THE VALUE PROPOSITION OF NEW URBAN PARKS IN SMALL CITIES: EXPLORING NEWBURGH, NEW YORK AS A PROTOTYPICAL CASE STUDY

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A capstone thesis paper submitted to the Executive Director of the Urban & Regional Planning Program at Georgetown University’s School of Continuing Studies in partial fulfillment of the requirements for Masters of Professional Studies in Urban & Regional Planning.

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ABSTRACT

In leading global gateway cities around the world, new high-performing urban parks have been harnessed for their transformative power to enhance the environment, create social cohesion, and catalyze economic development. The “world-class park,” once an outdated vestige of the City Beautiful movement, has now been repeatedly used as a core catalyst of neighborhood revitalization and urban reinvestment. Can the “new parks” strategy work in smaller, second- and third-tier cities? This paper explores “transformative park strategies” in small and medium-sized post-industrial cities and tests the viability of these strategies through interviews conducted with key stakeholders in Newburgh, New York, as well as nationwide urban park leaders. The paper concludes with the formulation of a “new parks” value proposition informed by national best practices, interviews, questionnaires and community engagement in Newburgh.

KEYWORDS

Post-industrial, Park, Value Proposition, Triple Bottom Line, Benefits

RESEARCH QUESTIONS

1. How can high-performing, context-appropriate parks be defined and programmed in small to medium-sized city comprehensive or master planning processes?

2. How does the delivery of high-performance urban open space represent a strategic catalyst to comprehensive economic and community development?

3. What regulatory requirements and other environmental policies can serve as incentives for creating parks that provide ecosystem services and other sustainable outcomes?
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Introduction

“In merging nature and culture the most successful cities combine such universal needs as maintaining or restoring contact with the cycles of nature, with specific, local characteristics.”
-Sally Chappell, Chicago’s Urban Nature: A Guide to the City’s Architecture + Landscape

On a global scale, more people now live in urban areas than in rural ones. Nowhere is this truer than in North America, where over 82% currently populate a city.¹ However, these statistics do not necessarily imply that people are flocking to the largest, most dense cities. According to the March 2015 Census Bureau report, Population Trends in Incorporated Places: 2000 to 2013, while incorporated places with populations of less than 50,000 experienced a population decrease of over 1.7% of the population during that same period, cities with population sizes between 50,000 and 250,000 experienced a total 2.2% increase in population. Additionally, since 2000 the share of the total U.S. population living in cities of a million or more has decreased by half a percentage, while those living in cities with population sizes between 50,000 and 250,000 experienced a 2.2% U.S. population share increase.²

In November 2015 the Joslyn Institute for Sustainable Communities hosted the Urban Thinkers Campus (UTC), which focused on the role and opportunities in urban sustainability for small and mid-sized cities. The Joslyn Institute was selected by UN-HABITAT to host UTC as part of the World Urban Campaign initiative, The City We Need, leading up to UN HABITAT III. According to the Joslyn Institute, small and medium-sized cities are uniquely positioned to develop, implement, and promote climate change policies supporting sustainable urban-rural interconnections, including regional food systems and integrated planning efforts.³

In these changing times, cities large, mid-sized, and small alike are regaining vitality and identity through a variety of initiatives, of which open space developments have been a synergistic contributor. In particular, the mentality that waterfronts serve no further purpose than being host to dumping grounds and manufacturing sites is shifting dramatically as cities everywhere begin to reorient themselves towards the water. Each park case study featured in this paper is a waterfront-oriented development.

The goal of this thesis is to develop a value proposition for open space investments in small post-industrial cities. Established research on the value of urban parks that is most relevant to small, post-industrial cities will be identified and combined with case study best practices and stakeholder interviews in order to inform a set of recommendations for making park investments in such urban environments. This paper highlights a select range of small and medium-sized cities that are successfully serving as environmental, social and economic change agents at least in part through well-designed, high-performing urban park systems. While the five parks range in size from 12 to 28 acres and come from cities with populations ranging from as small as 15,000 to upwards of 275,000, they are precedents that can be scaled down to smaller cities with similar contexts and site conditions.

Throughout this paper, Newburgh, New York, located along the Hudson River sixty miles north of New York City, will serve as a proxy for the small, post-industrial city. It is a time of great transition in Newburgh, with the population approaching 30,000 and the building vacancy rate dipping below 10% for the first time in several decades. As a result of skyrocketing

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rents for urban dwellers downriver, Newburgh and many of its neighbors are prime prospects for welcoming Brooklyn-based transplants and other newcomers.

In recent years a renaissance has awakened in Newburgh. A growing arts district has brought a variety of cafes, restaurants, bars, and shops to downtown Newburgh. In the summer of 2015 the non-profit anchor institution, Safe Harbors of the Hudson, announced that it would be developing the vacant lot located in the heart of this rapidly developing neighborhood on the corner of Broadway and Liberty Street into a community park, Safe Harbors Green. I will argue that the creation of this flexibly-designed, socially welcoming, and sustainably-oriented space will serve as further catalyst for redevelopment in downtown Newburgh and could serve as a model for many places like it.

**Limitations and Clarifications**

This paper will not claim that the highlighted best practices can be universally applied across post-industrial cities for identical results. Rather, it will maintain that each city is unique and the park-oriented solution or added value is very context-specific. Some are pocket parks, some are greenways or trails or recreation spaces. Based on site typology, size, on-site features/programming and surroundings, each case study’s associated benefits will be very different.

However, the case studies selected do share a range of attributes. Each case study is based in a small to medium-sized post-industrial city, with a waterfront park that has had significant economic, environmental, and social benefits as a result of its development. All selected projects have been the recipient of at least one prestigious design or performance-based award recognition and each park has played a major role in establishing a sense of shared
identity or history within its respective city.⁵

The five precedents highlighted come at the recommendation of leading experts in urban park development and park performance research.⁶ While attempts were made to represent all major U.S. geographic regions in the case study analysis, the Midwest and West coast were excluded due to time-related limitations. Additional limitations include a disparate range of city populations for the selected case studies, spanning from 15,000 to upwards of 275,000, and the fact that project budgets are far larger than the typical financial capacity of a small, rather than medium-sized, city.

In recent years, excellent work defining metrics of successful parks and other open space developments has been conducted by many organizations including The Trust for Public Land, the Urban Land Institute, and the Landscape Architecture Foundation. Rather than creating a new set of metrics, this paper borrows from accepted uses by the aforementioned institutions and provides anecdotal examples of measures of success.

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⁵ See Appendix B: Case Study Matrix for further detail and to compare across case studies.
⁶ See Appendix C: Interview Matrix for full description of experts interviewed.
Literature Review: Recent Theory of Transformative Public Realm Investments

A range of research has been conducted in recent years on the transformational impact of investments in open spaces. However, as this literature review will indicate, most of this work has been done in larger, gateway cities featuring world-class parks. Interviews with park and other open space experts have helped both narrow the selection of studies referenced and inform the distinction between park investment-based benefits that can also be applied to small, post-industrial cities, those that cannot, and those that are unique to small cities.

Throughout this paper the phrase “value proposition” is used with “value” defined as environmental, social, and/or economic gain. Following the triple bottom line approach of considering environmental, social, and economic sustainability, these three considerations have been separated into metrics-based subcategories within each topic. The literature review provides a synopsis of established research relevant to triple bottom line benefits, separated by category and with particular focus on key metrics within each. The case study section highlights the relevant environmental, social, and economic outcomes featured in each project.

Each case study referenced in this paper has been subject to value-based classification by at least one or more entities that either provides award recognition, certification, or in-depth documentation to help illustrate the site’s unique and vital contribution to the environment, society, and economic success. For example, Railroad Park was the 2012 winner of the Urban Land Institute (ULI) Urban Open Space Award, which celebrates vibrant open spaces that have enriched and revitalized their surrounding communities. In the American Planning Association’s report, “A Landscape Approach to Green Infrastructure,” Railroad Park’s key impacts are assigned the following categories: multi-functionality, connectivity, habitability,

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7 “About the Urban Open Space Award,” Urban Land Institute, http://uli.org/programs/awards-competitions/urban-open-space-award/
resiliency, identity, and return on investment.\textsuperscript{8} While the former criterion focuses heavily upon the economically catalytic benefits of a site, the latter uses metrics primarily concerned with the environmental impacts. The case study chapter of this paper will describe each in the context of environmental, economic, as well as social performance outcomes- an approach most closely aligned with the Landscape Architecture Foundation’s \textit{Landscape Performance Series} case study format, among which Renaissance Park is a featured project.\textsuperscript{9}

**Economic Benefits**

Peter Harnik, Director of City Park Excellence for The Trust for Public Land (TPL), a nonprofit organization that helps communities across the country fund and carry out land conservation, has devoted his career to addressing some of the major gaps in park value research. A 2009 report, \textit{Measuring the Economic Value of a City Park System}, frames and answers the question: How much value does an excellent city park system bring to a city?\textsuperscript{10} The report outlines seven attributes of city park systems that provide economic value and are measurable: property value, tourism, direct use, health, community cohesion, clean water, and clean air.\textsuperscript{11}

According to TPL, two of these seven outcomes provide direct income to cities: property tax revenue generated from property value increases due to proximity to parks (what is referred to as “hedonic value” by economists) and the sales tax collected from visitor spending by tourists that has occurred primarily as a result of visiting the park. However, the hedonic value consideration will require further research specific to smaller cities before it can be applied. An

\textsuperscript{8} Ignacio Bunster-Ossa and David Rouse, \textit{A Landscape Approach to Green Infrastructure} (Washington, DC: American Planning Association, 2013).
\textsuperscript{11} Ibid.
interview with Harnik revealed that the hedonic assumption does not hold nearly as well in less densely populated cities where property is not as valuable, green space is not a rarity, and/or natural places are a short distance away.\textsuperscript{12}

Direct savings come as a result of: the free or cheap recreation opportunities inherent in parks, lower medical costs following the health benefits achieved by exercising in a park, as well as reduced crime and related behavioral problems due to the social capital generated by community cohesion. Water pollution and air pollution reduction both provide environmental savings and health benefits. However, the report warns that not every aspect of a park system can be quantified, such as the mental health value of a walk in the woods or how to fully calculate the carbon sequestration value of a city park, which will be touched upon in the next section, where environmental and social considerations are addressed.

The landscape features within parks can also have economically significant impacts. According to Dr. Kathleen Wolf’s research on the correlation between tree canopies and consumer behavior, survey findings in cities across the U.S. indicate that individuals are willing to spend between 9-12\% more for products in business districts that host high-quality tree canopies.\textsuperscript{13}

\textbf{Figure 1: Metrics for Economic Benefits}

\begin{table}[h]
\begin{tabular}{|l|}
\hline
\textbf{Metrics for Economic Benefits} \\
\hline
Property Value Increase (Tax Revenue) \\
Operations and Maintenance Savings \\
Commercial Development \\
Visitor Spending \\
Job Creation \\
Space Rental \\
Tourism \\
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\end{tabular}
\end{table}

Source: Arianna Koudounas

\textsuperscript{12} Peter Harnik, interview by Arianna Koudounas, Georgetown University, October 27th 2015.  
Environmental Benefits

Due to the aging infrastructure inherent in many small, post-industrial cities, a combined sewer overflow system (CSO) can be a commonality. According to the U.S. Environmental Protection Agency (EPA), CSOs can be defined as sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. On most occasions, CSOs transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt when wastewater volume typically transported to the sewage treatment plant exceeds the capacity of the sewer system or treatment plant, CSOs overflow and discharge excess wastewater directly to nearby streams, rivers, or other waterways.

The CSO water resulting from heavy rainfall is a major pollution concern, often including the following components: untreated sewage, excess fertilizer from farms, lawns and gardens, and petroleum products which have leaked onto parking lots and roadways. Rather than relying on gray infrastructure to capture and release all overflowing rainfall/snowmelt and subsequent refuse, green infrastructure provides a far more environmentally-friendly, sanitary, and healthy alternative, which can also be less costly. Most sustainability plans include measures for stormwater mitigation, which can involve a variety of initiatives for incorporating green infrastructure into city planning. A range of such approaches will be highlighted in the case studies referenced in this paper, including the use of rain gardens, runnels, cisterns, more permeable soils and pavement, as well as trees, shrubs, and other plant palettes.

For CSO systems, green infrastructure solutions can also translate to economic savings. During an interview conducted with landscape designer Brian Quinn of OneNature, the firm

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14 Combined Sewer Overflows (U.S. Environmental Protection Agency, 2012).
designing and constructing Safe Harbors Green, Quinn emphasized the importance of green infrastructure in the site design. Rain gardens and other key features will help maximize the on-site stormwater management capability and significantly reduce the need for additional sewer pipe investments to manage the site.15 This park design is just one of a greater network of nodes of green infrastructure investments that will be introduced to Newburgh in the coming years as part of the City’s plan for green infrastructure, which has gained momentum due to the reality that green infrastructure investments will be far more cost effective than replacing the City’s aging sewer pipes.16

As a model for implementation, Newburgh should look to the Philadelphia Water Department (PWD), which runs a program to mitigate CSOs called “Green City, Clean Waters.” PWD is working in partnership with the EPA on a 25-year plan to install thousands of acres of green infrastructure that will manage stormwater as well as provide many of the ancillary benefits of green space that this paper highlights. Additionally, stormwater mitigation banks and stormwater retention credits programs are developing all around the country, including in cities like Baltimore and Washington, D.C., which both have CSO systems.17

Figure 2: Metrics for Environmental Benefits

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<th>Metrics for Environmental Benefits</th>
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<tr>
<td>• Temperature &amp; Urban Heat Island</td>
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<td>• Habitat Restoration</td>
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<td>• Soil Remediation</td>
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<td>• Waste Reduction</td>
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<td>• Water Quality</td>
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<td>• Air Quality</td>
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</table>

Source: Arianna Koudounas

15 Bryan Quinn, interview by Arianna Koudounas, Georgetown University, October 12th 2015.
16 Alexandra Church, interview by Arianna Koudounas, Georgetown University, October 14th 2015.
17 Combined Sewer Overflows (U.S. Environmental Protection Agency, 2012).
Social Benefits

Successful urban parks provide a dynamic assortment of social benefits, ranging from physical and mental health to improved accessibility for all ages, abilities, and socioeconomic statuses. In Erica Gies, “The Health Benefits of Parks: How Parks Help Keep Americans and Their Communities Fit and Healthy,” Gies argues that parks promote health and combat obesity through the physical activities supported therein, and that such environments also serve a range of mental and psychological benefits, including: reduced mental stress, therapy for individuals with attention deficit disorder, promotion of coping mechanisms, support for neurological development, and strengthening of the overall social health of a community.18

Gies’ case for the mental and physical health afforded by parks and greenways is further substantiated by Marc Berman’s work on the cognitive benefits of nature,19 Deborah Cohen’s study of the significance of parks as they relate to physical activity and overall public health,20 Frances Kuo’s study of inner-city neighborhood connectedness through common public spaces21 and Byoung-Suk Kweon’s focus on the social integration of inner-city older adults in particular.22

While a range of studies have been conducted that provide insights into the physical and increasingly mental benefits of urban open space, much of this work remains qualitative and seldom has a precise economic value attached to it. This paper will identify sites that have the

potential to demonstrate this impact and will provide guidelines on how to do so through the incorporation of particular metrics (such as those listed below) and site-specific research methods.

Figure 3: Metrics for Social Benefits

<table>
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<th>Metrics for Social Benefits</th>
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<tbody>
<tr>
<td>• Bike/Ped/Transit Connectivity</td>
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<td>• Social Cohesion and Equity</td>
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<td>• Cultural Preservation</td>
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<tr>
<td>• Educational Value</td>
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<tr>
<td>• Mental Wellness</td>
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<td>• Physical Health</td>
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<tr>
<td>• Food Access</td>
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<td>• Recreation</td>
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Source: Arianna Koudounas
Research Methodology

This paper is the result of a six-phase research approach. The first phase was a two-year, five meeting, 250-person community engagement process that began in the fall of 2013. The gatherings, referred to as, “Community Conversations,” were organized and facilitated by the author, with each meeting focused on economic development and revitalization strategies for Newburgh, New York. Following one such meeting in the spring of 2015, a community member informed the author that Safe Harbors of the Hudson, a local non-profit, would be developing a park, Safe Harbors Green, in the vacant lot adjacent to the organization.

Following the news of Safe Harbors Green, interviews were conducted with key stakeholders in Newburgh surrounding the coming park development in order to establish a basis for guiding the research methodology and gaining an understanding of how best to frame the value proposition for park investment in similar cities with related constraints and opportunities. Following these findings, national leaders in urban park design and development were interviewed and provided assistance in identifying key urban park projects to focus on as design and performance-based precedents for the small, post-industrial city.

Based on expert recommendations and desktop research, five case studies were selected and analyzed spatially, economically, environmentally, socially, and demographically. Questionnaires were then circulated to the site development or management contacts for each site, inquiring about the project outcomes and metrics for success. Questionnaire findings were aggregated and compared across case studies, helping to inform key principles for successful post-industrial park strategies.

Finally, an outline of key recommendations for making a value proposition for high-performing parks in small, post-industrial cities, including a range of metrics in order to establish
and evaluate site performance goals was provided, abstracting from a combination of interview and questionnaire results as well as the literature review.
Safe Harbors Green - Newburgh, New York: A Prototypical Case Study

Figure 4: Site Pre-Construction

Figure 5: Safe Harbors Green Rendering

Background

Newburgh is a small city located 60 miles north of New York City along the west side of the Hudson River in Orange County, New York. As of 2013 estimates, the population of the City of Newburgh is 28,480.23 Founded in the early 1700s, Newburgh is steeped in a rich history, which includes being host to George Washington frequently throughout the Revolutionary War and the site where he allegedly refused the crown.24 Newburgh’s past is also one of prosperity. Due to its near equidistant proximity to New York City and Albany, Newburgh thrived as a regional transportation hub and industrial center from the Gilded Age in the late 1800s through to the mid-1900s.25 For much of this period, Newburgh was at the forefront of modernity and innovation, being both the second American city to host an Edison power plant and to have a street lit using electricity, as well as one of the first cities in the country to fluoridate its water.

In the mid to late twentieth century the city’s industrial base declined as production relocated to cheaper locations down south and overseas. At the same time, the Hudson River lost

most shipping traffic to trucking. In 1963 the opening of the Newburgh-Beacon Bridge - which connected Interstate 84 across the river - resulted in the bypassing of the Newburgh waterfront and often the city altogether. Shortly thereafter, the Newburgh-Beacon ferry shutdown and did not reopen until 2005. Throughout the 1960s, suburban development throughout the sprawling town of Newburgh and its resulting automobile-oriented shops, including the Newburgh Mall, served to further diminish the city’s once highly regarded retail sector. This period was also marked by race riots throughout the city. During the late 1960s into the early 1970s the city - like many others throughout the U.S. at the time - underwent an ambitious urban renewal plan, which included a complete demolition of the historic waterfront area. The grand complex planned for replacing the leveled waterfront never came to fruition due to a lack of state and federal available funds following the 1973 oil crisis.26

Today Newburgh is a far more racially diverse community than it used to be. The city is now inhabited by nearly a three-way split of Latinos, African Americans, and whites. Economic development is a major concern, yet remains poorly realized, as the good jobs once found in the local manufacturing sector have not been replaced. Despite the economic and crime-related issues that plague the city, some of the reasons to remain optimistic are anchored around the intersection of Broadway and Liberty Street: the future site of Safe Harbors Green.

Safe Harbors Green is named for Safe Harbors of the Hudson, a Newburgh-based non-profit organization whose mission is, “to transform lives and build communities through housing and the arts.” The organization purchased the old Hotel Newburgh in 2002 and transformed the blighted eyesore into the Cornerstone Residence, which is now home to 128 adults including the formerly homeless, veterans, those living with mental health diagnoses, artists and low income

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working adults in need of affordable housing. Safe Harbors also runs a contemporary arts venue: the Hudson Ann Street Gallery, and a live performing arts space: the Lobby at the Ritz. The development of Safe Harbors Green is a continuation of the organization’s dynamic strategy for revitalizing downtown Newburgh by contributing a variety of creative interventions. Safe Harbors was able to secure a commercial loan to purchase the one-acre lot adjacent to the organization’s building thanks to a generous lead gift from a board member, combined with matching support from the Newburgh Community Land Bank.

**Site Context and Details**

According to Safe Harbors of the Hudson, a park in the heart of the city’s downtown will create a place that: strengthens connections among residents and the greater community they share, encourages walkability, connectivity and accessibility, and animates a gathering place where visitors can meet, recreate, and exchange ideas. The park is anticipated to serve as a catalytic and vital complement to the restaurants, cafes, art galleries, historical landmarks, bars, and other businesses and institutions that surround the site. The staff and park designer alike envision the site to be host to farmers markets, gardens, open-air performances, festivals, public art and quiet spots to simply sit and contemplate.27

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The park design will optimize the site’s natural resources while incorporating sustainable design solutions, including native plantings, rainwater gardens, solar lighting and full ADA accessibility in an inviting and well-designed space. Additional key site features include: a meandering miniature waterfall, a community garden, local blue stone seat walls, art installations, educational signage, and a flexible indoor/outdoor performance space.\footnote{Bryan Quinn, interview by Arianna Koudounas, Georgetown University. October 12th 2015.}
Projected Outcomes and Recommendations for Tracking Success

Interviews with Safe Harbors of the Hudson Executive Director Lisa Silverstone and One Nature landscape designer Brian Quinn indicated a range of anticipated economic, environmental and social outcomes as a result of site development. The metrics highlighted in Figures 9, 10, and 11 indicate which potential outcomes were identified for each category. Within each of the three areas, more specified recommendations for how to quantify key site-specific metrics are outlined.

Economic Impacts

Figure 9: Safe Harbors Green Economic Metrics

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Source: Arianna Koudounas

Property value increase over time can be measured with user-friendly online real estate assessment tools, such as Zillow. To do so, a defined radius in close proximity to the future site of Safe Harbors Green should be determined. Baseline property values should be established by compiling a list of current (2015) real estate sale and estimation prices for the properties surrounding the property within the determined radius. On a quarterly or annual basis following park completion, property values should continue to be tracked. Commercial development can be quantified with an approach similar to that of property value increase, by simply comparing
the baseline (in this case, 2015) state of commercial developments and business operations within the defined radius on a quarterly or annual basis.

Operations and maintenance savings typically include the labor and materials-based cost avoidance associated with a site. In this instance, the savings associated with stormwater management - which are estimated to range between $10,000 and $50,000 - can also be included, as the savings is due to combined sewer overflow-related costs that would be part of standard site operations and maintenance procedures, were the site landscape not significantly featuring green infrastructure.

Tourism monitoring numbers can vary based on a range of factors, including what the research team defines as tourism, and the research method(s) undertaken to gauge how Safe Harbors Green attracts tourism. Adjacent attractions might include George Washington’s Headquarters, the Karpeles Manuscript Library Museum, and the many neighborhood art galleries. Similarly, the definition of visitor spending - such as whether it refers solely to on-site spending or includes nearby business spending and how that information is tracked - will significantly impact the results gathered.

Regardless of the research approach undertaken, one must be vigilant in maintaining consistency and troubleshooting against data collection strategies that may skew the results. The same philosophy applies to tracking environmental as well as social performance.
Environmental Impacts

Figure 10: Safe Harbors Green Environmental Metrics

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Source: Arianna Koudounas

During site construction soil quality samples were taken. As such, the improvement of soil quality over time can be tracked by collecting soil samples on a seasonal or annual basis and having them tested at nearby labs. Stormwater management baseline conditions were also established during site construction, which provides future researchers the opportunity to track the site’s stormwater management capacity in comparison to pre-development numbers. When possible, periods of extreme rainfall or flooding should be tracked in order to gauge how resilient or flood-resistant the site is and to observe what site feature additions might further enhance its stormwater management capability.

Tracking habitat restoration and/or generation requires a more nuanced approach, as animals, insects, and other wildlife are not static creatures. In order to best determine baseline conditions, citizen science databases and other tracking methods, including the Audubon Society’s annual bird tracking, should be accounted for. Once site construction has been completed, species inhabiting the site can be tracked through coordinated research and environmental educational partnerships with the Newburgh School District, the local colleges, Boys and Girls Scout troops and other educational or civic institutions.
Social Impacts

Figure 11: Safe Harbors Metrics for Social Benefits

Metrics for Social Benefits

- Bike/Ped/Transit Connectivity
- Social Cohesion and Equity
- Cultural Preservation
- Educational Value
- Mental Wellness
- Physical Health
- Food Access
- Recreation

Source: Arianna Koudounas

Most of the projected social benefits listed in Figure 11 can be tracked either by observing site visitor behavior or by distributing user surveys with targeted questions for one or more of the areas. Some of the metrics, such as bike/pedestrian/transit connectivity or food access might require analysis of citywide data. More specified metrics for the aforementioned benefits include: measuring the number of people educated or surveying educators to gauge the educational value of the program; tracking the number of annual visitors; aggregating bike and pedestrian fatalities and injuries overtime; comparing pre and post-construction crime data; and gathering surveys on mental and physical wellness.
Broader Green Infrastructure Strategies

Figure 12: Aerial view of Newburgh, featuring the Quassaick Creek

Source: Peter Smith, Quassaick Creek Watershed Alliance.

The Quassaick Creek - sometimes referred to as “Newburgh’s other waterfront” by long-time creek restoration advocate and Newburgh resident Peter Smith - winds around the City of Newburgh for two and a half miles and empties into the Hudson at the city’s southern boundary. The Quassaick Creek Watershed Alliance is comprised of a group of proponents of restoring the creek and reorienting the city towards it as a vehicle for neighborhood revitalization. Quassaick Creek advocates envision the reimagined creek as an emerald necklace wrapping around the city, providing ample opportunities for: economic development, passive and active recreation, environmental education, protection and interpretation of cultural assets, as well as habitat restoration and protection.

Proposed design interventions and developments include reimagining Lake Street and its adjacent strip mall as a complete street with a mixed-use development. One Columbia University

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29 See Figure 12 for an aerial shot of the creek’s route throughout the city.
urban design student has advanced creating a food hub through adaptive reuse of a cluster of former mill buildings. Additional economic opportunities include generating micro hydropower from the creek’s dam and providing stormwater management-associated savings for the city. Key obstacles to implementation include: accessibility issues, a lack of funding, current zoning, and the prevalence of polluted waters due to dumping from neighboring businesses and runoff.

Other citywide open space efforts concern the design and implementation of complete streets developments along the Broadway corridor, which include the construction of medians and bike lanes. Consistent with this objective, the city’s Frederick Law Olmsted-designed Downing Park has recently experienced a reawakening through the Downing Park Greenhouse Project, which aims, “to build a pathway to urban agriculture in the City of Newburgh that is walkable and sustainable.”31 Additionally, the City has determined that Newburgh’s CSO system will be most cost effectively managed through the expansion of green infrastructure, which has the co-benefits of: serving as publicly accessible green spaces, managing stormwater and possibly generating additional ecosystem services, such as establishing habitat or reducing the urban heat island effect.32

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32 Alexandra Church, interview by Arianna Koudounas, Georgetown University. October 8th 2015.
Urban Revitalization through Park Investment: Case Study Overview

The case study selection criteria was anchored around the following parameters: small to medium-sized post-industrial city; waterfront park development; demonstrated significant economic, environmental, and social outcomes; recipient of at least one prestigious design/performance award; and each park must have played a major role in establishing a sense of shared identity or history for the community. These requisite attributes were developed as a result of interviews with key national leaders in park development, the literature review, and through a cross-case study meta-analysis of fourteen different projects.

Earlier considerations included: Black Hoof Park in Lenexa, Kansas; Canal Park in Washington, DC; Canalside in Buffalo, New York; Erie Street Plaza in Milwaukee, Wisconsin; Lowell National Historic Park in Lowell, Massachusetts; Pearson Park in Tarrytown, New York; Sixth Ward Park in Lancaster, Pennsylvania; SteelStacks in Bethlehem, Pennsylvania; and Walkway Over the Hudson in Poughkeepsie, New York. Some sites, such as Canalside and SteelStacks were too commercial in scope and not focused enough on the development of open space. Other sites, such as Lowell National Historic Park and Walkway Over the Hudson, being a national and a state park, respectively, were determined to be too rare an exception to have broadly applicable implications for those viewing this paper. Others may have been incredibly sustainable, equitable, or economically catalytic, but the lack of an integrated triple bottom line design approach and resulting performance impact prevented them from making the final cut.
Long Dock Park – Beacon, New York

Figure 13: Kayak Storage and Dock  Figure 14: Trailway Overlooking the Hudson River

Source: James Ewing Photography  Source: James Ewing Photography

Background

Beacon, New York is a small Hudson River city located directly across the river from Newburgh, with a population just short of 15,000. Up until the late 20th century, the site of today’s Long Dock Park was host to an oil terminal, a salt storage facility, and a junkyard. Prior to that, Long Dock Park contained a rail ferry terminal, warehouses and other buildings. After 10 years and nearly $9 million, the former brownfield has been reborn as a beautiful, sustainable, and educational waterfront oasis. It all began in 1996 when the local environmental organization, Scenic Hudson, acquired the 16-acre property and removed over 75 truckloads of scrap metal, old tires, and other trash from the former junkyard, making way for a lush, native landscape.

Site Context and Details

The park development was a multiphase process, the first of which opened in 2009 and included a boardwalk and a site-specific art installation. In 2011 the next phase resulted in the construction of two buildings: an arts and environmental education center renovated from Long Dock’s historic red barn and a new pavilion for kayak storage and rentals, which was

constructed at the center of the cove. Among the original set of pilot projects for the Sustainable Sites Initiative (SITES), Long Dock Park was certified successfully, ranking three out of four stars, in the summer of 2013.³⁵

Figure 15: Site Plan of Long Dock Park

A series of arcing circulation paths and crested landforms frame views of the surrounding mountains and the Hudson River. Universally accessible paths connect the park to a network of amenities including: museums, additional outdoor recreation nodes, restaurants, and the nearby Metro-North train station.³⁶

Economic Impacts

Figure 16: Long Dock Park Economic Metrics

**Economic Benefits**

- Property Value Increase (Tax Revenue)
- Operations and Maintenance Savings
- **Commercial Development**
- Visitor Spending
- **Job Creation**
- Space Rental
- **Tourism**

Source: Arianna Koudounas

Environmental Impacts

Figure 17: Long Dock Park Environmental Metrics

**Metrics for Environmental Benefits**

- Temperature & Urban Heat Island
- **Resilience/Flood Prevention**
- Stormwater Management
- Habitat Restoration
- Soil Remediation
- Waste Reduction
- Water Quality
- **Air Quality**

Source: Arianna Koudounas

Social Impacts

Figure 18: Long Dock Park Social Metrics

**Metrics for Social Benefits**

- **Bike/Ped/Transit Connectivity**
- Social Cohesion and Equity
- Cultural Preservation
- Educational Value
- Mental Wellness
- **Physical Health**
- Food Access
- Recreation

Source: Arianna Koudounas
Mill River Park – Stamford, Connecticut

Figure 19: Mill River Before (2007)                                      Figure 20: Mill River After (2013)

Source: Mill River Restoration                                     Source: Mill River Restoration

Background

Stamford, Connecticut is a city of over 128,000, located 30 miles northeast of Manhattan. Stamford differs from the other projects highlighted in this paper in that the city’s industrial bust was more swiftly ameliorated than many others, including nearby Danbury and Waterbury, which are still plagued by such issues. Stamford has benefitted from its proximity to rail and highways, and from a campaign by the Regional Plan Association to encourage businesses to move their back office functions to the city, while keeping headquarters in Manhattan to keep employees located near transit rich areas and to keep firms from relocating their entire operations.

During the 1960s and 70s an increasing number of businesses relocated from Manhattan to Stamford, thus providing an economic boom to the area. The city has consistently been among the safest in the country, with high median income levels and one of the most educated populations in the country.37

While Stamford has a more prosperous and dynamic economy than cities typically categorized as post-industrial, it was selected based on its small to medium-sized city scale and its great success in developing a park, greenway, and network of civic spaces. The city dreamed of creating its own version of a Central Park in the heart of its downtown and a greenway along the banks of the historic Mill River for most of the 20th Century. As a result of the collaborative efforts of city, state and federal government, corporations, foundations, and private citizens, this vision has increasingly materialized into reality. A 28-acre Park and three-mile greenway have begun to emerge, transforming the heart of Stamford and serving as a catalyst for residential development, corporate and commercial growth, and as a new venue for healthful active recreation.  

The park’s history began in 1997 when the city hired Sasaki Associates to conduct a study on the park area that resulted in the Mill River Corridor Plan. The plan’s intent was to reclaim and create an open, green gathering place in the heart of town for the public. Subsequently the plan was included in the Stamford Master Plan, a new zoning district - the Mill River Design District - was created, a project plan was adopted by Stamford’s urban redevelopment commission, and the city established capital accounts for property acquisition and park development.  

**Site Context and Details**

The Mill River Playground was the first structure in Mill River Park as one of the early guiding visions for the park included a place for children throughout Stamford to exercise and play together. With the help of over 1,500 volunteers and dozens of donors from the corporate,  

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39 Ibid.
civic, educational and government communities, the playground was completed during a seven-day community-build in May of 2006. The Playground featured five hand-painted wildlife murals and a dynamic plant palette including thousands of bulbs, grasses, perennials, shrubs, and trees. A number of contributors helped endow the playground, providing funding for its long-term maintenance.

Figure 21: Fully Built-out Site Plan with Labeled Sponsor Areas

Source: Mill River Collaborative

**Economic Impacts**

According to the revised 2014 Mill River Park Master Plan, Mill River Park & Greenway is expected to be transformative, providing a new model for redefining urban life and attracting the new, young urban residents who want to work and live in close proximity without compromising quality of life. Mill River Park & Greenway will provide the natural balance to Stamford’s robust built environment, which should dramatically improve quality of life for
Stamford as a whole and particularly for the many new residents moving into Stamford’s Downtown.

Over one thousand units of housing and over $4 million in new annual municipal tax revenues have already been generated in anticipation of the park, which is being funded on the City’s part with tax increment financing. Mill River Park Collaborative, a public/private partnership, is leading a $100 million project that is changing the urban landscape and economic dynamic of Stamford for generations to come. At the time of this paper’s publication, it is under contract with the City to develop and operate the park and has raised $15 million toward its $20 million private capital campaign.40

Figure 22: Mill River Park Economic Metrics

<table>
<thead>
<tr>
<th>Economic Benefits</th>
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<tbody>
<tr>
<td>● Property Value Increase (Tax Revenue)</td>
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<tr>
<td>● Operations and Maintenance Savings</td>
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<tr>
<td>● Commercial Development</td>
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<tr>
<td>● On-site Spending</td>
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<tr>
<td>● Job Creation</td>
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<tr>
<td>● Space rental</td>
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<td>● Tourism</td>
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Source: Arianna Koudounas

The park is expected to cover an ever-increasing share of operating revenues through on-site development. With allowance for limited commercial development within the site, revenue opportunities can be created. Active programming in combination with these commercial developments can establish events that activate the park during different times of day throughout the year.

Environmental Impacts

In 2000, the Army Corps of Engineers studied the restoration of local ecosystems and

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40 Ibid.
endorsed the removal of the historic Mill River Dam with the intention to restore a natural stream channel to encourage the return of anadromous fish, restore wetland habitat, and improve public access to the river. In collaboration with the Army Corps of Engineers, Olin Partnership was selected in 2005 to design the park. The resulting design, created in 2007, includes many of the latest advances in bioengineering and landscape architecture, and is perfectly suited for a premier downtown park. The demolished dams are allowing river herring to spawn for the first time in 360 years. Eels are migrating upstream and minks are coming downtown every summer to catch them. Acres of land along the river have been reclaimed from invasive plants and restored to native woodland, riparian, and meadow species, bringing back a diversity of insects, mammals, and birds.\textsuperscript{41}

Figure 23: Mill River Park Environmental Metrics

<table>
<thead>
<tr>
<th>Environmental Benefits</th>
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<tbody>
<tr>
<td>● Temperature &amp; Urban Heat Island</td>
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<td>● Water Quality</td>
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<td>● Air Quality</td>
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Source: Arianna Koudounas

Social Impacts

Key social metrics include the number of people visiting the site on a daily, weekly, or annual basis. This in part is an urban design story about how a dramatic increase in open space is required to complement the increasing density of the urban core and how improved pedestrian infrastructure has become critical to continued growth. Physical health promotion facilitated by

\textsuperscript{41} Ibid.
features such as bikes, programmed exercise classes and active recreation encourage a healthy lifestyle for all.

**Figure 24: Mill River Park Social Metrics**

<table>
<thead>
<tr>
<th>Social Benefits</th>
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<tbody>
<tr>
<td>• Bike/Ped/Transit Connectivity</td>
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<td>• Food Access</td>
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<td>• Recreation</td>
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</table>

Source: Arianna Koudounas

**What’s Next**

At the time of this paper’s publication, future developments include the Nissen Carousel, custom-made with 30 hand-carved animals and ADA-compliant features. Mill River Park Collaborative chose Carousel Works, the highest quality carousel supplier, to ensure that this feature matches the standards of the park and functions as a regional tourist destination. The carousel has served as a successful aspect of the capital campaign, with individual stewards of Mill River Park naming and funding the creation of the carousel figures. Selected by local school children, the carousel figures represent native animals to Connecticut.

Additional forthcoming developments include the Whittingham Discovery Center, an environmental learning center that also features an indoor gathering place for party rentals and dining, so as to help cover the site’s operational costs. The Steven & Alexandra Cohen Skating Center and Fountain will be a year-round attraction on the east side of Mill River Park. During
winter months a seasonal ice skating center will offer outdoor skating for area residents. Skate rentals will be available as an additional revenue generator.\textsuperscript{42}

**Railroad Park – Birmingham, Alabama**

Figure 25: Aerial Shot of Railroad Park

Source: Tom Leader Studio

**Background**

Birmingham is the largest city in Alabama and is the county seat of Jefferson County. As of 2013 estimates, the city’s population is 212,113. From its founding in 1871 through to the end of the 1960s, Birmingham served as the primary industrial center of the south, with particular focuses on mining, iron and steel production, and railroad transportation.\textsuperscript{43} In homage to the city’s central railroad reservation and in an effort to reunite the bifurcated city, 19 acre Railroad Park was built along the seam historically created by a rail viaduct that bisects Birmingham’s downtown.

\textsuperscript{42} Ibid.

Similar to many American cities of the time, Birmingham experienced a “white flight” to the suburbs in the late 1960s and 1970s, leaving significant parts of the downtown core vacant or underutilized. As a legacy of this period of economic depression and blight, Birmingham has long lacked a cohesive strategy for guiding civic growth as well as green infrastructure priorities. However, according to Bunster-Ossa and Rouse’s, “A Landscape Approach to Green Infrastructure,” the completion of Railroad Park has spurred municipal interest in sustainable landscape infrastructure as well as economic development and social unity.  

Railroad Park was the recipient of the Urban Land Institute’s 2012 Urban Open Space Award, competing against high-profile parks, including New York’s iconic The High Line. The award annually recognizes an outstanding example of a well-used open space that has spurred regeneration and the transformation of the surrounding community. The park is owned by the City of Birmingham and is managed by the Railroad Park Foundation.

**Site Context and Details**

The City Beautiful movement, vis-à-vis the Olmsted Brothers’ 1924 plan for a system of parks in Birmingham, is experiencing a reawakening in Birmingham with several significant new parks and greenways, including Railroad Park. The City Center Master Plan, which advocates strongly for residential development in downtown Birmingham pairs nicely with the ongoing open space developments underway throughout the city.

Railroad Park is comprised of a four-block segment of the city’s former railroad reservation, a major corridor of railroad tracks and warehouses that served the

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44 Bunster-Ossa, and Rouse, *A Landscape Approach to Green Infrastructure*.
47 *City Center Master Plan Update for the City of Birmingham, Alabama* (Urban Design Associates, 2004).
mining, iron, and steelmaking industries. Adjacent to the site is a 15-foot high rail viaduct with active tracks, providing further inspiration for the park’s name. The site integrates the train experience with a variety of open space activities including a series of trails, exercise and play features, which have successfully organized and stimulated growth in the southern part of downtown while promoting connections north of the railroad.  

Figure 26: Adjacent Site Development Due In Part as a Result of Railroad Park

Railroad Park is located on what was historically the lowest elevation point in Birmingham, making it a logical place to store water from the immediate watershed and to provide emergency flood protection during periodic heavy rains that can plague the city’s storm infrastructure. As such, stormwater management and water features play a central role in the park’s design, with the park consisting of 30% water. A large lake reservoir is used for irrigation, which then discharges through a stream and several ponds, and also supplies a stunning rain

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48 Krueger, Birmingham’s Railroad Park Selected as 2012 Winner of ULI Urban Open Space Award.
certain water feature. In addition to satisfying the site’s irrigation needs, the lake also contributes a cooling, recreational presence to the downtown, which includes water sports like canoeing and paddle boating. Floodwater is provided through a network of wetlands that run along the adjacent rail viaduct.\textsuperscript{49} Materials integrated throughout Railroad Park provide reference to the site’s former warehouse and masonry uses, including many of the walls and seating areas constructed from hand-cast bricks and original cobblestone.\textsuperscript{50}

Key site amenities include a network of winding paths throughout the park that connect to a Rail Trail which extends well beyond the length of the park, two play areas filled with modern playground equipment and a climbing dome for toddlers and children, a skate park, outdoor gym equipment, and an amphitheater for hosting outdoor performances.\textsuperscript{51}

\textbf{Figure 27: Labeled Aerial Shot of Key Site Features}

\begin{center}
\includegraphics[width=\textwidth]{labeled_aerial_shot.png}
\end{center}

\textbf{Source: Tom Leader Studio}

\textbf{Economic Impacts}

\textsuperscript{49} “Projects: Railroad Park,” \textit{Tom Leader Studio},
\url{http://www.tomleader.com/studio/projects/project_details.php?id_proj=40}
\textsuperscript{50} “About Railroad Park,” \textit{Birmingham’s Railroad Park}.
\textsuperscript{51} Ibid.
Railroad Park was the culmination of a thoughtful and strategic series of studies initiated by the city and implemented by ULI, resulting in the aforementioned downtown master plan, which identified key initiatives for growth and improvement, including an emphasis on residential development in the city center. A key finding from the research and community engagement conducted was a consensus that a major downtown park on the current site of Railroad Park would facilitate the establishment of an open space-oriented identity, which would help organize and stimulate growth in the southern half of downtown. ULI 2012 Open Space Award jury chairman Randall K. Rowe said it best, stating, “Railroad Park is a transformative example of how open space can enrich and revitalize a surrounding community as well as become a critical part of the urban social fabric.”

Since opening, the park has attracted the relocation of the Birmingham Barons minor league baseball team back to the city, resulting in the construction of their new ballpark in the park’s western end. Partially in response to the development of the ballpark, the University of Alabama updated their campus master plan, now encouraging campus growth north to Railroad Park. The park’s perimeter is full of new construction and renovations. Railroad Park also generates revenue on-site through the Railroad Park Dining Car as well as through facility rentals for events.

Figure 28: Railroad Park Economic Metrics

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</tbody>
</table>

52 Krueger, Birmingham’s Railroad Park Selected as 2012 Winner of ULI Urban Open Space Award.
53 Bunster-Ossa and Rouse, A Landscape Approach to Green Infrastructure.
Environmental Impacts

The key water features integrated throughout the site, including the lake, biofiltration wetlands area, ponds and streams enable water storage, flood control, and even water quality improvement within and surrounding Railroad Park. As detailed in Bunster-Ossa and Rouse’s study of the park, the site’s green infrastructure plays a crucial role in addressing the EPA’s mandate for city’s stormwater management.\(^{54}\)

Creative and thoughtful reuse of a range of materials in constructing knolls, walls and seating throughout the park also help reduce waste and prevents carbon emissions that would have resulted from transport of additional materials to a dumpsite.\(^{55}\)

Figure 29: Railroad Park Environmental Metrics

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Social Impacts

A central theme surrounding Railroad Park’s conception, design, and programming is equity. According to ULI, Railroad Park is a model of integration, participation, and urban regeneration that will reward residents and visitors alike for generations to come.\(^{56}\) Tied to this

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\(^{54}\) Ibid.
\(^{55}\) “Projects: Railroad Park,” Tom Leader Studio.
\(^{56}\) Krueger, Birmingham’s Railroad Park Selected as 2012 Winner of ULI Urban Open Space Award.
sense of belonging is the unifying bond that city residents share over the cultural preservation and recognition of rail on-site, thus underscoring the sensitivity provided by the design team which has facilitated cultural healing to the perceived fractured downtown.

As a gathering place, Railroad Park has become an iconic cultural reference that facilitates a range of performances, celebrations, markets, educational tours, sporting events, and more. In particular, the park is host to numerous events including: the Alabama Symphony, Relax by the Tracks Jazz concerts, Sunset Cinema outdoor movie nights, and the annual “Crawfish Boil” which attracts over 30,000.57

A combination of the design, features, and programming of Railroad Park successfully serves to promote health and wellness for area residents. Connectivity to a three-park greenway system and adjoining rail trail encourages bike and pedestrian activity, while the park’s outdoor gym facility encourages strength training for site users. During the warmer months, Blue Cross Blue Shield of Alabama sponsors health programs five nights a week to further encourage healthy living for all Birmingham residents.58

Figure 30: Railroad Park Social Metrics

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</tr>
</tbody>
</table>

Source: Arianna Koudounas

57 Ibid.
58 Ibid.
Renaissance Park – Chattanooga, Tennessee

Figure 31: Aerial Shot of Renaissance Park

Source: John Gollings, Hargreaves Associates

Background

Chattanooga, Tennessee, with a population of 173,000, is the fourth largest city in Tennessee and is the seat of Hamilton County. According to the U.S. Census, as of May 2015, Chattanooga is the second-fastest growing city in Tennessee, eclipsing the growth rate of Knoxville for the first time in years.\(^{59}\) While Chattanooga’s official nickname is “the Scenic City” due to the city’s mountainous backdrop and ample opportunities for outdoor recreation, its image was not always so positive. In 1969 the city’s industrial pollution had amassed to such an extent that the federal government declared that Chattanooga had the dirtiest air in the nation.\(^{60}\)

Following this period of peak industrialization, the city entered the 1980s with a range of severe economic and social challenges related to de-industrialization layoffs, citywide

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\(^{59}\) Mike Pare, “Chattanooga has 2nd fastest growth among Tennessee’s big cities,” *Time Free Press* (Chattanooga, TN), May 22, 2015.

\(^{60}\) Roberta Brandes Gratz, *Healing the Urban Heart: Chattanooga’s Next Great Challenge* (The CitiStates Group, 2011).
infrastructure deterioration, racial tensions and other social divisions. However, the three decades following the city’s low point have been increasingly prosperous, with a combination of public and private investments focused on the revitalization of downtown and the waterfront, including the city’s 21st Century Waterfront Master Plan, of which the 22 acre Renaissance Park was the final phase.\textsuperscript{61}

**Site Context and Details**

Downtown Chattanooga has an abundant array of city parks and green spaces available with leisure activity options for every desire. Unique attractions, public art, large yards, fountains, trails, carousels, hills to slide down and areas of exploration await visitors throughout downtown and beyond.\textsuperscript{62}

Renaissance Park is a 22-acre urban brownfield redevelopment project within Chattanooga’s nationally recognized Tennessee River Park and the final phase of the 21\textsuperscript{st} Century Waterfront Master Plan.\textsuperscript{63} Most of the waterfront’s park development - including Renaissance Park - is overseen by RiverCity, Co. a private non-profit corporation. The company’s roots can be traced back to 1986 when Chattanooga began its aggressive project to reprocess land once occupied by factories, warehouses, and industrial plants. In place of the vacant former production facilities, Chattanooga sought to refine its downtown based on recreation, leisure, and consumption.\textsuperscript{64} According to the questionnaire completed by Jeff Pfitzer

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\textsuperscript{61} Collett and Taylor. *Landscape Performance Series Case Study: Renaissance Park.*


\textsuperscript{63} Ibid.

of the Benwood Foundation, the main objectives of Renaissance Park were to: clean up the post-industrial brownfield, expand existing park space, and spur economic development.⁶⁵

Key features include a 500-seat amphitheater; a one-acre constructed wetland which holds and treats runoff from the site; a drainage system below the site which diverts any contaminated pollutants to the sanitary sewer; passive controls for wetland inlets and outlets which save on energy and maintenance costs; 9,025 linear feet of walkways; elevated piers over wetlands and riparian banks with educational signage; and a boat ramp.

Figure 32: Renaissance Park Site Plan.

Source: City of Chattanooga Parks and Recreation

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⁶⁵ Jeff Pfitzer, questionnaire by Arianna Koudounas, Georgetown University, December 1st 2015.
Completed in 2006, this riverfront project transformed a blighted post-industrial site into a celebrated public park that has been a catalyst for reinvestment in Chattanooga’s growing Northshore neighborhood. Preservation areas and natives meadows reduce maintenance costs due to the minimal amount of grass mowing needed, while iconic landforms safely and artistically enclose contaminated soils.

**Economic Impact**

According to Pfitzer, park development generated a 10:1 return on investment in the form of surrounding catalytic business investment before the park was even completed.\(^\text{66}\) No general funds were used in the construction of the park, with all $120 million coming from the 21\textsuperscript{st} Century Waterfront Trust: a combination of grants, private donations, and loans, while the park is maintained by city staff using general funds.

Like many post-industrial cities, in the past 20 years Chattanooga leaders have dismantled their manufacturing infrastructure, replacing warehouses and enameling plants with

\(^{66}\text{Ibid.}\)
parks, museums, restaurants, hotels, and apartments. The result is a vibrant tourism and entertainment industry, and a rebuilt downtown that is helping to lure new residents. The city has also developed skills needed to redevelop the urban core, such as efficient public-private partnerships that can attract new businesses.67

While many Rust Belt cities continue to shrink, Chattanooga is growing. Between 2000 and 2008 the city grew by 9.3%, outpacing surrounding Hamilton County, while drawing interest from both ends of the age spectrum. The greatest segments of demographic growth—newborns to five-year-olds and 45- to 65-year-olds—suggest an influx of young couples confident about the city's future and retirees who find it an appealing location for aging in place.68

Figure 34: Renaissance Park Economic Metrics

<table>
<thead>
<tr>
<th>Economic Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Property Value Increase (Tax Revenue)</td>
</tr>
<tr>
<td>● Operations and Maintenance Savings</td>
</tr>
<tr>
<td>● Commercial Development</td>
</tr>
<tr>
<td>● Visitor Spending</td>
</tr>
<tr>
<td>● Job Creation</td>
</tr>
<tr>
<td>● Space rental</td>
</tr>
<tr>
<td>● Tourism</td>
</tr>
</tbody>
</table>

Environmental Impact

Once the site of manufacturing plants, Renaissance Park demonstrates how a polluted area can be returned to a clean river habitat and a natural park setting. The park's design promotes the return of native plants and animals, enhances river eco-systems, and provides a balance between urban renewal and the conservation of natural resources. Buried waste was removed and stabilized chemically and geo-technically on-site rather than being exported to

67 Spielberg, “Chattanooga Reinvents Its Downtown.”

68 Ibid.
landfills. A created wetland system now collects and cleans urban runoff generated on-site and runoff brought onto the site via the North Market Street Branch stream, before being released into the Tennessee River. Unstable and erosive stream and riverbanks have been stabilized with a unique vegetative system and the use of live staking, as well as a series of gabion structures and rip-rap armature.69

Figure 35: Renaissance Park Environmental Metrics

<table>
<thead>
<tr>
<th>Environmental Benefits</th>
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</thead>
<tbody>
<tr>
<td>● Temperature &amp; Urban Heat Island</td>
</tr>
<tr>
<td>● Resilience/Flood Prevention</td>
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<tr>
<td>● Stormwater Management</td>
</tr>
<tr>
<td>● Habitat Restoration</td>
</tr>
<tr>
<td>● Soil Remediation</td>
</tr>
<tr>
<td>● Waste Reduction</td>
</tr>
<tr>
<td>● Water Quality</td>
</tr>
<tr>
<td>● Air Quality</td>
</tr>
</tbody>
</table>

Source: Arianna Koudounas

Social Impact

Renaissance Park provides a canvas for social engagement, healthy lifestyles, and environmental education, which utilizes the site’s ecosystem services resulting from the preserved floodplain forest, meadow plantings and a constructed wetland that treats stormwater and provides increased floodplain storage capacity as an outdoor classroom. The park hosts a range of public events and honors the site’s historical significance, including the Trail of Tears, the encampment of liberated slaves, and the location of the city’s first bridge crossing the Tennessee River.70

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70 Collett and Taylor, *Landscape Performance Series Case Study: Renaissance Park.*
According to on-site surveys and observations conducted by landscape performance researchers Brad Collett and Jessica Taylor, the following social benefits have come as a result of Renaissance Park:

- Promotes a healthy lifestyle, according to 85% of 85 park users surveyed. 81% agree that the park increases their outdoor activity.
- Attracts an estimated 145,220 visitors annually, many of whom also patronize local businesses. 89% of 85 surveyed park users shop or dine within 1/2 mile of the park before or after visiting the park.
- Influenced the housing choice of 76% of 51 survey respondents who live within one mile of the park. 41% said they are willing to pay a premium to live close to the park.\(^71\)

Figure 36: Renaissance Park Social Metrics

<table>
<thead>
<tr>
<th>Social Benefits</th>
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<tbody>
<tr>
<td>Bike/Ped/Transit Connectivity</td>
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<tr>
<td>Social Cohesion and Equity</td>
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<tr>
<td>Cultural Preservation</td>
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<tr>
<td>Educational Value</td>
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<tr>
<td>Mental Wellness</td>
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<tr>
<td>Physical Health</td>
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<tr>
<td>Food Access</td>
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<tr>
<td>Recreation</td>
</tr>
</tbody>
</table>

Source: Arianna Koudounas

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\(^71\) Ibid.
Riverfront Park – Newark, New Jersey

Figure 37: Local Residents Take Advantage of Live Waterfront Concerts

Source: Newark Riverfront Revival

Background

Riverfront Park fulfills a decades-long movement to reclaim the Passaic riverfront for the people of Newark, New Jersey, a medium-sized city with a population of 278,427. Situated on the cleaned-up site of a former metal smelting plant, the park provides Newark’s only public access to the river and outdoor recreational space for a neighborhood where the amount of green space dedicated for use as parks is far below the national average. The 19-acre park is the result of a public engagement process that included more than 6,000 people. It is expected to attract new economic development, particularly to downtown Newark, and will eventually be part of a string of riverfront parks and trails that will stretch for five miles.

The Trust for Public Land TPL led the effort to assemble the private and public funding needed to expand the park.72 The site is programmed by Newark Riverfront Revival (NRR), an

independent initiative aiming to connect every Newark resident to their river. Since 2008, NRR has built support for Newark’s riverfront by taking hundreds of people on boat and walking tours, hosting dozens of outreach events, organizing design education programs for youth, and staging a City Hall exhibition.73

**Site Context and Details**

Figure 38: Riverfront Park Site Plan

Source: Lee Weintraub

**Economic Impacts**

Figure 39: Riverfront Park Economic Metrics

<table>
<thead>
<tr>
<th>Metrics for Economic Benefits</th>
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<tbody>
<tr>
<td>• Property Value Increase (Tax Revenue)</td>
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<tr>
<td>• Operations and Maintenance Savings</td>
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<tr>
<td>• Commercial Development</td>
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<tr>
<td>• Visitor Spending</td>
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<tr>
<td>• Job Creation</td>
</tr>
<tr>
<td>• Space Rental</td>
</tr>
<tr>
<td>• Tourism</td>
</tr>
</tbody>
</table>

Source: Arianna Koudounas

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Environmental Impacts

Figure 40: Riverfront Park Environmental Metrics

<table>
<thead>
<tr>
<th>Metrics for Environmental Benefits</th>
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</thead>
<tbody>
<tr>
<td>Temperature &amp; Urban Heat Island</td>
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<td>Resilience/Flood Prevention</td>
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<td>Stormwater Management</td>
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<tr>
<td>Habitat Restoration</td>
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<td>Soil Remediation</td>
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<tr>
<td>Waste Reduction</td>
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<tr>
<td>Water Quality</td>
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<tr>
<td>Air Quality</td>
</tr>
</tbody>
</table>

Source: Arianna Koudounas

Social Impacts

Since 2012, NRR has worked with Essex County, the City of Newark, The Trust for Public Land, Ironbound Community Corporation, and other partners to build and program over 15 acres of riverfront parks, including a walking and biking trail, sports fields and courts, floating boat dock, riverfront boardwalk, playground and other settings for relaxation, picnics, exercise, and environmental education.74

Figure 41: Riverfront Park Social Metrics

<table>
<thead>
<tr>
<th>Metrics for Social Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike/Ped/Transit Connectivity</td>
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<td>Physical Health</td>
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<tr>
<td>Food Access</td>
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<tr>
<td>Recreation</td>
</tr>
</tbody>
</table>

Source: Arianna Koudounas

74 “About the Newark Riverfront,” Newark Riverfront Revival, http://newarkriverfront.org/
Synthesis of Findings: The Post-Industrial City Challenge

Following the meta-analysis of the 14 researched case studies and a closer look at the five park projects featured in this paper as well as the literature review and interviews completed, ten overarching principles for successfully establishing a park strategy in a post-industrial city have surfaced:

1. **Make a Master Plan**
   The development of the master plan can be approached in several ways, including by being folded into the city’s greater comprehensive or city-wide open space planning efforts (Renaissance Park), a neighborhood-specific initiative (Railroad Park), a standalone park (Mill River Park), or otherwise.

2. **Monitor the Implementation of the Plan and Revise If Necessary**
   The metrics referenced throughout the case studies and the research methods outlined for Safe Harbors Green provide a useful introduction to quantifying and articulating the value of a range of park-based environmental, social, and economic outcomes. As many of the case studies demonstrate, success breeds success. What began as a volunteer-driven playground construction project at Mill River Park turned into a multi-phase, multi-million dollar project that will eventually connect to a citywide greenway.

3. **Enhance Pre-existing Amenities**
   Renaissance Park and Railroad Park honor each site’s historical significance as a means for catapulting into the future by providing educational signage and other methods for attracting tourists and piquing curiosity of long-time residents alike. Through the Mill River Park dam removal as well as Long Dock Park’s soil remediation and kayak launch creation, the once environmentally degraded sites are now newfound places for recreation and habitat restoration.

4. **Regulatory Compliance = Opportunity**
   The stormwater management provided by the green infrastructure and other sustainable features throughout Railroad Park enables the site to comply with the Environmental Protection Agency’s citywide regulations for its CSO system. While this case study has the strongest direct tie to environmental regulatory compliance, all featured projects, including Safe Harbors Green, serve to either minimize the impact on the city’s CSO system or otherwise provide much-needed stormwater management and other environmental benefits, which often come at a cost savings.

5. **Context is Everything - Until It’s Redefined**
   Successful open space development is a delicate balance between being sensitive to the surrounding context and having the foresight to make the interventions that will significantly improve the site’s overall function. Such changes can take the form of
grading soil, dam removal, new plant palettes, reorienting towards a waterway, leveling an industrial site, and more.

6. At Any Given Time, There Should Be Ten Things To Do
Borrowing from the philosophy of Project for Public Spaces Founder and President, Fred Kent, truly vital and engaging parks should be host to no less than ten activities for a passerby at any given time. This principle should not be misinterpreted to be a prescription for heavily programmed spaces, but rather, to have a healthy mix of programmed, passive, and active recreation opportunities alike, such as Riverfront Park where one might: watch a concert, learn about the environment, kayak, run, lay on the grass, ride a bike, do yoga, read a book, make a new friend, or walk their dog.

7. Waterfront Reorientation Spurs Economic Development
With Renaissance Park’s documented 10:1 ratio of commercial development, it’s hard to argue with the economic impact that reorienting one’s city towards the water can have, especially for sites that were formerly reserved for industrial uses and now serve as the nexus of recreation, tourism, commerce, and/or residential development.

This principle is the story of Safe Harbors Green, the site of which for years has anchored the community’s arts festivals, races, community days, and more. Safe Harbors of the Hudson aims to complete the majority of park construction through volunteers and donated materials. Another example is Mill River Park, whose playground-to multiphase park and civic center development was referenced in principle two.

9. Connectivity is Key: Greenways, Bike Lanes, Sidewalks
Plain and simple, the more connected a city’s open spaces and bike/pedestrian-friendly pathways, the more physically active and socially connected a community will be. Such developments can also provide significant environmental benefits through stormwater management, as well as economic benefits through visitor spending and property value increases.

10. Historically or Culturally Significant Spaces Can Be Important Tourist Destinations
Post-industrial cities are historic gems. Each one possesses its own story to tell of creation, boom, bust, and regeneration. Some played significant roles in various wars, some were the birthplace of the civil rights movement, and still others have artistic or environmental draws.

Recognizing that many of the principles outlined above borrow from medium-sized post-industrial cities rather than small cities where resources, processes and dynamics may be different, it was determined that conducting a Strengths Weaknesses Opportunities and Threats
(SWOT) analysis would help highlight the key challenges as well as benefits to small, post-industrial cities implementing their own high-performing park developments:

**Strengths**
- Faster rate of change in zoning laws
- A clearly defined identity and/or rich history
- In small places with less concurrent activity, success is more visible
- Presumably smaller governing body → more expedient community engagement process
- Residents, business owners, other stakeholders have long-term investment in community

**Weaknesses**
- Lack of funding
- Change-averse culture
- Lack of quantified precedents
- High property taxes due to weak economic basis
- Lack of resources → can limit long-term strategic thinking
- Faster rate of change in zoning laws (can be detrimental as well as positive)

**Opportunities**
- Social capital
- Town/gown collaborations
- Vacant parcels → future open green space
- Funders are investing in post-industrial cities
- Sparking a trend reversal: graduates returning to small cities/hometowns
- Major city property value increases → demand for small, walkable, urban places

**Threats**
- The stripping of federal and state funding
- Gentrification and pricing out long-term residents
- Perception: grey infrastructure > green infrastructure
- Cost, skill, and consistency required for maintenance and programming of the site
- Public-private partnerships that do not represent/advocate for the public sufficiently
Recommendations: A Value Proposition for Newburgh

The key opportunities that open space developments such as Safe Harbors Green afford to Newburgh encompass the many economic, environmental, and social outcomes outlined earlier in this paper, including: property value increases and business growth; stormwater management and habitat restoration; improved safety, physical and mental wellness for residents; and bike/pedestrian/transit-oriented connectivity. Less quantifiable, but no less important, these types of developments can provide a huge boost to general community quality of life.

In order to maximize the benefits resulting from the creation of Safe Harbors Green and other existing and future open space developments in Newburgh, including the development of a connected network of parks and other green spaces throughout the city, the following strategies should be implemented:

Make a Parks and Green Infrastructure Master Plan
Between the pre-existing and future possibilities for open space development along the Hudson River, as well as the growing support for Quassaick Creek-oriented trails, the expansion of the Downing Park greenhouse efforts and the construction of Safe Harbors Green, the City of Newburgh would benefit from developing a long-term strategy for creating green space and prioritizing based on which investments will produce the greatest environmental, social, and economic benefits. Given the city’s CSO system, it stands to tremendously benefit from an emerald necklace of green infrastructure that will provide much-needed stormwater management at a significantly lower cost than replacing the city’s aging sewer pipes.

Update Zoning to Reflect Development Potential
Current zoning should be updated to encourage commercial and residential development in areas that have historically served industrial purposes. Tied to the development approval should be required contributions to the construction and/or maintenance of the park, similar to New York City’s privately owned public spaces (POPS) which permit increased density in exchange for the development and management of public spaces, which are often parks.

Establish Environmental, Social, and Economic Baselines
Recommendations for establishing environmental, social, and economic baselines have been outlined in the Safe Harbors Green chapter of this paper. Gathering this information
as soon as possible (even if construction has already begun) is critical in order to demonstrate the future benefits that will inevitably result from the park’s development.

**Track the Triple Bottom Line Impacts of Safe Harbors Green**

Guidelines for tracking the triple bottom line post-occupancy performance of Safe Harbors Green has also been provided. Safe Harbors of the Hudson or other entities undergoing this research should be sure to think critically about what information will serve most useful in advocating for improvements upon the site, as well as for an expanded city-wide green infrastructure or parks strategy. Given the currently high crime and unemployment rates in Newburgh, tracking the safety and economic development-based benefits resulting from the park development will be of great value.

**Convert Vacant Lots into Temporary or Permanent Green Spaces**

In recent years, the Newburgh Community Land Bank was created in order to combat blight and vacancy throughout the city. The Land Bank should be folded into the Newburgh Planning Department’s strategy for park and/or green infrastructure development, utilizing vacant lots for temporary or permanent green spaces- and pointing to Safe Harbors Green as one such precedent.

**Take Advantage of Funding and Technical Assistance Opportunities**

As population rates in large, expensive global gateway cities stabilize, regional, national, and even international funders are beginning to take notice of smaller cities with growing opportunities for housing those seeking more affordable, livable communities. Organizations such as Smart Growth America, American Planning Association, Rockefeller 100 Resilient Cities, Project for Public Spaces, ArtPlace, the National Endowment for the Arts, and more provide technical assistance and/or funding to help underfunded cities with great growth potential to improve their infrastructure, resilience, sense of place, and tools for marketing themselves as the next great place to relocate.

**Next Steps in Research**

Following the completion of this paper, the author aims to share key research findings during an upcoming Newburgh City Council meeting. Building upon the five previously held Newburgh Community Conversations, a charrette will also be held and all Newburgh community members will be encouraged to attend, during which time lessons learned from the five case studies will be discussed and utilized to spur further ideas for how to customize such models to fit Newburgh’s own objectives, needs, and circumstances. On an on-going basis, the author will advise Safe Harbors of the Hudson staff and the Safe Harbors Green design team on metrics and methods for evaluating the environmental, social, and economic performance of the site,
including the importance of documenting the “before” conditions. As data is collected over time, the results will be analyzed at a site, neighborhood and/or city-scale and used as advocacy tools for encouraging further complete streets and open space developments or improvements. Finally, continued national research for compiling case studies of small, post-industrial city parks will be conducted on an ongoing basis, perhaps one day taking the shape of a PhD thesis.
Conclusion: Broadening the Parks Agenda to Small Cities

While the demonstrated value of park investment in global gateway cities has never had a stronger case, major research and documentation gaps remain for small, post-industrial cities. The findings in this paper advance this realm of research by synthesizing the economic, environmental, and social quantified outcomes of five best practices in post-industrial city park development. Further research must be conducted in order to illustrate the outcomes of projects like the one proposed for Newburgh, and to track the experiences of small cities with open space and green infrastructure master planning efforts still in their infancy.

As the highlighted economic work by the Trust for Public Land, the environmentally beneficial case studies of the Landscape Architecture Foundation and the American Planning Association, and the mental health research conducted by Wolf and Gies clearly demonstrate, well-designed and managed, high-performing parks and greater park networks provide a range of value propositions for the post-industrial city, and many other city and community typologies. Reports referenced throughout this thesis have paved the way for research conducted on the value proposition for city parks, but there is still so much that remains to be done, including in small, post-industrial cities.

Community leaders and planners of cities and towns, in urban as well as rural environments, must begin documenting their own efforts in order to expand the collective evidence that parks are economically, environmentally, and socially catalytic. Planners, designers, and community members everywhere must vigilantly advocate for parks that encourage social cohesion, improve mental and physical health, and protect the environment. As this paper has demonstrated, such investments can attract businesses, which provide more jobs.
and bolster tax revenues which further support public investments, including schools, libraries, and even the topic of this very paper: parks.
Appendix A: Incorporated Places

Table 1: Incorporated Places by Size 2000-2013

<table>
<thead>
<tr>
<th>Population size category</th>
<th>Number of incorporated places</th>
<th>Population</th>
<th>Percent of United States total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>All incorporated places</td>
<td>19,454</td>
<td>19,541</td>
<td>19,508</td>
</tr>
<tr>
<td>1,000,000 or more</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>500,000 to 999,999</td>
<td>20</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>250,000 to 499,999</td>
<td>28</td>
<td>41</td>
<td>43</td>
</tr>
<tr>
<td>100,000 to 249,999</td>
<td>173</td>
<td>200</td>
<td>216</td>
</tr>
<tr>
<td>50,000 to 99,999</td>
<td>383</td>
<td>432</td>
<td>450</td>
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<tr>
<td>25,000 to 49,999</td>
<td>644</td>
<td>723</td>
<td>718</td>
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<tr>
<td>10,000 to 24,999</td>
<td>1,435</td>
<td>1,542</td>
<td>1,533</td>
</tr>
<tr>
<td>Less than 10,000</td>
<td>16,772</td>
<td>16,576</td>
<td>16,494</td>
</tr>
</tbody>
</table>

1 The number of incorporated places is as of January 1 of the calendar year. The numbers of incorporated places for the census years 2000 and 2010 include places with inactive governments that are not included in the population estimates for 2013. There were 24 inactive incorporated places in 2010. These 24 places had a combined 2010 census population of 2,904.

## Appendix B: Case Study Matrix

Table 2: Case Study Matrix

<table>
<thead>
<tr>
<th>CASE STUDIES &amp; BENEFITS/DETAILS</th>
<th>Long Dock</th>
<th>Mill River</th>
<th>Railroad</th>
<th>Renaissance</th>
<th>Riverfront</th>
<th>Safe Harbors Green</th>
</tr>
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<tbody>
<tr>
<td><strong>ECONOMIC</strong></td>
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<td>Property Value</td>
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<td>Operations &amp; Maintenance Savings</td>
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<td>Commercial Development</td>
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<td>Visitor Spending</td>
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<td>Job Creation</td>
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<td>Space Rental</td>
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<td>Tourism</td>
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<td>Temperature</td>
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<td>Flood Prevention</td>
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<td><strong>SOCIAL</strong></td>
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<td>Equity &amp; Cohesion</td>
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<td>Recreation</td>
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<td><strong>PROJECT TYPE</strong></td>
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<tr>
<td>Waterfront; Rail Trail</td>
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<tr>
<td>Park; Greenway</td>
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<tr>
<td><strong>PROJECT SIZE</strong></td>
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<td>28 acres/ 3 miles</td>
<td>19 acres</td>
<td>22 acres</td>
<td>19 acres</td>
<td>1 acre</td>
</tr>
<tr>
<td><strong>DESIGNER</strong></td>
<td>Reed Hilderbrand</td>
<td>OLIN</td>
<td>Tom Leader</td>
<td>Hargreaves Associates</td>
<td>Lee Weintraub</td>
<td>One Nature</td>
</tr>
<tr>
<td><strong>AWARDS</strong></td>
<td>ASLA</td>
<td>ASLA</td>
<td>ULI</td>
<td>Governor’s Award</td>
<td>EPA Smart Growth</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>POPULATION</strong></td>
<td>Beacon, NY 14,389</td>
<td>Stamford, CT 126,456</td>
<td>Birmingham, AL 212,313</td>
<td>Chattanooga, TN 173,366</td>
<td>Newark, NJ 278,427</td>
<td>Newburgh, NY 28,480</td>
</tr>
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</table>
Appendix C: Interview Matrix

Table 3: Interview Matrix

<table>
<thead>
<tr>
<th>Entity</th>
<th>Position</th>
<th>First Name</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newburgh Office of Planning &amp; Economic Development</td>
<td>City Planner</td>
<td>Alexandra</td>
<td>Church</td>
</tr>
<tr>
<td>One Nature LLC (Newburgh park landscape design firm)</td>
<td>Landscape Designer</td>
<td>Bryan</td>
<td>Quinn</td>
</tr>
<tr>
<td>Mill River Collaborative</td>
<td>Development &amp; Membership Coordinator</td>
<td>Emily</td>
<td>Rosenthal</td>
</tr>
<tr>
<td>Urban Land Institute (formerly)</td>
<td>Creator of Burden Prize; co-author of &quot;Urban Parks&quot;</td>
<td>Gayle</td>
<td>Berens</td>
</tr>
<tr>
<td>Safe Harbors of the Hudson</td>
<td>Board Member</td>
<td>Hannah</td>
<td>Brooks</td>
</tr>
<tr>
<td>Safe Harbors of the Hudson</td>
<td>Executive Director</td>
<td>Lisa</td>
<td>Silverstone</td>
</tr>
<tr>
<td>Trust for Public Land</td>
<td>Director: Center for City Park Excellence</td>
<td>Peter</td>
<td>Harnik</td>
</tr>
<tr>
<td>Newburgh Planning Board</td>
<td>Member</td>
<td>Peter</td>
<td>Smith</td>
</tr>
<tr>
<td>Kathy Blaha Consulting</td>
<td>President</td>
<td>Kathy</td>
<td>Blaha</td>
</tr>
</tbody>
</table>

Source: Arianna Koudounas
Appendix D: Case Study Questionnaire

Figure 42: Case Study Questionnaire

Case Study Questionnaire

- Under what circumstances was this park conceptualized/envisioned?
  - Who were the key actors who made it happen?

- What were the main objectives of this park?
  - Overall
  - Environmental
  - Social
  - Economic

- Were there environmental regulations or other city-wide/state/regional/national policies that influenced some design choices made?

- Following the previous question’s sub-questions/specifications, what were the main outcomes of this park?
  - Environmental
  - Social
  - Economic

- How was the land for the park acquired/financed?

- How was the design of the park:
  - Conceptualized
  - Funded
  - Implemented

- How was the programming of the park:
  - Conceptualized
  - Funded
  - Implemented

- How was the maintenance of the park:
  - Conceptualized
  - Funded
  - Implemented

Source: Arianna Koudounas
## Appendix E: Case Study Questionnaire Matrix

Table 4: Case Study Questionnaire Matrix

<table>
<thead>
<tr>
<th>1) Park</th>
<th>2) Entity Representing</th>
<th>Position</th>
<th>First Name</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Dock Park</td>
<td>Scenic Hudson</td>
<td>Senior Park Planner</td>
<td>Meg</td>
<td>Rasmussen</td>
</tr>
<tr>
<td>Mill River Park</td>
<td>Mill River Collaborative</td>
<td>Development &amp; Membership Coordinator</td>
<td>Emily</td>
<td>Rosenthal</td>
</tr>
<tr>
<td>Renaissance Park</td>
<td>Benwood Foundation</td>
<td>Program Officer</td>
<td>Jeff</td>
<td>Pfitzer</td>
</tr>
<tr>
<td>Safe Harbors Green</td>
<td>One Nature LLC</td>
<td>Landscape Designer</td>
<td>Bryan</td>
<td>Quinn</td>
</tr>
<tr>
<td>Safe Harbors Green</td>
<td></td>
<td>Executive Director</td>
<td>Lisa</td>
<td>Silverstone</td>
</tr>
<tr>
<td>Safe Harbors Green</td>
<td></td>
<td>Landscape Designer</td>
<td>Bryan</td>
<td>Quinn</td>
</tr>
</tbody>
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Source: Arianna Koudounas
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