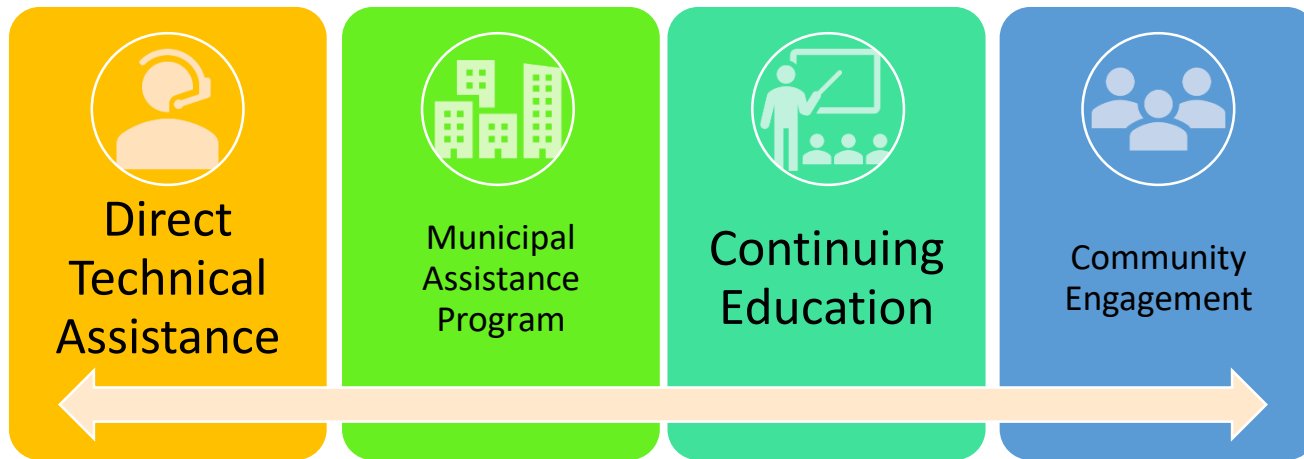


# The Challenges and Benefits of Developing a Brownfield



# Region 1 TAB services



# Direct Technical Assistance

## Technical Document Review

- Review of Environmental Site Assessment Reports, Remedial Action Plans, Planning Documents

## Brownfields Proposals Review

- EPA Brownfields proposals (assessment, cleanup, multipurpose) and State Program proposals

## Evaluation of Redevelopment Options

- Site uses, zoning and parking requirements

## Access to Resources

- Fact sheets, example proposals, and documents

## Online Office Hours

- Answer Technical Questions



# Municipal Assistance Program

Communities will participate in the service-based learning *Brownfields Corps* course activities and receive help on brownfields projects



Fall Semester (Lecture)

## EPA GRANT REVIEW

Review of EPA Grants for brownfields assessment and cleanup

Assistance with research and technical components of the grant

Spring Semester (Practicum)

## TECHNICAL SUPPORT

Collect data for brownfield sites

- Review previous site investigation reports
- Evaluation of redevelopment options
- Brownfield inventories for communities (lists, maps)



# Show me the money!

The Brownfields Corps has successfully secured 5 EPA funding awards for communities totaling \$1.4 million



# List of Projects

# Spring 2022

1. Brownfields Inventory, Athol, MA
2. Brownfields Inventory, Attleboro, MA
3. Redevelopment Options, Monson, MA
4. Redevelopment Options (S Main St), Waterbury, CT
5. Redevelopment Options (Anaconda/American Brass), Waterbury, CT
6. Redevelopment Options, Town of Lyndon, VT
7. Community Engagement, Bethlehem, NH





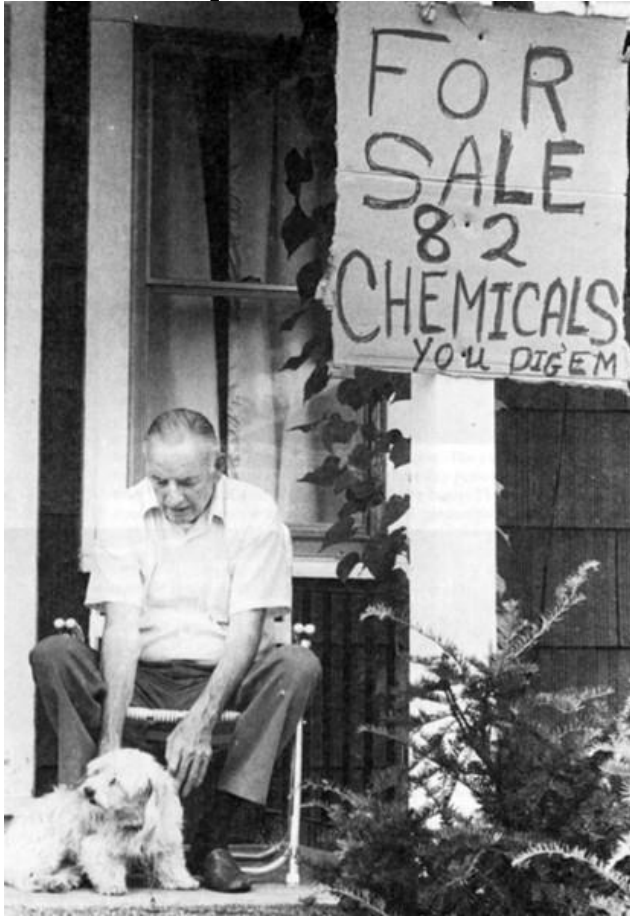
# TAB

- Dr. Marisa Chrysochoou
- Dr. Nefeli Bompoti

<https://tab.program.uconn.edu>



# Brownfields cleanup can be complicated



**Love Canal**

- Brownfields add another dimension to the challenge of redevelopment of underutilized properties. Most are found in urban areas and have been vacant for years, if not decades
- Brownfields are most likely to be a combination of contaminants possibly requiring more than one method of remediation.



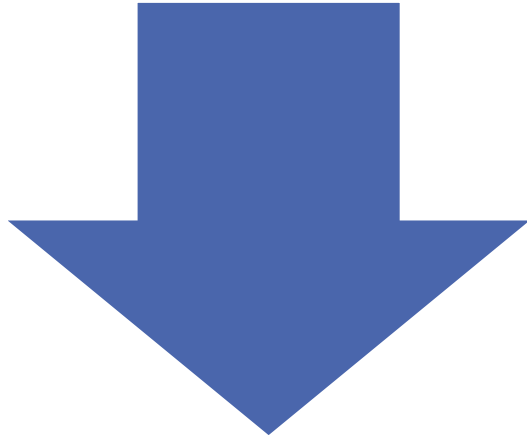


# Brownfields Catch-22

- In many cases funding sources want to see a developer willing to develop a site before funding
- Developers want assurance they can put a shovel in the ground by a date certain.



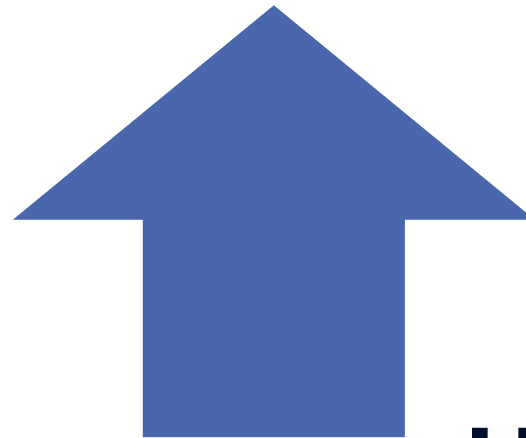
# Advantages & Risks of redeveloping a BF from a real estate view



Prime Location  
Existing  
Infrastructure  
Funding  
Opportunities  
Sustainable Land  
Reuse



Liability  
Cleanup Costs &  
Timeline  
Financing  
Weak Demand



# Site Reuse Assessment

**GOAL: Identify potential reuse options for the brownfield**

Provides a full evaluation of the **opportunities, constraints and range of redevelopment possibilities** related to the reuse of a brownfield site.

## FLOOR AREA SUMMARY

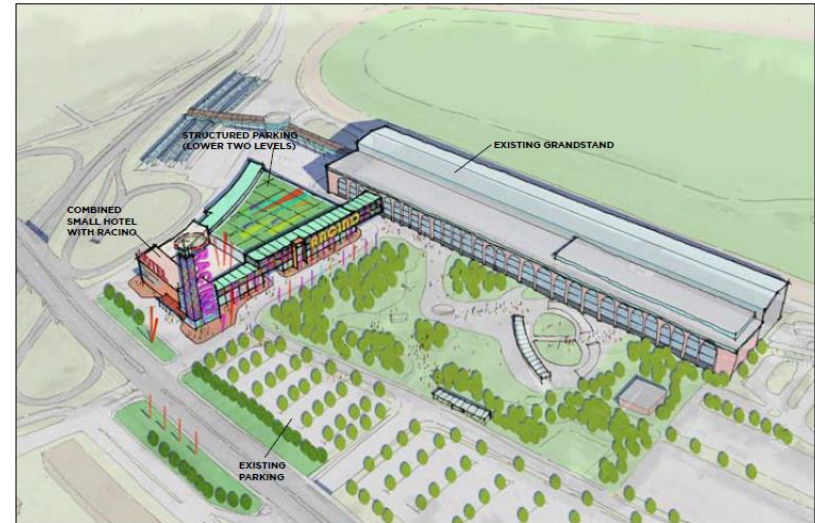
Racino  
240,000 SF  
(2 floors @ 120,000 SF per floor)  
28 SF per VLT  
4,500 VLTs

Hotel  
130,000 SF  
100-150 rooms  
(4-6 floors)

Structured Parking  
240,000 SF  
(2 floors @ 120,000 SF per floor)  
660 spaces

Existing Surface Parking  
188,000 SF  
536 spaces

FIGURE 22: OPTION 3.1: PERSPECTIVE

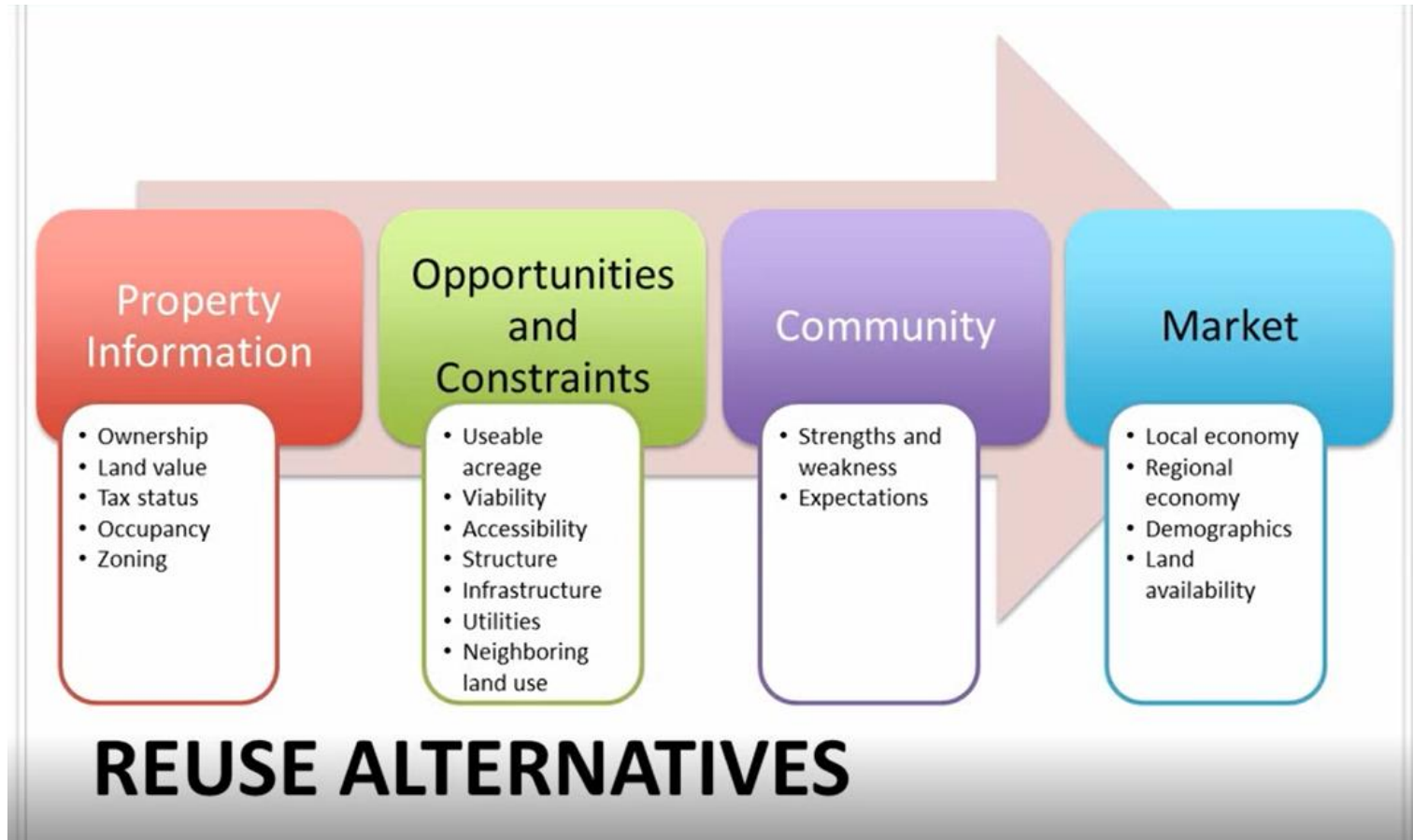


- Site characteristics and needs
- Area economy and demographics
- Physical, environmental conditions
- Applicable regulations
- Real estate market conditions

[https://www.epa.gov/sites/default/files/2018-10/documents/site\\_reuse\\_assessment\\_placeholder.pdf](https://www.epa.gov/sites/default/files/2018-10/documents/site_reuse_assessment_placeholder.pdf)



# Site Reuse Assessment



PREPARED Workbook ([Property Reuse Assessment](#))

**UCONN**

Economic Development Strategy & Regional/Local planning studies

Market Studies

Zoning Regulations

Wetlands and Floodplains

Infrastructure & Utilities

Traffic Assessment

Remediation restrictions

Building Assessment (if building will be reused)



# Challenges-Understanding what you're are dealing with

What is the type and level of contamination?



# What's the difference?

- Polluted Soil
- Hazardous Soil
- Contaminated Soil
- Polluted Fill
- Dirty Dirt



# Polluted Soil

Soil affected by a release of a substance at a concentration above the analytical detection limit (Connecticut definition)





# Hazardous Soil

Soil that contains contaminants defined as hazardous waste which is defined as waste that is dangerous or potentially harmful to our health or the environment.



# Contaminated Soil

Soil that contains waste that is not defined as hazardous, but substances that can be potentially harmful to our health or the environment



# Polluted Fill

- Soil/sediment which contained polluted substances at the time such soil/sediment was deposited as fill material.



# Dirty Dirt

A term sometimes used by the general public to describe all of the previously listed conditions



# Investigations Phase 1

Environmental database of environmental and historical land use information:

- Federal, State and local environmental files
- Historical aerial photos
- City directories
- Sanborn Fire Insurance maps
- CTDEP public files
- Municipal files: Building Dept., assessor's Office, Zoning Office, Health Dept.

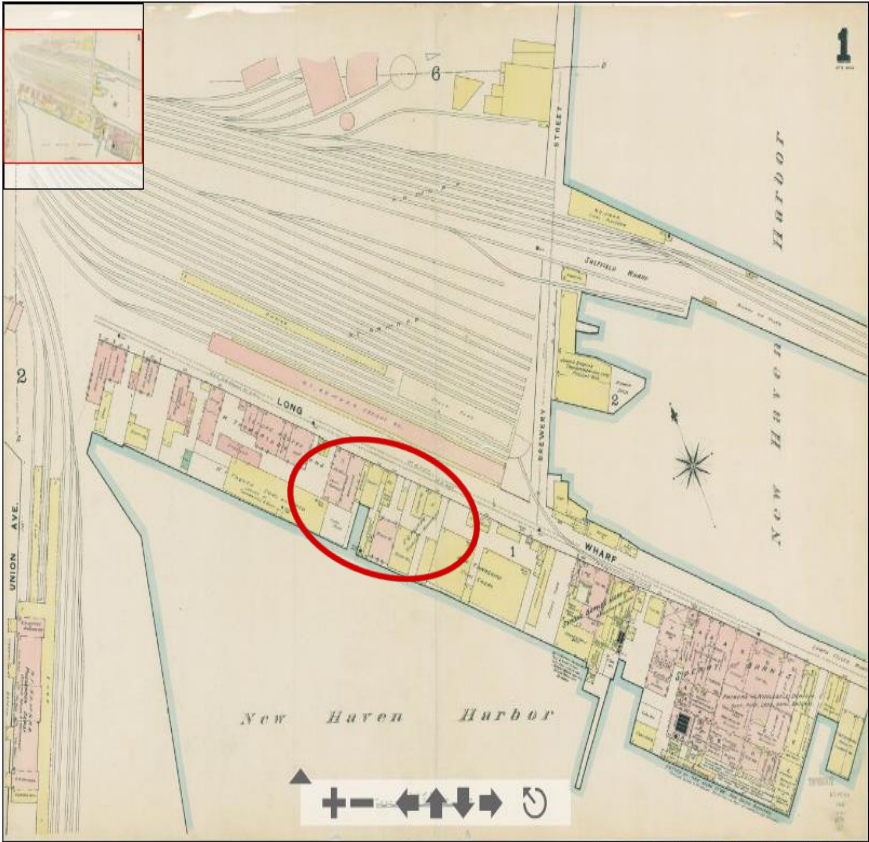


# Phase 1

# Records Search



# Today vs. 1886



Imagery Property of [Yale Maps](#) - Powered by [Zoomify](#)



# Phase 2 Sampling Soils and Groundwater

Soil sampling may be drilling or hand auger or other hand tools

Groundwater sampling by monitoring wells





# Phase 3

## Further evaluation of the extent of contamination



# Challenges- Is the site marketable for anything that will produce tax revenue and jobs

- A market analysis is needed to understand what is possible to attract a developer
- Be realistic, many great plans have been produced that had little chance of becoming reality
- A better use may be open space



# Challenges-Site Considerations

- What are the uses abutting the site?
- What is the area zoned
- Are you willing to change the zoning?
- Site access/ traffic issues
- Fragmented land ownership



# Challenges-Planning

- Is the site being developed on its own or is it part of a of a grand plan?
- Infill v part of a master plan?
- Willing to give tax breaks?



# Challenges-Regulatory Process

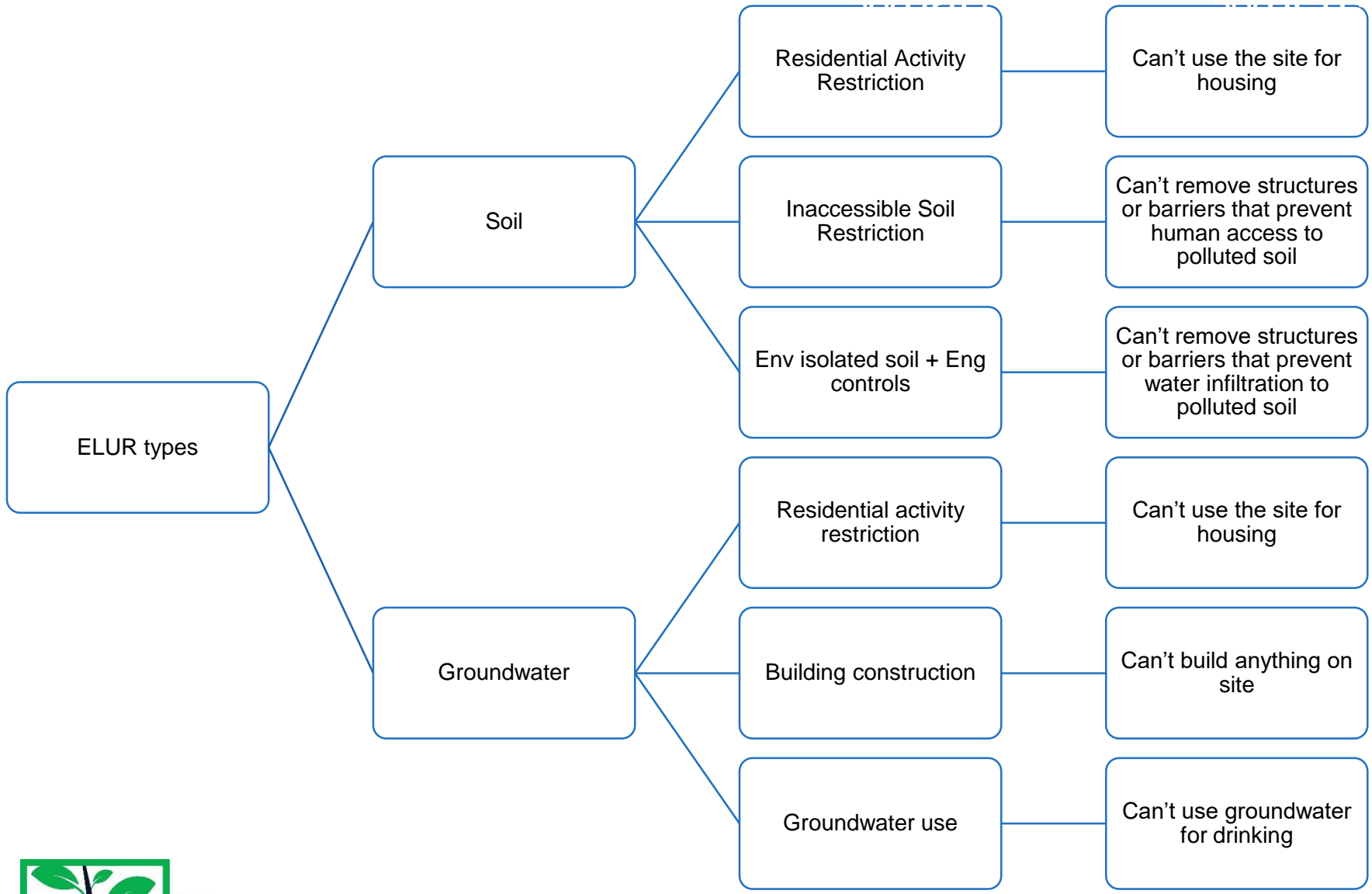
- Level of cleanup needed for the proposed use  
Industrial v. residential
- Longer Regulatory Approval Process.  
Developer issue with timing
- Conflicting interests of regulatory agencies
- Use restrictions run with the land



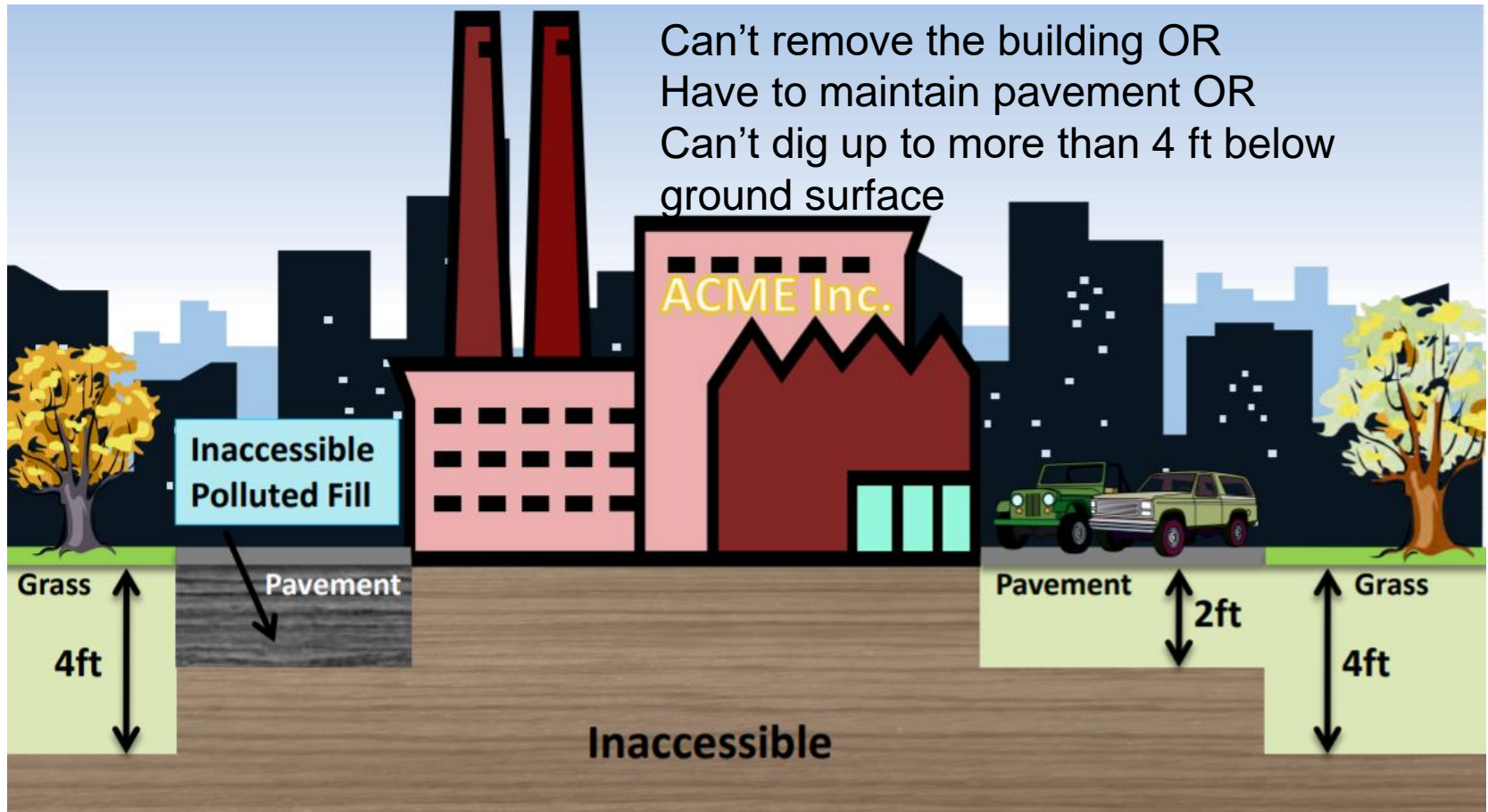
# Environmental Land Use Restriction

- An ELUR is an easement that is granted to the CT DEEP by the property owner and is recorded on the municipal land records. Its purpose is to minimize the risk of human exposure to pollutants and hazards to the environment by preventing specific uses or activities at a property or a portion of a property.
- Runs with the land and is recorded on the land records





# Challenge-Inaccessible Soil





# Challenges-Building Condition

- Are the buildings able to be salvaged. Historic preservation considerations
- Structural assessment, building envelope, mechanical systems
- Are the foundations in an adequate condition?
- Leakage areas



# Challenges-Funding

- Higher Upfront Capital Costs
- More Limited Financing Options
- Competition for Scarce Resources at both the state and federal level
- Tax Breaks



# Benefits of Brownfields Redevelopment:

- Eliminating health and safety hazards;
- Eliminating eyesores;
- Bringing new jobs into the community;
- Bringing new investment into the community;
- Increasing the productivity of the land;
- Increasing property values and tax receipts by local and state governments (the effects of increased property values on poor residents may, however, need to be mitigated)
- Improving the quality of life in a community



# Success stories-Connecticut New London Mills, New London, CT



Current use: office/research space for Electric Boat designing the next generation of nuclear submarines, 1500+ jobs and residential spinoff development

Polychlorinated biphenyls (PCBs), lead, arsenic, volatile organic compounds, petroleum products and an artillery shell



**Artillery Shell**

**UConn**

# Success Stories Rhode Island Meeting Street Providence, RI



## Meeting Street Educational Center

Athletic fields, parking, and 100,000-square-feet of buildings.

Early childhood programs and schools now serve over 7,000 economically disadvantaged children and their families each year.

Lead, arsenic, volatile organic compounds, and petroleum products.



Source: EPA

**UConn**

# Success Stories-Massachusetts

United Shoe Machinery Corp Beverly, MA



*A train arrives at United Shoe Machinery in the 1940s.*



Cummings Center has 400 commercial tenants occupying nearly 2 million square feet employing 3,400 workers. In addition, a 15-acre parcel of the for-Spinoff development of a yacht club, a park, a supermarket and retail shops.

Oil, solvents, polychlorinated biphenyl and polycyclic aromatic hydrocarbons



Source: MassDEP

**UConn**

# Success Stories-Vermont

## Goodyear Industrial Campus Windsor, VT



Goodyear Tire manufactured rubber shoe and sole parts

Current use; A 500-kilowatt solar array system that contributes towards both the town's and region's renewable energy goals

Demolition waste, asbestos and in a floodplain



Source: EPA

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*Former mill property contaminated with lead and barium.*

Success Stories-New  
Hampshire  
Former Pillsbury Mill,  
Tilton. NH

Challenges: Waste chemicals, asbestos  
containing materials (ACMs), storage tanks,  
and a transformer presumed to contain  
polychlorinated biphenyls (PCBs)



# Success stories-Maine

## TW Dick Mill Gardiner, ME



Current use: Medical Facility, Residential

Petroleum, asbestos, volatile organic compounds, polycyclic aromatic hydrocarbons, and lead



Source: EPA

**UConn**

# Highest and Best Use

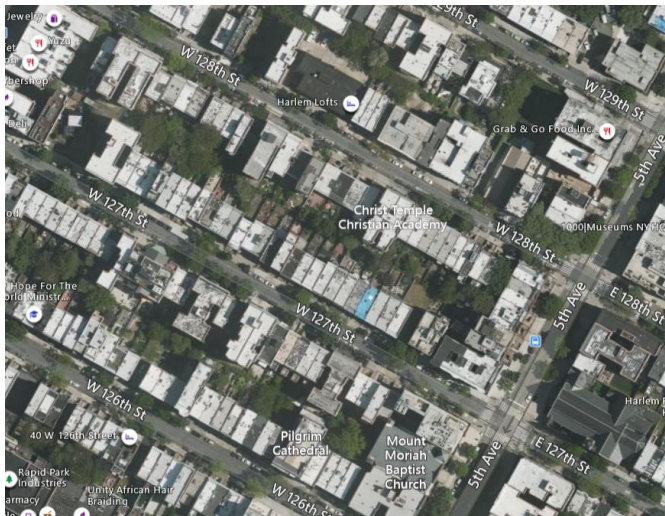
Of the 1,000s of brownfields in New England many will have little hope of redevelopment and remain underutilized for decades



# Highest and Best Use

Can we do more to combine clean-up with resilience to climate change

- Address issue of urban heat islands
- Coastal resiliency



# Questions?

