Interim use (holding pattern)
- Redevelopment (reuse)





What do we have? What do we need?

Identify public resources

- Federal (EPA Brownfields program; Technical Assistance; HUD; more)
- State (Targeted Brownfield Assessments)
- Local (CDBG; municipal budget; bonds)

Identify private resources

- Private brownfield land owner, private citizens
- Developer
- Party responsible for historical site contamination
- Local banks, credit unions, hospitals, community foundations

A large, light blue question mark is centered on a dark blue rectangular background that occupies the left side of the slide. The background has a thin teal bar at the top and a light green bar at the bottom.

**What am I
trying to find
out?**



Know Your Soils

Extension Soil Testing

- Gardening
- Soil nutrients, pH
- Opt-in lead testing (for a fee)
- Limitations

Phase I Assessment

- Historic land uses of site
- Known releases on/near site
- Indicates go/no-go re: further site investigation
- NO soil test

Phase II Assessment

- Soil sampling, testing
- Groundwater sampling, testing
- Characterize nature, extent of contamination
- Determine hot spots
- Iterative process



How do we know what cleanup is required?



EPA Brownfields Program =

- established guidelines
 - extensive methodology
 - reporting, oversight requirements
-
- Nature, amount, location of contaminants
 - “Ticking clock”
 - Potentially responsible party (PRP)
 - Covenant Not to Sue

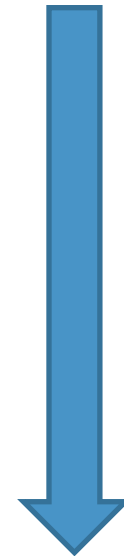


How much cleanup is required?



Site's desired end use
(extent/nature of human
activity on-site over time)
dictates cleanup required:

- Parking lot \$
- Industrial use \$\$
- Retail \$\$\$
- Homes, school, park \$\$\$





Types of remedial strategies

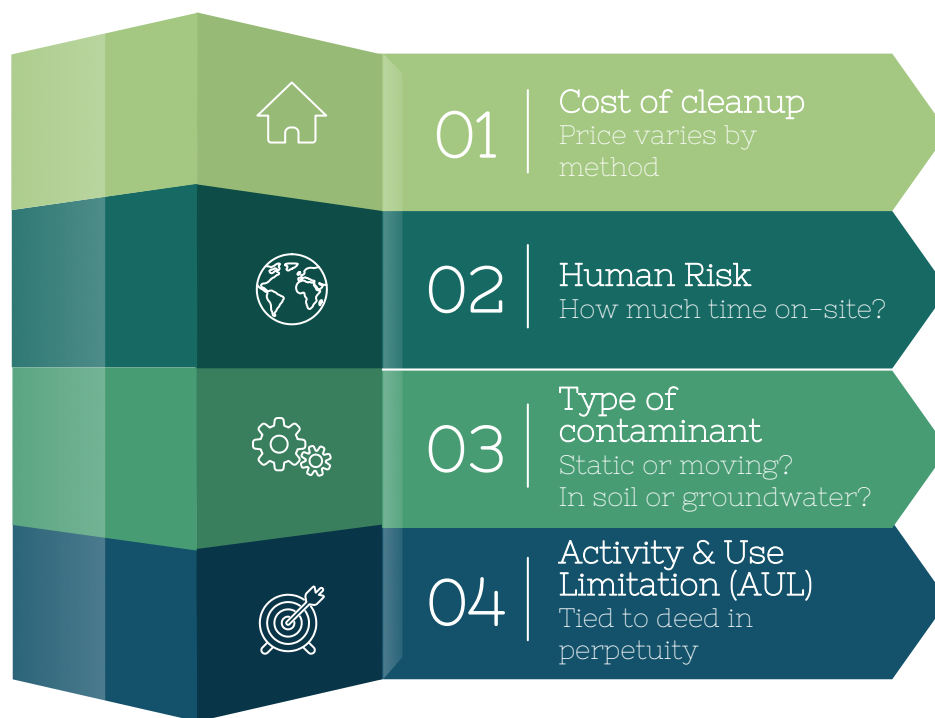
Capping in place

Partial Cap/Select
Soil Removal

Complete soil
removal,
replacement

Phytoremediation,
Mycoremediation
(pilot)

“Value Engineering” can help balance various factors



This is EJ!

- **Due diligence required**
- **Assure human health safety, well-being, and desired use of site**
- **Multiple bottom lines, not just price, should dictate which cleanup strategies are employed**



**This begs the
question...**

**What do we
do in the
meantime?**





“Just do nothing” isn’t a solution.

- **Choose wisely (DIY background check of potential sites)**
- **Use best practices to minimize risk of exposure to contaminants**
 - **On-site practices**
 - **Off-site practices**
- **Develop strategic partnerships to leverage and maximize resources (i.e., City - nonprofit)**



*Fort Dupont Community Garden,
Washington DC*



Choose your urban ag/ greening sites wisely

Assess

**Plan, Clean
Up**

Reuse



Choose your sites wisely

Phase I Environmental Site Assessment (ESA)

- Formal “background check” evaluates a site’s environmental conditions
 - Information on past uses
 - Conditions indicative of environmental contamination

Phase I Report

- Done by a Qualified Environmental Professional
- Pre-purchase due diligence, liability protection for Innocent Purchasers
- Enables eligibility for EPA grants
- Helps avoid or plan for increased construction/redevelopment costs
- Can be used as a site marketing tool (anticipate issues, needs, costs)





EPA's "All Appropriate Inquiries" (AAI) Rule

What does the Environmental Professional Look For?

- ✓ Chain of Title / Environmental Lien Search
- ✓ Review of Federal, State, Tribal, and Local Records
- ✓ Historic Sanborn Map, USGS Map, city directory and aerial photo review
- ✓ Interviews w/ Site Owners, tenants and neighbors
- ✓ Site Visit
- ✓ Specialized Knowledge of Purchaser
- ✓ Vapor Intrusion – assess vapor migration
- ✓ Relationship of purchase price to value of property
- ✓ Obviousness of presence or likely presence of contamination



How sites would be described in a Phase I report

Recognized Environmental Condition (REC)

- Likely presence of a hazardous substance
- De Minimis – no threat

Historic Recognized Condition (HREC)

- Past release that has been addressed completely (no controls needed)

Controlled Recognized Condition (CREC)

- Past release that has been addressed with controls (like a cap and deed notice)



What goes into a Phase I report?

Documented Findings

- Indicate whether the assessment has identified potential releases
- Identify data gaps
- Make recommendations (further study?)
- Provide qualifications of Environmental Professional





How can I do an informal Phase I?

Search Databases/ Online

- A government database search (EDR Report)
- On-line search (State DEP)

Review Historic, Topographic Maps

- Topo map – physical setting
- State Library: historical maps, atlases, industrial directories available
- Sanborn™ fire maps

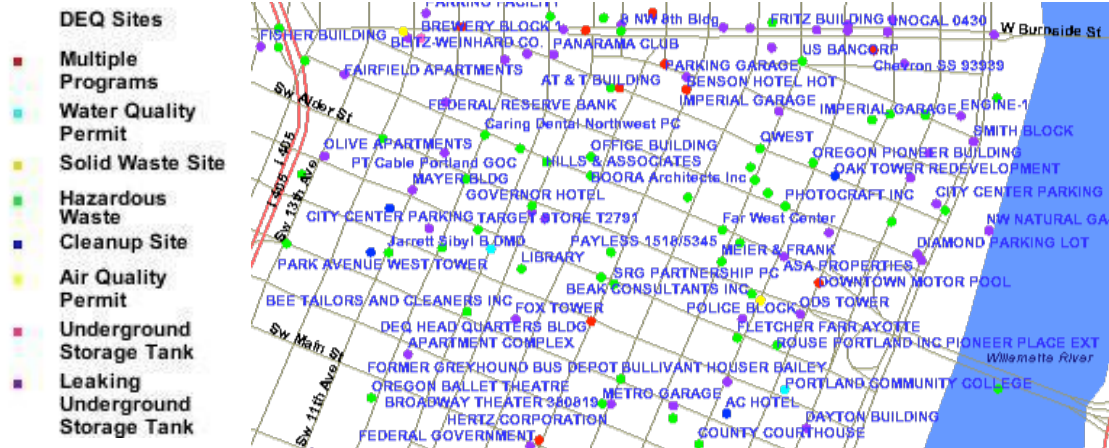
Evaluate property maps, photos, records

- Historical aerial photographs
- Dept. of Health/Environment
- Fire Department
- Planning Department
- Building Permits, Inspections Dept.

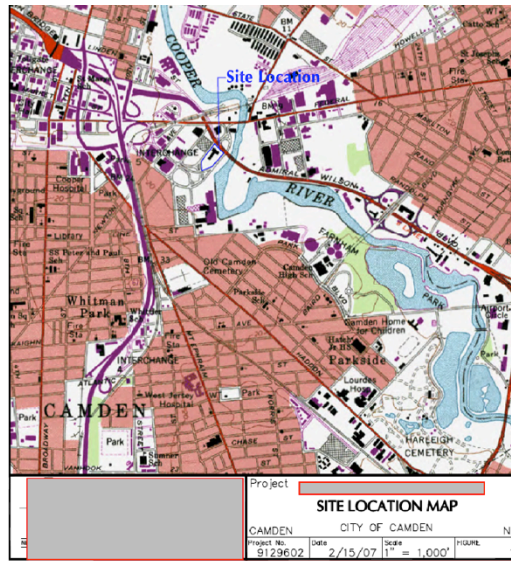
Database search of Fed, State environmental records

- <http://www.epa.gov/cleanups/cleanups-my-community>

- State Database:



Topographic Maps



<http://store.usgs.gov>

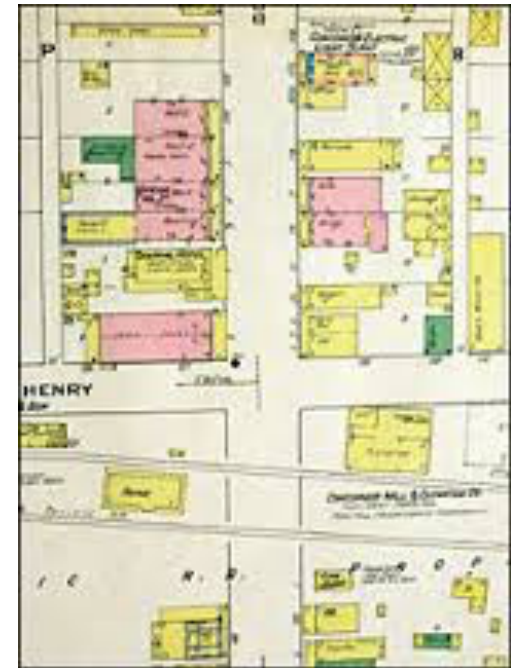
<http://ngmdb.usgs.gov/maps/TopoView>

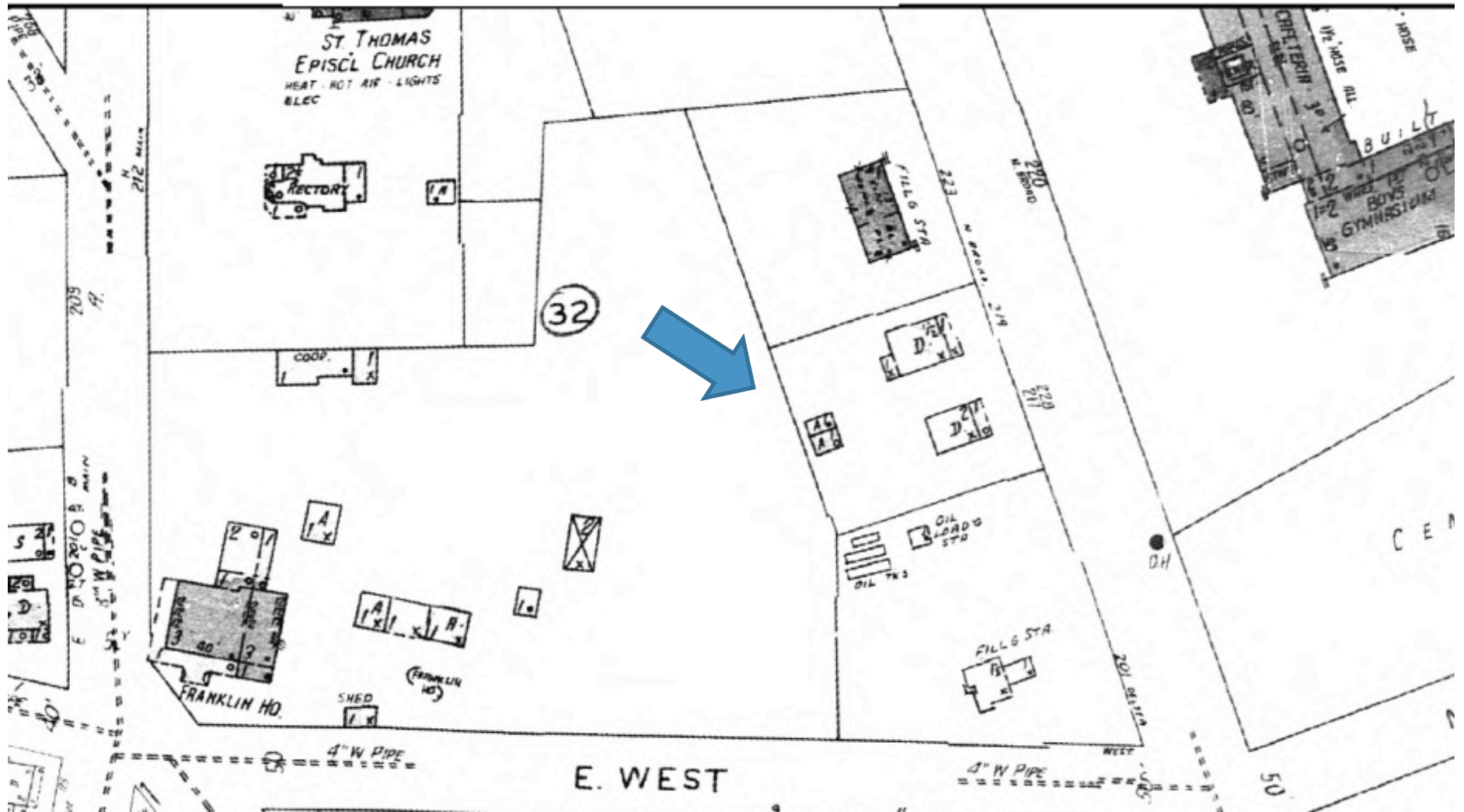


More about Sanborn Maps

Fire insurance maps, developed for the insurance industry to assess fire risk, include:

- Details regarding the size, shape, and construction of commercial buildings, dwellings, and structures
- Provides historical use of property and surrounding area
- Timeframe for development of removal of structures
- Check State Library, College Library, or [ProQuest Digital Sanborn Collection](#)





Aerial maps



1986



1940



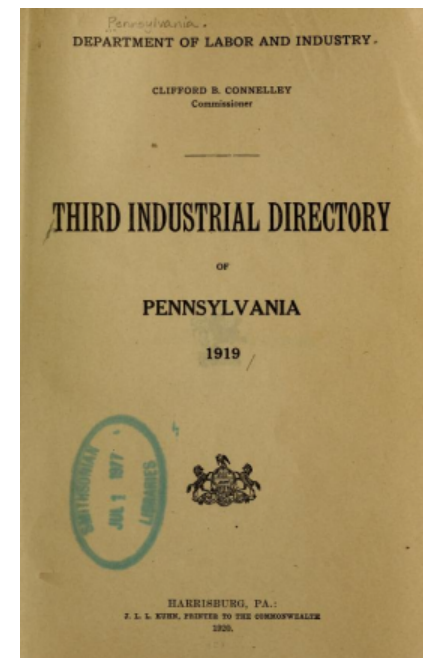
Database records

1965	Address Not Listed in Research Source	New Jersey Bell Telephone Co
1970	Address Not Listed in Research Source	New Jersey Bell Telephone Co
1980	<u>**ADMIRAL WILSON BLVD**</u> ASPHALT SALES INC (1350)	New Jersey Bell Telephone Co
1984	<u>**ADMIRAL WILSON BLVD**</u> ALLIED ROOFERS SUPPLY CORP (1350)	New Jersey Bell Telephone Co
1990	<u>**ADMIRAL WILSON BLVD**</u> HARGROVE BROTHERS (1350)	New Jersey Bell Telephone Co
2004	Address Not Listed in Research Source	Verizon Communications



Other Resources

- Historical maps
- Historical Atlases
- Industrial Directory
- *State Industrial Directory*
- *McRae's Industrial Directory*



Site Reconnaissance



Visually observing the site and its surrounding areas.

Objectives:

- Document physical features of the site (dimensions, buildings, etc.) and the surrounding area
- Note any differences from info already gathered in the records search
- Identify any sources of hazardous substances and pathways that may be of concern
- Identify any new features that may have an impact in the assessment and decision regarding the site
- Identify Recognized Environmental Concerns (REC)



“Telltale signs”



“Telltale signs”





“Telltale signs”



“Telltale signs”



“Telltale signs”





Best practices: Gardening and Greening Safely



Applied research

Major Questions identified

- Best practices for contaminated soils
- Origins of specific contaminants?
- How does uptake vary by plant parts?
- Precautions for Environmental Justice communities?
- Impacts of contaminants on animals and animal products?

Supporting Groundwork USA's applied work through evidence-based research.



[Beavola](#), Flickr Creative Commons

10 Best Practices On-site to Minimize On-Site Exposure



[Clean McCall](#), Flickr Creative Commons

1. Test the soil.
2. Incorporate clean soil, compost, or manure each year.
3. Maintain soil pH at near-neutral (6.5 or more).
4. Wear gloves when handling soil, especially if it is believed to have contaminants.
5. Build raised beds with clean soil, and use landscape fabric under beds.

10 Best Practices On-site to Minimize On-Site Exposure



[Jason McCall](#), Flickr Creative Commons

6. Grow plants that are less likely to take up contamination.
7. Grow food away from areas adjacent to buildings
8. Mulch walkways and areas where food and plants aren't being grown
9. Plant perennial shrubs, bushes and trees around the garden
10. Use special care with children, pregnant women and environmental justice communities

Animal uptake of contaminants

Preliminary research: meat, milk, eggs

- **Animals can be exposed** to heavy metals, which can be stored in muscle tissues.
- **Risk is typically low** to consumers: humans typically only consume animal products as a portion of their diet, and metals aren't always bioavailable.
- **Best practices should be followed** to reduce animal exposure to contaminants



Chickens:

- Evaluate soil where animals have contact
- Amend soil
- Feed in containers
- Don't feed contaminated garden scraps
- Offer calcium supplementationⁱ

ⁱ Spilthoff, H., Mitchell, T., Ribaudo, L., Taylor, O., Shayler, H., Greene, V., Oglesby, D. (2014.) Lead in New York City Community Garden Chicken Eggs: Influential Factors and Health Implications. *Environ. Geochem Health*. 36:633-649.



[K. Hudey](#), Flickr Creative Commons

Best Practices off-site to minimize exposure

1. **Leave shoes at the door** – don't track dirt into your home.
2. **Wash off the dirt** from hands, garden-grown produce + children and pets.
3. **Eat healthy foods rich in vitamin C, calcium and iron** to reduce absorption of lead and prevent body from harm.

Finding support that fits your needs

Testing Resources

Choosing tests and taking action

Once you know a site's history you can plan tests accordingly. While testing and remediation can be expensive and require coordination, there are many resources available for urban farmers to make good decisions and seek support. Once results are known, gardeners and farmers can take action based on their particular site. Many services exist to support urban gardeners and farmers:

Brownfields assistance

After researching the site, if it is believed to be a brownfield – a site with hazardous substances, contaminants, or pollutants – EPA's Brownfields program is an important resource. The Brownfields program offers extensive assistance and grants to prevent, assess, safely clean up, and sustainably reuse brownfields for many uses, including urban agriculture. If it is suspected that a site is a brownfield with contamination and pollutants, gardeners may be able to utilize EPA support. <https://www.epa.gov/brownfields>

Cooperative Extension Services

The United States Department of Agriculture (USDA) National Institute of Food and Agriculture funds the Cooperative Extension Services, a network of locally based educators and researchers that are typically familiar with the unique history and context of the communities in which they work. Local branches can supply materials and instructions for testing and can help interpret results of tests for gardeners. Find your local branch at: <https://nifa.usda.gov/partners-and-extension-map>

Groundwork USA's Brownfields Technical Assistance Program:

Groundwork USA operates a technical assistance program and supports a community of practice for nonprofit and local government practitioners working to achieve equitable development and environmental justice in brownfield-affected communities. For those in need of "brownfield for community benefit" strategies, including development of a campaign to build will and gather resources for urban ag/greening projects on former brownfields, Groundwork USA can help: <http://groundworkusa.org/ta-services/equidev-brownfields-planning>

USDA Urban Agriculture Toolkit

This guide offers a breadth of information that emphasizes the importance of soil quality. The toolkit offers extensive federal and local-scale financial and technical resources on testing, interpreting results, and taking steps toward remediation and cleanup. <http://www.usda.gov/documents/urban-agriculture-toolkit.pdf>





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Next Steps

- Distributing information to practitioners in brownfield-affected communities
- Nurturing a community of practice
- Providing Direct Technical Assistance to communities (municipalities or nonprofits) who seek guidance, strategy and support

Group Discussion

- Has your city/town been supportive in testing and cleanup? Or proved to be a barrier?
- What kinds of common misunderstandings have you found to be prevalent in your work?
- What kind of support would you find to be most helpful in dealing with contamination on your sites?
- What do you see as the best way to receive information or communicate to your constituents about these issues?



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THANKS! Additional Questions?



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