

Green Infrastructure  
Strategies in  
American Shrinking Cities

2017

Shuang Ma  
Tsinghua University



# 01

## Shrinking Cities

“Although a few cities have managed to reverse an earlier decline and are growing, most of the shrinking cities are continuing to shrink and it has to be accepted that the shrunken vertical cities will never grow back to their previous size and prosperity”  
----Rybczynski and Linneman(1999).

# Reasons

a) De-industrialization—Manchester, Lancashire, Cotton

b) Sub-urbanization—America

c) Post-socialist transition

d) Population aging

The shrinkage there does not involve a decay of whole areas

- American dream
- Federal government supportment (Roosevelt regime of the federal housing agencies/National Interstate and Defense Highways Act)(a 41,000 thousand miles highway system)



## Time Table

1990s

Germany

Developing Country Urban population decay, followed by urban economy recession

The beginning of 21st C

Europe

Europe was a region of shrinking and depopulation in modern society

After WWI

The United States

1950-1960, 38 large cities were shrinking, including Washington, Chicago and Detroit

1990s

Soviet Union

Countries like the Ukraine, Romania, Russia and East Germany

1990-2000

Developing Country

From 1990 to 2000, 143 of the cities (10.2%) experience a population decline





# 02

## Green Infrastructure

Shrinking cities could create good opportunities to reuse the vacancy lands and resident properties as green resources

# Green Space To GI

## Green space in shrinking cities

- Reduce the cost for maintaining the vacant properties
- Avoid collapse accidents to protect the human safety
- Make green space accessibility will be good for the work and life balance for human
- Make migration behavior balance for wildlife
- Good for health
- Increase local incomes

## Green Infrastructure

- **Connectivity:**  
Make the traditional green space as a network to restore fragmented eco-system in old industrial cities that were damaged before
- **Multi-functionality:**  
Add more functions on traditional green space such as fresh food production, groundwater recharge, energy use reduction and green jobs supplement.
- **Multi-scale performance:**  
Provide more accessibility for vacancies



# Rochester

# Cleveland

# Seattle

# Detroit

1  
 Learned about the failed experience of a “slum clearance” and put special emphasis on social justice and community health

2  
 Especially focused on protection of the historical context and proposed green corridors that reflect the historic streetcar routes

3  
 Parks, temporary private parks and agricultures, green corridors

1  
 Different to Rochester, the GI strategies in Detroit are more comprehensive, integrated and bold

1  
 Methods include rainwater management, urban agriculture, low impact transport, alternative energy regeneration, sustainable environment

2  
 Cleveland 2020 Citywide Plan: Short-term holding strategies and long-term strategies

1  
 The top city on Forbes’ most miserable city list

2  
 An integrated GI, improving the ecological open space, measuring the population density and community environmental quality and offering an equal approach of use.

1  
 Five networks: water, open space, low impact mobility, water, wildlife habits and metabolism



# 03

## Right-size Model

“Right sizing by replacing vacant and abandoned properties with green infrastructure converts surplus blighted land into green space”

----Schilling and Logan, 2008)

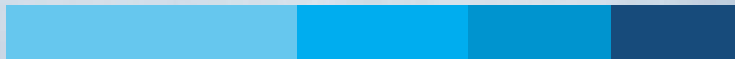


# Concept

---

The concept of right sizing was developed by Schilling and Logan (2008). It is similar to the concept of smart decline that was developed by Hollander and Németh (2012).

“Right sizing refers to stabilizing dysfunctional markets and distressed neighborhoods by more closely aligning a city’s built environment with the needs of existing and foreseeable future populations by adjusting the amount of land available for development.



# Benefits

---

Save the costs of maintaining blight and abandonment and improve the financial health of the city(Krohe Jr. 2011;Hollander 2011)).

In serving a smaller and more concentrated area, right-sizing strategies make cities more affordable and authorities can provide better public service (Markus Berensson, 2011).

To make a smaller, but greener city(Rybczynski and Linneman,1999).

Their inspiration came mainly from successful cutting-edge urban greening initiatives in pioneering cities, such as Philadelphia, Pennsylvania and Lawrence, Massachusetts (Schilling and Logan, 2008)

An effective approach to save the decay market and blight neighborhood, through a reasonable arrangement of the current building environment(Schilling and Logan, 2008)

The asset values around the greening and demolition lots increased by 17%, compared to the asset values decreasing by 20% around the vacant and abandoned lands (Wachter and Gillen, 2008).





# GI PLAN + LAND BANK + COLLABORATIVE PLAN

1. **GI Plan**

2. **Land Bank**

The target of land bank is to acquire vacant properties “through bank foreclosures, tax foreclosures or donated property and rehabilitate homes to return to the market place or demolish property for future development”

the government and related agencies could collect, temporarily manage and dispose of the vacant properties to maintain the neighborhood stability and change the vacant properties into green assets.

3. **Collaborative Plan**

1. Preparation: Assess and survey existing conditions

2. Plan and Design: Engage in collaborative neighborhood planning process

3. Action: Implement green infrastructure and right-sizing plan

1. • Create green infrastructure right-sizing plan  
• Identify potential green infrastructure linkages  
• Identify strategic investment areas and pilot projects  
• Identify and engage neighborhood and citywide stakeholders

2. • Provide relocation and displacement assistance  
• Begin strategic transfers, demolition, rehabilitation  
• Pursue and obtain initial funding  
• Establish land bank

3. • Identify possible revenue options & business models  
• Identify and rectify potential legal barriers  
• Inventory and map , open space, trails, etc., and identify underserved areas  
• conduct environmental assessment of vacancies

## Government Consultative Approach

- Technocratic Process
- Targeted high-level consultation with selected segments of the public
- Time frame determined by government agency Limited public influence on final outcome
- Government seeks information from public but makes final policy decision, e.g. public meetings, direct mail, survey, public submissions

## Consultative Approach

- Targeted detailed consultation with relevant public/community groups in region directly affected by policy or program
  - Formal government driven process
- Time frame determined by government agency
  - Some community influence on outcome
- Government agency determines final decision, e.g. workshops, advisory committees, focus groups.



# 04

## Case Study

Youngstown

Cleveland

Buffalo



# Case Study

City	Sources	Vision	Projects	Green Initiatives	Strategies
Youngstown	Youngstown 2010 Plan (City of Youngstown; HuangHe, 2011; Terry Paris Jr., 2010; Dan Kildee et al, 2009)	Accepting that Youngstown is a smaller city; Defining Youngstown's role in the new regional economy; Improving Youngstown's image and enhancing quality of life; A call to action.	Green Network; Competitive Industrial Districts; Viable Neighborhoods; Vibrant Core	Manicured lots with flowers, trees and rocks dot; Urban agriculture to distribute fresh local produce to underserved neighborhoods in the city; Wetlands in eastside; Establishing greenways along river and stream corridors	Clear up urban spatial environment; Demolish vacant properties and change them to greening space; Adjust urban range; Applicable zoning regulations
Cleveland	Re-Imagining Cleveland and Sustainable Cleveland 2019 (Cleveland Urban Design Collaborative; Cleveland City Planning Commission, 2008; Alan, Lisa and Joseph, 2005, Not known, not known)	Cleveland, a cleaner, healthier, more beautiful, and economically sound city; Treating vacant sites as viable opportunities for future development.	Roadway infrastructure to increase access and buffer adverse impacts; Demolition and board-ups; Landscaping for vacant lots; Tree nursery; Urban agriculture; Lots consolidation; Storm water management	Expansion of parks and natural areas and linkages between green space within the city and region; Ecosystem restoration to manage storm water; Increasing biodiversity; Low-mow native landscapes; Community gardens, market gardens and urban farms are emerging throughout the city	Neighborhood stabilization and holding strategies; Green infrastructure strategies to expand recreation opportunities and the green space network, to improve ecosystem function and remediate contaminated properties and to create productive landscapes (i.e. agriculture and energy generation)

This table shows the visions, projects, strategies of right sizing in Youngstown, Cleveland and Buffalo.



City	Sources	Vision	Projects	Green Initiatives	Strategies
Buffalo	5 in 5 Plan (Brown, 2007; Schillings 2008(2); Jason, 2013; City of Buffalo, 2007)	Decrease the vacant rate close to 5%; Accelerate our economic revival, removing blight and opening up shovel-ready sites for new investment.	Demolish 5,000 properties in five years; Create development and investment opportunities; Save the city money over the long term; Ensure greater public safety	—	Preferentially demolish areas with redevelopment plans in place, as well as sites posing a threat to public safety
	National Vacant Properties Campaign and "Blueprint Buffalo" (Blueprint Buffalo Policy Brief; Blueprint Buffalo Action Plan)	City and its first ring suburbs faced with problems like old housing, vacant commercial area, deteriorating infrastructure and population loss and continuous substantial support must be given to address vacant problems.	Create a citywide vacant properties initiative; Develop an agenda that is responsible for the vacant properties in suburban; Creation of an Erie-Buffalo Vacant Properties Coordinating Council to solve the problems about blight and abandonment in the region, offer a communication and information sharing platform and develop institutional capacities and partnerships; Establishment of Buffalo-Niagara as a Vacant Property Living Laboratory	A regional green infrastructure with the help of land bank and land trust	Blueprint Buffalo recommends four fundamental vacant property strategies: Develop a regional real property information system; Institute a comprehensive code enforcement approach; Establish a multi-purpose land bank authority or program and green infrastructure initiative to right size the city's most distressed neighborhoods; Create a holistic policy framework for the redevelopment of grey fields and brown fields.
	The Queen City in the 21st Century: Buffalo's Comprehensive Plan (Comprehensive Plan, 2007)	Buffalo's future development should be sustainable and integrate economic, environmental and social concerns.	All other planning initiatives in the city, including The Queen City Hub; A Strategic Regional Action Plan for Downtown; the Local Waterfront Revitalization Program; the Olmsted Parks Restoration and Management Plan; Buffalo Niagara Medical Campus Master Plan	Create a greenway trail; Restoration of Lasalle Park; Development of new parks; Expanding the system of greenways that connect parks; imaging a system of green infrastructure composed of several types of open spaces; Green building techniques	Sustainability; Smart growth; Fix the basics; Build on assets

# Youngstown 2010 Citywide Plan

## History:

Youngstown comprehensive planning (1951, update 1974)

50% population drop (by the end of 2002)

## DETAILS

### 2010 Citywide Plan:

- The pioneer to using the right-sizing framework in reviving a shrinking city to make the city clearer, smaller and greater.
- As Hunter Morrison, director of the Center for Urban and Regional Studies at Youngstown State said, “accepting we’re going to be a smaller city was key” .
- Smaller does not mean we “give up”. According to Jay Williams, the mayor at that time, investment should be made in the sustainable development areas in the city and long-term investments should not be made in the areas that are not sustainable.

**Strategies of right-sizing:** demolitions, rehabilitation and using green assets to green the surplus infrastructure

**Large-scale public participation:** more than 5,000 people are engaged / Public inclusion was a top priority in the Youngstown 2010 planning process from the beginning as wrote in this plan.

**Funds:** mainly come from the city budget, as Mayor Jay William said, “However, the financial problems also affected the demolishment process”

**Land bank:** In 2006, Ohio enacted a law that reverted the long-term vacant properties that had defaulted on real estate tax more than their market value back to the government. This meant that the city land banks of Ohio could quickly obtain abandoned properties for renovation.

**Argument:** without a head since Anthony Kobak quit in 2009(Daniel, 2015)

Did not become real resources of economic development.

Urban poverty and economic crisis and failing school areas are still serious problems in this city after implementing the right-sizing framework for several years(Schilling, 2008)





# Re-Imagining Cleveland and Sustainable Cleveland 2019

The population had decreased to almost half(1950-2000)

In 2010, it was the top city in Forbes' most miserable city list



**Targets:** to develop the urban vacant properties for future use, to create a comprehensive GI and to make green space as economic assets through urban farming and energy production.

There are various food production land types, such as community gardens, market gardens and urban farms and there are more than 160 community gardens in Cleveland .

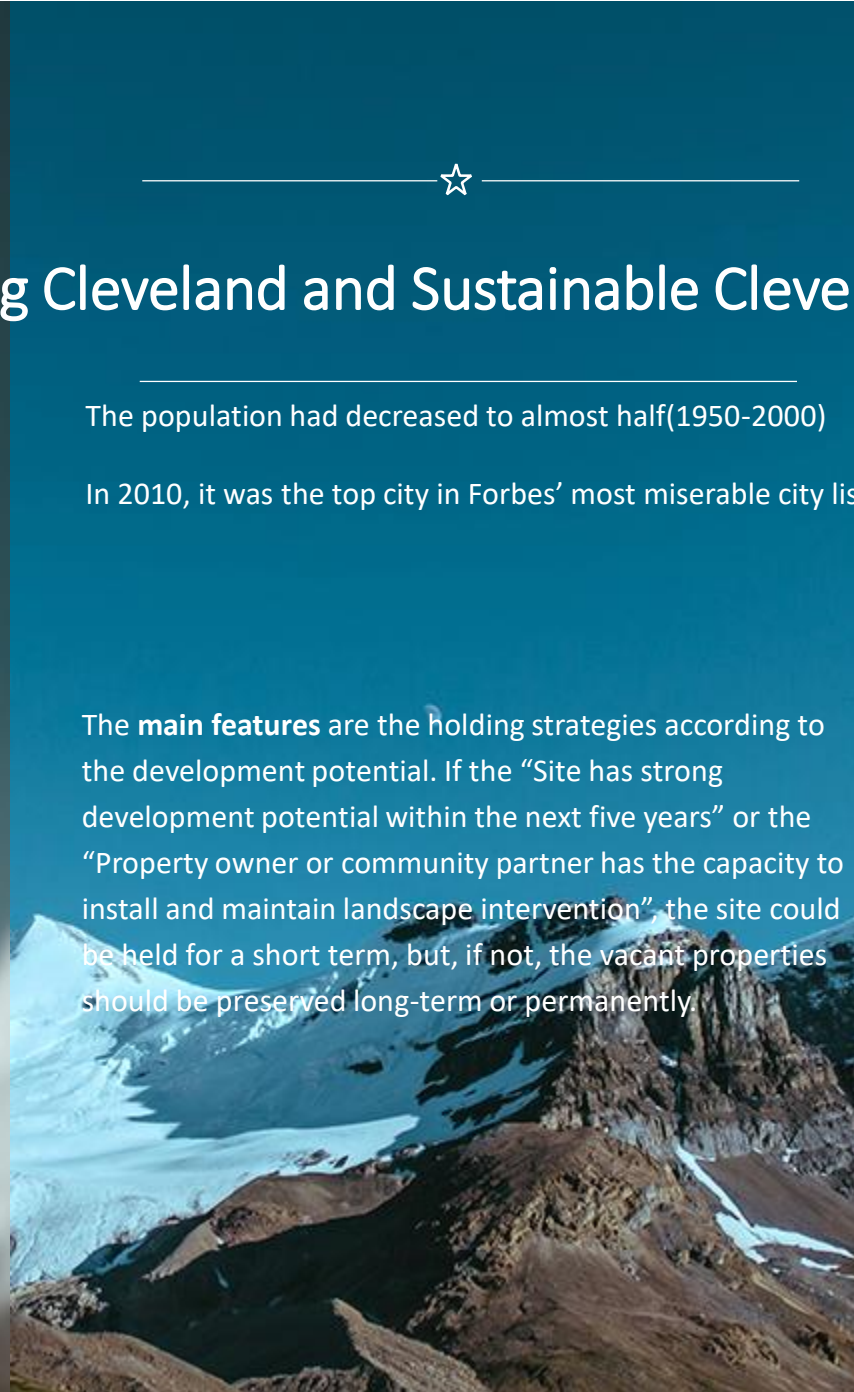
The **main features** are the holding strategies according to the development potential. If the "Site has strong development potential within the next five years" or the "Property owner or community partner has the capacity to install and maintain landscape intervention", the site could be held for a short term, but, if not, the vacant properties should be preserved long-term or permanently.



**Pilot Projects:** 56 vacant lands are preferentially funded

**Land Bank:** The Land Bank in Cleveland listed eight thousand vacant properties and also has a mechanism to decide whether the vacant properties should be preserved or not(oldest land bank in the United States.). Similar to Youngstown, the State of Ohio issued land bank legalization to deal with the vacant and abandoned problems.

it is successful for several reasons, such as the strategies to hold the land for redevelopment, the support of local legislation and the co-operation among the city, suburbs and neighborhoods (Schilling, 2008)





## Queen City in the 21st Century: Buffalo's Comprehensive Plan

### A right-sizing method including:

Through rehabilitation reconstruction and demolition, rebuilding neighborhoods and meeting the needs of population shrinkage and a possible increase in the future.

Restore the urban fabric, natural environment, building relations between the old and new and through waterfront revitalization, to accelerate the greening and accessibility of the waterfront.

However, this plan design does not recognize that population decline cannot be reversed in a short period of time. The plan focuses on the resilience of planning in urban design, capital investment, education and related activities to build a prosperous, green and livable city for citizens.

### "5 in 5 Demolition Plan

Target: to demolish 5,000 properties in five years, which would decrease the vacant rate close to 5%, with the co-operation of the City-State-Federal-community partnership.

Funds: \$100 million(\$60 million from New York State, \$20 million from the City of Buffalo, \$15 million from the federal government, \$5 million from the City-Community)

## The National Vacant Properties Campaign (NVPC) & its Technical Assistance Demonstration Program

At the regional level: NVPC offered a "regional framework for both abatement and prevention of further vacancies" for this city to address the abandoned and vacant buildings. The NVPC spent nine months in the Buffalo-Niagara region carefully investigating and reporting on the history, vacant condition, population loss, decaying real estate market and economy. The campaign developed a "blueprint buffalo" report to address the surplus vacancies. It provides a policy framework to tackle the issue of urban shrinkage at a regional scale. In this plan, almost all of the strategies refer to making the right size according to current and future demands

## Buffalo

Buffalo was the national economy center, relying on industry and manufacturing, due to its location on the Great Lakes, from the 1830s to the 1900s. According to demographic statistics, the population dropped from 580,132 in 1950 to 261,310 in 2010 (Jason, 2013)





THANK

YOU