

**Ann Carroll
US EPA**

**Office of Brownfields & Land Revitalization
“GROWING PAINS” PANEL**



**New Partners for Smart Growth,
Baltimore, MD
January 30, 2015**

Growing Pain Speakers

Ann Carroll, carroll.ann@epa.gov

EPA, Office of Brownfields and Land Revitalization

Abby Cocke, Abby.Cocke@Baltimorecity.gov

Planning Department, City of Baltimore

Dennis Chestnut, dennis@groundworkdc.org

Groundwork Anacostia

Dwane Jones, dwane.jones@udc.edu

University of District Columbia

What is a Brownfield?

“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.”

The Small Business Liability Relief and Brownfields Revitalization Act signed January 11, 2002.

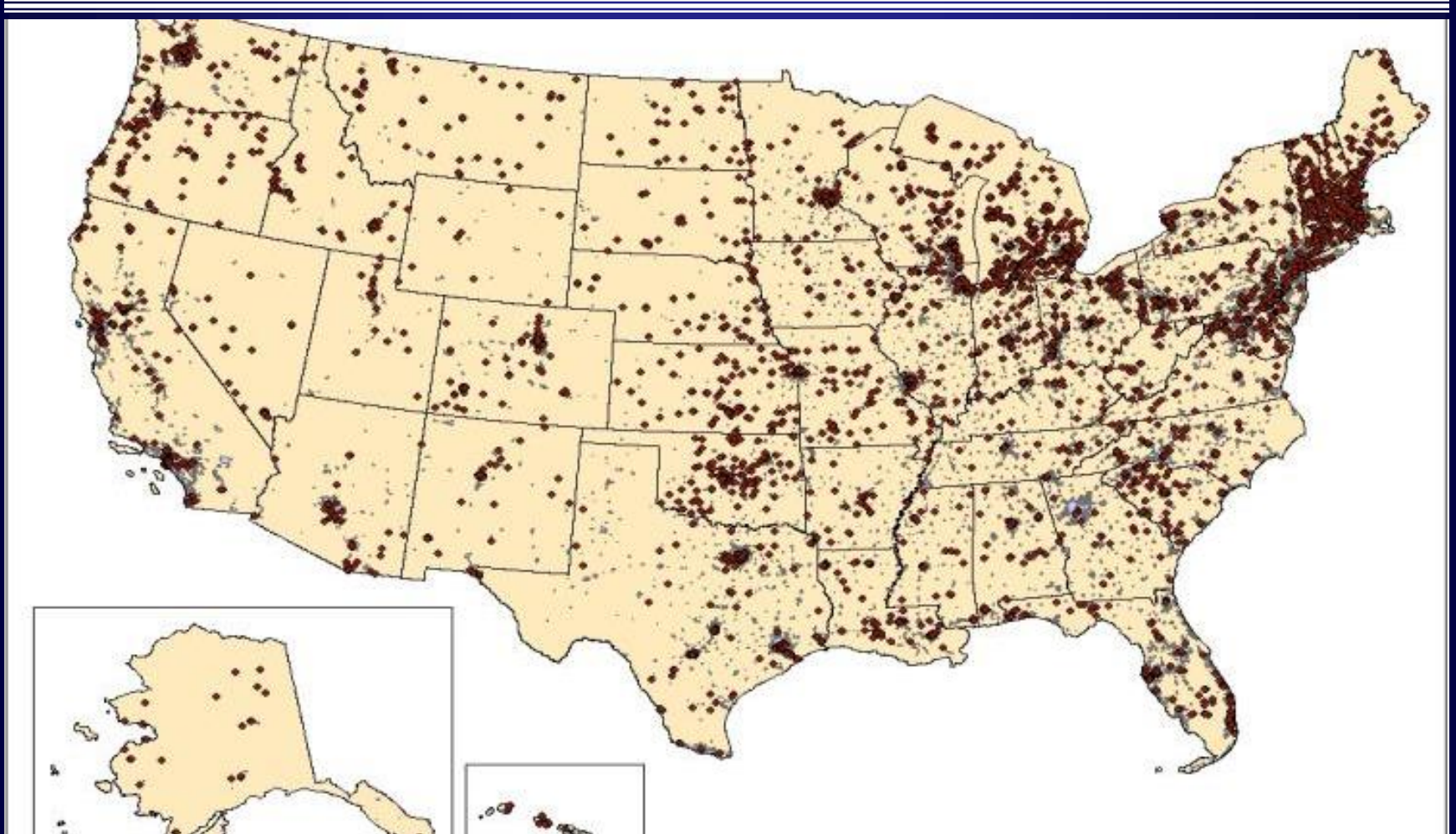
A More Common Language Brownfields Definition

- A brownfield property – is or is perceived to be contaminated
- Brownfields can be:
 - Former industrial sites and dry cleaners
 - ‘Drug lab’ sites contaminated with “controlled substances”
 - ‘Low risk’ sites contaminated by petroleum products, old gas stations
 - Mine-scarred lands



*

Past Brownfield Locations



Typical Brownfield Contaminants?

- Petroleum, fuels and hydrocarbons
- Lead and other metals
- Polycyclic Aromatic Hydrocarbons (PAH)
- Volatile Organic Compounds (VOC)
- Pesticides
- Asbestos, mixtures ...



Table. Common Sources of Contamination¹

General Source	Examples of Previous Site Uses	Specific Contaminants
Paint (before 1978)	Old residential buildings; mining; leather tanning; landfill operations; aircraft component manufacturing	Lead
High traffic areas	Next to heavily trafficked roadways or highways; near roadways built before leaded fuel was phased out	Lead, Zinc, PAHs
Treated lumber	Lumber treatment facilities	Arsenic, chromium, copper
Burning wastes	Landfill operations	PAHs, dioxins
Contaminated manure	Copper and zinc salts added to animal feed	Copper, zinc
Coal ash	Coal-fired power plants; landfills	Molybdenum, sulfur
Sewage sludge	Sewage treatment plants; agriculture	Cadmium, copper, zinc, lead, persistent bioaccumulative toxins (PBTs)
Petroleum spills	Gas stations; residential/commercial /industrial uses (anywhere an aboveground or underground storage tank is or has been located)	PAHs, benzene, toluene, xylene, ethyl benzene
Pesticides	Widespread pesticide use, such as in orchards; pesticide formulation, packaging and shipping	Lead, arsenic, mercury, chlordane and other chlorinated pesticides
Commercial/Industrial site use		PAHs, petroleum products, solvents, lead, other heavy metals (such as arsenic, cadmium, chromium, lead, mercury and zinc)
Dry cleaners		Stoddard solvent and tetrachloroethene
Metal finishing operations		Metals and cyanides
EPA's Toxic Release Inventory (TRI) database can provide information to communities about sites where contaminants were released into the environment.		

¹ Adapted from Heinegg, A., Maragos, P., Mason, E., Rabinowicz, J., Straccini, G. and Walsh, H. (2000) Urban Agriculture and Soil Contamination, available at: http://cepm.louisville.edu/Pubs_WPapers/practiceguides/PG25.pdf

EPA's Brownfields &

Land Revitalization Program

Grants and Technical Assistance:

- Area-Wide Planning (BF AWP)
- Environmental Workforce Development & Job Training
- Assessment
- Cleanup/ Revolving Loan Fund
- State & Tribal Response

TA-Targeted Brownfields Assessment (TBA)

TA-Technical Assistance to Brownfield Communities (TAB)



Deconstruction,
Demolition, and
Removal

Cleanup,
Remediation, and
Waste Management

Design and
Construction for
Reuse

Sustainable Use
and Long Term
Stewardship

Locally grown / sold, produced food and urban Ag!

- Uses and restores vacant lands and infill areas
- Increased environmental and social benefits
- Minimizes environmental impacts of food transportation
- Increases food access in underserved areas
- Introduces youth to growing healthy food
- Catalyzes revitalization and stormwater management



Garden Cautionary Tale? Sacramento, California

- Garden for >30 years
- Tested, found lead, PAHs, pesticides
- 1,900 yd³ soil, 24-48 inches removed
- \$423,000 leveraged for cleanup/ garden



Vacant lot/Dump to Garden Somerville, Massachusetts

Vacant since 1950s, an
illegal dump

City acquired in 2003,
found PCBs, VOCs,

Metals, coal/wood ash

EPA Cleanup helped
remediation to garden in
2007 - ~\$400,000



From Boyles Galvanizing to Greensgrow Farm, Philadelphia



- Superfund removal, cap, 5 ft gravel
- Now Farm earns >\$800,000 annually, two bee hives, catalyzing area change

Brownfields to Gardens and greenhouses



- Boot Camp Farm ribbon cutting, Sept 2013, Bridgeport, CT (top)
- Spruce Street garden, Lawrence, MA (bottom right)
- Cleveland, Ohio (bottom left)



Brownfield to Farmer's Market



Brownfields to Farmers Market (before/after) Shelton, Connecticut (above) & Santa Fe, New Mexico (below left) and Bellow Falls, Vermont (below right)





48.6 acre Brownfield

- Used for auto salvage, Tire and scrap disposal

- 1,234 tons of metal debris, 926 tons of garbage, and 400,000 waste tires removed for recycling

- \$4 million in cleanup, \$218 million in investment

Brownfields, Urban Ag & Other Food Options



*Emeryville,
CA (above),
Lynchburg,
VA (right)*



*Kenosha,
WI (left)
Missoula,
MT
(below)*

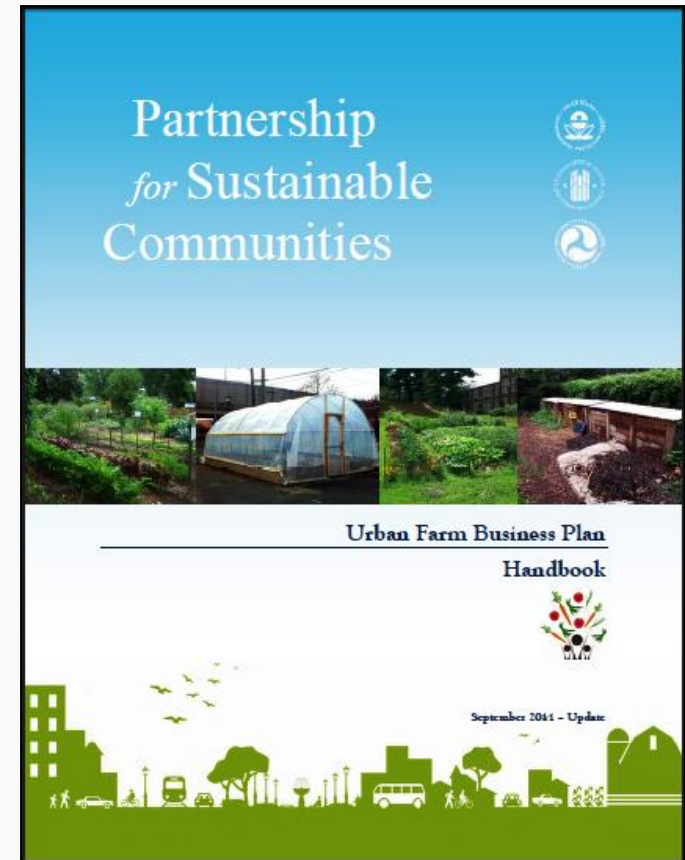
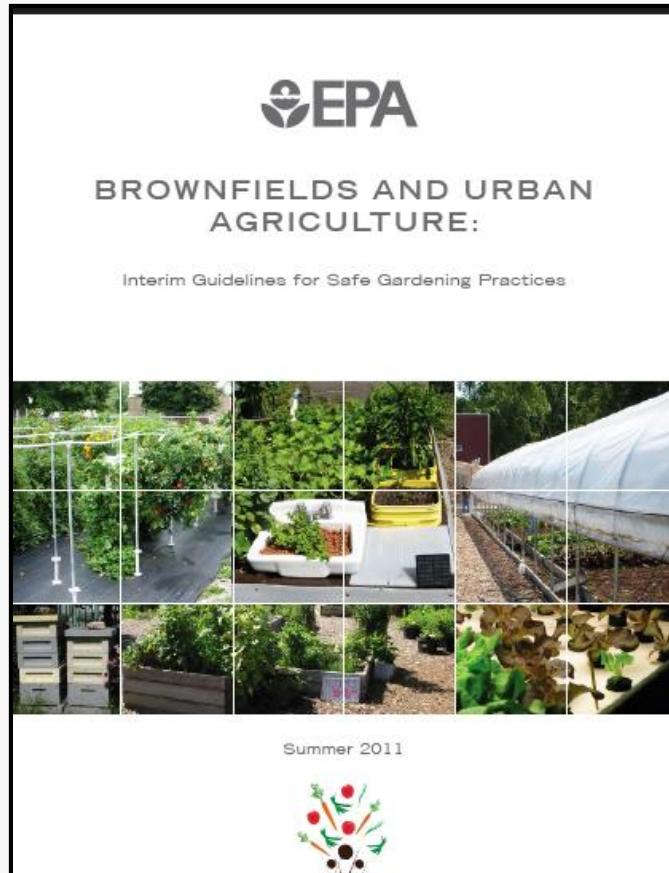


- Edible landscaping
- Community/school gardens and orchards
- Urban farms/hoop and Greenhouses
- Green roof and/or walls
- 'City chickens' & Beekeeping
- Aquaculture or Horticulture
- Farmer's Markets
- Commercial kitchen
- Groceries and supermarkets
- Food manufacture
- Food 'safety net' or food bank

Urban Ag Info



www.epa.gov/brownfields/urbanag



Brownfields 2015, September 2-4, 2015, Chicago, IL

Brownfields 2015
SUSTAINABLE COMMUNITIES START HERE

SEPA
U.S. Environmental Protection Agency

ICMA
Institute of City Managers

Join us in Chicago: Save the Date!

2015 NATIONAL BROWNFIELDS TRAINING CONFERENCE
Chicago • Hilton Chicago • September 2-4, 2015

Visit www.brownfieldsconference.org for more information.

Photos: © Christie Chicago



Ann Carroll, MPH,
carroll.ann@epa.gov

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