

The Legacy Cities “Greenventory”

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March 17th, 2019

Introduction

Over the past two decades, a growing movement has worked to implement green and sustainable policies and programming at the urban scale. Within older industrial “legacy” cities, much of this sustainability *policy, planning, project, and program* innovation (the 4Ps) has concentrated on creative ways of addressing issues of blight and abandonment that resulted from de-industrialization and population loss. While most national attention has been paid to larger legacy cities, such as Detroit, Cleveland, and Philadelphia, several small and midsize legacy cities have also been adept at developing and executing green and sustainable programs in concert with efforts to stabilize distressed neighborhoods.

Thanks to support from the Lincoln Institute of Land Policy, we set out to learn more about these endeavors by developing a preliminary inventory of green and sustainable actions and interventions occurring in small and midsize legacy cities, dubbed the “Greenventory.” Our *Greenventory* focuses on the 4Ps in cities that have lost substantial population (at least 15 to 20 percent) since a mid-century peak and currently have between 40,000 and 300,000 residents. This range covers small cities, such as Dubuque, IA, to cities such as Buffalo, NY, on the larger end. Green and sustainable activities were included if they touched one of seven topic areas:

- Green or blue infrastructure: Refers to a variety of programs that seek to reclaim vacant properties by adding green space (e.g. community gardens), make physical improvements to existing greenspace (e.g. tree planting), stabilizing vacant lots through urban greening treatments or improve water quality / water resources (e.g. along riverways).
- Climate change or energy use: Refers to policies and programs that seek to mitigate or adapt to changing climatic conditions by, among other things, reducing energy use, reducing greenhouse gases, or switching to more sustainable energy sources. Typically,

these are policy or strategic plans that outline broad policy goals across multiple domains (energy, adaptation, etc.) and often include smaller initiatives to achieve those goals.

- Green economy and jobs: Refer to policies that support the development of “green” jobs or create an environment that fosters growth among industries considered “green.”
- Solid waste or recycling: Refers to policies that seek to reduce the amount of solid waste generated by households or to facilitate more recycling.
- Food policy: Refers to policies and plans, often adopted by regional or city food policy councils, that seek to improve the community food systems and/or increase access to nutritious, healthy foods. These actions include specific initiatives (e.g., ordinances, health communications, education and outreach, incubators, etc.) that bring healthy foods to underserved communities along with relevant “farm to table” programs that work with local and regional farmers.
- Transportation: Refers to a broad category of programs and policies that seek to create more access to multi-modal, forms of green transportation (e.g., hybrid, hydrogen or electric buses, bikes, city fleets, etc.), more sustainable infrastructure (complete streets) and more transportation choices.
- City operations and capacity: Refers to bodies or agencies that are designed to improve the operation of sustainability programs, coordinate sustainability programs citywide (e.g., an office of sustainability), or local nonprofits that support capacity building.

Our topic area categories were refined through an organic, iterative process. The genesis was a September 2018 conversation among a group of policy experts from Lincoln Institute for Land Policy, the Urban Institute, and Northeastern University’s School of Public Policy and Urban Affairs. That list was further refined based on a literature scan and early results of initial green inventory search.

Methodology

To find relevant activities, we did a brief scan of the relevant literature to better understand: 1) the range of local green/sustainability efforts (the seven categories listed above); 2) the type of activity (the 4 Ps—programs, policies, plans, and projects); and 3) the types of entities, primarily local governments and nonprofits, leading these activities. Although there is a robust literature on legacy cities and another body of work on green and sustainable urban activities, the research on sustainability within small to mid-sized legacy cities, touching on their unique challenges, is sparse. There is likely a gap in the transfer and translation of research on sustainable programs to policy for small to medium sized legacy cities. As our findings demonstrate, this may be due to a lack of resources. Within the legacy city literature, several of the larger legacy cities (e.g., Philadelphia, Baltimore, Cleveland, etc.) did have many green and sustainable policies, plans, programs and

projects. We did capture some of them but did not include them in our list of cities given their population. We also relied on Lincoln’s previous legacy city publications and its current demographic list of small to medium legacy cities. See the appendix for a list of resources we identified and consulted.

After our initial literature scan, we focused on a search of publicly available information, primarily websites run by cities. While local government agencies and departments were often the primary hosts/vehicles for these green and sustainability efforts, we also identified several nonprofits, community-based organizations, universities, and foundations, along with regional and state entities, that hosted and/or partnered with the relevant city and county governments. We also found a variety of green programming led by a handful of community development intermediaries, such as the [Groundwork Trusts](#) and [PUSH Buffalo](#). The most common source of information was typically a city office of sustainability or similar local government department (e.g., environment, public works, planning and building). Other common sources included newspaper articles, regional plans, or websites run by nongovernmental organizations.

It was hard to craft a precise definition of what constitutes a single program or initiative, as larger initiatives often cover smaller programs. We relied primarily on what cities themselves indicated are individual programs. We looked for clear descriptions and messaging that a program was standalone, used clear titling or a consistent name across sources, and/or was the charge of a specific, designated agency. We excluded more informal efforts, such as one-off support for a community garden, where the description (if present) did not make clear that an individual project was part of something larger. Another important limit in our methodology is that we did not consider the size, budget, and/or costs of each effort. A single energy reduction initiative with minimal costs was given the same weight as a multimillion dollar redevelopment project.

Preliminary Findings

Our initial review so far includes 43 cities, predominantly in the Northeast and Midwest. States included Delaware, Iowa, Indiana, Massachusetts, Michigan, New York, New Jersey, Ohio, Pennsylvania, Tennessee, and Wisconsin. (See the appendix for a full list of the cities we covered.) We identified more than 100 programs. About three-fourths of cities surveyed included some type of green or sustainable programming. In the cities in which we found programs, there were on average three programs per city, though many cities had only one program.

Table 1 (below) shows that the most common programming we identified covered green and blue infrastructure, followed by climate change and energy-use programs. The activities were remarkably diverse in terms of both size /potential impact, policy area, and duration. (Note: Some

programs span more than one policy area). At one end of the spectrum are small scale, self-contained projects and programs, such as the **City of Rochester** adding a green roof and a permeable parking lot to City Hall. Many activities were also smaller in scale but part of ongoing efforts, such as **Dearborn, MI** creating a city fund to support local homeowners in creating community gardens.

TABLE 1
Number of Activities by Topic Area

Topic Area	Number of Activities
Green + Blue	40
Climate change + energy use	34
Green economy + jobs	8
Solid waste + recycling	4
Food policy	3
Transportation	5
City Operations + Capacity	19

Note: Some activities span multiple areas and are therefore listed in more than one topic area.

More uncommon, but potentially more effective, were the programs that are part of larger, multi-year initiatives designed to have widespread impact. For example, **Buffalo’s Sewer Authority** is implementing several programs and projects to reduce stormwater runoff and improve water quality. To start, the city worked with community groups and supported investments to turn parking lots, streets, and other sites into green, permeable surfaces that can absorb rain water. In a phase 2, the city completed a rain road map to identify six areas that offered the best opportunity (e.g. soil quality and topography) for further green infrastructure targeted at stormwater runoff. The city is also combining these greening efforts with a multi-year, large scale demolition program that targets the most dangerous properties (e.g. those damaged by fire) in the city. In addition to improving public safety through blight remediation, the properties are being turned into green space that can capture stormwater runoff that would otherwise flow into city storm drains. New demolished sites are given a “green treatment” that includes low grow turf that is permeable and requires minimal maintenance.

Additionally, several cities infused redevelopment projects with green or sustainable elements. For example, **Grand Rapids, MI** is promoting the inclusion of LEED buildings, rooftop greenhouses, rain gardens, and geothermal wells as part of a revitalization of the downtown market. Sustainable redevelopment projects were also common along formerly polluted riverways that snake through

legacy cities. **Albany, NY** has a land and water use plan with policies and strategies to guide redevelopment and enhance the natural and recreational areas along the Hudson River. Successes under the plan include preserving and landscaping a natural reserve, creating of a waterfront park, and establishing walkways and bikeways that connect the river to the downtown. The city is now updating the plan to promote underutilized brown space and ensure development is consistent with climate change and flooding.

The second most common topic area, climate change and energy programs, generally came in two varieties. The first included examples of adopted climate action plans or sustainability policy plans that established broad goals/visions along with a wide range of strategies to reduce energy use or greenhouse gases. A good example of this is **Grand Rapids'** sustainability plan, which sets performance targets such as reduce greenhouse gas emissions, increase renewable energy use, and increase water reuse and recovery. Sustainability elements can also be infused into local comprehensive plans. **Lowell, MA** plan, Sustainable Lowell 2025, for instance, includes specific objectives that promote land-use policies such as walkable, well connected neighborhoods and integrating natural and recreational spaces into the urban landscape. The second common type of activity was more targeted programs and projects that reduced energy use through energy efficient upgrades or adding solar panels. For example, **Troy, NY**, recently installed 2.1 MW of solar power to meet 20 percent of the city's energy needs.

Most other types of plans, projects, programs, and policies were few. One interesting category that emerged was policies and programs to improve city operations or otherwise augment local capacity. City operation programs were interesting in that they could potentially be low-lifts that have large returns. For example, **Rochester, NY** launched a Green Infrastructure Retrofit Manual that provides guidance to local planners, city staff, engineers, and maintenance personal on incorporating urban green practices to reduce stormwater impacts as part of retrofits and redevelopment.

The least common types of programs were those related to food policy. However, this may reflect our inventory's methodology (we might have looked in the wrong places or did not have the right key words) coupled with the fact that food policy initiatives often happen at the regional context and thus somewhat separate from local sustainability efforts. Additionally, we found only a few programs or projects that explicitly support green jobs at the city level, with most those carried out by nonprofits. Although excluded from the final inventory, we did find some state and regional programs that supported green jobs, which seems to suggest the logical alignment of green jobs programs with the larger scale of regional markets and governmental programs and policies.

Table 2 illustrates the important relationship between city size and the number of current/available programs. On average, cities with more than 200,000 residents had nearly six programs, while the smallest legacy cities had about 1.3 programs.¹ Furthermore, of the ten cities in which we did not find any online reference to a green or sustainable program, all were either below 50,000 or between 50,000 and 100,000. Perhaps not surprisingly, regional location appears to have an influence on the number of programs with New York-based cities leading the way on sustainability, even among the smaller cities. **Rochester, NY** had the most programs with 10 identified individual programs. **Binghamton, NY**, with a hair under 50,000 residents, boasted 5 green or sustainable programs, indicating that location within a region of innovation can temper size limitations.

TABLE 2
City Size and Number of Activities

City Size	Number of cities	Average Number of Activities
Below 50,000	6	1.3
Between 50,000 and 100,000	22	1.8
Between 100,000 and 200,000	11	3.5
Above 200,000	4	5.8

Note: In ten cities, we did not find any examples online of green or sustainable programs. Those cities have been omitted from this table. See the appendix “List of cities” for the ten cities in which we did not find any programs.

In addition to the relationship between size and number of programs found, several larger cities also boasted Offices of Sustainability or similar environmental departments that coordinate green and sustainability efforts citywide. These included **Pittsburgh, PA**, **South Bend, IN**, and **Chattanooga, TN**. Another recent development that intersects with some aspects sustainability, such as climate adaptation and disaster prevention, is the creation of Chief Resilience Officers.

Although not explore in significant depth in our initial scan, a robust non-profit community, particularly well-established universities, appear to be able to augment some limitations in smaller cities. For example, **Cornell University’s** Landscape Architecture launched Rust2Green initiative as a platform for faculty and students to work with upstate communities on a variety of urban greening projects and programs. **Erie, PA** has a non-profit, Environment Erie, that offers support to local residents on community programs focused on sustainable and environmental themes.

¹ One caveat: as indicated in our methodology, we excluded informal programs, which may be more common or more critical to smaller jurisdictions with less funding and staffing capacity.

Syracuse University's Center for Excellent in the Environment and Energy seems more of a hub for public-private partnerships with manufacturing companies. Also, **Ball State University** launched ecoREHAB, a sustainable, energy efficiency focused program, in **Muncie, IN** that works in partnership with the city and other nonprofits to rehabilitate homes.

Observations / Reflections

As our inventory shows, small to midsize legacy cities are developing and implementing innovative green and sustainable programs. A few specific reflections follow:

- **Urban Green and sustainable programs can be critical to revitalization and regeneration.** Several cities found success using green and sustainable programs to directly address issues of blight and abandonment, or at least as components of programs that address those issues. Vacant lot greening to help stabilize neighborhoods and facilitate revitalization could be found in many of these legacy cities. Sometimes those programs were led by city departments, such as public works, or by county land bank authorities in those states with strong land banking programs (e.g., Michigan, Ohio, New York, and Pennsylvania). Local nonprofit intermediaries also managed rather robust urban greening initiatives, such as the Groundwork Trust network or Youngtown Neighborhood Development Corporation (YNDC's) Lots of Green program. **Wilmington's** Christina River redevelopment offers another example where the city is converting formerly polluted industrial land along the river into revitalized urban space as well as parkland. As a part of the effort, the city is replanting native plants and creating a Riverwalk. On a much smaller scale, it is also common for many legacy cities to support efforts to turn vacant and abandoned property into parks and gardens. Some are even nonprofit led, such as the Cleveland Botanical Garden's work in **Buffalo** and **Gary**.
- **Cities can support a range of green and sustainable activities.** Although our scan is not exhaustive, we generally found three primary pathways that cities supported these programs: 1) design, develop, invest directly in programs; 2) align existing programs with green and sustainable elements; and 3) partner with other agencies and nonprofits in support of the green and sustainable initiative. Surprisingly, supporting private sector efforts, such as endorsing green jobs programs led by the business community, were rare. We found this result to be interesting because of the relatively light lift on the part of government. Government could easily endorse or promote a network of green businesses or non-profits seeking to expand green employment without bearing significant costs. One explanation may be tied to the overall lack of employment within small to medium

sized legacy cities, but we would need further investigation to determine the lack of green job activities.

- **Capacity and leadership are critical.** Larger cities tended to have more programs, although several small cities showed strong leadership. Offices of sustainability and other agencies that coordinate sustainable efforts appear to be key capacity-building efforts. These cities tend to have more programs and more coordination among the programs. Local stakeholder groups consisting of citizens, business leaders, and nonprofits can also supplement the capacity of local government. For example, many cities operate citizens' commissions that advise city leaders on sustainability issues.
- **The nonprofit community can push forward programs.** While most of the programs detailed in the *Greenventory* are government sponsored, in several cities the nonprofit community is the primary driver. For example, Worcester, MA, has several nonprofits tackling the issues of food access and nutrition, urban forests and greenspace, and green jobs. Similarly, in **Chattanooga**, an NGO, Green Spaces, educates the public on sustainability issues, which can help set the stage for future sustainability work by building support for the concept. Some nonprofits also operate regionally, such as the YNDC in **Youngstown** and the Groundwork Trust network that supports 20 local "trusts" in many legacy cities in the northeast and Midwest.
- **State and regional entities can facilitate and increase local capacity.** The largest regional concentration of programs was in upstate New York which might be driven by several state of New York programs that support local green and sustainable programs. Several of the cities in upstate New York participated in those state programs, but those cities also tended to have citywide initiatives on their own. A good example of this is Albany, which had five initiatives, including participating in the state sponsored Energize NY Finance Program that provides financial support to cities to fund energy efficiency upgrades and reduce energy water in residential and commercial buildings. State and regional initiatives may be better positioned to support green jobs/economy initiatives, particularly in small cities, due to the importance of network effects related to job creation, workforce development, and the economy.

Potential Next Steps

During our work on the *Greenventory*, several research and policy questions arose that could shape a more in-depth project around sustainability policies, plans, programs, and practices in small to midsize legacy cities:

1. How does the city's size affect how seriously the community (e.g., local government, nonprofits, and community partners) take sustainability?
 - a. Examine the city's fiscal health and sources of revenue (using Lincoln's existing data and research), along with budgetary allocations and trends that support sustainability efforts. For example, how much of a local government's budget supports sustainability/greening programming? Are there other sources of funding from foundations or private sector? How many staff work on sustainability programs, etc.
 - b. Examine the community's civic capacity/infrastructure that focuses on sustainability programming. What is the structure, staffing and financing approaches for green regional/local nonprofits What are the avenues of cross sector collaboration on sustainability and what role do the nonprofits play in facilitating that collaboration?
2. What role does/did political leadership (primarily state and local) and entrepreneurial management play in influencing (or not) the adoption and implementation of a communities' sustainability efforts?
3. What role does/did community-based organizations (CBOs), institutions (local foundations, universities, hospitals, etc.), and local nonprofits play in the adoption and implementation of sustainability efforts?
4. What role are/did state and regional governments or entities play?
5. Are there policies, programs, or plans that seem to address the distinctive challenges confronting legacy cities (e.g., vacant lot greening, green infrastructure urban gardening, local food marketing and security)? If legacy cities suffer from a lack of small businesses and jobs, have green jobs and businesses been prominent (or not) in the communities' sustainability efforts?
6. Are there current learning networks where small to mid-sized legacy cities can talk to each, problem solve, share model practices?

The Urban Institute sees great synergy in leveraging the *Greenventory's* insights to support a more robust body of work. The *Greenventory* establishes a solid analytical framework (the six sustainability categories and the 4Ps) and a preliminary roster of examples. While more work could be done to fill out the *Greenventory*, any additional work would have greater impact if it

supported research that could answer the questions outlined above. Critical policy and practice gaps could be filled by a report that offers state and local policy makers, civic and community based leaders, funders, etc. with insights and recommendations on how to “cultivate” and support the emerging sustainability policies, programs, and practices within and among these pioneering legacy cities.

Appendix: List of Cities

Delaware	Michigan con't	Ohio con't
Wilmington, DE	Kalamazoo, MI	Mansfield, OH
Iowa	Pontiac, MI	Toledo, OH
Dubuque, IA	Saginaw, MI	Youngstown, OH
Indiana	New Jersey	Pennsylvania
Anderson, IN	Camden, NJ	Allentown, PA
Gary, IN	New York	Bethlehem, PA
Muncie, IN	Albany, NY	Erie, PA
South Bend, IN	Binghamton, NY	Lancaster, PA
Massachusetts	Buffalo, NY	Pittsburg, PA
Holyoke, MA	Rochester, NY	Scranton, PA
Lawrence, MA	Schenectady, NY	York, PA
Lowell, MA	Syracuse, NY	Tennessee
New Bedford, MA	Troy, NY	Chattanooga, TN
Springfield, MA	Utica, NY	Wisconsin
Worcester, MA	Ohio	Kenosha, WI
Michigan	Akron, OH	
Dearborn, MI	Dayton, OH	
Flint, MI	Hamilton, OH	
Grand Rapids, MI	Lima, OH	

Note: For the cities listed in red, we did not find any green or sustainable programs

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