Preserving New Jersey's Industrial Heritage: A Business Feasibility Study Assessing the Restoration and Reuse of the Hackensack Water Works

Cristina Baldor
Noah Branman
Randi Chmielewski
Ziwei Song
David Strungis

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New York University
Robert F. Wagner Graduate School of Public Service
295 Lafayette Street
New York, New York 10012

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Abstract

Recognized by the National Trust for Historic Preservation as one of the eleven most endangered historic places in the United States, the Hackensack Water Works is a monument to New Jersey's industrial past. Since its donation to Bergen County in 1993, the site has languished in a state of abandonment and disrepair due to a lack of funding and common vision for the site. The Rutgers University Center for Urban Environmental Sustainability, through interactions with government representatives and public stakeholders, has identified the creation of a business feasibility study as a crucial next step toward the restoration of the historic water works. This study will include an examination of comparable projects, an analysis of supply and demand conditions in Bergen County, a financial model for potential cash flows given specific assumptions, and recommendations for a possible nonprofit entity to engage in public-private partnership with Bergen County.

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EXECUTIVE SUMMARY

The Hackensack Water Works was a cutting edge facility when it began operations in 1882 on Van Buskirk Island in Bergen County, New Jersey. The site pioneered numerous water treatment technologies that facilitated the development of northern New Jersey and much of the northeast region. In 1993, the property was retired by the Hackensack Water Company and donated to the County of Bergen. Since that time, stakeholders have debated how best to reuse the Water Works' historic buildings and Van Buskirk Island property.

In September 2011, the Center for Urban Environmental Sustainability (CUES) at Rutgers University recruited a capstone team from New York University's Robert. F. Wagner Graduate School of Public Service to conduct a business feasibility study exploring redevelopment strategies for the Hackensack Water Works. The Wagner capstone process is designed to be learning in action and is part of Wagner's core curriculum. It is intended to provide students with both a critical learning experience and an opportunity to perform a public service. This capstone team consists of students pursuing master's degrees in public administration with specializations in both finance and nonprofit management. Over the course of the academic year, the capstone team has taken the initial assignment from CUES, developed a research plan, collected and analyzed data from numerous sources, looked at comparable projects, and produced this final report.

This analysis provided several key findings:

The scope and scale of the restoration will determine the initial upfront costs and options for financing. Larger restoration scopes will incur significant upfront costs and will likely require other project partners or sources of funding to be completed. Smaller restoration scopes, on the other hand, have lower capital costs and could be accomplished with private donations and government grants from a combination of federal, state, and local sources.

A rent paying tenant(s) could offset the costs of routine maintenance giving the project a degree of sustainability. In each of the pro forma models, all post-construction cash flows are positive. The potential income -- market rent less vacancy -- exceeds the estimates for routine maintenance. Each scope has a break-even occupancy of 52%, which means that the vacancy rate can be as high as 48% before the project runs an annual deficit.

The model is only as good as the assumptions used. It is unclear who the prospective tenants would be or if a large institutional use can be found. In addition, the pro forma analysis is based on estimated data only. The true costs of the project will not be revealed until a detailed scope of work is created at a later date. Also, the pro forma analysis is unable to capture the intangible and hard to quantify outcomes, such as those of additional open space, historic preservation and economic benefits.

Comparable projects offer useful insights on historic restoration efforts. For instance, Philadelphia's Fairmount Water Works provide useful lessons about the importance of public sector leadership and assessing community needs. New York City's High Line shows the challenge of converting an industrial space into a public amenity and the necessity of creating of a strong nonprofit organization. Both of these projects show that restoration can be a lengthy

process, sometimes taking decades until completion, and require persistence and creativity when pursuing funding.

A new nonprofit organization is crucial to helping move this project forward. Public-private partnerships allow for the sharing of the project's risks and rewards, utilize the strengths of each partner, and offset any weaknesses. Potential benefits of a nonprofit partner for the Hackensack Water Works include its ability to generate information, hold community meetings, allow citizens input and participation, raise funds, and manage the property.

Recommendation: Start small, remove barriers to progress, and build momentum for the future. The most critical elements for the Water Works are the stabilization and protection of the buildings and the activation of the site. With this accomplished, Water Works advocates can build a base of support from which to push and rally for greater restoration in the future. This strategy is akin to hammering in a nail. After the initial breakthrough, the rest can follow smoothly.

The recommendation focuses on three areas: the restoration scope, the nonprofit organization, and the written agreement.

Restoration Scope: The capstone team looked at four possible scopes which illustrate the potential costs and trade-offs within the project. The analysis can be thought of in two pieces: First, the upfront capital costs which take place as the buildings are restored, and second, the cash flows which take place after the building is occupied. The primary inflow for the project is rent which is set at the market rate and each restoration model assumes a rent paying tenant(s). This is included in the model in order to give the project self-sufficiency. The primary outflow is the routine maintenance costs. The pro forma also includes an analysis of the discounted cash flows which shows all future cash flows in their present value.

Based on this analysis, the team believes that a limited restoration scope is the most feasible option for going forward and would create high community value at a low cost. In this scope, a small space could be made available for lease and another area could be minimally restored to allow for guided tours. One possible use for this space is a Water Works museum. A museum would celebrate the industrial heritage of Bergen County, and be a valuable cultural and community amenity. A limited restoration scope not only provides for the stabilization and protection of the buildings and the activation of the site, it has the lowest capital and ongoing maintenance costs, parking needs are minimal, and the restoration could be funded in large part through government grants and private donations. As a result, this scope does not have to wait until a major institutional use is found; it can happen now. Finally, this scope can be seen as the first phase of a much larger initiative. As community support is built and funds are raised, greater restoration could happen in the future.

Nonprofit: A nonprofit organization would be a vehicle for adding renewed energy and funding for the Hackensack Water Works restoration project. Although the composition of the board will become clearer as the process continues, a number of stakeholders have already been identified including Bergen County, the boroughs of Oradell and New Milford, CUES, and environmental and historic preservation-oriented organizations. Other parties to potentially include are

community members from adjacent neighborhoods, potential donors and grantors, and representatives of the chamber of commerce or the business community.

The role of the nonprofit should reflect the scope of the restoration. Based on the recommended scope, the most essential roles for the organization are as assistance provider and catalyst. As an assistance provider, the organization would raise awareness about the Water Works, organize volunteers, and program activities. In the catalyst role, they would build increased organizational capacity and community support for further restoration.

The activities of the organization should be closely tied to its role. Three are critical: programming, marketing and outreach, and fundraising. The nonprofit would be a tenant of the building, operate a Water Works museum, provide programming, engage the community, and raise operating and capital funds.

The roles and activities of the nonprofit may change and evolve over time to meet new needs, but the capstone team believes that these are the most appropriate at the outset.

Written agreement: The written agreement is the cornerstone of the partnership between the nonprofit and the public sector. A strong partnership agreement must give each partner equal standing and define the independence of the nonprofit, particularly with regard to control of funds raised by the organization. The agreement will also detail the responsibilities for each partner and reflect mutual interests.

Conclusion

The goal of this research was to identify a productive, publicly beneficial reuse strategy that is financially sustainable over the long-term and that preserves the historic and environmental integrity of the property. Van Buskirk Island and the Hackensack Water Works are poised to become an important educational, environmental, historic and recreational amenity for Bergen County. This report should serve as a starting point for the restoration process. From here, the stakeholders can begin to coalesce around a single vision and take critical next steps, specifically conducting a detailed fundraising feasibility study and a formal business plan which combined will determine the capacity of the nonprofit.

SECTION 1: INTRODUCTION AND PROJECT DESCRIPTION

Introduction

This project explored the costs, concerns, and benefits associated with the restoration and reuse of the Hackensack Water Works in order to present recommendations for next steps in the redevelopment process. The capstone team did this by conducting a business feasibility study.

> "A business feasibility study can be defined as a controlled process for identifying problems and opportunities, determining objectives, describing situations, defining successful outcomes and assessing the range of costs and benefits associated with several alternatives for solving a problem. The business feasibility study is used to support the decision-making process based on a cost benefit analysis of the actual business or project viability. The feasibility study is conducted during the deliberation phase of the business development cycle prior to commencement of a formal business plan. It is an analytical tool that includes recommendations and limitations, which are utilized to assist the decision-makers when determining if the business concept is viable."[1]

This study is intended to provide a framework for discussion about how to repurpose the Hackensack Water Works in light of the competing constraints of history, financial capacity, long-term sustainability, and community interests.

Project Description

The capstone team was asked to provide a financial analysis of four options for restoration and reuse of the Hackensack Water Works. These options can be understood as either separate investment choices or iterative phases in a long-term project. When constructing and evaluating options, the team kept several key considerations in mind: financial costs for restoration and operation, economic trends that affect Bergen County, community standards of acceptable use as identified by CUES prior research, environmental issues (particularly flooding), legal restrictions, and political realities.

Research Process

The capstone team employed several research strategies during the course of the project. Team members interviewed representatives from Mark B. Thompson Associates, Bergen County Division of Open Space, Fairmount Water Works, Bergen County Economic Development Corporation, real estate professionals, and New York University faculty. The team also reviewed relevant literature, comparable projects, economic data, and historical documents, including prior research on community preferences, prior task force reports, and correspondence between Bergen County and the New Jersey Department of Environmental Protection Historic Preservation Office.

[1] Thompson, A.. *Business feasibility study outline*. N.p., 2005. Web. 2 May 2012.

SECTION 2: BACKGROUND

Project History

The Hackensack Water Works has been designated as one of the most endangered historic places in the United States.[2] *Possible uses for the site have been contemplated since its closure in 1990, but no use has been identified as both sustainable and amenable to the community's needs.*

The historic Hackensack Water Works is located on Van Buskirk Island, located on the boundary of the boroughs of Oradell and New Milford. In 1882, the Hackensack Water Works, a water treatment plant owned and operated by the Hackensack Water Company (now known as United Water), opened on Van Buskirk Island. The Water Works supplied clean drinking water to Bergen County until 1990, when the company completed the transition of all filtration activities to its Haworth, New Jersey facility, built in 1964.

At the time the Water Works ceased operations, the Hackensack Water Company was exploring redevelopment options such as housing for underutilized property assets including Van Buskirk Island. However, local Bergen County residents were strongly opposed to the idea of Van Buskirk Island transitioning to a residential or commercial use. The community desired to see the historic character of the property preserved and was concerned about the potential exacerbation of existing flooding issues in the area.

In light of community concerns, the Hackensack Water Company approached Bergen County in May 1991 and proposed donating the property for use as a public park. The company envisioned the Water Works as a destination stop along a larger Hackensack River Walkway project.

Bergen County appointed a Donation Task Force to evaluate the anticipated costs and benefits of accepting the property. After a deliberative process, the Board of Chosen Freeholders voted to accept the property for two primary reasons: Van Buskirk Island would become a valuable public asset and officials were excited by the vision of the Water Works as a stop along the Hackensack River Walkway.

Van Buskirk Island and the Hackensack Water Works were legally transferred to Bergen County for one dollar on December 21, 1993. In accepting the property donation, the county agreed to the following special use deed restriction:

> "The Grantee, its grantees, transferees, lessees, successors and assigns, covenant and agree that the Land shall be permanently and irrevocably restricted and dedicated to governmental and/or public benefit uses and for no other uses or purposes. Such permitted uses may include parks, museums, nature trails, government offices or institutions, public recreational and conservation uses, publicly or privately sponsored activities for the public benefit, public or privately sponsored, financed or regulated low-income or low-cost housing, public parking,

[2] "Hackensack Water Works." *11 Most Endangered Historic Places*. National Trust for Historic Preservation, n.d. Web. 30 Apr 2012.

hiking, or any other use whose principal objective is to promote the public benefit and the health, safety and general welfare of the community."[3]

To supplement the property donation, the Hackensack Water Company agreed to provide an additional cash donation of $1.1 million to help maintain the Water Works buildings while a reuse plan was created -- the estimated timeline for implementing a reuse plan was 3-5 years. Alternatively, the funds could be used to cover the cost of demolishing the buildings as part of a larger park design. However, for the next several years, no single reuse plan could be agreed upon by the stakeholders involved.

In 2001, the Hackensack Water Works was added to the New Jersey Register of Historic Places, and later the National Historic Register.[4] In 2002, the site was recognized by the National Trust for Historic Preservation as one of the 11 most endangered sites in the United States. The Hackensack Water Works site is considered historically significant because of "its role in the development of water purification through a carbon filtration system enabling delivery of untainted water to cities and towns across the country. The machinery, intact and spanning a period of over one hundred years, documents key developments of the Industrial Revolution, particularly the evolution from steam to electricity."[5]

Thirteen acres of the Van Buskirk Island Property are listed on the New Jersey and National Registers, and of those 4.2 acres are occupied by buildings and structures. The period of historic significance identified for the Water Works is 1882-1914 for New Jersey and 1882-1931 nationally; all buildings and structures which predate 1914/1931 and contribute to the historic character of the complex must be preserved. Structures identified by the state as requiring preservation include: the Pump House, Filtration Plant, the stacks, and the smaller Gate House associated with the Sedimentation and Coagulation Basin, and the immediate yard around these buildings as they might have existed in 1912.[6]

Since accepting the Van Buskirk Island donation nearly 2 decades ago, Bergen County has explored a range of redevelopment options including:

- Senior public housing (Borough of Oradell) (1995)
- Westlock Controls Corp. office space and manufacturing facility (1995)
- PENWAL Affordable Housing Corp. proposal for affordable senior housing and retail, including a supermarket (1996)
- Pyramid Const. Co. garden apartment proposal (1996)
- Hackensack Estuaries and River Tenders nature preserve and Pump House preservation proposal (1996)
- G. Heller Enterprises senior housing and multi-family unit proposal (1996)
- Oradell Arts and Business Coalition and Regan Development Corp. proposal for senior housing, assisted living, site restoration, and non-profit education center (1996)

[3] DeCandia, Anthony. Bergen County. *Hackensack Water Company Bargain and Sale Deed*. 1993.
[4] "Hackensack Water Works." *11 Most Endangered Historic Places*. National Trust for Historic Preservation, n.d. Web. 30 Apr 2012.
[5] Campbell, Bradley M.. "Letter to Bergen County Executive Dennis McNerney." June 20, 2003.
[6] New Jersey. Historic Sites Council. *Resolution 2002-626*. 2002. and Bergen County, New Jersey. Hackensack Water Works Task Force. *Final Report*. 1998.

- Korean church (1996)
- Oradell redevelopment plan (1996)
- Public-Private partnership proposal for restoration and operation by Bergen County, Borough of Oradell, and the private Water Works Conservancy (2000)
- Walled Garden (2001): a park concept where the Water Works' buildings would have their roofs removed, allowing water to naturally move through the full property. [7]

A more in-depth site donation timeline, with redevelopment proposal information, is included in the additional digital resources attached to this report.

While a community consensus has not yet been achieved, there is strong support for the historic preservation and adaptive reuse of the Hackensack Water Works and Van Buskirk Island within the local communities, county and state. However, this support is counterbalanced by financial constraints, diverse community preferences, and significant environmental concerns – including a history of severe flooding issues.

Rutgers University's Center for Urban Environmental Sustainability (CUES), led by faculty members Dr. Beth Ravit and Dr. Wolfram Hoefer, has been working with Bergen County and other project stakeholders to develop a new vision for Van Buskirk Island and the Hackensack Water Works. To date, CUES has led four community visioning and design charrettes, and have identified potential uses for the historic buildings in partnership with the local community members and the county's architectural consultant, Mark B. Thompson Associates. This business feasibility study is intended to supplement the *Vision for Van Buskirk Island County Park* published by CUES in 2009, and to provide a framework for future stakeholders discussions.

[7] This proposal was rejected by the New Jersey Historic Sites Council for not meeting minimum preservation requirement associated with the site's listing on the New Jersey Register of Historic Places by concerned community members.

SECTION 3: MARKET CONTEXT

Bergen County is one of the highest income counties in the United States, with increasing racial diversity and lower unemployment than the rest of the country. Visions of the site focus on mitigating environmental, traffic and parking issues and reactivating the site with the least impact on the surrounding community.

Economy and Demographics

Population

Bergen County is one of the most populous counties in the state of New Jersey with roughly 905,116 people, covering 70 municipalities. The county population grew by 20,998 people (2.4%) between 2000 and 2010 and its residents currently make up 10.3% of the state population. Population growth in Bergen County is projected to be much slower than in the rest of the state over the next 6 years. The New Jersey Department of Labor and Workplace Development's Division of Labor Market and Demographic Research currently estimates that the county will grow by only 0.6% through 2018.[8]

Racial diversity has increased in Bergen County over the last 10 years. In 2000, 78.4% of the population identified as white compared to 71.9% in 2010. Those of Hispanic or Latino origin now account for 16.1% of the population and were the fastest growing minority population in the county over this 10 year period.[9] Hispanics remain a smaller proportion of the population in Bergen than statewide, where they make up 17.7% of the population. Asian Americans are the largest minority group in Bergen County, making up 14.5% of its population, a much higher rate than the state's 8.3%. African-Americans account for 5.8% of Bergen's population, compared to 13.7% statewide.[10]

The median age for Bergen County is 41.1 years, higher than the statewide median of 39 years.[11] This is expected to increase as the 65+ age group is projected to see the largest growth through 2018, adding 14.7% in contrast to expected decreases for the 0-14 cohort (-11.7%) and 25-44 cohort (-4.7%).[12]

[8] New Jersey Department of Labor and Workforce Development. Division of Labor Market and Demographic Research. *Northern Regional Community Fact Book: Bergen County Edition*. 2012. Web. 1 May 2012.

[9] Ibid.

[10] US Bureau of the Census, *2010 Census of Population and Housing*, Prepared by the New Jersey Department of Labor and Workforce Development, Division of Labor Market & Demographic Research, May 2011. Web. 30 Apr 2012

[11] Ibid.

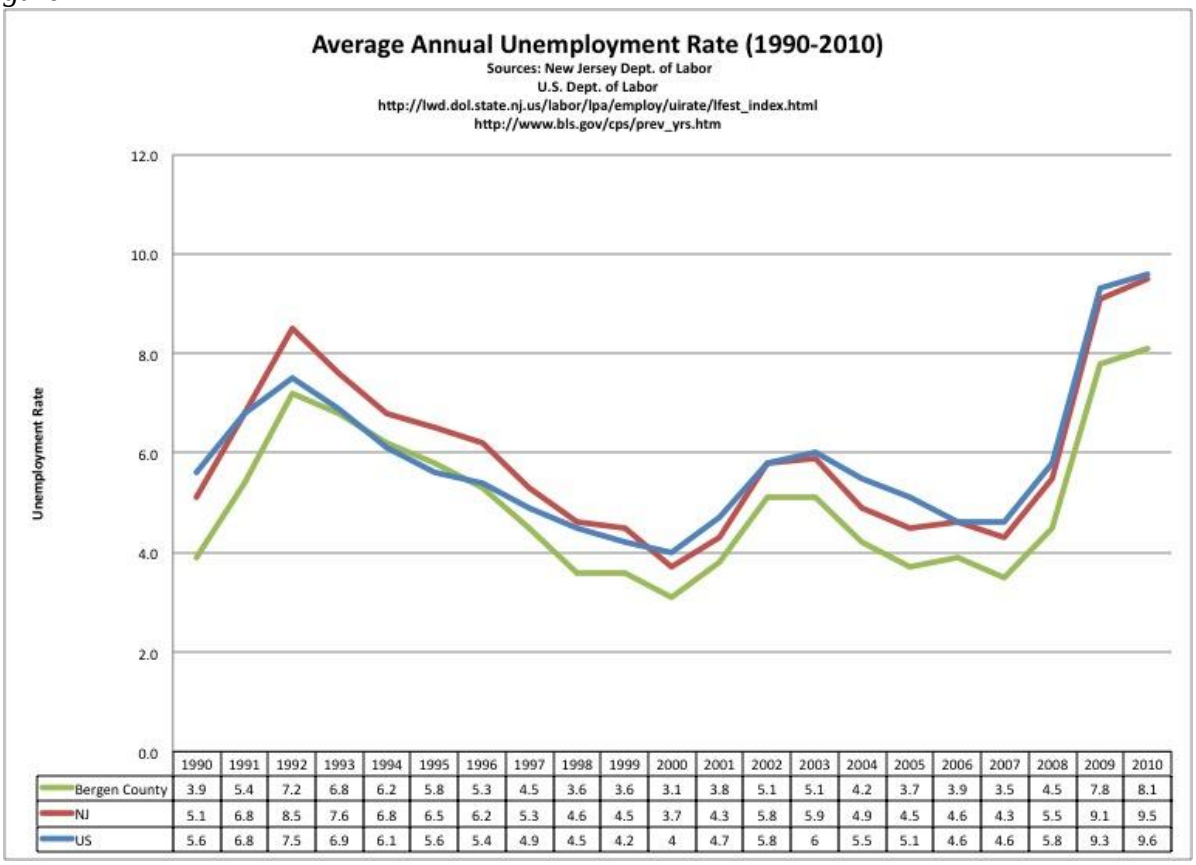
[12] New Jersey Department of Labor and Workforce Development. Division of Labor Market and Demographic Research. *Northern Regional Community Fact Book: Bergen County Edition*. 2012. Web. 1 May 2012.

Employment

In 2010, there were 375,391 private sector jobs located in Bergen County, 12% of statewide private sector employment. The recent recession had a significant impact on the Bergen County employment base. Both Bergen County and New Jersey lost jobs during the economic downturn. Private sector employment in Bergen County decreased 5.6% from 2005 to 2010. New Jersey saw a slightly lower decrease of 5.3% statewide. Between 2008 and 2009, 19,568 jobs were lost and unemployment increased from 3.4% in 2007 to 7.9% in 2009 -- below the state unemployment rate of 9.2%.[13] Despite employment losses in nearly every sector, some Bergen County industries were resilient. From 2004 to 2009, employment in education and health care services grew by 14.4%. Hospitality and leisure also increased by 6.6%.

Looking forward, the health care and social assistance job sector is expected to lead the county's employment growth through 2018, adding a projected 8,650 jobs (+12.9%). Accommodations and food services as well as the professional, scientific, and technical services sector are also expected to produce job growth during the period of 2008-2018. In contrast, the county's manufacturing job base is expected to decrease by 10,300 jobs (-27%) by 2018. Total growth is predicted to be 0.8%.[14]

Figure 1



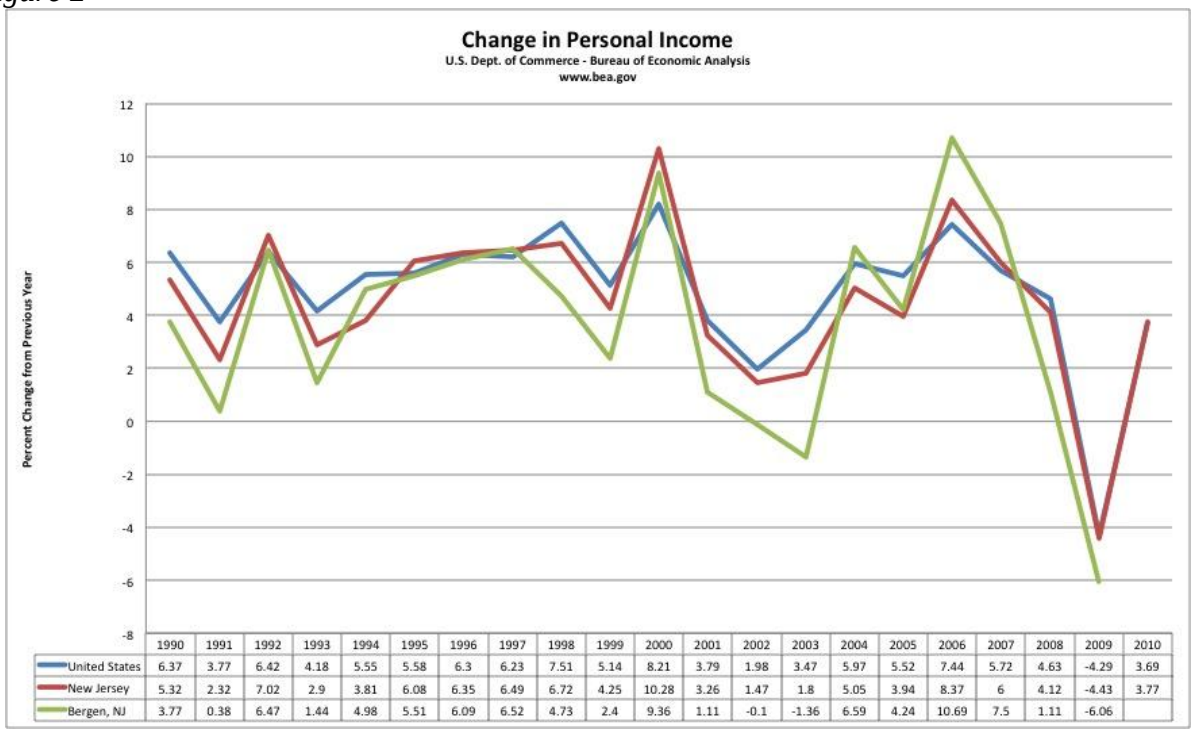
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bergen County	3.9	5.4	7.2	6.8	6.2	5.8	5.3	4.5	3.6	3.6	3.1	3.8	5.1	5.1	4.2	3.7	3.9	3.5	4.5	7.8	8.1
NJ	5.1	6.8	8.5	7.6	6.8	6.5	6.2	5.3	4.6	4.5	3.7	4.3	5.8	5.9	4.9	4.5	4.6	4.3	5.5	9.1	9.5
US	5.6	6.8	7.5	6.9	6.1	5.6	5.4	4.9	4.5	4.2	4	4.7	5.8	6	5.5	5.1	4.6	4.6	5.8	9.3	9.6

[13] Ibid.
[14] Ibid.

Wages

Due in part to their proximity to New York City, many Bergen County residents earn salaries above the national average. In 2009, the county was ranked the 16th wealthiest in America - with a per capita personal income of $67,125.[15] Despite this relative affluence, Bergen County has not been immune to the impact of the global recession, as demonstrated by Figure 2.

Figure 2



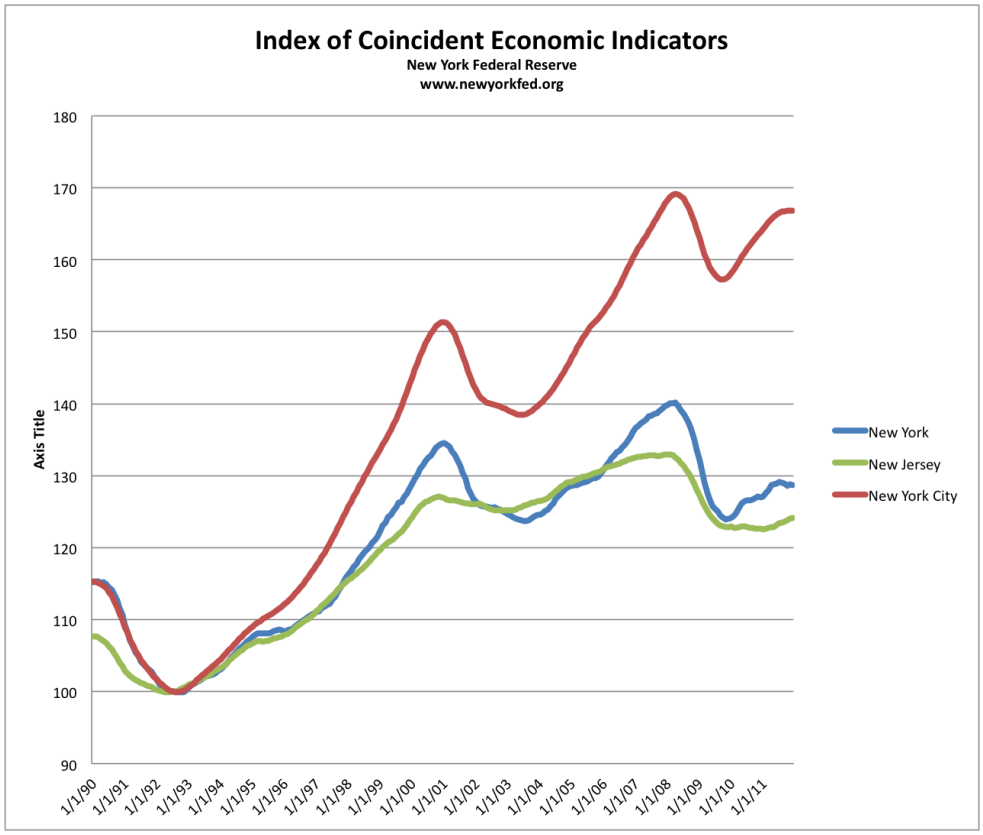
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
United States	6.37	3.77	6.42	4.18	5.55	5.58	6.3	6.23	7.51	5.14	8.21	3.79	1.98	3.47	5.97	5.52	7.44	5.72	4.63	-4.29	3.69
New Jersey	5.32	2.32	7.02	2.9	3.81	6.08	6.35	6.49	6.72	4.25	10.28	3.26	1.47	1.8	5.05	3.94	8.37	6	4.12	-4.43	3.77
Bergen, NJ	3.77	0.38	6.47	1.44	4.98	5.51	6.09	6.52	4.73	2.4	9.36	1.11	-0.1	-1.36	6.59	4.24	10.69	7.5	1.11	-6.06	

[15] Associated Press . "N.J. has four of nation's 20 highest-income counties." *New Jersey On-Line*. New Jersey On-Line LLC, 20 May 2009. Web. 30 Apr 2012.

Economy

Figure 3 provides a macro-level view of the economic health of the New York metropolitan region - comparing New Jersey, New York State, and New York City. This Index of Coincident Economic Indicators is computed by the Federal Reserve Bank of New York and is intended to be a summary of overall economic conditions. The index incorporates data such as earnings and unemployment rates. By this standard, New Jersey has not fared as well as the city or state of New York over the last 5 years.[16]

Figure 3



The economic context was a paramount concern when considering potential reuse strategies. The slow predicted growth rate for both population and labor market were considered particularly notable. These factors support the argument for a more limited restoration and reuse plan -- at least in the short-term.

[16] Federal Reserve Bank of New York. *Index of Coincident Economic Indicators*. 2012. Web. 1 May 2012.

Environmental Context

The 1992 Site Assessment Report prepared by TAMS Consultants, Inc. highlights four primary environmental issues that should be taken into consideration when exploring redevelopment options for Van Buskirk Island:[17]

1. Hydrology, Hydraulics and Water Quality -- The island is affected by three hydraulic regimes: Oradell Reservoir above Oradell Dam, the Pump House Intake Reservoir, and the lower Hackensack River. The end of operations for the Water Works has the potential to decrease water quality through the buildup of organic and silty materials and to reduce the intake reservoir's ecological and aesthetic value.
2. Flooding -- The island is predicted to experience flooding related to the Hackensack River at least once every ten years.
3. Vegetation, Wetlands, and Wildlife -- Undeveloped woodland areas are rare along the Hackensack River. This feature of the property holds unique aesthetic and environmental value for the local communities.
4. Regulatory Constraints - Van Buskirk Island may be restricted by state and federal environmental regulations such as the flood plain management program, wetlands protections, and coastal management programs.

Community Concerns

The environment, financial sustainability, historic preservation, and quality of life were chief concerns for the four key stakeholder groups involved in the redevelopment of Van Buskirk Island and the Hackensack Water Works.[18] Figure 4 summarizes the top concerns for each group and where overlapping values may be present. These concerns and priorities inform the recommendations outlined in later sections.

Figure 4

[17] Tams Consultants, Inc., . Bergen County, New Jersey. Hackensack Water Works Land Donation Task Force. *Site Assessment Report: Hackensack Water Compan'ys New Milford Pump and Filtration Station*. 1992. Print,

[18] Hoefer, Wolfram and Beth Ravit. "Hackensack Water Works at Oradell Charrette & Public Meeting." *Rutgers University Center for Urban Environmental Sustainability* . N.p., 14 Nov 2009. Web. 1 May 2012

SECTION 4: REAL ESTATE SUPPLY AND DEMAND ANALYSIS

Spaces in renovated buildings in the Water Works would likely be categorized as Class C office space. Bergen County market rents for such space are $19.40 per square foot, and vacancy rates are at 10%.

Office space is divided into three types: A, B, and C.[19] This designation is defined by a number of factors including quality of HVAC systems, proximity to amenities, site access, parking, floor load capacities, and nearby construction. Type A space is generally considered new, state-of-the-art space with excellent markings in all of these areas. It attracts top tenants and high rental rates. Type B spaces are older, but well maintained buildings. They sometimes have many of the same qualities as Type A spaces, but are often in need of greater investment. As a result, Type B spaces can attract rates somewhat comparable to Type A spaces. Finally, Type C spaces are lacking in each of the aforementioned categories. These spaces are often off the beaten path, and the buildings are older and typically in need of significant investment and renovation. Of the three office types, the Hackensack Water Works is most appropriately classified as Type C space.

Removing non-comparable office space from the analysis clarifies the demand picture considerably. In the third quarter of 2011, there was approximately 5,084,647 square feet of Type C inventory in Bergen County with an overall vacancy rate of 9.6%. The third quarter of 2011, the year-to-date overall net absorption was -43,660 sq.ft.. This indicates that the market is still shedding excess inventory, and suggests that the market is somewhere between the recovery and correction phase of the typical real estate market cycle. The direct average asking rental rate for Type C inventory was $19.40 a square foot, compared to $28.16 for Type A and $26.15 for Type B.[20] The sizable difference in rental rates highlights the importance of distinguishing between inventory types. The third quarter 2011 Type C asking rental rate will act as a baseline for the pro forma analysis.

[19] "A Guide to Office Building Classifications; Class A, Class B, Class C." *Square Feet Commercial Real Estate Blog*. N.p., 06 July 2008. Web. 30 Apr 2012.
[20] "New Jersey Office Market Third Quarter 2011 Office Market Report Statistical Summary Class C."*Research Services*. Cushman & Wakefield of New Jersey, Inc., 2011. Web. 30 Apr 2012.

SECTION 5: CURRENT CONDITIONS AND RENOVATION SCOPE

Current Conditions

The Hackensack Water Works was in marginal condition when deeded to the county, and conditions have worsened with lack of maintenance and frequent flooding in the area. It is estimated that a $3.5 million scope of work would prevent further damage to the buildings, and that a $400-$500 per square foot scope of work would rehabilitate the buildings to the point where tenants could begin fit out.

The Hackensack Water Works' buildings total nearly 75,000 square feet, or approximately one and a half football fields. The Water Works buildings are on average 100 years old, with most sections constructed between 1882 and 1912, and some extensions built in the 1930s and 1950s. The buildings are brick with brick and concrete foundations, slate roofs and wooden or steel superstructures. While some sections are heated, the buildings are not insulated and do not have any large scale heating, cooling or mechanical ventilation systems. Electricity was supplied to run some machinery, but there is minimal lighting in most of the spaces. Plumbing systems exist that formerly served kitchens, bathrooms and fire sprinklers.[21]

Combined with the structural deterioration to be expected with buildings of this age, the site's location in a floodplain and the lack of repairs and maintenance have left the buildings in a critical state of disrepair since its closure by the Water Works Company in 1990. The aforementioned assessment of the site by TAMS Consultants, Inc. found significant problems already existing with the buildings, especially with regards to water infiltration. The report noted rainwater leaking into the buildings and standing water on the roofs, instability in the brick walls due to settlement, thermal movement and water absorption, water damage to wooden decks, doors and windows, and the seepage of water through foundation walls.[22] Such conditions have likely worsened in the 20 year interim since the report was completed.

The main levels of the buildings are below the water table and require the continuous operation of sump pumps to keep out groundwater. After electricity stopped running to the site, the groundwater returned to its natural level inside the buildings, exacerbated by frequent and severe flooding in the area. The imminent collapse of the buildings' roofs and chimney-stacks has caused the need for fencing around the area to mitigate life safety hazards.[23]

Profiles of the two main buildings and their current conditions based on an assessment by architectural and planning firm Mark B. Thompson Associates PLLC ("MBTA") are below:

[21] Tams Consultants, Inc., V-6, V-8 - V-14
[22] Tams Consultants, Inc., V-5
[23] Thompson, Mark B, and Claire Donato. Telephone Interview. 11 Jan 2012.

Building 1 - The Pumping Station

Square Footage: 22,000
Conditions: Approximately 63% in good or fair condition, 37% in poor condition
Access: Several architecturally marked entrances around the perimeter of the building, at-grade
Equipment: Pumps, boilers, tanks, as well as historically significant traveling cranes and a Vertical Triple Expansion steam engine from the early 1900s
Flooding considerations: Entrances to the building are at-grade and allow for water to more easily enter the building

Building 2 - The Filtration Plant

Square Footage: 52,800
Conditions: Approximately 63% in good to fair condition and 37% in fair to poor condition
Access: One main entrance at the four-story, 5,000 square foot Head House, with a second entryway at the opposite end of the building, above-grade
Equipment: Pipe galleries, tanks and 20,000 square feet of filtration beds
Flooding considerations: Entrances to the building are above-grade, mitigating some flooding conditions, but rain water drains directly into the existing filtration beds and will have to be redirected in order to make the space usable

For further detail on condition of the site by section, see Appendix A.[24]

Stabilization and Protection
Before any work begins to restore sections of the Water Works for future development, initial work must take place to stabilize the buildings and ensure that no further deterioration occurs. The stabilization and protection phase addresses emergent structural issues that threaten the buildings and will lead to more costly repairs in the future if not mitigated immediately. The completion of this phase will also reduce safety concerns and allow for the removal of fencing and a partial reactivation of the site for community use.

This phase will include the mitigation of structural failures such as collapsed roofs and chimney stacks and the installation of temporary roofing where needed, the installation of doors and windows to ensure that the buildings are sealed, as well as some passive ventilation, and the removal of water currently flooding the lower levels and the operation of sump pumps to keep groundwater out of the buildings. This scope is estimated to cost approximately $3.5 million and will take 12 -16 months to complete.[25]

Infrastructure
This phase would permanently restore the buildings, or sections thereof, and complete work on interior systems and facades. After the completion of this scope, the buildings would be fully rehabilitated and tenants would have suitable spaces in which to begin customizing spaces to their needs.

[24] Mark B. Thompson Associates. Hackensack Water Works. *Charrette 2 -- Visioning for Sustainable Reuse: Reuse Attributes*. 2010.
[25] Thompson, Mark B, and Claire Donato. Telephone Interview. 11 Jan 2012.

The infrastructure phase will include the following work: permanent structural repairs including permanent roofing, masonry and exterior painting, limited landscaping work such as pathways to entrances, electrical work and lighting, mechanical ventilation in tenant spaces or a central mechanical plant to provide heat, ventilation and air-conditioning (HVAC), life safety code compliance work, such as the installation of exit signs, upgrades to door hardware and windows, emergency lighting for egress paths, disability access code compliance work, and interior work including the creation of safe level walking surfaces. Although conditions vary across buildings and spaces, the infrastructure phase is estimated to cost approximately $400 to $500 per square foot of rehabilitated space. The timeline for this phase is dependent upon the scope of the restoration and the areas selected for rehabilitation.[26]

Intermediate Infrastructure Scope

One scope described in the pro forma analysis (Scope 4) contemplates the completion of the full infrastructure rehabilitation on a portion of Building 1 and an intermediate infrastructure scope of work on other sections of the building. This intermediate infrastructure work would partially rehabilitate selected spaces to meet life safety standards and allow for guided tours through the site.

This work includes limited electrical work and lighting fixtures, life safety code compliance work, such as the installation of exit signs, upgrades to door hardware and windows, emergency lighting for egress paths, disability access code compliance work, and interior work including the creation of safe level walking surfaces.[27] It is estimated to cost approximately one-third of the full infrastructure cost per square foot. The timeline for this phase would be coterminous with any full infrastructure work.

Tenant Improvements and Fit-Out Costs

A third phase of construction would take place once tenants are identified for the buildings and begin fit-out to customize each space for their needs. Such improvements vary in cost depending on the needs of the tenant and the design they have selected for their space. The financing of such improvements is typically negotiated with the tenant and may take on the form of partial rent abatements. An allowance of $100 per square foot has been factored into the pro forma to account for this work, which would include subdividing walls, interior doors, painting, flooring and bathrooms.[28] The pro forma analysis below shows the full tenant improvement cost as a part of the initial investment needed in the site before any rents are collected.

Contingency

Estimates of capital repair and replacement costs and timing vary widely depending on the types of equipment and fixtures installed on the site. As the design for the space is not yet completed and such information is not available, the pro forma allows for an additional amount equal to 10% of the total renovation cost to be put aside as a contingency on the initial work and as a capital improvement reserve.

[26] Ibid.
[27] Ibid.
[28] Reichenstein, Robair. Telephone Interview. 03 Apr 2012.

Routine Maintenance

The buildings will incur annual expenses related to electrical and HVAC maintenance, electricity supply, cleaning and landscaping (limited to the area surrounding the building and not to the park itself), and the upkeep of life safety and security systems. Based on research with real estate professionals in the New York metropolitan region, a typical office space open five days a week during normal working hours (9am to 5pm) incurs annual maintenance costs of approximately $5 per square foot.[29] Assuming that a nonprofit education user would operate the site for longer hours, and to provide for the operation of sump pumps and other annual flood mitigation work, that estimate was doubled to $10 per square foot.

[29] Ibid.

SECTION 6: FINANCIAL ANALYSIS

Pro Forma

A pro forma analysis of upfront construction and ongoing maintenance costs was conducted for various rehabilitation scopes for the Hackensack Water Works, showing positive cash flows for years post-rehabilitation given current market rents and occupancy rates. Even with decreased rent and/or occupancy rates, the site could generate enough revenue to cover routine maintenance expenses.

Using the data and analysis from Sections 1 through 5, the capstone team conducted a pro forma analysis to examine the financial costs of the project. The pro forma analysis is an accounting tool used to assess the financial return of an investment or project. It models the expected return by making a variety of assumptions about a number of variables over a long-term time frame.[30] These variables include the rate of inflation and the expected rise of prices in the future, the expected cash flows from the project, the appropriate discount rate to value those cash flows in present day terms, and the value of the cash flow in perpetuity. Using these assumptions, the pro forma provides a sense of true cost and highlights trade-offs in the project's scope and scale.

Pro Forma Model

The pro forma model can be thought of in two sections. First, the upfront capital costs which take place in Year 0, the time period in which the buildings are restored. Second, the rental revenue and routine maintenance costs in Years 1 - 10 after the buildings are available for a tenant.

Year 0 costs consist of four components: stabilization and protection, infrastructure, tenant improvements, and a contingency fund. One scope (Scope 4) also includes intermediate infrastructure work. Each of these components are described in greater detail in Section 5. The stabilization and protection of the Water Works is estimated to cost $3.5 million and will be fully included in each scope. The model shows this number whole, however, some of this work is already underway and some of this money has already been spent.

The infrastructure work is estimated to cost an average of between $400 and $500 per square foot for both buildings. To create more conservative estimates, this figure is set at $475 per square foot in the model. The scale of the infrastructure work will drive the size of each restoration scope. After the stabilization and protection of the buildings, each of the four scopes contemplates a different level of infrastructure restoration. In addition, Scope 4 includes an area to be minimally restored (Building ID's 1G, 1A, 1C). The cost of the intermediate infrastructure work is estimated at approximately $142.50 per square foot, or one third of the cost of the full infrastructure work.

Tenant improvements are estimated at $100 per square foot.

[30] The model relies heavily upon the information ascertained in the supply and demand analysis and the interview with Mark B. Thompson and Associates. See the Appendix A for a full listing of all pro forma assumptions.

Finally, each scope includes a 10% contingency fund which adds an extra degree of conservatism to the model.

Years 1 through 10 show the annual cash flows from the project. The primary inflow for the project is rent, which is set at the market rate and each restoration model assumes a rent-paying tenant. This is included in the model in order to give the project self-sufficiency. The primary outflow is the routine maintenance costs. These costs are a function of the rentable area. The model assumes that after the stabilization and protection phase, any area not receiving the infrastructure improvements are sealed off until they can be restored at a later date. Therefore routine maintenance does not apply to these areas. Any work needed in these areas is considered remedial maintenance and is not factored into the model.

The pro forma also includes an analysis of the discounted cash flows. This analysis shows future cash flows in their present value.

Pro Forma Scope Descriptions
The capstone team created four pro forma scenarios, which assume various scopes for the project. The scopes are as follows:

Scope #1: This scenario envisions the restoration and rehabilitation of all 74,900 square feet of the Hackensack Water Works. As a point of reference, the Interpretive Center at the Fairmount Water Works is about 5,000 square feet, the average strip mall is around 20,000 square feet, and the average Wal-Mart is about 97,000 square feet, making this scope a very large project.

This scope would require approximately $48.6 million to complete. The total present value of the cash flows for this scope is $3.1 million, giving the project a net present cost of $45 million.

All of the interior space would be made available for lease. At least 225 total parking spaces are needed depending on the intensity of the uses.

FILTRATION PLANT | PUMPING STATION

BUILDING IDENTIFICATION	2A Head House	2A/2B Gallery & E/W Corridor	2A/2B Fairmount Beds	2C Gertrude	2D Gallery & Offices	2D Fairmount Beds	2E Coal House	1A	1B	1C	1C Machine Shop	1D	1DE	1E	1F	1FG	1G Steam Engine	1G
BUILDING FOOTPRINT AREA (SQ. FT.)	3rd & 2nd 5,500 1st & 4th 5,500	8,900	19,000	6,100	6,200	8,150	300	7,600	1,200	1,900	900	2,500	900	2,500	4,300	1,000	1,900	4,100
FLOOR LEVEL CAPACITY	4	1	1+	1+	1	1+	1+	1 + 1/2	1 + 1/2	1	1	2 + 1/2	2	2	2 + 1/2	1	2	2
# OF EXISTING FLOOR LEVELS	4	1	1	1	1	1	1	1	1	1	1	1	2	1	1 + MEZZ	1	1	1
CONDITION	GOOD	GOOD	FAIR TO POOR	FAIR	FAIR	FAIR	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	POOR	POOR	POOR	POOR	GOOD	GOOD
IN-SITU MACHINERY & EQUIPMENT	LARGE TANKS ON 3rd FLOOR	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FLUE ELEMENTS	-	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FLUE ELEMENTS	-	SMALLER SCALE PUMPS	SMALLER SCALE PUMPS	PUMPS	-	TRAVELING CRANE	-	LARGE SCALE TANKS	LARGE TANKS	-	45' STEAM ENGINE & TRAVELING CRANE	PUMPS
ORIGINAL DATE OF CONSTRUCTION	1905	1905 / 1912	1905 / 1912	1910s	1905	1905	1906	1892	1886	1891	c.1920s	1898	c.1900	1898	1906	c.1910s	1911	1911
* COMMENTS			*INTERIOR BELOW - LARGE FLAT ROOF ABOVE			*INTERIOR BELOW	*PIPE TUNNEL BELOW											

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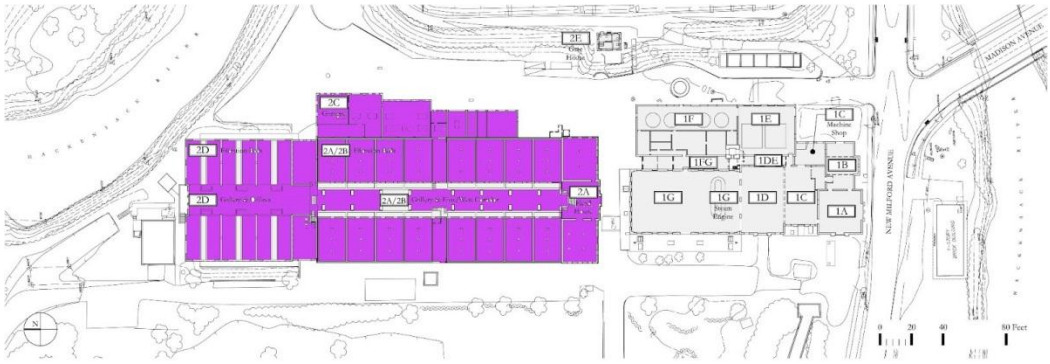
Scope #2: In this scenario, only Building 2, the 52,800 square foot Filtration Plant, is restored, at a cost of $35.3 million, also a large project. The present value of the cash flows is $2.2 million giving the project a net present cost of $33 million. Approximately 158 total parking spaces will be needed.



	FILTRATION PLANT							PUMPING STATION									
BUILDING IDENTIFICATION	2A	2A/2B	2A/2B	2C	2D	2D	2E	1A	1B	1C	1C	1D	1DE	1E	1F	1FG	1G	1G
											Machine Shop						Steam Engine	
BUILDING FOOTPRINT AREA (SQ. FT.)	1st & 2nd 3,850 2nd & 4th 1,300	8,500	16,300	6,150	5,250	8,150	300	1,650	1,200	1,900	600	2,550	400	2,500	4,300	1,200	1,900	4,100
FLOOR LEVEL CAPACITY	4	1	1*	1*	1	1*	1*	1-1/2	1-1/2	1	1	2-1/2	2	2	2-1/2	1	3	3
# OF EXISTING FLOOR LEVELS	4	1	*	1	1	*	*	1	1	1	1	1	2	1	1 + MEZZ	1	1	1
CONDITION	GOOD	GOOD	FAIR TO POOR	FAIR	FAIR	FAIR	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	POOR	POOR	POOR	POOR	GOOD	GOOD
IN-SITU MACHINERY & EQUIPMENT	LARGE TANKS ON 3rd FLOOR	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	-	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	-	SMALLER SCALE PUMPS	SMALLER SCALE PUMPS	PUMPS	-	TRAVELING CRANE	-	LARGE BOILERS	LARGE TANKS	-	VTE STEAM ENGINE & TRAVELING CRANE	PUMPS
ORIGINAL DATE OF CONSTRUCTION	1905	1905 / 1912	1905 / 1912	1930s	1905	1950	1906	1882	1886	1891	c.1920s	1898	c.1900	1898	1906	c.1930s	1911	1911
* COMMENTS			RESERVOIR BELOW, USABLE FLAT ROOF ABOVE	*USABLE FLAT ROOF ABOVE		*RESERVOIR BELOW	*PIPE CHAMBER BELOW											

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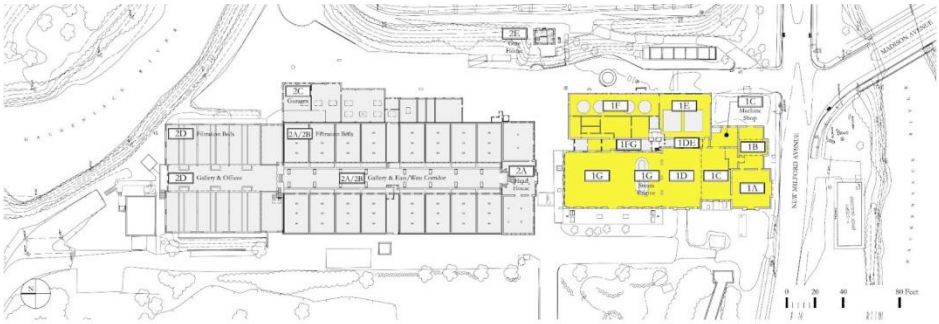
Scope #3: In this scenario, only Building 1, the 22,000 square foot Pumping Station is restored, at a cost of $17 million. The present value of the cash flows is nearly $1 million, which gives the project a net present cost of $16 million. Depending on the intensity of the uses involved, approximately 82 total parking spaces are required.



	FILTRATION PLANT							PUMPING STATION									
BUILDING IDENTIFICATION	2A	2A/2B	2A/2B	2C	2D	2D	2E	1A	1B	1C	1C	1D	1DE	1E	1F	1FG	1G	1G
	Head House	Gallery & E/W Corridor	Filtration Beds	Gatehouse	Gallery & Offices	Filtration Beds	Gate House				Machine Shop						Steam Engine	
BUILDING FOOTPRINT AREA (SQ. FT.)	1st & 2nd 3,850 2nd & 4th 1,300	8,500	16,300	6,150	5,250	8,150	300	1,650	1,200	1,900	600	2,550	400	2,500	4,300	1,200	1,900	4,100
FLOOR LEVEL CAPACITY	4	1	1*	1*	1	1*	1*	1-1/2	1-1/2	1	1	2-1/2	2	2	2-1/2	1	3	3
# OF EXISTING FLOOR LEVELS	4	1	*	1	1	*	*	1	1	1	1	1	2	1	1 + MEZZ	1	1	1
CONDITION	GOOD	GOOD	FAIR TO POOR	FAIR	FAIR	FAIR	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	POOR	POOR	POOR	POOR	GOOD	GOOD
IN-SITU MACHINERY & EQUIPMENT	LARGE TANKS ON 3rd FLOOR	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	-	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	-	SMALLER SCALE PUMPS	SMALLER SCALE PUMPS	PUMPS	-	TRAVELING CRANE	-	LARGE BOILERS	LARGE TANKS	-	VTE STEAM ENGINE & TRAVELING CRANE	PUMPS
ORIGINAL DATE OF CONSTRUCTION	1905	1905 / 1912	1905 / 1912	1930s	1905	1950	1906	1882	1886	1891	c.1920s	1898	c.1900	1898	1906	c.1930s	1911	1911
* COMMENTS			RESERVOIR BELOW, USABLE FLAT ROOF ABOVE	*USABLE FLAT ROOF ABOVE		*RESERVOIR BELOW	*PIPE CHAMBER BELOW											

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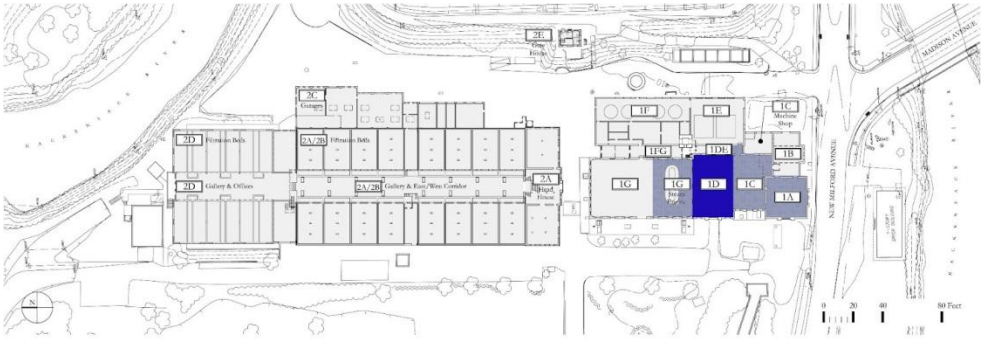
Scope #4: In this scenario, only a very limited area of Building 1, the Pumping Station, is restored (Building Identification 1D). In addition, the intermediate infrastructure work would be completed to meet safety and regulatory compliance in three additional sections (Building Identifications 1G, 1C, and 1A). This scope would fully restore 2,550 square feet and minimally restore an additional 4,750. It would cost approximately $6.2 million to complete. The total present value of the cash flows for Years 1 - 10 is just over $100,000 giving the project a net present cost of $6.1 million.



	FILTRATION PLANT							PUMPING STATION								
BUILDING IDENTIFICATION	2A Head House	2A/2B Gallery & E/W Corridor	2A/2B Filtration Beds	2C Gutmers	2D Gallery & Offices	2D Filtration Beds	2E Gate House	1A	1B	1C	1C Machine Shop	1D	1DE	1E	1F	1FG	1G Screen House	1G
BUILDING FOOTPRINT AREA (SQ. FT.)	1st & 2nd 3,050 3rd & 4th 1,300	8,500	19,300	6,150	5,250	8,150	300	1,250	1,200	900	600	1,100	400	2,500	4,300	1,000	900	4,100
FLOOR LEVEL CAPACITY	4	1	1*	1*	1	1*	1*	1-1/2	1-1/2	1	1	2	2	2	2-1/2	1	3	3
# OF EXISTING FLOOR LEVELS	4	1	*	1	1	*	*	1	1	1	1	2	2	1	1 + MEZZ	1	1	1
CONDITION	GOOD	GOOD	FAIR TO POOR	FAIR	FAIR	FAIR	GOOD	GOOD	FAIR	GOOD	GOOD	POOR	POOR	POOR	POOR	POOR	GOOD	GOOD
IN-SITU MACHINERY & EQUIPMENT	LARGE TANKS ON 3rd FLOOR	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	–	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	–	SMALLER SCALE TANKS	SMALLER SCALE PUMPS	–	–	–	–	LARGE BOILERS	LARGE TANKS	–	THE SLOW TAKING & SWINGING CRANE	PUMPS
ORIGINAL DATE OF CONSTRUCTION	1905	1905 / 1912	1965 / 1912	1930s	1955	1955	1905	1910	1886	1901	c.1920s	1911	c.1900	1898	1906	c.1950s	1911	1911
* COMMENTS			*RESERVOIR BELOW, USABLE FLAT ROOF ABOVE	*USABLE FLAT ROOF ABOVE		*RESERVOIR BELOW	*PIPE CHAMBER BELOW											

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Detailed Description of the Pro Forma Model[31]

Each of the four pro forma scenarios begins with a basic set of assumptions: The total number of square feet being restored, the efficiency ratio (the percentage of total square feet that are leasable), the number of square feet of leasable space, the infrastructure costs per square foot, the costs per square foot for the intermediate infrastructure work completed in Scope 4, a funding level for the project contingency, the costs per square foot for tenant improvements, the asking rental rate, and the annual increase in CPI. (Exhibit 1)

Exhibit 1 List of Salient Facts

	Scope 1	Scope 2	Scope 3	Scope 4
No. Square feet of total space	74,900	52,800	22,100	2,550
Efficiency ratio	75%	75%	75%	75%
No. Square feet of Leasable space	56,175	39,600	16,575	1,913
Infrastructure Repair per sq. ft	$475	$475	$475	$475
Walking Tour Upgrade per sq. ft.	142.5	142.5	142.5	142.5
Project Contingency	10%	10%	10%	10%
Tenant Improvements per sq. ft/10 yrs	$100	$100	$100	$100
Asking Rental Rate (Year 1)	$19.4	$19.4	$19.4	$19.40
Annual Increase in CPI	3%	3%	3%	3%

These assumptions are used to estimate the total capital costs of each project scope. (Exhibit 2)

Exhibit 2 Year 0 Capital Costs

	Scope 1	Scope 2	Scope 3	Scope 4
Protect and Stabilize (Phase 1)	3,500,000	3,500,000	3,500,000	3,500,000
Infrastructure Restoration (Phase 2)	35,577,500	25,080,000	10,497,500	1,211,250
Walking Tour Upgrade (Scenario 1 only)	0	0	0	776,625
Tenant Improvements (Phase 3)	5,617,500	3,960,000	1,657,500	191,250
Project Contingency	3,907,750	2,858,000	1,399,750	548,788
Total Restoration Cost	$48,602,750	$35,398,000	$17,054,750	$6,227,913

After the capital improvements in Year 0 are completed, the actual use and leasing of the finished space begins in Year 1. (See Exhibit 3) The pro forma assesses the potential annual cash flow for each scope. The cash flow analysis begins by calculating the potential gross rents (market rent) which is equal to the asking rental rate multiplied by the number of leasable square feet. The effective gross rents are found by subtracting expected vacancies from potential rents. The pro forma assumes a 10% vacancy rate. Finally, operating expenses, estimated at $10 per square foot per year are then subtracted to find the net operating income. For the purposes of this analysis, net operating income is the same as the before tax cash flow because no financing is built into the model and there are no tax implications for the property.

[31] Full pro forma details including a detailed cash flow analysis and an analysis of discounted values for each scope are provided in Appendix A

Exhibit 3 First Year Project Setups				
	Scope 1	Scope 2	Scope 3	Scope 4
Potential Gross Rents *(Market Rent)*	1,089,795	768,240	321,555	37,103
-Vacancies	(108,980)	(76,824)	(32,156)	(3,710)
Effective Gross Rents	980,816	691,416	289,400	33,392
-Operating Expenses	(561,750)	(396,000)	(165,750)	(19,125)
Net Operating Income	$419,066	$295,416	$123,650	$14,267

Exhibit 4 demonstrates the restoration and operating comparables between scope for Year 1. The restoration price is calculated by adding the all Year 0 capital costs. As shown below, the restoration price per rentable square foot is smaller as the size of the project increases. This is because the cost of the stabilization and protection phase, which is the same for every scenario, is distributed over a greater area as the project scope increases.

Exhibit 4 Restoration and Operating Comparables (Year 1)				
	Scope 1	Scope 2	Scope 3	Scope 4
Restoration Price/Rentable SF	$865.20	$893.89	$1,028.94	$3,256.42
Operating Expenses/Rentable SF	$10.00	$10.00	$10.00	$10.00
Operating Expenses/Effective Gross Revenue	0.57	0.57	0.57	0.57
Rent/SF	$19.40	$19.40	$19.40	$19.40
Actual or Projected Occupancy	90.00%	90.00%	90.00%	90.00%

Projected occupancy is 100% the assumed vacancy rate (10%) across all scenarios. Exhibit 5 shows the break-even occupancy, which is the occupancy level needed to produce effective gross rents equal to routine maintenance. Each scope has a break-even occupancy of 51.55% leaving an added margin of 38.45% -- which means that the vacancy rate can be as high as 48.45% before the project runs an annual deficit. This is a function of the fact that the market rent less vacancy exceeds the estimates for routine maintenance.

Exhibit 5 Break-even Analysis				
	Scope 1	Scope 2	Scope 3	Scope 4
Current or Projected Occupancy	90.00%	90.00%	90.00%	90.00%
Added margin	38.45%	38.45%	38.45%	38.45%
Break-even Occupancy	51.55%	51.55%	51.55%	51.55%

Exhibit 6 compares the primary financial metrics for each scenario. The first set are simple measures of return. The total equity required is equal to the Year 0 restoration costs. The capitalization rate measures the return on the asset and it indicates the ability of the property to carry debt. It is calculated by taking the net operating income and dividing it by the restoration price. The capitalization rate has been calculated both for going in (Year 1) and going out (Year 10). Financial cost is measured by taking the value of the property in perpetuity minus the restoration costs.

Exhibit 6 Financial Analysis				
	Scope 1	Scope 2	Scope 3	Scope 4
Restoration Price	$48,602,750	$35,398,000	$17,054,750	$6,227,913
Simple Return Measures				
Capitalization Rate -- Year 1	0.86%	0.83%	0.73%	0.23%
Capitalization Rate -- Year 10	1.13%	1.09%	0.95%	0.30%
Financial Cost	($37,667,041)	($27,688,983)	($13,828,059)	($5,855,602)
Discounted Return Measures				
NPC @ 8%	($45,438,749)	($33,167,570)	($16,121,180)	($6,120,193)

Exhibit 6 also includes discounted measures of return. This means that the total values over ten years have been brought back to Year 1 values. Discounting the cash flows allows the analysis to take the time value of money into consideration. The net present cost (NPC) is the value of the positive and negative cash flows discounted back to present value dollars. The discount rate reflects the riskiness and the opportunity cost of the project. The discount rate is set at 8%. This reflects that the project is riskier than a municipal bond, but less risky than a private real estate development project because it will likely be backed by a government entity.

Each of these measurements of return were then put into a rank formula to compare scenarios side by side. Exhibit 7 shows the ranking of each scenario by measurement.

Exhibit 7 Option Ranking				
	Scope 1	Scope 2	Scope 3	Scope 4
Equity Required	2	1	2	1
Simple Return Measures				
Capitalization Rate -- Year 1	1	2	3	4
Capitalization Rate -- Year 10	1	2	3	4
Financial Cost	4	3	2	1
Discounted Return Measures				
NPC @ 8%	4	3	2	1

The analysis also estimates potential parking space requirements. Since a tenant has not been identified, these numbers are meant as a rough estimate and guide. The numbers were taken from the Bergen County Site Plan Review Resolution and are for commercial office space. The number of parking spaces required for each 1,000 square feet of gross leasable space (GLA) is four.

Exhibit 8 Parking Requirements				
	Scope 1	Scope 2	Scope 3	Scope 4
Parking per 1000 sq.ft. of G.L.A	4	4	4	4
# Number of parking spaces required	225	158	66	10

Pro Forma Scope Analysis and Conclusions
A side by side comparison of the pro forma scopes demonstrates the potential trade-offs inherent in each restoration strategy.

One significant finding is that the scale of restoration dramatically changes the overall Year 0 costs and the likely financing options. Larger-scale projects would incur significant upfront costs and other project partners or sources of revenue might be needed to complete those scopes. As the scale of the project increases, the stakeholders may need to engage a private developer as a partner if state and federal grants or other fundraising methods have been exhausted. A private developer could also take advantage of federal historic tax credits which are unavailable to a government or nonprofit entity. Additionally, a private partner could provide the anchor use that a large-scale development would require and generate more substantial cash flows. However, it is unclear what private uses would meet the current deed restrictions and a deed amendment may be required.

A large-scale restoration will require creative packaging of fund sources and will likely mix county, state, and federal government grants with private and nonprofit capital. The very low capitalization rates, seen in Exhibits 5 and 6, suggest a significantly limited ability to take on debt to finance the project. Also the large net present costs indicate that the project will not recoup the entire cost of restoration. Smaller-scale projects, on the other hand, could be accomplished largely with government grants, from federal, state, and local sources and private funding.

The pro forma suggests that after restoration, a rent paying tenant could sufficiently offset the costs of routine maintenance, meaning that the project can be self-sustaining. However, the model is only as good as its assumptions. For instance, the sustainability in the pro forma relies upon a rent-paying tenant to be found to at least cover the routine maintenance costs. Scopes 1 through 3 call for the restoration of a such a large area that the only way to fill that space would be to have a large institutional user at the outset of the restoration process. Currently, it is unclear who that prospective tenant would be. Also, the numbers in the pro forma are based on estimates only. The true costs of the project will be revealed as a detailed scope of work is determined by professional architects and engineers.

Additional Benefits
While the pro forma captures the estimated financial costs and benefits of the project, it does not measure the intangible benefits or costs to restoration, such as the addition of open space. Van Buskirk Island holds 13 acres of possible park land with riverfront access that is currently cut off from the community. Stabilizing and protecting the buildings should allow the perimeter fence to be removed and allow public access to the site. At one of the visioning workshops for the Bergen County Master Plan, local stakeholders pointed out a fundamental lack of open space in the county, and in particular that passive open space is at a crisis point.[32] Bergen County has a world

[32] Bergen County, New Jersey. *Northwestern Visioning Workshop January 20, 2010 Bergen County Law and Public Safety Institute—Mahwah, NJ*. 2010. Web. 1 May 2012.

class park system that includes large nature preserves, but most of its residents are not within walking distance of a park or public open space. [33]

In addition to being a gathering space, an access to the waterway, and a place for recreation, there are also possible economic benefits. A study by Active Living Research noted that open space, particularly parks in urban areas, tend to increase neighboring property values and as well as government revenues.[34] This is in line with the findings of the New York State Comptroller's report from that same year that found that open space generates billions of dollars of economic activity annually, supports regional economic growth, and can be financially beneficial to local governments.[35]

Restoration will also save a piece of Bergen County's industrial heritage from decay and reclaim it as a community amenity. This too may have economic multipliers. A 1997 study by the New Jersey Historic Trust found that spending on historic preservation led to the creation of jobs, new income, and increased tax revenue:

> "The total economic impacts from the $123 million spent on statewide historic rehabilitation included: 4,607 new jobs; $156 million in income; $207 million in gross domestic product; and $65 million in taxes...The total economic impacts from the $25 million in annual spending by the New Jersey historic sites and organizations, included a gain in 1996 of 1,438 jobs, $33 million in income, $43 million in gross domestic product, and $14 million in taxes."[36]

[33] Bergen County, New Jersey. *Vision Bergen: The Visioning Component of the Bergen County Master Plan*. 2011. Web. 1 May 2012.
[34] L. Shoup, and E. Reid. "The Economic Benefits of Open Space, Recreation Facilities and Walkable Community Design." *Research Synthesis*. Active Living Research, May 2010. Web. 30 Apr 2012.
[35] New York State. Office of the Comptroller. *Economic Benefits of Open Space Preservation*. 2010. Web. 1 May 2012
[36] "New Jersey. New Jersey Historic Trust. *Economic Impacts of Historic Preservation*. 1998. Print.

SECTION 7: COMPARABLE PROJECTS: FAIRMOUNT WATER WORKS AND THE HIGH LINE

Comparable projects have shown other rehabilitations of industrial use facilities to be sustainable and to have created ancillary economic benefits in their communities.

Fairmount Water Works, Philadelphia, PA

The Fairmount Water Works project provides useful lessons about the importance of strong leadership from the public sector as well as insights into project funding and the assessment of community needs. Like the Hackensack facility, Fairmount is historically significant, is attached to surrounding park land, there were many different ideas for its reuse, and it faces similar flooding issues. Both sites provided clean drinking water starting in the 19th century. After Fairmount's closing in 1973, it took 30 years to open the doors of today's Fairmount Water Works Interpretive Center and another four years to fit a high-class restaurant in its engine house. The site receives 300,000 visitors annually.

Despite the apparent similarities, there are also notable differences between the two sites. Fairmount is located in a much more populated area, benefiting from the high visibility and traffic of surrounding destinations such as the Museum of Art. Since its opening, it has been a publicly owned facility. The recent redevelopment of the site was led by the Philadelphia's Water Department. The city had a clear and specific goal for the restoration, and provided the bulk of the funding for the Interpretive Center. Additionally, several nonprofits have been actively engaged in fundraising for the restoration of the park area adjacent to the Water Works. The city also created a nonprofit, the Fund for Fairmount Water Works, for the sole purpose of accepting donations that the government itself could not. Lastly, Bergen County's economy is much smaller than Philadelphia's. The Hackensack Water Works is also less accessible, which means that potential flow of visitors to site will be milder.

Having these differences in mind, it is clear that the Hackensack Water Works faces a more challenging situation with less resources to utilize. These challenges, however, indicate the need for communication among local residents, the need for a leadership -- public or nonprofit -- and the need for a careful assessment of local needs.

The High Line

The High Line is another interesting comparable project considering the Friends of the High Line's accomplishments despite adversity and limited initial resources. The High Line was an elevated railway built in the 1930s to remove industrial traffic from the crowded streets of the West Side of New York City, and was used until abandoned in 1980. In August 1999, local residents Robert Hammond and Joshua David attended a community hearing and became interested in saving the High Line. At that time, there was no money and no organized group working towards this goal. Within a few months, the duo founded the nonprofit Friends of the High Line though they had limited experience.

While the High Line is different in many ways, there are numerous similarities between the projects, such as the conversion of an industrial space into a public amenity, the many competing visions for a revitalized High Line, and the long time period from closure to reopening. The

Hackensack project has numerous advantages compared to what Friends of the High Line faced when they began. Until very recently the High Line and the property below it was privately owned. There was nearly no support for saving the High Line and a great deal of public support for its demolition. Already, those working on the Water Works project have a great deal of experience and momentum behind them, meaning this project may be better poised for success than the High Line was at the outset.

The experience of the Friends of the High Line provides useful lessons about creating a strong nonprofit organization. Such an organization can be extremely effective in educating the community, building support, changing minds, and raising significant funds for a restoration project. The Friends' co-founders recently released *High Line: The Inside Story of New York City's Park in the Sky,* a book which may be a valuable resource to stakeholders working on the Water Works project.

SECTION 8: NONPROFIT PARTNER

The creation of a nonprofit partner for the County should take into account its expected mission, roles and activities, and a written agreement should determine all parties' responsibilities for management, programming, and fundraising for the Hackensack Water Works.

Nonprofit Organization

In addition to a study assessing the feasibility of restoring the Hackensack Water Works, the capstone team has been asked to provide basic recommendations on the formation of a nonprofit partner to enable the long-term sustainability of the project. While the actual nonprofit will be formalized and operationalized by the stakeholders involved, this study provides a guide for the decision-making process. Five keys to the success of the nonprofit are the public-private partnership, the structure of the organization, the composition of the board, the roles and the activities of the nonprofit, and the written agreement for the partnership. The structure of the nonprofit will depend on the restoration scope and capacity of both the organization and the public sector partner.

Public-Private Partnerships

Public-private partnerships (PPPs) come in many forms and are essentially a "contractual agreement between a public agency (federal, state, local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public."[37] The benefit of PPPs is that they allow for the sharing of a project's risks and rewards and for each party to optimally balance their strengths and weaknesses. This creates a more efficient and effective provision of services, as well as greater project advocacy, and it often opens access to other sources of revenue such as fundraising and donations. A successful partnership needs to be based on an appropriate alignment of interests and common mission and purpose. Without a strong foundation based on mutual interest, a partnership may fall apart even with a detailed agreement.

The potential benefits of a public-private partnership are numerous. First, the nonprofit organization will be able to generate additional support of the project through its legal capacity to accept tax deductible contributions. Second, the nonprofit could take on the role of the property manager. Third, there are many players involved in the discussions around the future of the Water Works, and the nonprofit can be a venue in which to hold conversations between these various groups and interests. The nonprofit can generate information, hold community meetings, and be a vehicle through which local citizens can make their voices and desires known. Lastly, establishing a mission-driven organization with a carefully designed board structure can demonstrate a broad-based commitment to the project.

Nonprofit Structure

There are two basic options for the nonprofit's structure. The first would be for a new organization to absorb the efforts of many of the groups already working and advocating on behalf of the Hackensack Water Works. This organization would become the new focal point for nonprofit fundraising and activity. While this new organization could present a unified face for

[37] "PPP Fundamentals." *National Council of Public Private Partnerships*. NCPPP, 2010. Web. 2 May 2012.

restoration, it may be very difficult for existing organizations to give up their autonomy. In addition, it may be challenging for a single organization to fulfill the needs of every stakeholder.

The second option would be an umbrella organization or coalition group that would convene all the current stakeholders to work towards the rehabilitation and development of Van Buskirk Island and the Water Works. While each of the member organizations would maintain their autonomy, this option allows all current organizations and interests to be represented through a unified structure. Elected officials, department heads, and existing organizations could opt-in as members. One potential downside of this structure is that if there are many organizations advocating on behalf of the same project, it is possible that messaging could become confused and fundraising cannibalized.

Directors, Members and Stakeholders

Next, the appropriate directors, members, and stakeholders should be identified. Issues to consider include: Who should be involved with the nonprofit? Who can belong to this group and who should have a deciding vote? What are the requirements of membership? Does anyone bring a particular expertise?

Some of this groundwork has already been accomplished. The identified stakeholders include Bergen County, historic preservation groups, the environmental community, the Borough of Oradell, and the Borough of New Milford. Key areas of expertise that may be required by the board include construction, landscape architecture, historic architecture, environmental science, and finance.[38] Additional stakeholders may include community members from the adjacent neighborhoods, large potential donors and grantors, and a representative from the chamber of commerce or business community.

For a point of comparison, the Central Park Conservancy's board consists of a broad community membership, five appointees made by the Mayor of New York City, and two government officials, the Manhattan Borough President and the Commissioner of the Department of Parks and Recreation, who serve in an ex-officio capacity.[39] The Friends of the High Line board includes five ex-officio representatives of various city branches and agencies including the Mayor's office and the City Council.[40]

Role and Purpose

Once the directors, members, and stakeholders are identified and an overall structure is selected, the first major decision the group will have to make is on the overall purpose of the nonprofit organization. Key issues include: Why does the nonprofit exist? Who does it serve? What the role will the nonprofit play? What are the relative strengths of this organization? How will it compensate for the relative strengths of the public sector partner? Also what is the likely overall capacity of the organization? Will it be able to raise the necessary funds to fulfill its mission on an annual basis?

[38] Rutgers University. Center for Urban Environmental Sustainability. *Nonprofit Proposal Summary*. Print.
[39] Central Park Conservancy Inc. *Amended and Restated By-Laws.* 2009. Print.
[40] "Friends of the High Line." *High Line*. High Line, n.d. Web. 1 May 2012.

The Project for Public Spaces (PPS), a nonprofit "dedicated to helping people create and sustain public spaces that build stronger communities," published a comprehensive guide for nonprofits partners involved with parks.[41] This guide is particularly relevant for this project. PPS identified five possible roles for a nonprofit to play, four of which are applicable to this project: an assistance provider, a catalyst, a co-manager, and a sole manager.[42] An **assistance providing** organization would be an advocate for the Water Works and would help with education, programming, and managing volunteers. Alternatively, a **catalyst** organization would help initiate projects with Bergen County. They would also raise funds and provide input into the design and construction process. If the nonprofit were to act as a **co-managing** organization it would collaborate with the public agency, the nonprofit and the county would jointly oversee the planning, design, and construction of capital projects and jointly share management and maintenance operations. Lastly, a **sole managing** organization would take primary responsibility for the maintenance, management, and direction of the Water Works. In this scenario, Bergen County would continue to own the buildings but would provide limited support for the overall maintenance.

The nonprofit role is also tightly integrated into the scope of the restoration. For instance, if the scope is minimal, such as Scope 4, it would be unrealistic and unnecessary for the nonprofit to take over the sole management of the Water Works. For smaller scopes, an assistance provider or a catalyst role seems most appropriate. However, for larger scopes, particularly for Scope 1, the nonprofit could be an invaluable management partner.

Activities

After deciding upon the overarching role and mission of the nonprofit, the board can begin to select the appropriate range of activities for the organization. These activities are necessarily informed by the role of the organization. Every nonprofit will have its own unique approach to a particular activity. Activities should be tailored to the specific needs of the community and the project and should complement the comparative strengths of the public-sector partners.

PPS has identified nine broad activities that nonprofits engage in: fundraising, organizing volunteers, design, planning, and construction of capital projects, marketing and outreach, programming, advocacy, remedial maintenance, routine maintenance, and security.[43] Each of these is a plausible activity for the new nonprofit. The following is a short description of each activity excerpted from *Public Parks, Private Partners:*

Fundraising is one of the basic activities of all nonprofit organizations. A nonprofit's resources make up the organization's basic capacity to provide service and carry out its mission. Fundraising could involve raising money for the annual operations of the organization and could include large capital campaigns.

Depending on role of the nonprofit, it is plausible that the organization could employ volunteers to help fulfill the group's mission. **Organizing volunteers** is especially important for a group

[41] "About PPS." *Project for Public Spaces*. Project for Public Spaces, n.d. Web. 1 May 2012.
[42] K. Madden, *Public Parks, Private Partners: How Partnerships Are Revitalizing Urban Parks*. New York, NY: Project for Public Spaces, 2000, p. 17.
[43] Madden, 23

with low financial capacity that cannot afford to hire permanent staff members. It is also a tactic to build community support and buy-in around a particular project.

Many organizations are involved, at least at some level, with the **design, planning, and construction** of capital projects. This is particularly true if they have raised money through a capital campaign. This activity can be undertaken in a variety of ways. For a smaller entity, it may involve giving input to a master plan design process, as well as being involved in smaller ad-hoc projects. This activity could also take the form of providing general advice, helping to choose consultants and clients, and being involved during a Request For Proposals process. For a larger organization involved in capital campaigns, this may mean having far more control over the physical design and planning of a project. For groups with high levels of capacity, such as the Central Park Conservancy, this may mean overseeing a capital project from start to finish.

Outreach and marketing are often used to educate, to create support, and to build interest in a particular project or park. Alternatively, the nonprofit could engage in **advocacy** for the Water Works. This includes various activities such as rallying community support and promoting the project, creating a sense of urgency for action, and lobbying for the county's budget to reflect the Water Works as a priority project. The extent to which a nonprofit partner can engage in advocacy is directly related to the role the nonprofit hopes to play. A successful working partnership is based on trust and mutual interests, which can make advocacy a particularly precarious activity.

A natural activity for this nonprofit is **programming**. An educational component to the project, such as a Water Works museum, would be a natural fit for a nonprofit partner. Additional programming could keep the site active and build interest in the Water Works.

After the restoration is complete, the Water Works will need two types of maintenance: **remedial maintenance** and **routine maintenance**. Routine maintenance encompasses the regular, day-to-day upkeep of the site. This work typically has been the responsibility of the public sector, and only the most well-funded and staffed nonprofit organizations with a high degree of control over the site have taken it on. However, nonprofits sometimes supplement the public sector's efforts in order to make up for shortfalls by funding remedial maintenance. These types of issues are generally critical one-time needs that are beyond the government's immediate ability to address. The capacity of the nonprofit to address the Hackensack's remedial maintenance issues will depend in large part on the financial strength of the organization.

Finally, although rare, some nonprofits are engaged in some kind of **security** activity. For a variety of reasons, most nonprofits involved with parks do not employ security officers. These reasons include lack of funding and a reluctance to take on the liability of policing an area. However, the regular maintenance and programming of a park may in itself create a safer environment than if the area were left unkempt and deserted.

Written Agreement[44]

The nonprofit and public sector partners must agree upon their roles and activities in a written agreement. This written agreement sets the baseline for the working relationship and trust between all of the project's partners. Some written partnership agreements are very vague, while others are very specific. Some simply act as memorandums of understanding, while others are full contracts with performance measurements and remedies in case of failure to perform. The most important criteria is that the agreement represents the mutual interests of both partners, and that services are able to be delivered more efficiently than in the absence of a partnership.

The written statement can be centered around a number of key elements depending upon the role and capacity of the nonprofit.[45] First, the agreement will highlight each partner's role and responsibility, and it will form the parameters of how they will work with each other. It is especially important for the nonprofit to have financial independence. Funders will give more readily if their donations to the nonprofit stay within the organization and the entity has full accountability for how funds are used.[46] Also, many agreements include a maintenance of effort clause, wherein the public sector agrees to maintain a reasonable amount of effort on maintenance. This clause is often of particular importance to the nonprofit partner because a common concern for funders is that as they give to the nonprofit, efforts by the public sector may be reduced. In addition, agreements often spell out each partner's role in reviewing plans and designs, and rules and regulations for the site. If the nonprofit takes on a co-management role, the agreement may articulate the specific tasks that each partner is responsible for. It may also detail how one will pay the other, if necessary. The agreement could also include performance measurements.

The Teaneck Creek Conservancy agreement with Bergen County is an informative example. This agreement features a number of the key elements discussed above including a description of responsibilities, the role of each partner in reviewing and implementing plans in the park, a maintenance of effort clause that stipulates the county's responsibility for routine maintenance, hold harmless clauses and liability insurance requirements, and a termination clause in the case of failure to perform. In addition, the agreement also contains a clause concerning the by-laws and make up of the Conservancy.

Other Considerations

While this has been presented as, and to some extent is, a linear process, it is important to remember that the work of creating a nonprofit can often be one step forward and two steps back. It is a difficult and time-consuming process. Stakeholders need to be found and their opinion sought, the local community needs to be mapped and analyzed, funds have to be raised from a limited and often overtapped pool of money, and then the appropriate staff needs to be hired before the hard work of actually providing services that will fulfill the mission of the organization.

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[44] This section is based the work of Project for Public Spaces and the agreements from the Central Park Conservancy, Friends of the High Line, Bryant Park, Madison Square Park, Prospect Park, and the Teaneck Creek Conservancy.

[45] Madden

[46] David, Joshua, and Robert Hammond. *High Line: The Inside Story of New York City's Park in the Sky*. New York: Farrar, Straus and Giroux, 2011, p. 70-71

SECTION 9: RECOMMENDATIONS

The purpose of this feasibility study is to assess the restoration of the Hackensack Water Works and to provide recommendations for moving forward. This study has identified four scenarios outlining possible restoration scopes and their estimated costs, as well as potential nonprofit structures, roles, and activities.

Decision-making Framework

A multi-point decision-making framework can be used to navigate the path forward. This framework is intended to help the stakeholders choose an appropriate restoration scope, a complimentary nonprofit structure, role, and activities, as well as provide guidelines for a written agreement between the nonprofit and the public sector.

The following is an outline of the decisions and the underlying choices that need to be resolved at each stage.

1. Decision: Restoration Scope
    a. Restoration Vision
    b. Community Preference
    c. Short/Long-term goals
    d. Identify Resources, Tenants, and Anchors
2. Decision: Nonprofit Structure, Role, and Activities
    a. Nonprofit Vision
    b. Community Mapping and Assessment of Stakeholders
    c. Exploration of Possible Competitive Advantages and Opportunities
    d. Assessment of Fundraising Capacity
3. Decision: Partnership Agreement
    a. Partnership Vision
    b. Agree Upon Individual Commitments and Responsibilities
    c. Identify Mechanisms for Accountability

The first major decision is to choose an appropriate scope for restoration. The primary considerations are the overall vision for restoration, short and long-term goals, and identifying anchors, smaller tenants, and other sources of revenue. The vision answers the big question: "Why?" and is the focal point of decision-making to follow. The short and long-term goals are particularly important when considering the phasing of the project. What needs to be accomplished now and which aspects could happen in the future? Finally, take a strong assessment of financing options and possibilities. What resources will fund the initial capital costs of restoration? Consider the findings in Section 6. Also identify tenants available to move in on the first day after restoration. Are any large institutional tenants willing to serve as the anchor for the property? The answers to these questions will help identify which of the pro forma scopes are the most feasible.

The next decision is to consider the structure of the nonprofit entity and the roles and activities it will take on. The vision for the nonprofit should flow from the restoration scope. For instance, the challenges -- and the thus the opportunities for a nonprofit entity -- presented by Scope 1 are very different than the those in Scope 4. The second step is to conduct a comprehensive community mapping exercise and consider the various stakeholders at work in the community.

Who are the stakeholders? What are their relationships with each other? What would their relationship be to this nonprofit? These questions will illuminate the best fitting structure for the organization and will begin to give a sense of the role that it should play (See Section 8 for analysis of nonprofit structures.) Also, in tandem with the community mapping exercise, consider the possible competitive advantages of the nonprofit. What work is already being done? What work needs to be done? What work could the nonprofit do better? Finally, consider the current and future fundraising capacity of the nonprofit. How large is the potential pool of supporters? How much money is likely to be raised and what can that buy? Is a capital campaign feasible?

The final decision to be made is the written agreement between the nonprofit entity and the public sector (See Section 8 for a discussion on written agreements.) Once a vision for the restoration and for the nonprofit has been articulated, it will be easier to formulate a vision for the partnership (See Section 8 for a discussion on types of public-private partnerships.) Guiding questions include: What is the ideal working relationship between the partners? Where can each partner provide the highest level of value? The partners should agree upon their individual commitments and responsibilities. What types of tasks need to be completed? Who will be in charge of what? How will the partners hold each other accountable? Does the nonprofit have control over the funds committed to the organization by donors? What happens to additional resources if the project exceeds expectations? What will happen when a commitment or responsibility is not met? What happens if the partnership falls apart?

Recommendation: Start small, remove barriers to progress, and build momentum for the future. The most critical elements for the Water Works are the stabilization and protection of the buildings and the activation of the site. With this accomplished, Water Works advocates can build a base of support from which to push and rally for greater restoration in the future. This strategy is akin to hammering in a nail. After the initial breakthrough, the rest can follow smoothly.

<u>Scope</u>
To move forward, the capstone team recommends that the stakeholders pursue restoration Scope 4 for the following reasons:

1. It is the most affordable scope in terms of upfront capital and ongoing maintenance costs.
2. The restoration timeline is shorter and could be funded with a more manageable mix of government grants and nonprofit fundraising.
3. The routine maintenance costs are low.
4. The sustainability of ongoing cash flows is not contingent upon a large-institutional user being found. As a result, restoration can happen sooner rather than later.
5. A use that meets the community's vision could be readily identified -- such as a museum-type use that focuses on education and the historic significance of the Water Works.
6. The Water Works buildings would be stabilized and protected, allowing for public access to Van Buskirk Island. This is especially important because it could generate support for greater restoration projects by enabling the community to interact with the space.
7. Parking needs are minimal.
8. Environmental impact is minimal.

9. Although the Pumping Station is at greater risk of flooding, it may be better suited to restoration due to its proximity to New Milford Avenue and its greater number of historically significant areas, including the steam-powered Vertical Triple Expansion pumping engine.
10. This can be seen as an initial step or phase of a much longer term project. It creates momentum for the future as a private developer or large institutional user is found.

Nonprofit Entity

Nonprofit Structure and Board Composition

Whether to create a new entity or an umbrella organization, and which individuals should lead this organization as a Board of Directors, depends greatly on the desires of community stakeholders and their public sector partners. Discussions with stakeholders on these items should take place after the completion of the next steps outlined below, and recommendations as to these items are not provided in this report.

Role

The nonprofit role should reflect the scope of the restoration. Based on the recommended scope, the most essential roles for the nonprofit are as assistance provider and catalyst. As an assistance provider, the organization would raise awareness about the Water Works, organize volunteers, and program activities. In the catalyst role, it would build increased organizational capacity and community support to further restore the buildings. Since Scope 4 has a smaller scale, at this time it would not be necessary for the organization to take on a larger role. However, it is possible that the nonprofit could evolve into a management role in later phases.

Activities

The activities of the organization should be closely tied to its role. Of the nine discussed in Section 8, three are critical. The first is programming. A museum-type tenant has been identified by the community as an optimal use of the Water Works. Such a use would celebrate the industrial heritage of Bergen County and Hackensack Water Works. One important way the nonprofit could provide programming for the site is as a tenant of the building, operating the museum as a community amenity, and activating the site with educational events.

As a newly formed nonprofit, the organization may have difficulty meeting the baseline rent assumed in the pro forma analysis. However, this can be alleviated. The break-even analysis indicates that the rent can be lower than the market average and still cover the expected operating expenses. As long as the rent paid by the nonprofit covers the estimated routine maintenance costs of the building ($10 per square foot), this could be a win-win situation for the nonprofit and the public sector partners. At minimum, the costs of renting the space can be seen as a fundraising goal for the organization and could be further offset in the form of operational grants from the public sector, if so desired.

The second activity is marketing and outreach. These efforts are particularly important because base building and community engagement will be critical for the long term success of the organization and the restoration project. This work should help the wider community see the opportunities that the entire island presents. Members of the community can become excited about the project, get involved, and demonstrate their support for greater restoration.

Outreach and marketing also involves educating the community about the history of the Hackensack Water Works and making the case that greater restoration is desirable and beneficial. This means continuing to make a compelling case to all stakeholders. It also means widening the scope of stakeholders involved and allowing for members of the community to have their ideas and concerns addressed. Through this process, the organization will be able to identify key people who are or could be supportive of the organization and project. Ideally, these key people will be well known, connected, powerful, and in a position of leadership. Once these key supporters are identified and cultivated, they can be utilized to gain further support, as well as help to raise the funds needed for additional phases. They may also have connections that can bring institutional uses to the project in those later phases.

Finally, the nonprofit should be involved in constant fundraising. Fundraising is the lifeblood of the organization and money raised will be used to fund initial operations, fulfill its designated role and activities, and to build organizational capacity to take on more responsibility in the future. Through the process of fundraising, the organization could generate additional committed supporters who can make the case directly to their elected representatives. Such supporters played a critical role in the success of the High Line project receiving support from members of New York City government.

The activities of the nonprofit may change and evolve over time to meet new needs, but these three (programming, marketing and outreach, and fundraising) are the most appropriate at the outset.

Written Agreement

The written agreement forms the baseline for the partnership between the nonprofit organization and all of the public sector partners, and it should outline the rights and responsibilities of each party. There are number of templates that could be used, such as the one between Bergen County and the Teaneck Creek Conservancy.

The nonprofit should assume responsibility for the programming of the site and should agree to meet any reasonable performance benchmarks that the public sector partners set. In order to provide a educational use, a lease agreement will need to be created and should reflect the rent the nonprofit would be required to pay each year, and outline their rights and responsibilities as a tenant. The nonprofit should also be given access during design and planning processes concerning any capital projects for the Water Works, and they should have input into the creation of the site's rules and regulations. Also, any surplus rent revenue should be invested back into the property either in the form of a reserve fund, or as funds used to restore other sections in later phases. Also it is important that the nonprofit be able to provide assurances to donors that they have accountability and control over the use of private contributions. Therefore the agreement should recognize the demarcation between public sector funds and nonprofit funds.

In addition, while remedial maintenance could fall within the scope of the nonprofit in the future, at this early stage, it is unclear whether the organization will have the capacity to perform that work. The project management responsibility for the routine and remedial maintenance for the buildings should fall to the public sector, which likely has the staff, equipment, and expertise to

adequately perform that work. A maintenance of effort clause should be written into the agreement to reflect that responsibility.

Finally, as owner of the building, the public sector partners should assume responsibility for large capital construction projects such as the restoration and renovation of the site. Bergen County is best suited to this task due to its ability to assume the potentially large capital costs as well as the potential liabilities involved.

Next Steps

The recommendations above provide a solid starting point, and outline a feasible path forward that can be easily sustained. From here the stakeholders can begin to coalesce around a single vision for the reuse of the Hackensack Water Works.

The following actions are recommended to continue progress towards a productive, publicly beneficial reuse strategy that is financially sustainable over the long-term and that preserves the historic and environmental integrity of the property:

- A fundraising feasibility study, to determine the capacity the nonprofit could achieve in terms of operations and capital projects
- Community mapping exercise, to identify stakeholders and needs
- A nonprofit business plan
- A more detailed restoration cost estimate provided by architects/engineers

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APPENDIX A: PRO FORMA EXHIBITS AND ANALYSIS

Exhibit 1 List of Salient Facts

	Scope 1	Scope 2	Scope 3	Scope 4
No. Square feet of total space	74,900	52,800	22,100	2,550
Efficiency ratio	75%	75%	75%	75%
No. Square feet of Leasable space	56,175	39,600	16,575	1,913
Infrastructure Repair per sq. ft	$475	$475	$475	$475
Walking Tour Upgrade per sq. ft.	142.5	142.5	142.5	142.5
Project Contingency	10%	10%	10%	10%
Tenant Improvements per sq. ft/10 yrs	$100	$100	$100	$100
Asking Rental Rate (Year 1)	$19.4	$19.4	$19.4	$19.40
Annual Increase in CPI	3%	3%	3%	3%

Exhibit 2 Year 0 Capital Costs

	Scope 1	Scope 2	Scope 3	Scope 4
Protect and Stabilize (Phase 1)	3,500,000	3,500,000	3,500,000	3,500,000
Infrastructure Restoration (Phase 2)	35,577,500	25,080,000	10,497,500	1,211,250
Walking Tour Upgrade (Scenario 1 only)	0	0	0	776,625
Tenant Improvements (Phase 3)	5,617,500	3,960,000	1,657,500	191,250
Project Contingency	3,907,750	2,858,000	1,399,750	548,788
Total Restoration Cost	$48,602,750	$35,398,000	$17,054,750	$6,227,913

Exhibit 3 First Year Project Setups

	Scope 1	Scope 2	Scope 3	Scope 4
Potential Gross Rents *(Market Rent)*	1,089,795	768,240	321,555	37,103
-Vacancies	(108,980)	(76,824)	(32,156)	(3,710)
Effective Gross Rents	980,816	691,416	289,400	33,392
-Operating Expenses	(561,750)	(396,000)	(165,750)	(19,125)
Net Operating Income	$419,066	$295,416	$123,650	$14,267

Exhibit 4 Restoration and Operating Comparables (Year 1)

	Scope 1	Scope 2	Scope 3	Scope 4
Restoration Price/Rentable SF	$865.20	$893.89	$1,028.94	$3,256.42
Operating Expenses/Rentable SF	$10.00	$10.00	$10.00	$10.00
Operating Expenses/Effective Gross Revenue	0.57	0.57	0.57	0.57
Rent/SF	$19.40	$19.40	$19.40	$19.40
Actual or Projected Occupancy	90.00%	90.00%	90.00%	90.00%

Exhibit 5 Break-even Analysis

	Scope 1	Scope 2	Scope 3	Scope 4
Current or Projected Occupancy	90.00%	90.00%	90.00%	90.00%
Added margin	38.45%	38.45%	38.45%	38.45%
Break-even Occupancy	51.55%	51.55%	51.55%	51.55%

Exhibit 6 Financial Analysis

	Scope 1	Scope 2	Scope 3	Scope 4
Restoration Price	$48,602,750	$35,398,000	$17,054,750	$6,227,913
Simple Return Measures				
Capitalization Rate -- Year 1	0.86%	0.83%	0.73%	0.23%
Capitalization Rate -- Year 10	1.13%	1.09%	0.95%	0.30%
Financial Cost	($37,667,041)	($27,688,983)	($13,828,059)	($5,855,602)
Discounted Return Measures				
NPC @ 8%	($45,438,749)	($33,167,570)	($16,121,180)	($6,120,193)

Exhibit 7 Option Ranking

	Scope 1	Scope 2	Scope 3	Scope 4
Equity Required	2	1	2	1
Simple Return Measures				
Capitalization Rate -- Year 1	1	2	3	4
Capitalization Rate -- Year 10	1	2	3	4
Financial Cost	4	3	2	1
Discounted Return Measures				
NPC @ 8%	4	3	2	1

Exhibit 8 Parking Requirements

	Scope 1	Scope 2	Scope 3	Scope 4
Parking per 1000 sq.ft. of G.L.A	4	4	4	4
# Number of parking spaces required	225	158	66	10

SCOPE 1 -- Pumping Station and Filtation Plant

Projected Cash Flow

	Assumptions			0	1	2	3	4	5	6	7	8	9	10
CPI	3%			1	1	1.03	1.0609	1.092727	1.12550881	1.15927407	1.194052297	1.22987387	1.26677008	1.304773184
	Total	Rentable	Rent											
Market Rents (total)	*74900*	*56175*	*$19.40*		*1,089,795*	*1,122,489*	*1,156,164*	*1,190,848*	*1,226,574*	*1,263,371*	*1,301,272*	*1,340,310*	*1,380,520*	*1,421,935*
- Vacancy	10%				(108,980)	(112,249)	(115,616)	(119,085)	(122,657)	(126,337)	(130,127)	(134,031)	(138,052)	(142,194)
Effective Gross Rents					980,816	1,010,240	1,040,547	1,071,764	1,103,916	1,137,034	1,171,145	1,206,279	1,242,468	1,279,742
- Operating Expenses	$10				(561,750)	(578,603)	(595,961)	(613,839)	(632,255)	(651,222)	(670,759)	(690,882)	(711,608)	(732,956)
Net Operating Income					419,066	431,637	444,587	457,924	471,662	485,812	500,386	515,398	530,860	546,785
- Protect and Stabilize				(3,500,000)										
- Infrastructure Renovations				(35,577,500)										
- Tenant Improvements	$100			(5,617,500)										
- Project Contingency	10%			($3,907,750)										
TOTAL RETURN				(48,602,750)	419,066	431,637	444,587	457,924	471,662	485,812	500,386	515,398	530,860	546,785

Restoration Price	$48,602,750	Perpetuity Value	$10,935,709	NET PRESENT COST AT	8%	($45,438,749)
		- Restoration Price	($48,602,750)			
		Financial Cost	($37,667,041)			

Analysis of Discounted Values

	1	2	3	4	5	6	7	8	9	10	**Discounted**
Cash Flow Before Taxes	$419,066										$388,024
	$0	$431,637									$370,060
	$0	$0	$444,587								$352,927
	$0	$0	$0	$457,924							$336,588
	$0	$0	$0	$0	$471,662						$321,005
	$0	$0	$0	$0	$0	$485,812					$306,144
	$0	$0	$0	$0	$0	$0	$500,386				$291,970
	$0	$0	$0	$0	$0	$0	$0	$515,398			$278,453
	$0	$0	$0	$0	$0	$0	$0	$0	$530,860		$265,562
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$546,785	$253,267
										Total	$3,164,001

Exhibit 9 Water Works Dimensions

Building	Building ID	Building Footprint (SQ. FT.)	Floor Level Capacity	# of Existing Floors	# of Existing Floors	Machinery and Equipment	Date of Construction
Filtration Plant	2A	5150	4	4	5	Large tanks on 3rd Floor	1905
Filtration Plant	2A/2B Gallery	8500	1	1	2	Large pipe Gallery below	1905/1912
Filtration Plant	2A/2B Filtration	19300	1				1905/1912
Filtration Plant	2C	6150	1	1	2	structural filter elements	1930's
Filtration Plant	2D Gallery	5250	1	1	2	Large pipe Gallery below	1955
Filtration Plant	2D Filtration	8150	1			structural filter elements	1955
Filtration Plant	2E Gate House	300	1				1906
Pumping Station	1A	1650	1.5	1	2	smaller scale pumps	1882
Pumping Station	1B	1200	1.5	1	2	smaller scale pumps	1886
Pumping Station	1C	1900	1	1	2	pumps	1891
Pumping Station	1C Machine Shop	600	1	1	2		1920
Pumping Station	1D	2550	2.5	1	2	traveling cane	1898
Pumping Station	1DE	400	2	2	3		1900
Pumping Station	1E	2500	2	1	2	large boilers	1898
Pumping Station	1F	4300	2.5	1	2	large tanks	1906
Pumping Station	1FG	1000	1	1	2		1950's
Pumping Station	1G Steam Engine	1900	3	1	2	VTE Steam engine	1911
Pumping Station	1G	4100	3	1	2	pumps	1911

SCOPE 2 -- Filtation Plant Only

Projected Cash Flow

	Assumptions			0	1	2	3	4	5	6	7	8	9	10
CPI	3%			1	1	1.03	1.0609	1.092727	1.12550881	1.15927407	1.194052297	1.22987387	1.26677008	1.304773184
	Total	Rentable	Rent											
Market Rents (total)	*52800*	*39600*	*$19.40*		*768,240*	*791,287*	*815,026*	*839,477*	*864,661*	*890,601*	*917,319*	*944,838*	*973,183*	*1,002,379*
- Vacancy	10%				(76,824)	(79,129)	(81,503)	(83,948)	(86,466)	(89,060)	(91,732)	(94,484)	(97,318)	(100,238)
Effective Gross Rents					691,416	712,158	733,523	755,529	778,195	801,541	825,587	850,354	875,865	902,141
- Operating Expenses	$10				(396,000)	(407,880)	(420,116)	(432,720)	(445,701)	(459,073)	(472,845)	(487,030)	(501,641)	(516,690)
Net Operating Income					295,416	304,278	313,407	322,809	332,493	342,468	352,742	363,324	374,224	385,451
- Protect and Stabilize				(3,500,000)										
- Infrastructure Renovations				(25,080,000)										
- Tenant Improvements	$100			(3,960,000)										
- Project Contingency	10%			($2,858,000)										
TOTAL RETURN				(35,398,000)	295,416	304,278	313,407	322,809	332,493	342,468	352,742	363,324	374,224	385,451

Restoration Price	$35,398,000	Perpetuity Value	$7,709,017	NET PRESENT COST AT	8%	($33,167,570)
		- Restoration Price	($35,398,000)			
		Financial Cost	($27,688,983)			

Analysis of Discounted Values

	1	2	3	4	5	6	7	8	9	10	**Discounted**
Cash Flow Before Taxes	$295,416										$273,533
	$0	$304,278									$260,870
	$0	$0	$313,407								$248,792
	$0	$0	$0	$322,809							$237,274
	$0	$0	$0	$0	$332,493						$226,289
	$0	$0	$0	$0	$0	$342,468					$215,813
	$0	$0	$0	$0	$0	$0	$352,742				$205,822
	$0	$0	$0	$0	$0	$0	$0	$363,324			$196,293
	$0	$0	$0	$0	$0	$0	$0	$0	$374,224		$187,205
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$385,451	$178,538
										Total	$2,230,430

SCOPE 3 -- Pumping Station Only

Projected Cash Flow

	Assumptions			0	1	2	3	4	5	6	7	8	9	10
CPI	3%			1	1	1.03	1.0609	1.092727	1.12550881	1.15927407	1.194052297	1.22987387	1.26677008	1.304773184
	Total	Rentable	Rent											
Market Rents (total)	*22100*	*16575*	*$19.40*		*321,555*	*331,202*	*341,138*	*351,372*	*361,913*	*372,770*	*383,953*	*395,472*	*407,336*	*419,556*
- Vacancy	10%				(32,156)	(33,120)	(34,114)	(35,137)	(36,191)	(37,277)	(38,395)	(39,547)	(40,734)	(41,956)
Effective Gross Rents					289,400	298,081	307,024	316,235	325,722	335,493	345,558	355,925	366,603	377,601
- Operating Expenses	$10				(165,750)	(170,723)	(175,844)	(181,120)	(186,553)	(192,150)	(197,914)	(203,852)	(209,967)	(216,266)
Net Operating Income					123,650	127,359	131,180	135,115	139,169	143,344	147,644	152,073	156,635	161,335
- Protect and Stabilize				(3,500,000)										
- Infrastructure Renovations				(10,497,500)										
- Tenant Improvements	$100			(1,657,500)										
- Project Contingency	10%			($1,399,750)										
TOTAL RETURN				(17,054,750)	123,650	127,359	131,180	135,115	139,169	143,344	147,644	152,073	156,635	161,335

Restoration Price	$17,054,750	Perpetuity Value	$3,226,691	NET PRESENT COST AT	8%	($16,121,180)
		- Restoration Price	($17,054,750)			
		Financial Cost	($13,828,059)			

Analysis of Discounted Values

	1	2	3	4	5	6	7	8	9	10	**Discounted**
Cash Flow Before Taxes	$123,650										$114,490
	$0	$127,359									$109,190
	$0	$0	$131,180								$104,135
	$0	$0	$0	$135,115							$99,314
	$0	$0	$0	$0	$139,169						$94,716
	$0	$0	$0	$0	$0	$143,344					$90,331
	$0	$0	$0	$0	$0	$0	$147,644				$86,149
	$0	$0	$0	$0	$0	$0	$0	$152,073			$82,160
	$0	$0	$0	$0	$0	$0	$0	$0	$156,635		$78,357
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$161,335	$74,729
										Total	$933,570

SCOPE 4 -- Limited Restoration

Projected Cash Flow

	Assumptions			0	1	2	3	4	5	6	7	8	9	10
CPI	3%			1	1	1.03	1.0609	1.092727	1.12550881	1.15927407	1.194052297	1.22987387	1.26677008	1.304773184
	Total	Rentable	Rent											
Market Rents (total)	*2550*	*1912.5*	*$19.40*		*37,103*	*38,216*	*39,362*	*40,543*	*41,759*	*43,012*	*44,302*	*45,631*	*47,000*	*48,410*
- Vacancy	10%				(3,710)	(3,822)	(3,936)	(4,054)	(4,176)	(4,301)	(4,430)	(4,563)	(4,700)	(4,841)
Effective Gross Rents					33,392	34,394	35,426	36,489	37,583	38,711	39,872	41,068	42,300	43,569
- Operating Expenses	$10				(19,125)	(19,699)	(20,290)	(20,898)	(21,525)	(22,171)	(22,836)	(23,521)	(24,227)	(24,954)
Net Operating Income					14,267	14,695	15,136	15,590	16,058	16,540	17,036	17,547	18,073	18,616
- Protect and Stabilize				(3,500,000)										
- Upgrade for Walking Tour	5450	$142.5		(776,625)										
- Infrastructure Renovations				(1,211,250)										
- Tenant Improvements	$100			(191,250.00)										
- Project Contingency	10%			($548,788)										
TOTAL RETURN				(6,227,913)	14,267	14,695	15,136	15,590	16,058	16,540	17,036	17,547	18,073	18,616

Restoration Price	$6,227,913	Perpetuity Value	$372,311	NET PRESENT COST AT	8%	($6,120,193)
		- Restoration Price	($6,227,913)			
		Financial Cost	($5,855,602)			

Analysis of Discounted Values

	1	2	3	4	5	6	7	8	9	10	**Discounted**
Cash Flow Before Taxes	$14,267										$13,210
	$0	$14,695									$12,599
	$0	$0	$15,136								$12,016
	$0	$0	$0	$15,590							$11,459
	$0	$0	$0	$0	$16,058						$10,929
	$0	$0	$0	$0	$0	$16,540					$10,423
	$0	$0	$0	$0	$0	$0	$17,036				$9,940
	$0	$0	$0	$0	$0	$0	$0	$17,547			$9,480
	$0	$0	$0	$0	$0	$0	$0	$0	$18,073		$9,041
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$18,616	$8,623
										Total	$107,720

APPENDIX B: PRO FORMA ASSUMPTIONS

1. All Scenarios assume a third-party, rent-paying, non-profit will lease space and operate in the building.
2. Type C space office is a reasonable comparable
3. The baseline asking rental rate is $19.4 per sq. ft. per year
4. Bergen County will provide the $3.5 million for the protection and stabilization of both the filtration plant and the pumping station
    a. Based on information provided by Mark B. Thompson and Associates
    b. All strategies receive the full $3.5 million in stabilization funding
5. Infrastructure improvements will cost $475 per sq. ft.
    a. Based on Mark B. Thompson and Associates estimate of an average of $400-$500 per sq. ft. for the entire site
6. No Depreciation in model
    a. Bergen County does not recognize depreciation – in conversation with the Treasury dept. it appears that they depreciate the entire expenditure at the moment of purchase
7. The efficiency ratio is between 75%.
    a. Based on Mark B. Thompson and Associates estimate of usable sq. ft. as between 65% and 75%.
8. Overall Vacancy is estimated at 10% for all years
9. Annual Operating Expenses are estimated at $10 a sq.ft.
10. The building has no tax liability and can't take advantage of any tax benefits
11. Tenant Improvements are $3 a sq.ft
12. CPI increases at 3% a year
13. No Debt Financing
14. Discount rate of 8%
15. The present values of the perpetual cash flows are calculated and added to the Net Present Value because the site is a permanent asset to the county
    a. Calculated (Year 10 NOI)/(Discount rate – growth rate)
16. Parking figures came from the Bergen County Site Plan Review Resolution
17. Ten year time frame -- its long-term outlook necessitates that assumptions be made about the future and this projection is limited to a ten year time frame due to the precarious nature of making accurate predictions beyond year ten.

APPENDIX C: SCOPE AND NONPROFIT COMPARISONS

Scope Comparison

Scope	Description	Initial Cost	Restored Area	Parking
1	Largest-scale infrastructure restoration	$48m	74,900 sq.ft.	225
2	Filtration Plant only	$35.3m	52,800 sq.ft.	158
3	Pumping Station only	$17m	22,000 sq.ft.	82
4	Limited scale	$6.2m	2,550 sq.ft. fully and 4,750 sq.ft. minimally	10

Nonprofit Role and Activities Comparison

	Scope	1	2	3	4
Nonprofit Role	Sole Manager	X			
	Co-Manager	X	X	X	
	Catalyst		X	X	X
	Assistance Provider	X	X	X	X
Activities	Fundraising	X	X	X	X
	Organizing Volunteers	X	X	X	X
	Capital Projects	X	X		
	Marketing and Outreach	X	X	X	X
	Programming	X	X	X	X
	Advocacy		X	X	X
	Remedial Maintenance	X	X		
	Routine Maintenance	X	X	X	
	Security	X			

APPENDIX D: PRIVATE PARTNER ROLES AND ACTIVITIES DEFINITIONS

Roles

Assistance Provider
Helps with education, programming, and volunteers, as well as the raising of additional funds.

Catalyst
Initiates the project and raises sources of financial support for the design and construction phase. Catalysts are typically involved with design and construction issues and advocate for additional services and support.

Co-Manager
Works with the public sector entity collaboratively on all (or most) aspects of design, construction and operations of the resource. Both the public sector agency and the private partner are jointly responsible for the performance of routine and remedial maintenance, as well as other work outlined in the written agreement. The public sector entity generally determines rules and regulations of the resource, with input from the private partner.

Sole Manager
Private sector partner is given sole responsibility for the design, construction and operations of the resource. They are responsible for raising all funds, though the public sector entity may choose to contribute. The private sector partner is generally granted the ability to determine the rules and regulations of the resource.

Source: Project for Public Spaces report Public Parks, Private Partners, Chapter 2

Activities

Fundraising
One of the most common activities of nonprofit partners due to their ability to collect tax-deductible contributions and apply for a wider range of grant funding. Donors often prefer to contribute to a nonprofit because of its ability to ensure that funds are spent on the specific project the donor wishes to support.

Volunteer Management
Building community stewardship, support and involvement with the project. Organizing volunteers to help with routine and remedial maintenance, events, fundraising, mailings, programming and more.

Design, Planning and Construction
Gathering input into the design of a project through community meetings and design competitions. Meeting with architects, contractors, and others involved in the process.

Marketing and Outreach
Increasing awareness and use of the project through various forms of publicity, media and person to person contact. Creating relationships with other institutions and organizations to enhance collaboration and support.

Programming

Organized activities of a recreational, educational, cultural, community or social nature meant to enhance the environment of the facility. A method to bring new people into the facility who might not otherwise go to it.

Advocacy

Advocacy can be geared towards any level of the public sector and encompasses a wide range of activities such as seeking additional services for a project, increased safety efforts, funding for additional renovations and more. Advocates must take care to make sure their efforts do not disrupt their relationships with other project partners.

Remedial Maintenance

Tasks such as replanting, path repair, clean-ups and storm repair, often conducted either by volunteers, staff, or contracted service providers.

Routine Maintenance

Day to day care of the facility, including tree and lawn care, litter removal and small facility repairs.

Security

Functions generally, though not always, left to the public sector including the patrolling and monitoring of the facility by law enforcement and park rangers. All partners contribute to the security of the facility by encouraging usage which generally helps discourage any undesirable activities.

Source: Project for Public Spaces report Public Parks, Private Partners, Chapter 3

APPENDIX E: ADDITIONAL RESOURCES

Books

David, J., & Hammond, R. (2011). *High Line: The Inside Story of New York City's Park in the Sky.* New York: Farrar, Straus and Giroux.

Madden, K. (2000). *Public Parks, Private Partners: How Partnerships are Revitalizing Urban Parks.* New York: Project for Public Spaces, Inc.

Studies

Active Living Research. (2010). *The Economic Benefits of Open Space, Recreation Facilities and Walkable Community Design*. http://atfiles.org/files/pdf/Economic-Benefits-Active.pdf

New Jersey Historic Trust. (1997). *Economic Impacts of Historic Preservation*. http://www.state.nj.us/dca/njht/publ/ec_imp.pdf

New York State Comptroller. (2010). *Economic Benefits of Open Space Preservation.* http://www.osc.state.ny.us/reports/environmental/openspacepreserv10.pdf

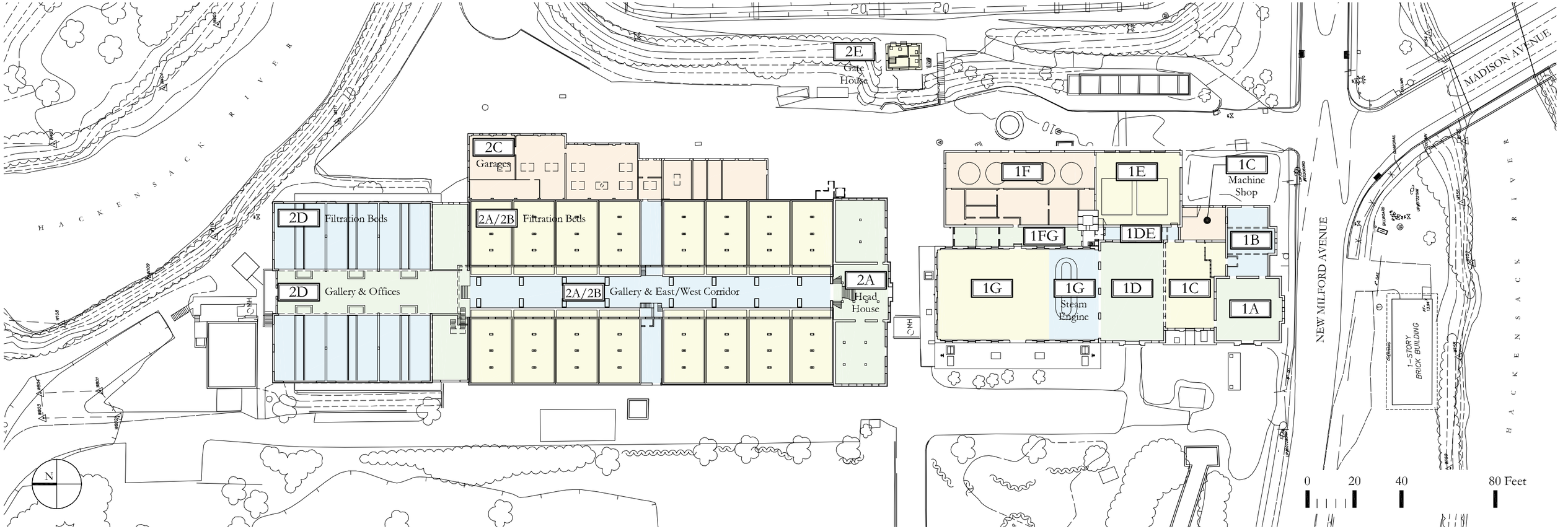
Organizations

Central Park Conservancy
http://www.centralparknyu.org/

Fairmount Water Works Interpretive Center
http://www.fairmountwaterworks.org/

Friends of the High Line
http://www.thehighline.org/

Project for Public Spaces
http://www.pps.org/



FILTRATION PLANT

PUMPING STATION

BUILDING IDENTIFICATION	2A Head House	2A/2B Gallery & E/W Corridor	2A/2B Filtration Beds	2C Garages	2D Gallery & Offices	2D Filtration Beds	2E Gate House	1A	1B	1C	1C Machine Shop	1D	1DE	1E	1F	1FG	1G Steam Engine	1G
BUILDING FOOTPRINT AREA (SQ. FT.)	1st & 2nd: 3,850 3rd & 4th: 1,300	8,500	19,300	6,150	5,250	8,150	300	1,650	1,200	1,900	600	2,550	400	2,500	4,300	1,000	1,900	4,100
FLOOR LEVEL CAPACITY	4	1	1*	1*	1	1*	1*	1–1/2	1–1/2	1	1	2–1/2	2	2	2–1/2	1	3	3
# OF EXISTING FLOOR LEVELS	4	1	*	1	1	*	*	1	1	1	1	1	2	1	1 + MEZZ	1	1	1
CONDITION	GOOD	GOOD	FAIR TO POOR	FAIR	FAIR	FAIR	GOOD	GOOD	FAIR	GOOD	GOOD	GOOD	POOR	POOR	POOR	POOR	GOOD	GOOD
IN-SITU MACHINERY & EQUIPMENT	LARGE TANKS ON 3rd FLOOR	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	–	LARGE PIPE GALLERY BELOW	STRUCTURAL/ FILTER ELEMENTS	–	SMALLER SCALE PUMPS	SMALLER SCALE PUMPS	PUMPS	–	TRAVELING CRANE	–	LARGE BOILERS	LARGE TANKS	–	VTE STEAM ENGINE & TRAVELING CRANE	PUMPS
ORIGINAL DATE OF CONSTRUCTION	1905	1905 / 1912	1905 / 1912	1930s	1955	1955	1906	1882	1886	1891	c.1920s	1898	c.1900	1898	1906	c.1950s	1911	1911
* COMMENTS			*RESERVOIR BELOW; USABLE FLAT ROOF ABOVE	*USABLE FLAT ROOF ABOVE		*RESERVOIR BELOW	*PIPE CHAMBER BELOW											

Charrette 2

Visioning for Sustainable Reuse

September 15, 2010

Hackensack Water Works at Oradell

REUSE ATTRIBUTES