



New Jersey Institute of Technology (NJIT) Technical Assistance to Brownfields Communities (TAB)

What is TAB?

TAB is a technical assistance program, funded by the USEPA, which is intended to serve as an independent resource to communities and nonprofits attempting to cleanup and reclaim brownfields.

NJIT's TAB program covers communities in EPA Regions 1 and 3.



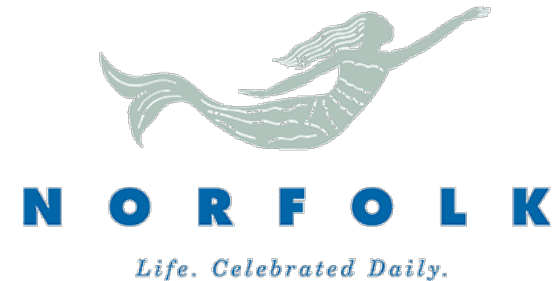
Who is the NJIT TAB Team?

- ❑ A multi-disciplinary team consisting of personnel with academic research, government, industry and consulting experience.
- ❑ NJIT has been providing brownfields services to communities for 20 years.



Who Can Receive NJIT TAB Assistance?

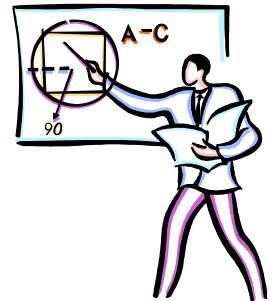
- ✓ Communities, regional entities and nonprofits interested in brownfields



What are NJIT TAB Services?

NJIT TAB can provide free assistance throughout the brownfield process from getting started to staying on track to getting the job done.

All services must be aimed at achieving Brownfields clean up and development and be consistent with Region 1 and 3 programs.



Examples of NJIT TAB Services

- Great website – www.njit.edu/tab
 - FAQs, Guidance on Managing BF projects, download materials from previous workshops
- Brownfields Workshops
- Webinars
 - Archives available at njit.edu/tab
- One-on-One Technical Assistance
- Review , Analysis, and Interpretation of Technical Reports

NJIT TAB CONTACT INFORMATION

Informal Process for assistance – just call or email us – there is no contract to sign. All assistance is free to eligible entities.

NJIT TAB Hotline 973-642-4165 tab@njit.edu

<http://www.njit.edu/tab/>

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Brownfields Overview

- Topics for Discussion
 - ▣ Definition – What is a Brownfield
 - ▣ History of Brownfields
 - ▣ Benefits of Brownfield Redevelopment
 - ▣ Brownfield Redevelopment Process
 - ▣ Brownfield Successes

Definition

What is a Brownfield Site?

- A property whose full use is hindered by fears of environmental contamination
 - Liability / Funding to cover remediation costs

- “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.” EPA
(Real or perceived contamination)

Where are Brownfields?

Brownfields are:

- Everywhere
- Concentrated in areas of former industrial use (Norfolk, Richmond, and Urban Crescent)

20% dry cleaner

5% gas plants

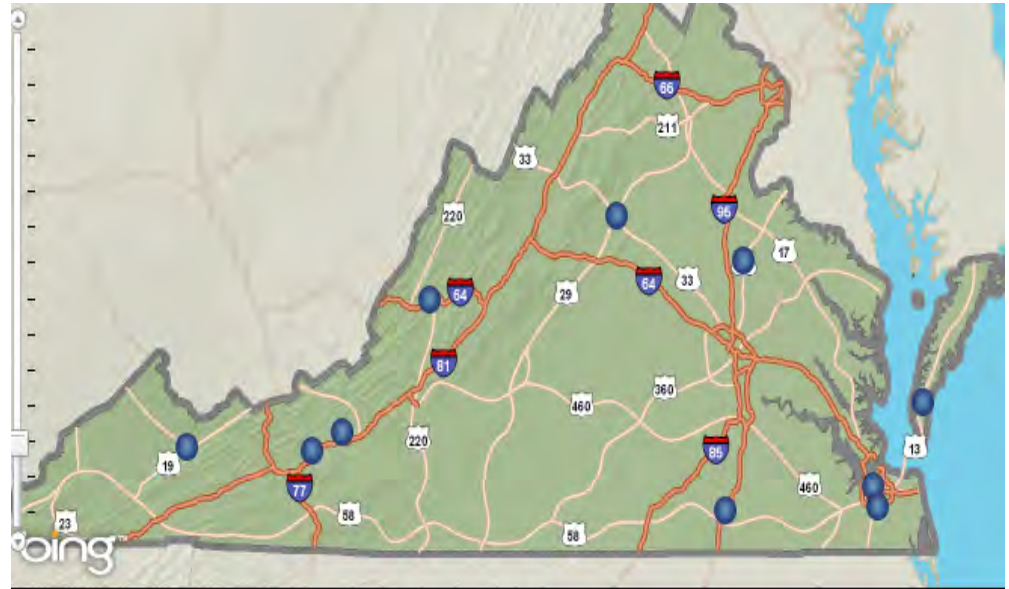
5% USTs

2-3%; landfills

2-3% junk yards

2-3% lumber yards

miscellaneous industries



<< 1 - 10 of 14 Results >> Show All Results

On Map	Property Name	Site Area (acres)	Largest Contiguous Parcel (acres)	Locality
<input checked="" type="checkbox"/>	Simmons Development Claypool Hill	5.44	2.50	Tazewell
<input checked="" type="checkbox"/>	60101 Spotswood Trail	12.76	12.76	Greene
<input checked="" type="checkbox"/>	Keller Ladders Site	21.33	21.33	Caroline
<input checked="" type="checkbox"/>	Honeywell Site	27.39	27.39	Pulaski
<input checked="" type="checkbox"/>	Clifton Forge Railway North	33.62	33.62	Alleghany
<input checked="" type="checkbox"/>	Webster Investors Site	35.00	35.00	Northampton
<input checked="" type="checkbox"/>	FASTA Site (Right Now Site?)	37.00	37.00	Greensville
<input checked="" type="checkbox"/>	Orca Yachts Property	41.44	39.95	Chesapeake
<input checked="" type="checkbox"/>	BASF Site	43.85	43.85	Portsmouth
<input checked="" type="checkbox"/>	New River Industrial Park Property (NRI)	65.84	65.84	Pulaski

Grant Application Process

11



- Feeling Lucky?
 - 449 applications submitted
 - 243 were selected for awards (54%)
 - 179 Assessments (73%)
 - 64 Cleanups (26%)
 - The estimated budget for this FY 15 awards has been reduced by \$14M

What Are the Fears?

- Sites are dirty, trashed, clearly used
- “Real” Contamination:
 - In the buildings
 - In the soil
 - In the water
- Liability
- Lack of Funds to cover remediation costs
- Displace Residents (gentrification and/or eminent domain)



Brownfield Redevelopment

YOU ARE NOT ALONE.

A 2010 Survey of 75 cities by the US Conference of Mayors showed that for just these 75 cities:

Brownfield sites = 29,624
representing 45,437 acres

VA = 500+ brownfield sites; 40%
sites in the VRP pose health /
environmental risk –



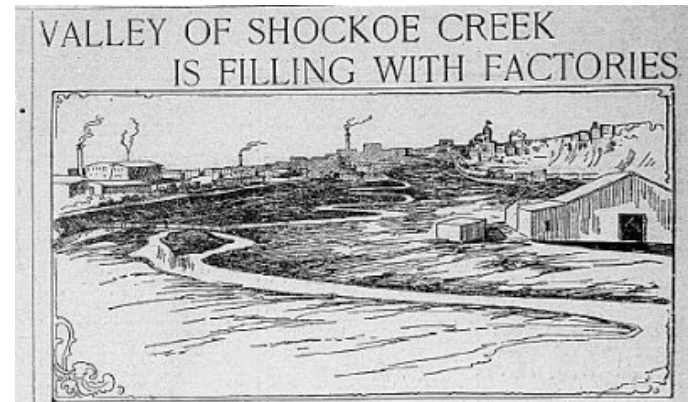
How Did We Get Here: History of Brownfields



Industries in Richmond, VA

Richmond's factories in the 1910s and 1920s: furniture, wagons, farm equipment, tobacco products, paper, and products made from iron including ornamental ironwork (fencing), stoves and locomotives.

Source: <http://theshockoeexaminer.blogspot.com/2010/06/rare-views-of-industrial-richmond-ca.html>



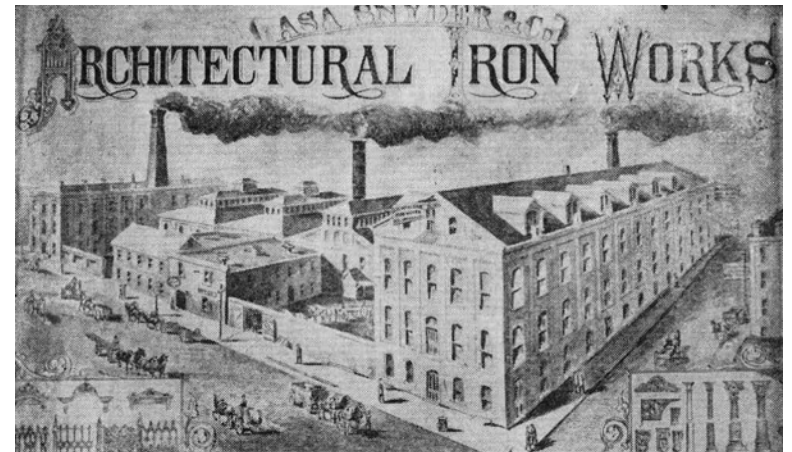
Early 1900s, Richmond VA

Source: Richmond Times, January 12, 1902.

<http://chroniclingamerica.loc.gov/lccn/sn85034438/1902-01-12/ed-1/seq-1.pdf>

Asa Snyder & Co. Architectural Iron Works, established 1871 at 1008-12 Cary Street.

Source: <http://richmondthenandnow.com/Newspaper-Articles/Ironworks-of-Richmond.html/>



History of Brownfields

FORMER GAS STATION

Source: EnviroSure Inc, RIW South Waterfront Service Station, September 2009.



FORMER FACTORY

Source: Limbrick 2010



FORMER JUNKYARD

Source: Limbrick 2008



Do I Have a Brownfield in My Community?

- Do I have a brownfield in my Community?
 - Ask yourself:
 - Do I know of a site that is vacant or less productive than it should be?
 - Are there concerns about environmental contamination?

Why is this site a Brownfield?

- Manufacturing
 - ▣ Soil, groundwater contamination
 - ▣ Heating Oil Tank Leak
- Currently Unused
- Deteriorated
- Underutilized



Source: The Register Citizen, August 11, 2014.
Esteban L. Hernandez

Why is a RR a Brownfield?

- Railroads may contain several sources of contamination:
 - ▣ Railroad ties (wood treating chemicals)
 - ▣ Pesticides
 - ▣ Slag used as railroad bed fill
 - ▣ Brake Fluid / Hydraulic Fluid
 - ▣ Fuel
 - ▣ Fossil Fuel Combustion products
 - ▣ PCBs in railroad transformers (used to power locomotives)
 - ▣ Solvents for cleaning
 - ▣ Spilled or leaked chemicals



Why is Brownfield Redevelopment Important?

- Environmental, Societal and Economic Benefits
 - Cleans up the Environment
 - Improves Community Appearance – Decreases Blight – Eliminates Eyesores
 - Increases Property Value
 - Liability for doing nothing: Potential fines for environmental enforcement actions
 - Can bring jobs & new investment to community



Redevelopment Options

- Industrial
- Residential
- Commercial
- Mixed Use
- Parks / Greenspace (trails, public water access / boat ramps, golf course, etc.)
- Government
- Urban Agriculture / Food Distribution

Reuse Example: Park/Greenspace Long Bridge Park, Arlington, VA

BEFORE

AFTER



Sources:

ASCE Infrastructure Report Card. <http://www.infrastructurereportcard.org/a/#e/public-parks-photo-06>
Kevin Wilson. ASCE. Brownfield Turns Green. January 31, 2012.
http://www.asce.org/CEMagazine/Article.aspx?id=25769805408#.VAYJ_lWS0

Reuse Example: Urban Farming - Lynchburg



**A non-profit
urban farm
providing for the
community**

Reuse Example: Albert Steel Drum – FedEx Facility Newark NJ



BEFORE



AFTER

Reuse Example: Retail-Richmond VA



Former Gas Station

Coffee Shop
Richmond, VA

Source: Limbrick

Reuse Examples: Industrial / Green Energy / School / Ballpark



Solar Farm Source: PSEG.com



Camden ECDC School Source: Limbrick



Fairless Hills, PA

Source: KIPC and Langan Engineering
<http://www.eswp.com/brownfields/Costello.pdf>



Minor League Ballpark
Campbell's Field / Camden Riversharks,
Camden, NJ Source: NJDEP

Reuse Examples: Commercial/ Retail / Office Park/ Mixed Use



Trenton Office Park

Source: Langan Engineering



Bronx Terminal Market

Sources: NYDEC and Plaza Construction



Residential : Apartments - LEED

Source: Trammel Crow Residential



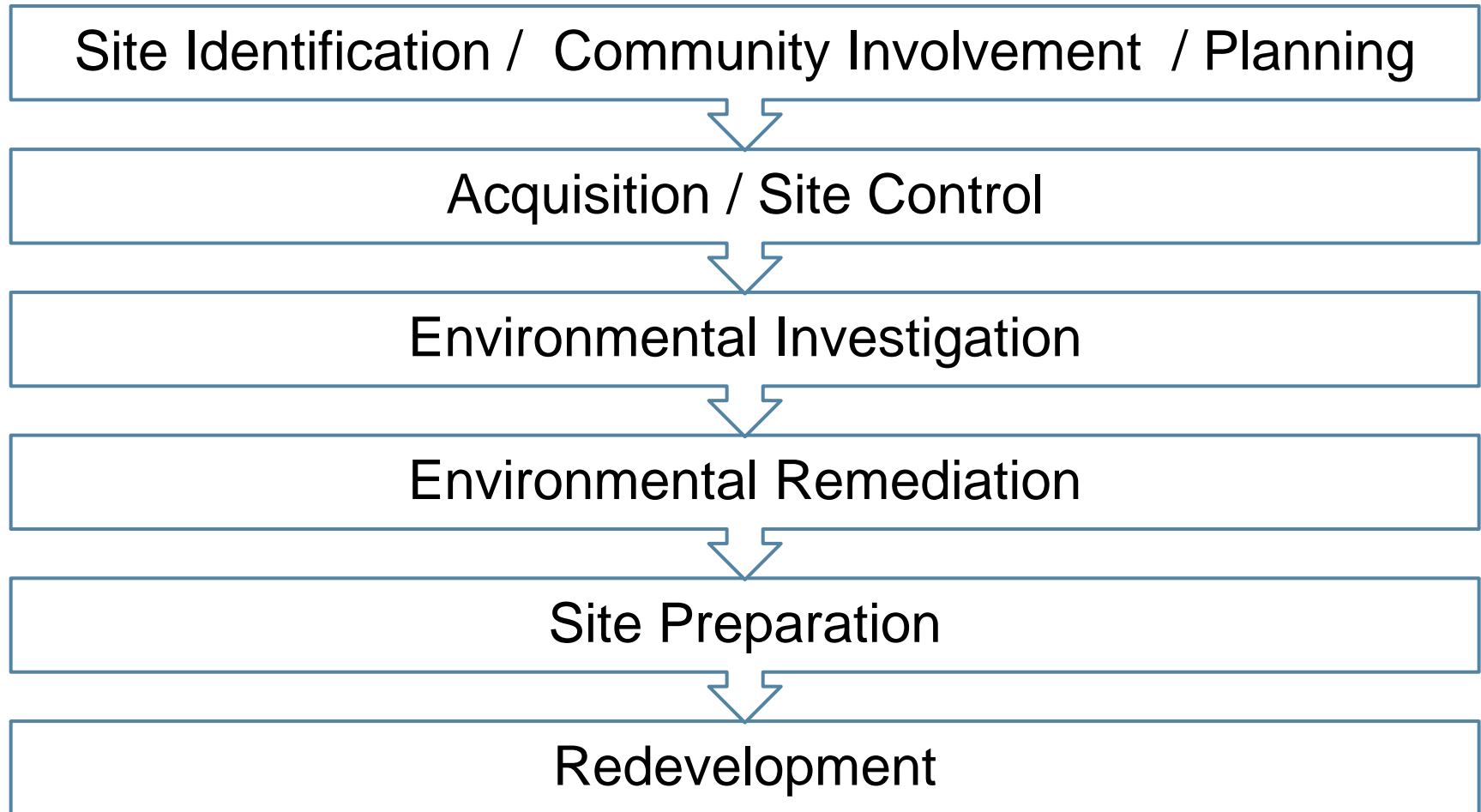
**Mixed Use Development with
Affordable Housing
Courtland Corners, Melrose Commons
South Bronx, NY**

Source: Bob Wieda and Phipps House / NYDEC
<http://www.dec.ny.gov/chemical/50491.html>

Steps in Brownfields Redevelopment

Yes – I have
brownfield site...
Now What?

What is Typically Involved with Redeveloping a Brownfield?



What is Typically Involved with Redeveloping a Brownfield?

Site Identification

- Inventory
- Single Site
- Common Types of Sites
- **Area-wide Approach to Sites**

Community Involvement

- Analyze community needs and preference to prioritize development strategies
- Can be a critical piece of redevelopment
- Often ignored by developers



What is Typically Involved with Redeveloping a Brownfield?

Planning

- Evaluating existing environmental conditions, local market potential, and area infrastructure improvements needed;
- Developing strategies for brownfields site cleanup/reuse;
- Identifying resources or leveraging opportunities to implement their plans.



What is Typically Involved with Redeveloping a Brownfield?

Acquisition / Site Control

- Phase I / All Appropriate Inquiry
- Purchase or sale agreement
- Involuntary acquisition methods
 - tax foreclosure
 - eminent domain
- Site Access Agreement with option to purchase

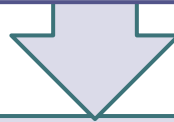


What is Typically Involved with Redeveloping a Brownfield?

Environmental Investigation

Phase I Preliminary Assessment

What environmental issues could we have?



Phase II Site Investigation

Qualification: Do we have contamination/environmental issues?

Yes or No?



Phase III Remedial Investigation

Quantification: What is the nature and extent of our contamination?

How much?



What is Typically Involved with Redeveloping a Brownfield?

Clean Up (Remediation)

Remedial Action Work Plan (RAWP)

Actions that will be taken to address identified contamination

Implement Remedial Action Work Plan.

- Conduct Clean Up
- Ensure Clean Up Was Effective

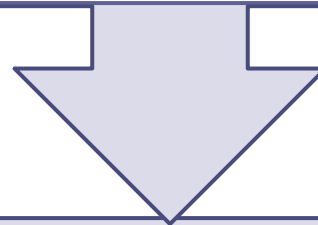


What is Typically Involved with Redeveloping a Brownfield?

Clean up (Remediation)

Remedial Action Report

Documents implementation and effectiveness of Remedial Actions



Measure of Finality



What is Typically Involved with Redeveloping a Brownfield?

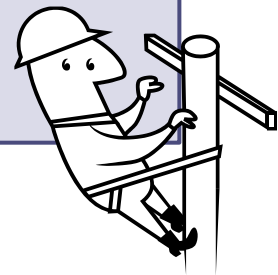
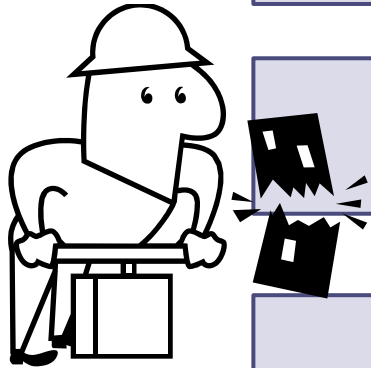
Site Preparation

Permits / Approvals

Demolition

Site Clearing

Infrastructure Improvements

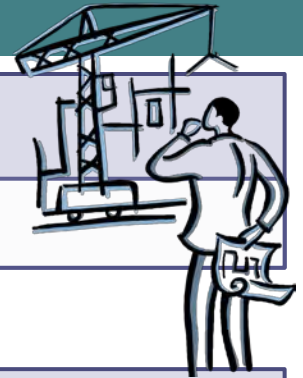


What is Typically Involved with Redeveloping a Brownfield?

Redevelopment

Construction

Integrated Remediation (cap)



Ownership and leasing transactions are finalized



Property is occupied and operating as its planned reuse.



Liability

- What are the potential liabilities / uncertainties?
 - Environmental Costs
 - Some lenders may also be wary
 - Uncertainty on costs for Investigation / Remediation
 - Additional costs for consultants & attorneys
 - Time
 - Uncertainty on timeframe for cleanup
 - Grant process takes time
 - More players involved
 - Depending on selected remediation, may limit reuse options

Liability Relief

- Federal – CERCLA
 - ▣ Innocent Purchaser
 - ▣ Involuntary Acquisition
 - ▣ 3rd Party Defense



TIP

- 1) Always do your Due Diligence aka “All Appropriate Inquiry” / Phase I before purchasing a property
- 2) Do not exacerbate the contamination

- Virginia
 - ▣ DEQ VRP – certificate of completion – offers immunity to future state regulatory compliance
 - ▣ EPA and DEQ MOA which provides federal concurrence with DEQ’s decisions on site requirements

Responsibilities

- Due Diligence
- Once you own it, you must:
 - Not exacerbate the contamination
 - Remove and properly dispose of any hazardous substances that are leaking (or likely to leak)
 - Report discharges
 - Exercise “appropriate care” with respect to hazardous substances found at the facility by taking reasonable steps to stop any continuing release, prevent any threatened future release, and prevent or limit human, environmental, or natural resource exposure to any previously released hazardous substances
 - Restrict access in order to minimize damage that may result from unauthorized access to the property

Timeframes

- **How long will the cleanup take?**

It depends on the level, type, amount, and extent of contamination, cleanup standards, and funding.



[More Detail Timeframes](#)

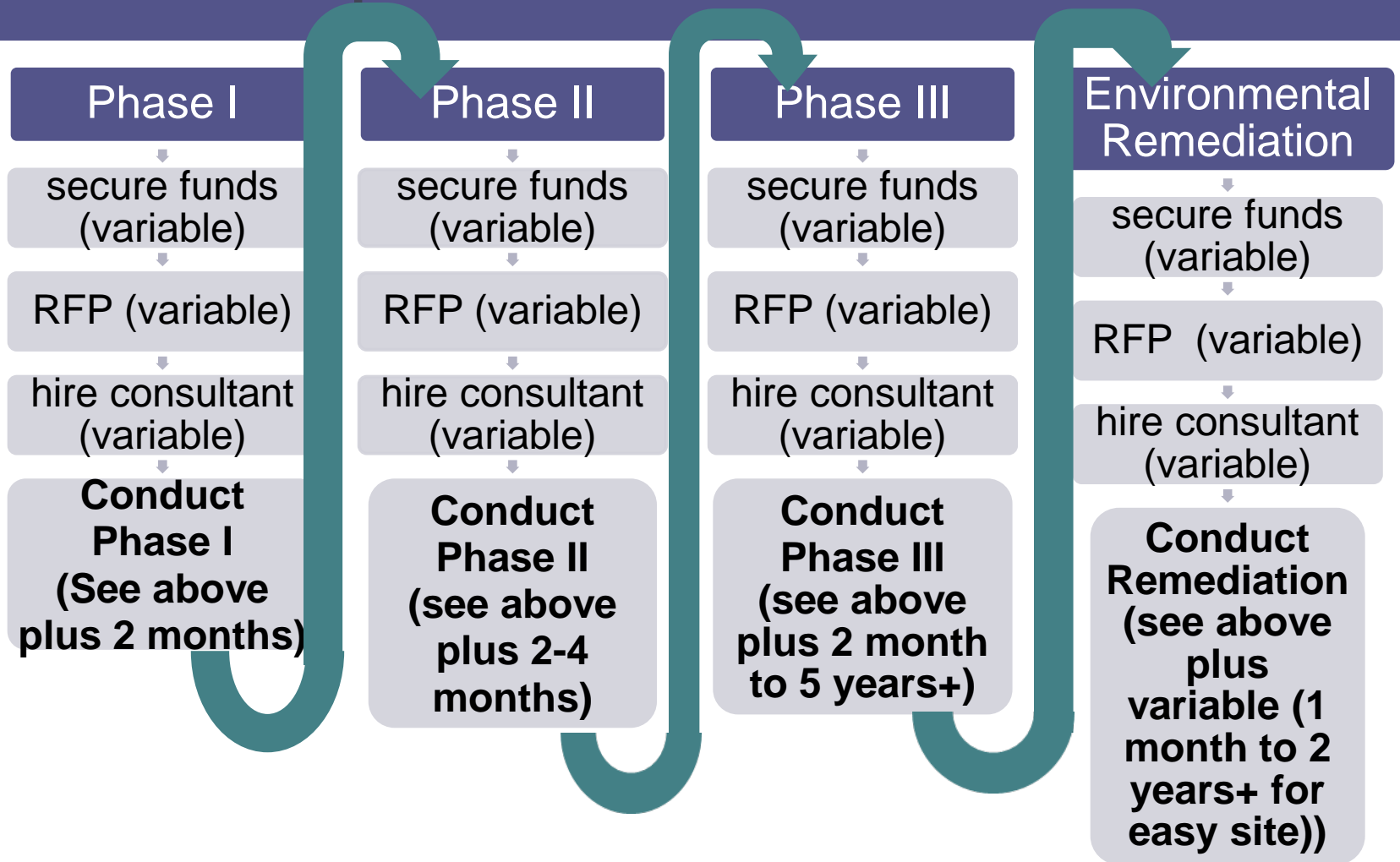
Timeframes

There is no “average site” so there is no “average timeframe”. However, timeframes for redevelopment vary from 6 months to 10 years and beyond.

Best scenario:

- ▣ property is owned
- ▣ minimal contamination
- ▣ permits are in place
- ▣ funding has been secured
- ▣ redevelopment plans have been approved

Example Timeframes Brownfield Redevelopment



How much will this Cost?

- **How much will it cost to investigate and remediate the site?**
 - It depends on the level, type, amount, and extent of contamination, and cleanup standards.
 - Phase I \$5,000
 - Phase II \$5,000 to well over \$100,000
 - Phase III??? \$5,000 - \$300,000+
 - Remediation \$20,000 - \$1Million+
- **How long will the cleanup take?**

It depends on the level, type, amount, and extent of contamination, cleanup standards, and funding.

Financing Brownfield Redevelopment

- ▣ Technical Assistance
- ▣ Tax Incentives
- ▣ Local Financing Tools
- ▣ Low Interest Loans
- ▣ Loan Guarantees
- ▣ Federal Grants

Types of EPA Brownfield Funding

- Assessment Grant
- Cleanup Grant
- Revolving Loan Fund (RLF)
- Job Training Grant
- Area Wide Planning Grant
- Targeted Brownfield Assessments (TBA's)

Assessment Grant

- \$200,000 community-wide/site-specific grants
- \$150,000 additional may be requested
- Government entities or government-related
- 3 year project periods
 - Phase I: record reviews, site visit
 - Phase II: sampling, analysis
 - Phase III: cleanup/remediation planning
- Sometimes it's all they need

Cleanup Grant

- \$200,000 per site (requires a 20% cost share) up to three sites
- Government entities and nonprofit organizations
- Applicant must own the property
- 3 year project periods
 - Conduct actual cleanup of contamination
 - Indoor contaminants
 - Soil and groundwater

Revolving Loan Fund Grants

- \$1 million grants (requires a 20% cost share)
- Governmental entities
- 5 year project periods
 - Low interest loan fund for cleanups (60%)
 - Subgrants for cleanups (40%)
 - Can loan to private parties

Job Training Grant

- \$200,000 grants
- Governmental entities and nonprofits
- Must have another BF grant
- 2 year project periods
 - For training and placing underemployed or undereducated residents
 - In communities clearly impacted by brownfields
 - HAZWOPER, OSHA health and safety, outreach

Targeted Brownfields Assessments (TBA's)

- EPA can perform direct brownfields site assessments in communities
- Offered to applicants who were not awarded
- Criteria
 - Site should be for public or non-profit use
 - Strong community support
 - Property owner(s) must allow access
 - Demonstrated commitments to cleanup and reuse site
- On-line application form
 - www.epa.gov/reg3hwmd/bfs/regional/index

Brownfield Area Wide Planning Grants

- Part of the HUD-DOT-EPA Partnership for Sustainable Communities.
- Perform the research needed to develop an area-wide **plan (not for implementation)**
- Designed to provide support for:
 - Fine-tuning an ongoing planning process for brownfields
 - Developing area-wide plans for brownfields
- **Determine next steps and identify resources to implement the plan**

Area Wide Planning Grant

- \$200, 000 award
- Government entities or government-related
- 2 year project periods
 - Community involvement
 - Evaluate existing environmental conditions, local market potential, and area infrastructure improvements needed
 - Develop strategies for brownfields site cleanup/reuse;
- Identify resources or leveraging opportunities to implement their plans.

Other Federal Funding Programs Grants

Can be Linked Together for Redevelopment Projects

- ▣ HUD's Community Development Block Grants (for projects locally determined)
- ▣ EDA public works and economic adjustments
- ▣ DOT (various system construction, preservation, rehabilitation programs)
- ▣ Army Corps of Engineers (cost-shared services)
- ▣ USDA community facility, business and industry grants

Other Federal Funding Programs

Loans

Can Be Linked Together for Redevelopment Projects

- ❑ EDA capital for local revolving loan funds
- ❑ HUD funds for locally determined CDBG loans and “floats”
- ❑ EPA capitalized revolving loan funds
- ❑ SBA’s microloans
- ❑ SBA’s Section 504 development company debentures
- ❑ EPA capitalized clean water revolving loan funds (priorities set/ programs run by each state)
- ❑ HUD’s Section 108 loans/guarantees
- ❑ SBA’s Section 7(a) and Low-Doc programs
- ❑ USDA business, intermediary, development loans

Other Federal Funding Programs

Can be Linked Together for Redevelopment Projects

Federal Investment Incentive Program

- ▣ EB5 Investments

Equity capital & loan guarantees

- ▣ SBA Small Business Investment Cos.
- ▣ SBA Section 7(a) guarantees
- ▣ DOE energy facility guarantees

Tax incentives and tax-exempt financing

- ▣ Targeted expensing of cleanup costs
- ▣ Historic rehabilitation tax credits
- ▣ Low-income housing tax credits
- ▣ New Markets Tax Credits (2015?)
- ▣ Industrial development bonds
- ▣ Energy efficiency construction credits

Virginia Brownfields Restoration and Economic Redevelopment Assistance Fund



Funds available July 1, 2015

Provides a “track record” for localities considering applying for EPA Grant and a leverage and/or match for other grants

Flexibility to complete either assessment or remediation if property is owned by the local government

- Created in 2002 with Virginia Brownfields Legislation
- First capitalized in 2011 with \$1M
- 24 Grants awarded with typical award of \$50,000 (Ranging from \$7,000 to \$60,000)
- Re-capitalized in 2015 with \$750,000
- Virginia Ally website <http://www.virginiaallies.org/> guidelines will be posted as soon as finalized
- Wide range of projects from typical Phase I & II ESA to removal actions for historic waste materials

Virginia's Brownfield Remediation Loan Program

- 2002 & 2003 General Assembly expanded the funding activities of the Revolving Loan Program
- Purpose of this Brownfield remediation financing legislation is to provide a source of low-interest loan financing to encourage the cleanup and reuse of contaminated properties
- Virginia's Brownfield Remediation Loan Program – contact Walter Gills 804-698-4133

walter.gills@deq.virginia.gov

§ 10.1-1231. Brownfield Restoration and Land Renewal Policy and Programs

“It shall be the **policy** of the **Commonwealth** to **encourage remediation and restoration of brownfields by removing barriers and providing incentives and assistance whenever possible**. The Department of Environmental Quality and the Economic Development Partnership and other appropriate agencies shall establish policies and programs to implement these policies, including a **Voluntary Remediation Program**, the **Brownfields Restoration and Redevelopment Fund**, and other measures as may be appropriate.”

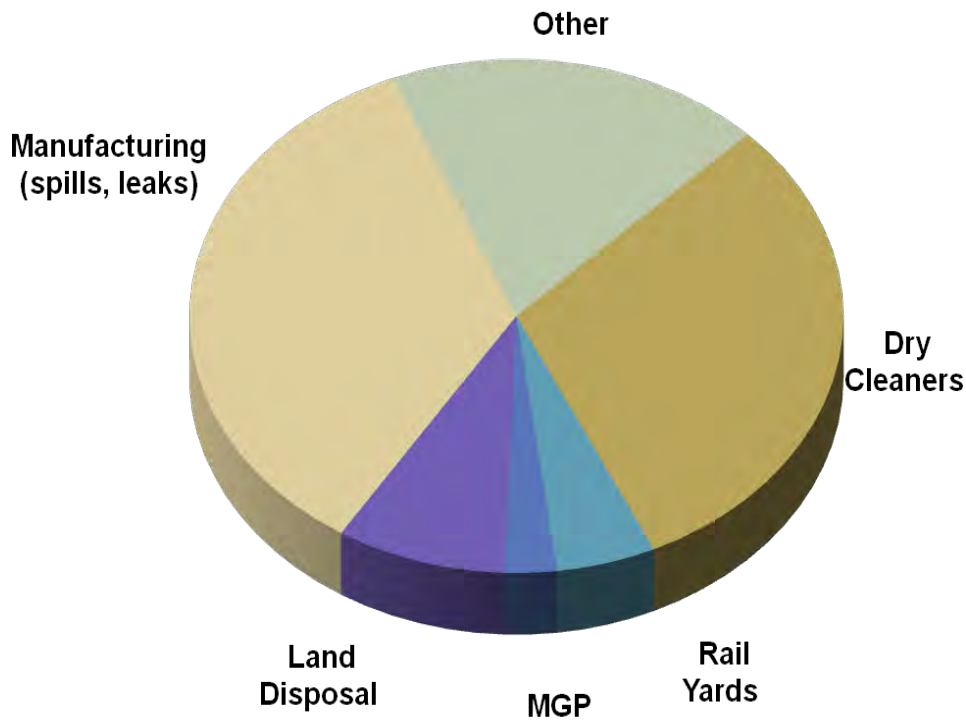
Voluntary Remediation Program

- Virginia's program for environmental and liability resolution of these "non-regulatory" cleanups.
- Site must not be subject to regulatory programs (ie such as an open/active UST cleanup) to enter the VRP

VRP

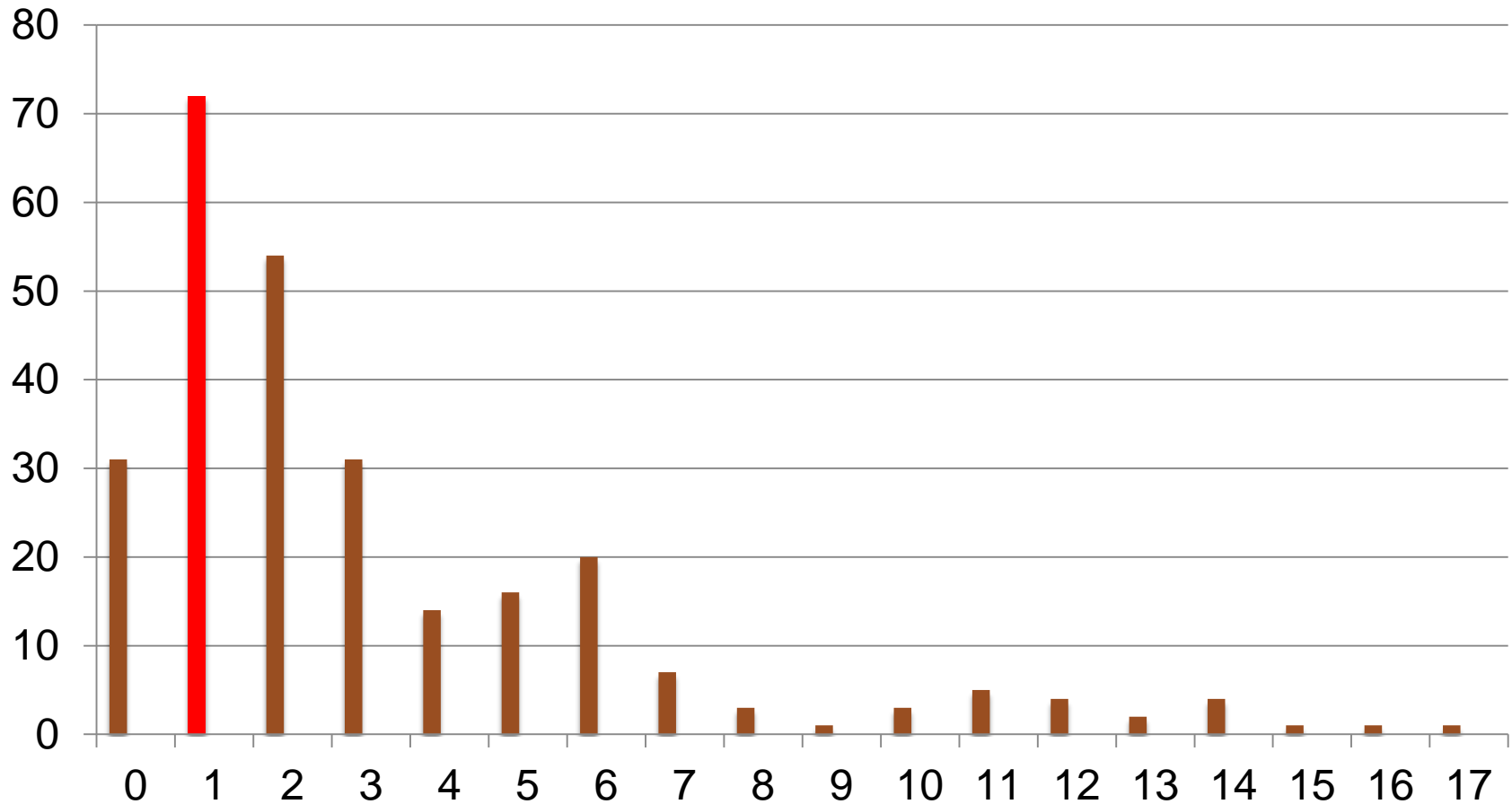
- Completion provides enforcement immunity for past environment issues
- MOA with EPA for no further federal interest after completion
- Lenders drive many of the cleanups
- Institutional and engineering controls are frequently used
- Completion Certificate “travels” with the land and adds value for resolution of issues

Types of VRP Sites (438 Sites)



Years to Complete (276 Certificates)

(through 3/1/2015)



VOLUNTARY REMEDIATION PROGRAM

Amendment 3 to VRP Regulations (9VAC20-160-10 *et seq.*) establishes a new fee structure which was effective July 1, 2014



\$2000 Phase I
registration
(application)
fee

\$7500 Phase
II (enrollment)
registration
fee

\$4500 Phase
III annual
registration
fee for each
year the site is
participating in
the program.

Voluntary Remediation Program

Certificates & Institutional Controls (276 sites)

- Groundwater Use restriction 83%
- Residential Use restriction 51%
- Other* 20%
- Excavation Limitation 18%
- No institutional controls 10%

* E.g. operate and maintain SSDS in perpetuity; HASP for construction workers for future excavations; post-certificate monitoring; maintain cover system in perpetuity

Brownfield Comfort Letter

- Bona Fide Prospective Purchaser Letters
- Lender Liability Letters
- Contiguous Property Owner Letters

Bona Fide Prospective Purchaser Protections Expanded

Code of Virginia - § 10.1-1230 Definitions

"Bona fide prospective purchaser" means a person or a tenant of a person who acquires ownership, or proposes to acquire ownership, of real property after the release of hazardous substances occurred.

BEFORE: US Patent Office Alexandria, VA



Landfill During Excavation

15.66 acre Site – desirable location inside DC Beltway

Extensive soil contamination

Groundwater contamination

Metals, VOCs, SVOCs, Petroleum, PCBs



Past Uses

RR Switching Yard (150 years +)

Scrap yard

Historic municipal landfill closed in the 1970s

Source: Bariatos and Brebbia. Prevention, Assessment, Rehabilitation and Development of Brownfield Sites. Brownfields IV. Billiceria, MA. 2008.

Timeline: US Patent Office

1996: Proposal for Development (Congress approved leasing of 2 Million SQF of office space).

2000: Contract awarded to LCOR. Environmental Investigation began. Site was divided into 7 parcels for development.

2000 – 2005: Remediation

- 450,000 CY of material disposed
- Institutional controls prohibiting residential use and prohibiting use of groundwater.
- Engineering controls:
 - hardscape capping or 2' of clean fill
 - the construction of a gas collection system
 - vapor barriers,
 - gas collection piping, and blowers under the buildings to prevent the potential buildup of methane, other landfill gases, or VOCs.

2005: VDEQ VRP issues “Certificate of Completion”. Employees move to new office.

AFTER: US PATENT OFFICE

US Patent and Trademark Office - \$1,000,000,000 Site



Costs: US Patent Office

Land Purchase	\$92 Million
Environmental Engineering	\$2 Million
Environmental Remediation	\$24 Million
Campus Design	\$31 Million
Construction Costs	\$518 Million
Finance	\$191 Million
Reserves	\$16 Million
Misc.	\$38 Million
TOTAL	\$912 Million

Economic Benefits: US Patent Office

ECONOMIC BENEFITS:

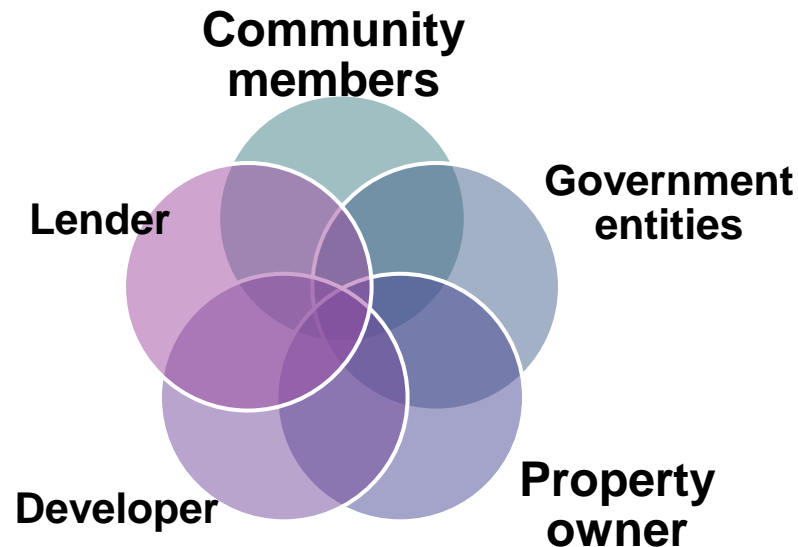
9,000 employees – \$795 Million estimated total wages paid per year.

	2001	2009
Land Value per acre	\$5.6 Million	\$9.8 Million
Total Assessed Value	\$87 Million	\$1.077 Billion
Tax Revenue	\$0.9 Million	\$9.8 Million
Adjacent site Tax Revenue	\$52K	\$119K



What Makes a Brownfield Redevelopment Successful?

1. YOU!
2. Partnerships
3. Community Involvement / Champion
 - ▣ Remember: Whose Project is it? The Community's
4. Agreement among stakeholders



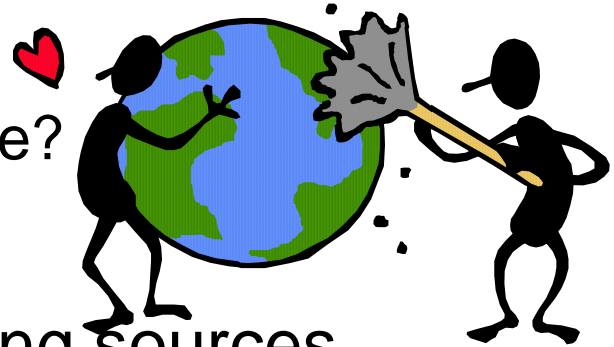
What Makes a Brownfield Redevelopment Successful?

5. Evaluating and Mitigating Environmental Risks

- How “clean” does it need to be?

6. Is the Project Viable?

- Evaluate finances and funding sources.
 - Do the numbers work?
 - Can this area support the future use?



What Makes a Brownfield Success?

7. Financing / Funding

- ▣ Obtain the funds / financing



8. Timing

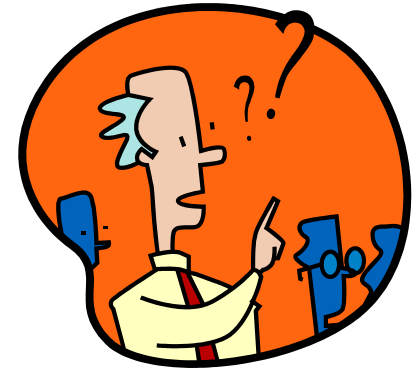


Conclusion

QUESTIONS?

Learning More

- <http://www.njit.edu/tab/>
- <http://epa.gov/brownfields/>



THANK YOU

CONTACT INFORMATION:

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TAB Hotline: (973-642-4165); tab@njit.edu