

# *Brownfields in Context: A Contaminate for Brownfield Weeds*

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*MINNESOTA BROWNFIELDS  
Reclaiming Recalcitrant Brownfield Sites  
November 23, 2010*



Virginia Tech  
*Invent the Future*

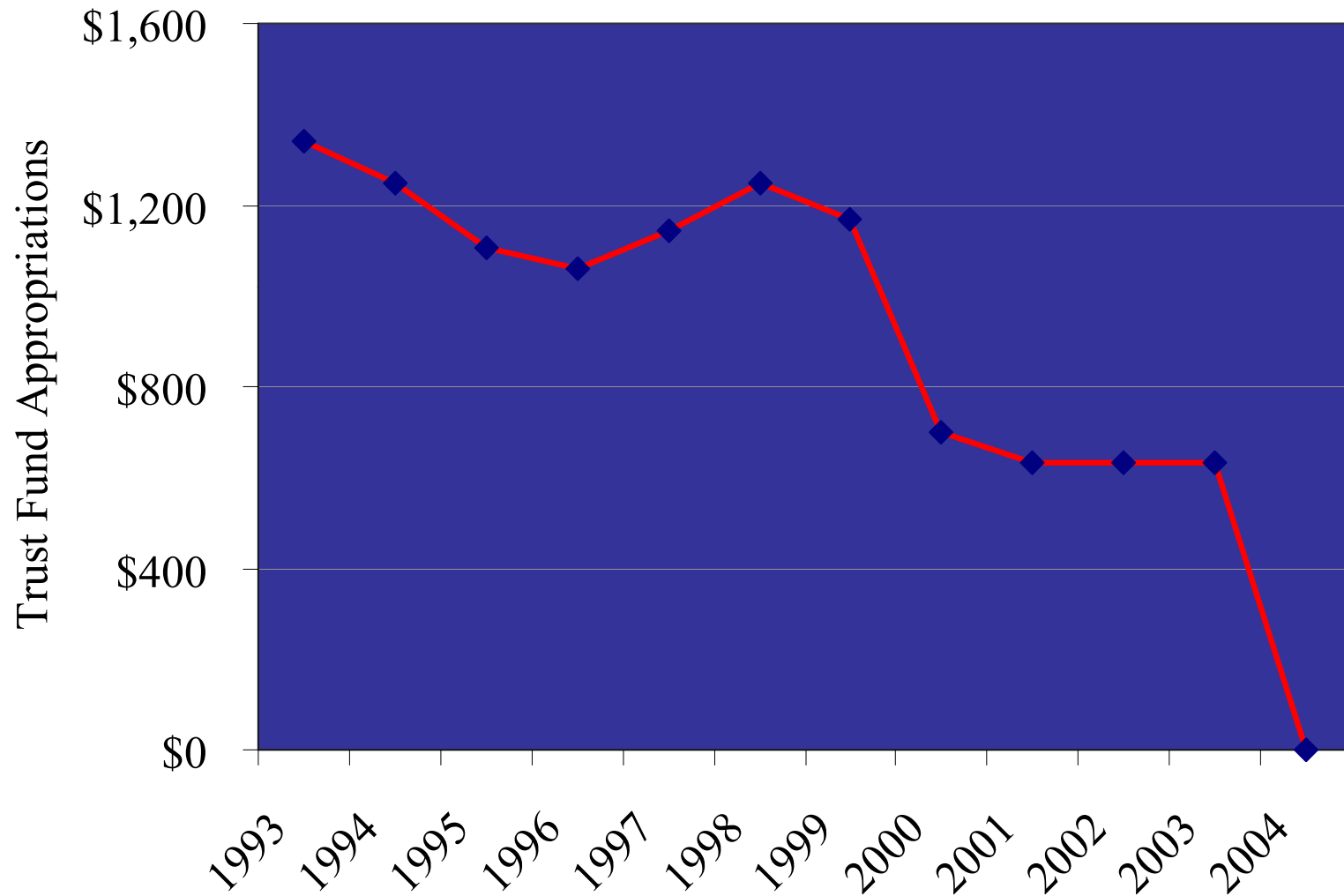
# Overview of Brownfields

- Brownfields Overview
- Fighting the Weeds
  - ✓ World BField Weed Contaminicide
  - ✓ National BField Weed Contaminicide
  - ✓ Neighborhood BField Weed Contaminicide
  - ✓ Site BField Weed Contaminicide
- Parting Shots

# Superfund → Brownfields

- failed reauthorization of Superfund tax
- more emphasis on protection through control of exposure rather than reduction of hazard
- greater reliance on institutional controls
  - ✓ government controls
  - ✓ proprietary controls
- pressure to show \$/jobs benefits vs. environmental focus
- frustration over slow pace
- concern over future costs, particularly megasites
- NRDA claims
- NACEPT committee report on Superfund

# Superfund “Fund” Balance

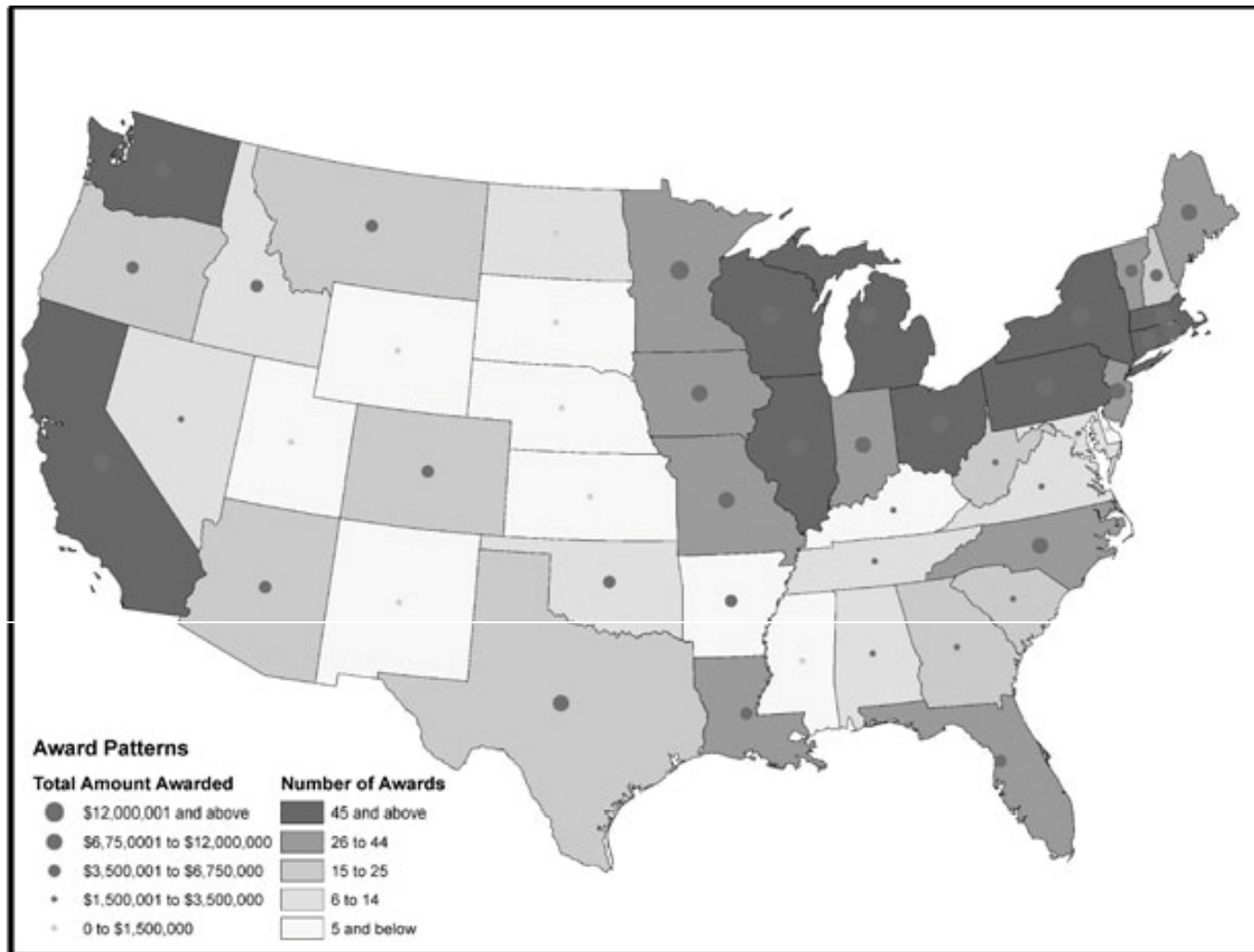


# Brownfield Programs!

- ↓ fear of getting involved in contaminated property (destigmatization)
- focus on controlling exposure
- ↓ costs of cleanup
- *return property to productive use*
- encourage voluntary action (rather than enforcement led approaches)
- federal brownfields law provides protection & \$\$\$
- 49+ states have brownfield/voluntary cleanup programs

- “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” (42 U.S.C. §9601, amended 2002)
- US EPA support from FY2003-FY2010
  - ✓ 2,000 grants and loans
  - ✓ US\$650 million to sites around country (more than \$850 million since 1993)
  - ✓ 60,000 jobs in cleanup, construction, and redevelopment claimed by EPA from awards

# Distribution of EPA Brownfields Program Awards to Local Government Applicants



# EPA Brownfield Applicants by Applicant Type, 2003-2007

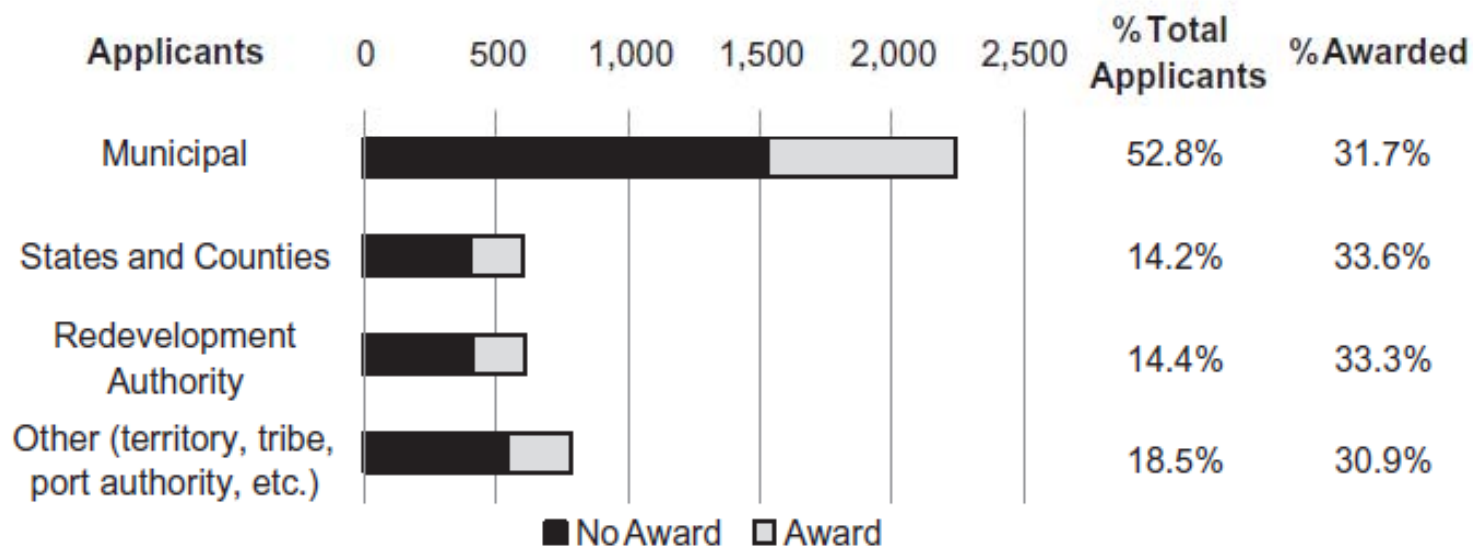
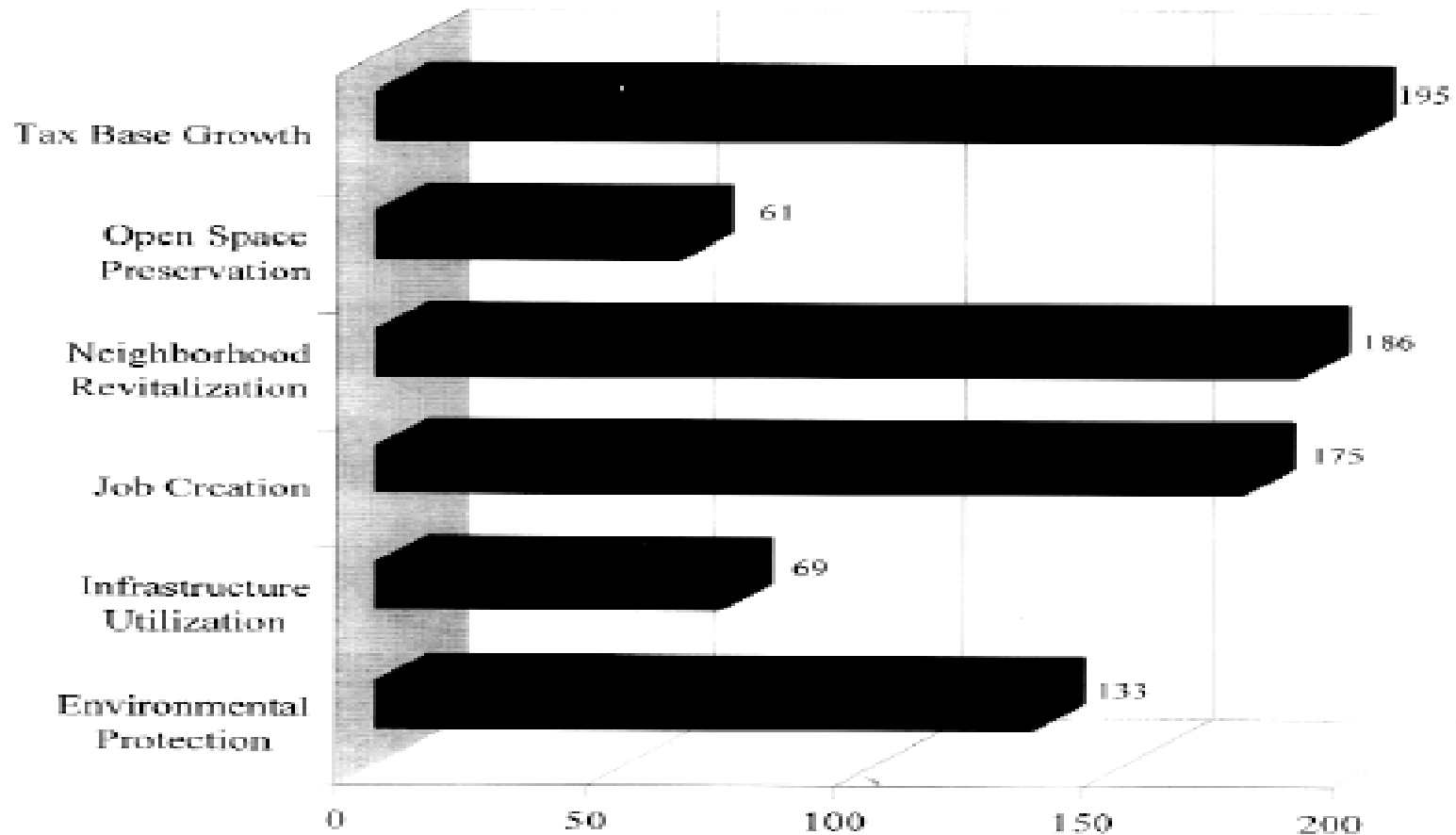


Figure 1. EPA Brownfields Applicants by Applicant Type, 2003–2007.

# US Conference of Mayors



# Benefits from Redevelopment of Contaminated Sites

create jobs

diversify business mix

increase tax revenue

more efficient use of infrastructure

part of areawide redevelopment agenda

promote greenspace

reduce environmental risk

remove eyesores

reduce public health risk

reduce sprawl

# Reasons for Redeveloping Brownfields

(% selecting “very important”)

<i>reason</i>	<i>private</i>	<i>econ develop</i>	<i>planners</i>	<i>other public</i>	<i>NGO</i>
<i>increase tax revenue</i>	37	48	30	28	30
<i>reduce environmental risk</i>	36	16	43	52	35
<i>efficient use infrastructure</i>	34	44	34	22	39
<i>reduce public health risk</i>	34	16	50	48	35
<i>create jobs</i>	30	47	23	24	39
<i>remove eyesores</i>	27	38	34	49	30
<i>reduce sprawl</i>	25	6	30	24	35
<i>area-wide redevelopment</i>	20	12	18	10	22
<i>promote greenspace</i>	12	6	9	18	9
<i>diversify business mix</i>	7	3	7	9	4
<i>number of respondents</i>	89	32	44	67	23

Source: see Heberle & Wernstedt (2006) and Wernstedt, Crooks, and Hersh (2003)

# World Bfields Weed Contamicide

# European Brownfields

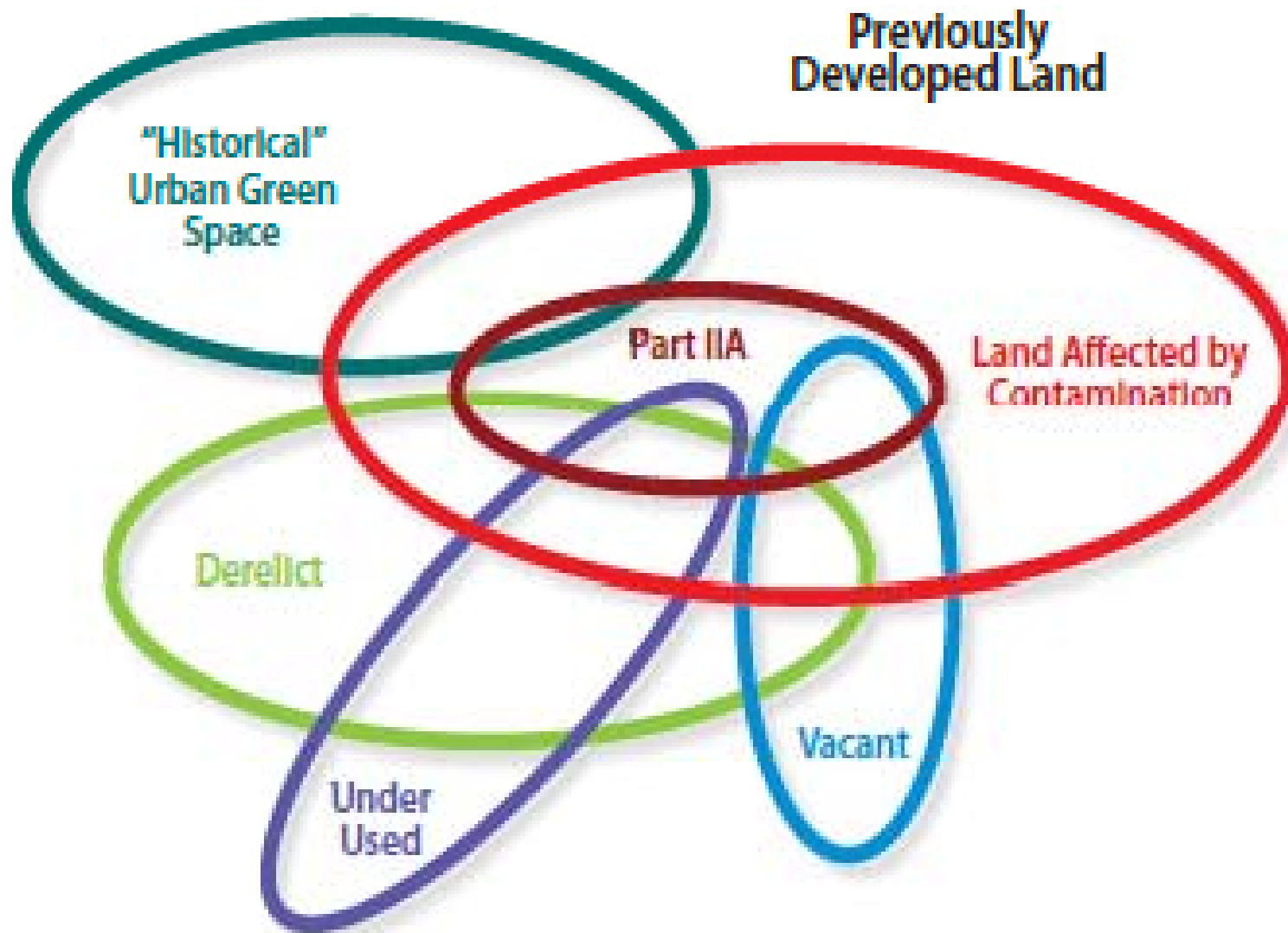
- no consistent brownfields definition across European countries in EU
- CABERNET definition (Concerted Action on Brownfield and Economic Regeneration Network)
  - ✓ have been affected by the former uses of the site and surrounding land
  - ✓ are derelict and underused
  - ✓ are mainly in developed urban areas
  - ✓ require intervention to bring them back to beneficial use
  - ✓ may have real or perceived contamination problems
- limited money available
- limited population growth (w/ notable exception in UK)

Country	Estimated total area of brownfield land	Suspected / potential number of brownfield sites	Data source
Austria	Data soon to be available	2500	Umweltbundesamt Wien (2000 and 2004)
Belgium	9,000 hectares (Wallonia) 5,500 hectares (Flanders)	5,528 (Wallonia) 53,000 (Flanders, estimate)	European Environment Agency (EEA) (1999); GEHAT, Université Bruxelles (2000)
Bulgaria	No data	No data	
Czech Republic	30,000 hectares	10,000	Czech Brownfield Regeneration Strategy, Progress Report (2004) - Czechinvest
Denmark	No data	30,000	Danish Environmental Protection Agency (2000)
Finland	No data	20,000	EEA (1999) Finnish Environment Institute (2001)
France	20,000 hectares	200,000 (estimate)	EEA (1999); Ministère de l'Environnement (2001)
	5000 hectares (Lorraine)		Les Etablissements Publics Fonciers (EPF)
	1000 hectares (Ile de France)		Direction Régionale de l'Équipement
	400 hectares (West Rhône Alpes)		Etablissement Public Foncier Ouest Rhône Alpes
Germany	120,000 hectares 18,000 hectares (Saxony)	362,000	Umweltbundesamt Berlin (2000)
Greece	No data	No data	
Hungary	No data	No data	
Ireland	No data	1,000 - 2,300 (contaminated sites)	Environmental Protection Agency (2000)
Italy	No national data 1200 hectares (Milan Province)	9,000	EEA (1999) Agenzia Nazionale per la Protezione dell'Ambiente (ANPA) (2001)
Latvia	No national data 1900 hectares (Riga only)	No national data 142 (Riga only)	Riga City Council (2004)
Netherlands	9,000 - 11,000 hectares	110,000 - 120,000 (estimate)	EEA (1999); Environmental Ministry (2000)
Poland	800,000 hectares	3200 sites	Ministry of Environment (2002)
Portugal	No data	2000 (estimate)	Lab. Nac. De Engenharia Civil (1998)
Romania	900,000 hectares	No data	Romanian Ministry of Waters and Environment (MAAF) (2000)
Slovak Republic	No data	No data	
Slovenia	Data soon to be available	Data soon to be available	Ministry Environment, Spatial Planning and Energy / Environment Agency
Spain	No national data	4,000 (potentially contaminated sites)	Ministerio de Medio Ambiente (2001)
	Basque Country: 7930 hectares potentially contaminated land, 402 hectares industrial ruins	Basque Country: 9328 potentially contaminated sites, 459 industrial ruins	IHOBE
Sweden	> 5000 hectares (estimate)	40,000	Unofficial estimate (C. Egelstig, JMAB, 2004)
United Kingdom	65,760 hectares (England) - full regional data available	100,000 (England, estimate)	National Land Use Database (2003 return published 2004)
	19,847 hectares (Scotland)	4,222 (Scotland)	Scottish Executive (Scottish Vacant and Derelict Land Survey 2003, published 2004)
	No data for Wales or Northern Ireland		

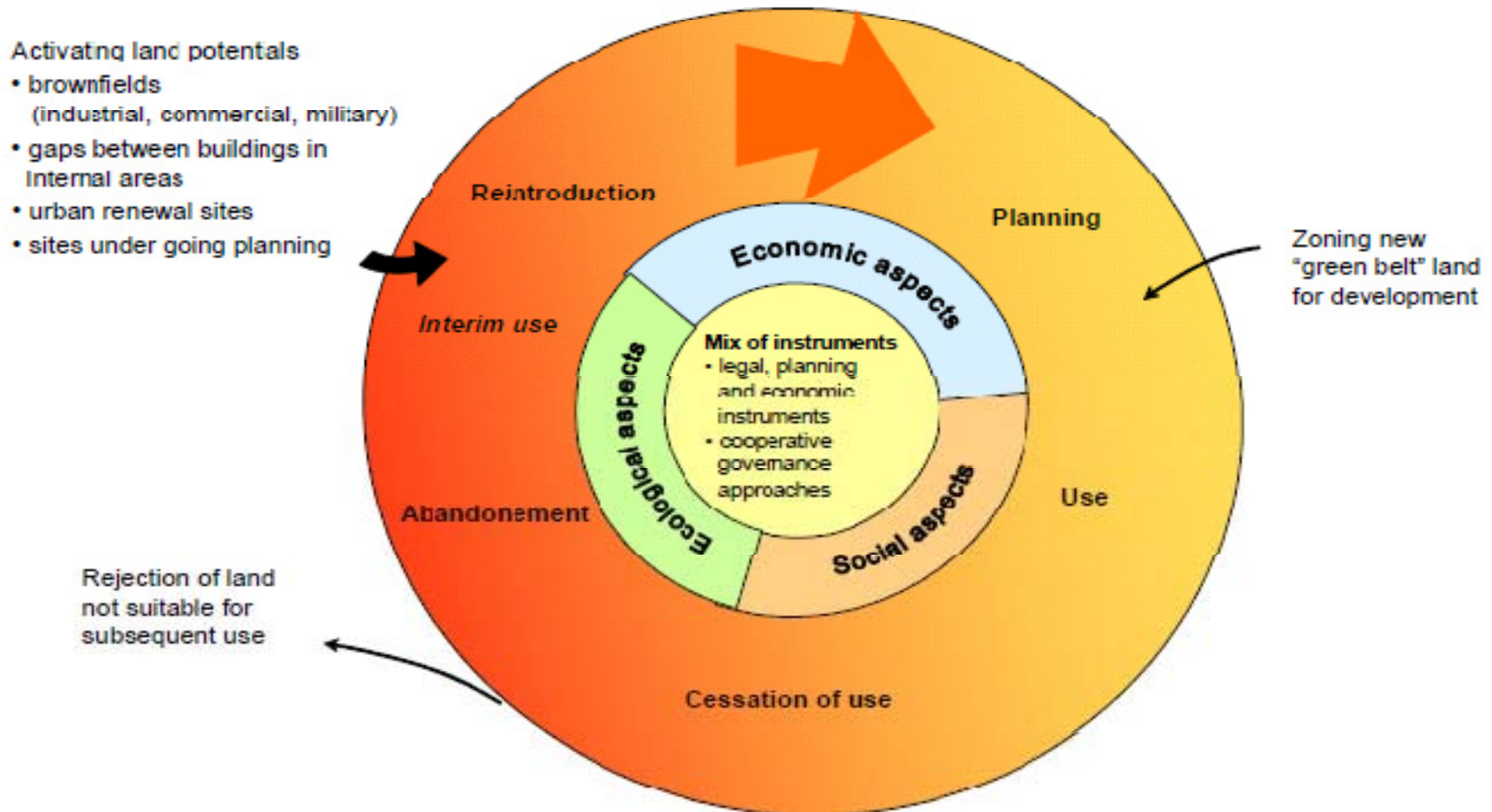
# Development Managerialism

## Context in UK

- brownfields framed principally in economic terms, as an obstacle to economic progress and urban development
- responses structured through existing administrative apparatus of planning
- emphasis on minimizing urban blight, protecting economic interests, and harnessing market-led development processes to bring land back to productive use
- cost-effectiveness an important theme
- driven by goal of siting 60% of new housing in brownfield areas



# Circular Land Management



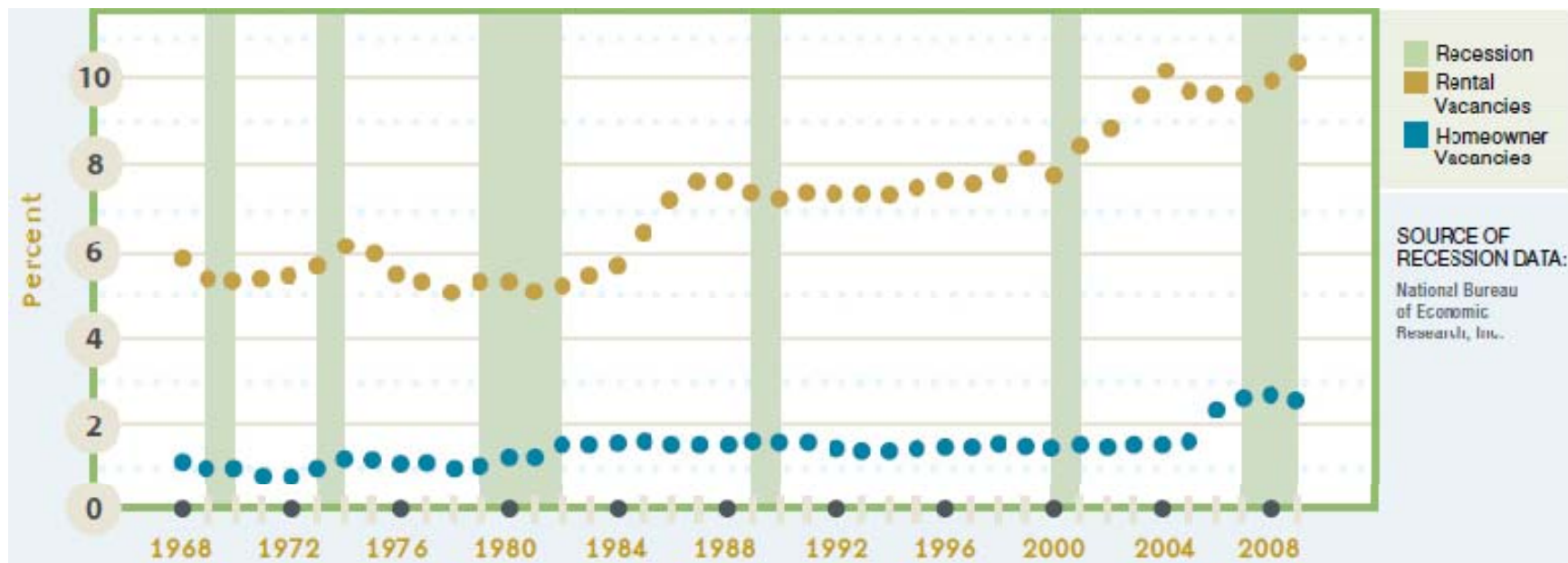
# National Bfields Weed Contaminate

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  - 400,000 to 1,000,000 million sites nationwide but . . . .

# Vacant Properties

- census count of “other vacant properties,” properties neither being offered for sale or rent, held for occupancy, or used for seasonal or migrant housing
  - ✓ between 1970 and 2000, number went from under 1 million to 2.3 million (# housing units increased by only two-thirds)
  - ✓ constitute 1 of every 50 dwelling units in US
  - ✓ 2008 ACS suggests number increased to 4.7 million by 2008, 1 of every 28 dwelling units

# Residential Vacant Properties

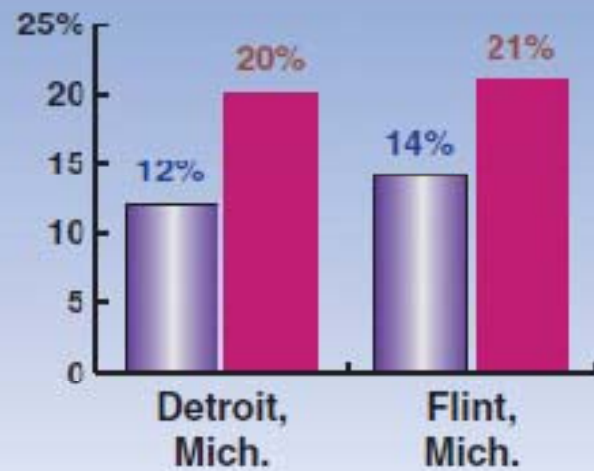




## Vacant Properties, 2006 and 2010

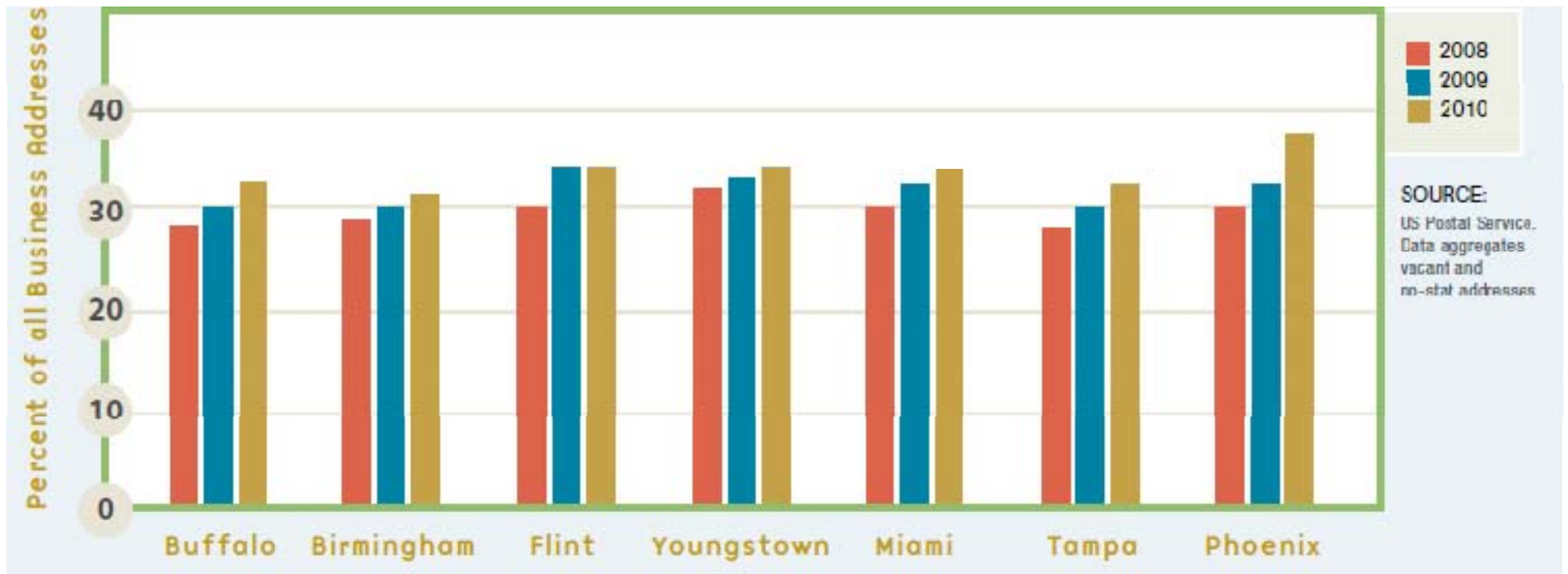
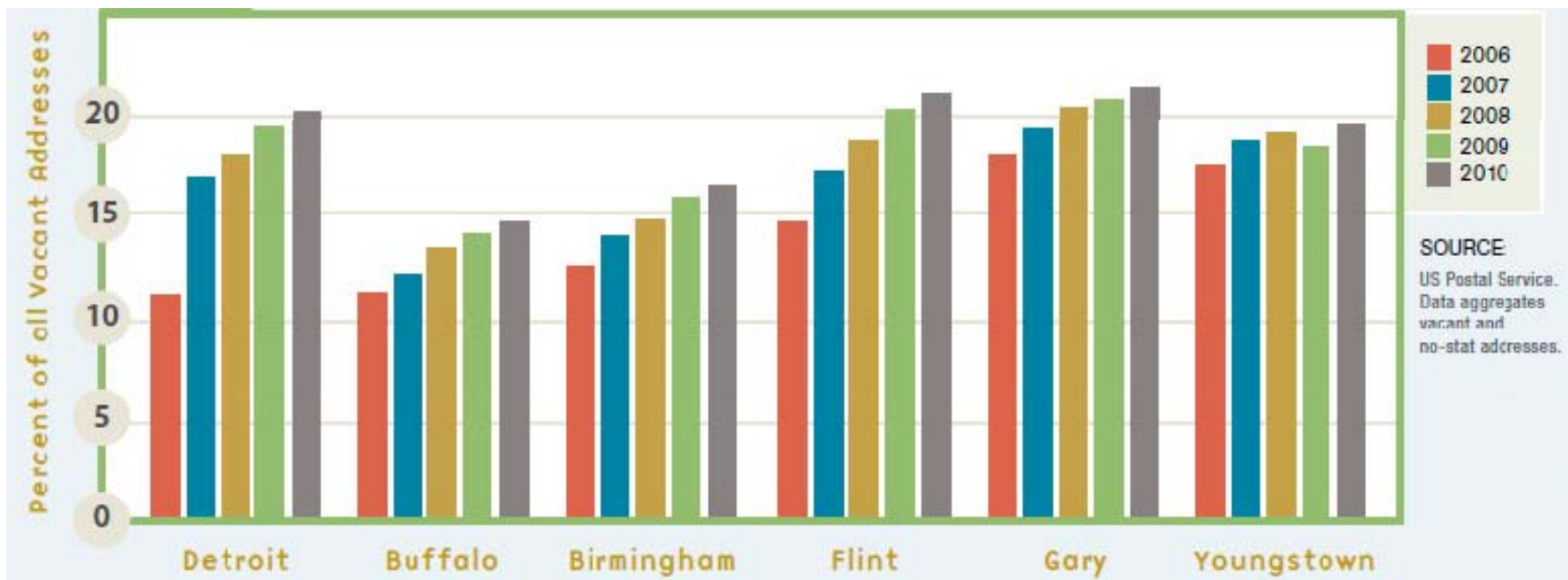
2006  
2010

### Older Cities

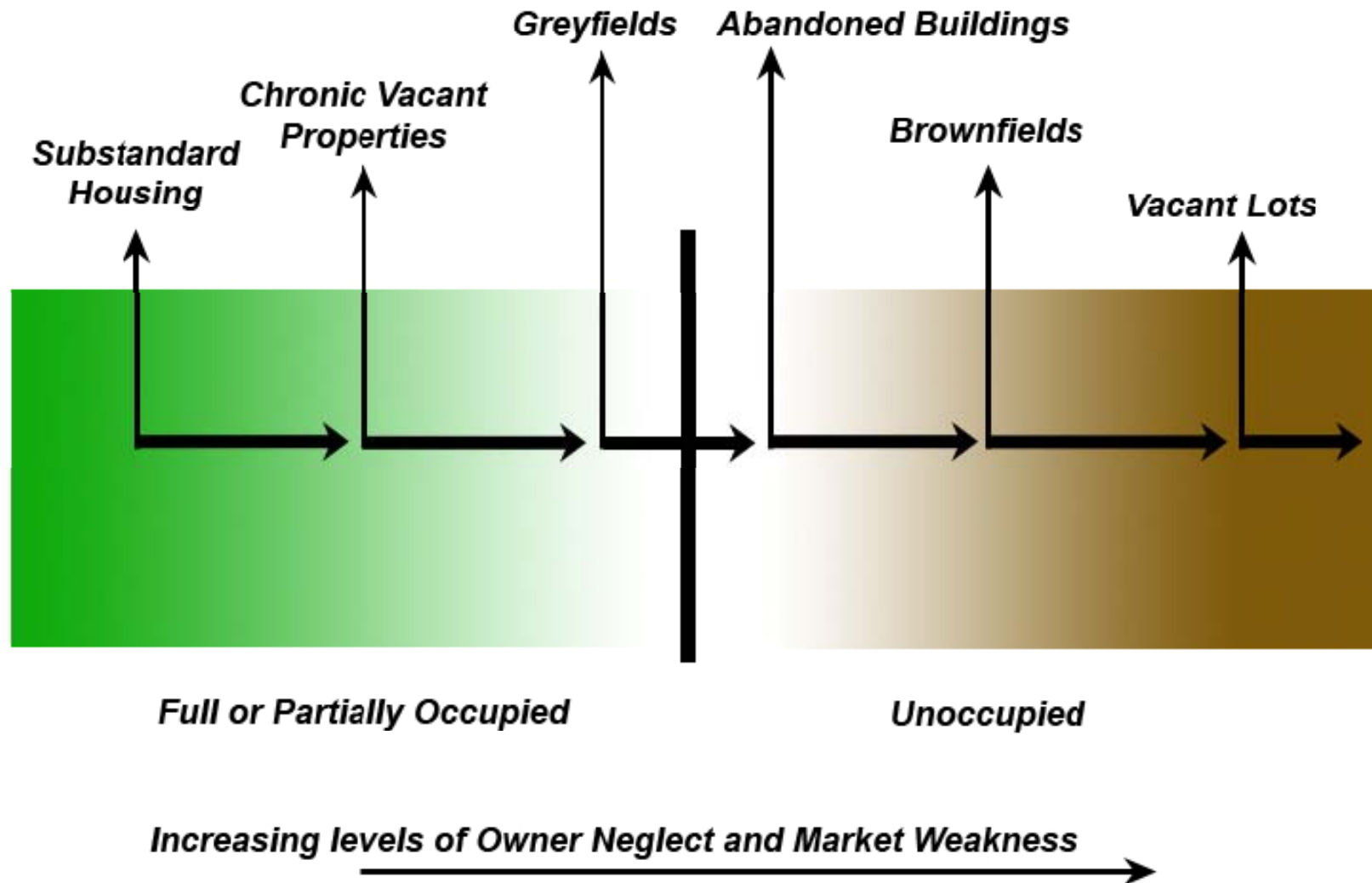


### Sun Belt Cities

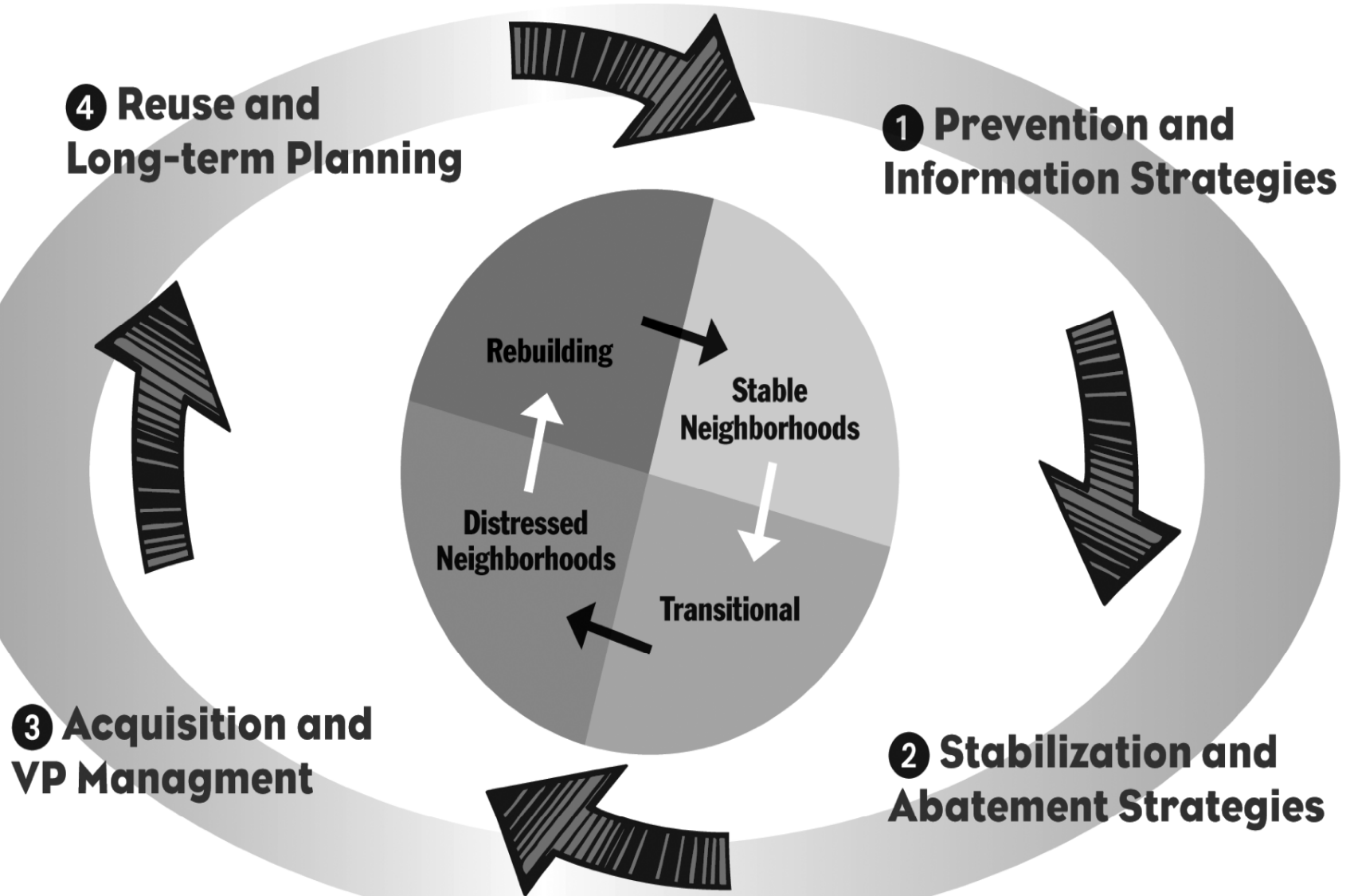




# Continuum of Distressed Properties



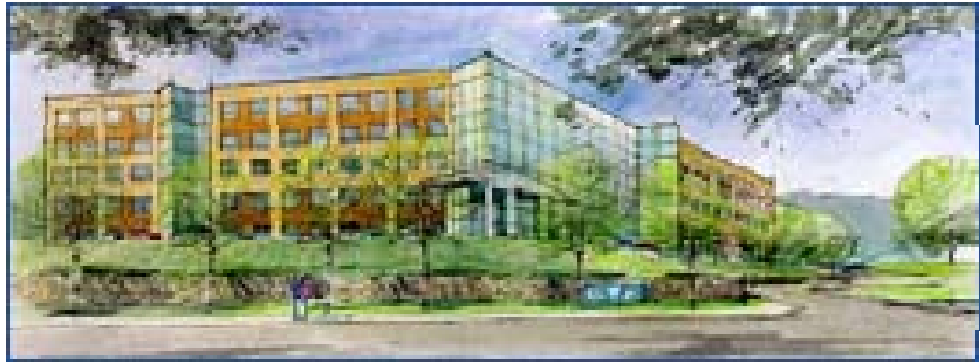
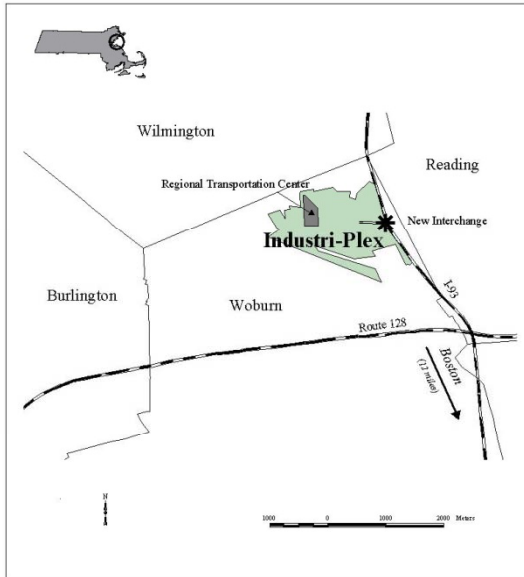
# Vacant Properties Revitalization Cycle

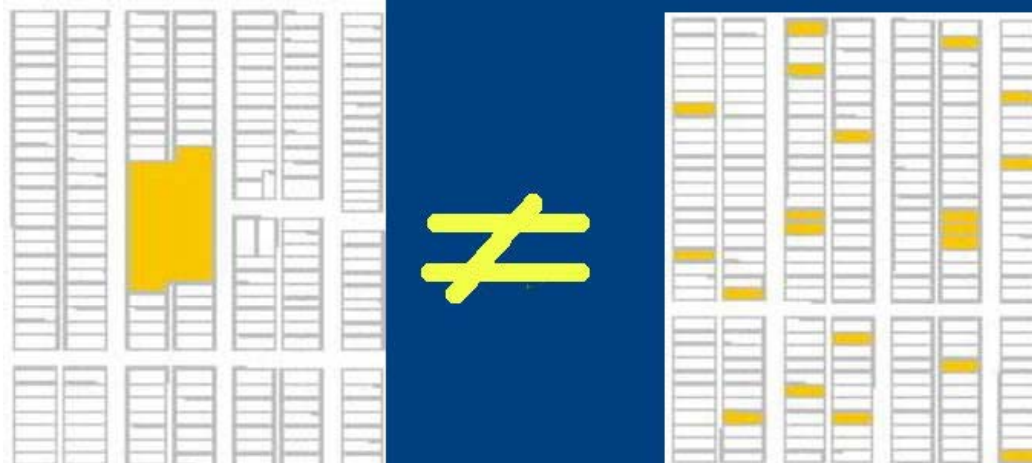
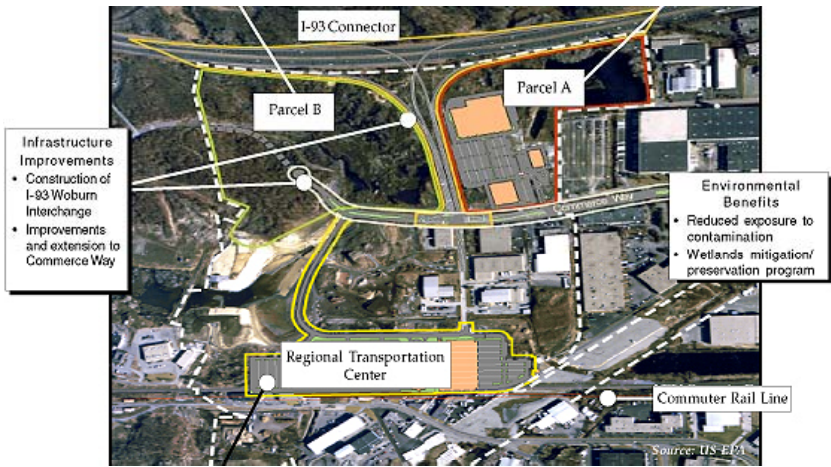


# Neighborhood Bfields Weed Contaminate

# Small Properties are Big Problems (Recalcitrant)

- upside down (real estate liabilities)
- no economies of scale in assessment or remediation
- insurance generally not affordable
- often located in distressed neighborhoods, where redevelopment of one property is not going to make a difference





# Areawide Bfield Regeneration

- focus on multiple small parcels with spillover potential
- cumulative effects
- economies of scale in assessment, remediation, and/or redevelopment
- possibility to access environmental insurance products
- promotes more holistic, integrated approach

# Areawide Tools

- NJ cluster, NY BOA, 23 EPA areawide pilots
- amnesty to encourage owners of small, “mothballed” parcels to do site investigations
- changes in the federal brownfields tax incentive
  - ✓ recapture
  - ✓ trading of tax credits
- required reporting of data on contamination and assessment and remediation costs
- strengthened requirements for public participation in areawide projects that receive funding
- areawide research initiative
  - ✓ land trusts
  - ✓ insurance
  - ✓ progressive finance
  - ✓ community development
  - ✓ business development

# Site Bfields Weed Contamicide

# We Really Don't Know What Incentives are Socially Desirable

- mixed evidence from the empirical literature about development incentives (*e.g.*, enterprise zones, tax incentives, *etc.*); lack of clean experimental setup is an issue (Bartik, 2004; Greenstone and Moretti, 2003)
- presence of concurrent incentives makes it difficult to estimate the impact of each
- hedonic studies about price of contaminated properties *vis-à-vis* others find mixed evidence about the effect of contamination and draw various conclusions about brownfield programs (*e.g.*, McGrath, 2000; Jackson, 2001; Howland, 2004; Schoenbaum, 2002)
- case studies about individual success (failure) stories

# How important are the following factors to the willingness to undertake brownfield projects?

<u>Not</u>	<u>Somewhat</u>	<u>Very</u>	<u>Essential</u>
<u>Important</u>	<u>Important</u>	<u>Important</u>	<u>Essential</u>

reimbursement for  
env. assessment


requirement for  
for public hearing

protection from  
cleanup liability

protection from  
3<sup>rd</sup> party liability

\$500,000 construction subsidy

# Marginal Value of Policies

	Dollar value	% of profit (strong market)
Avoiding a public hearing		4
Cleanup liability relief		14
3 <sup>rd</sup> party liability relief		19

# Specialists v. Non-specialists

(proportional comparison)

	Non-specialists	Specialists
Avoiding public hearing	x	0.55x
Cleanup liability relief	y	0.94y
3 <sup>rd</sup> party liability relief	z	0.64z