ACKNOWLEDGEMENTS

The sponsors and authors of the “Reconsidering Gowanus” report extend their deep gratitude to William S. Newman, Founding Chair of the Steven L. Newman Real Estate Institute of Baruch College at CUNY, whose dedication made our work possible and whose enthusiasm reinforced our own.

We are grateful, too, to Matthew Goldstein, Chancellor of CUNY, for his strong support, and to Baruch College President Stan Altman and Provost James McCarthy for their commitment to this scholarly research.

Special recognition goes to Stanley Moses, Former Chairman of the Department of Urban Affairs & Planning, Hunter College, CUNY, for his encouragement and belief in the significance of this research.
PREFACE

Centuries of use have marked the Gowanus section of Brooklyn. Settled in the 1630s by the Dutch, it had by the mid-1800s become such a thriving industrial and commercial center that a canal was built so heavy goods could be shipped by barge from Upper New York Harbor to factories and distribution depots in Gowanus.

By the 1950s, the economy and population had sharply declined, and industry had left a dark legacy: pollution of the canal and adjacent properties so severe that the U.S. Environmental Protection Agency recently designated the canal a Superfund site. The EPA-led remediation, now in the investigative phase, should set the stage for revitalization and repurposing of an area with tremendous potential to generate a vibrant mix of new housing, commercial businesses and canal-side recreation.

Among the assets Gowanus boasts are strategic transportation connections; economic and social links to the larger city; and property that could be used for light industry, commerce, housing, and cultural and recreational amenities. Equally important are the growing number of stakeholders committed to achieving a better future for Gowanus.

Our report analyzes these assets and offers recommendations for capitalizing on them. It is an effort which originated through the Newman Real Estate Institute’s support of a graduate planning studio at Hunter College’s Department of Urban Affairs and Planning. Rosemary Scanlon, clinical associate professor of real estate at New York University and the former chief economist of the Port Authority of New York and New Jersey, contributed economic analysis. Harry Schwartz, the New York-based urban planner and economic development consultant, helped guide the report’s planning research and analysis.

The findings we present are consonant with New York City’s planning framework, notably the long-term sustainability goals detailed in PlaNYC 2030. We conclude that, with leadership responsive to residents’ aspirations, appropriate zoning and land-use policy, judicious investments of public and private funds – including, crucially, investments in stormwater management, and infusions of residents’ abundant resourcefulness and creativity, Gowanus can flourish sustainably. Further, its success, particularly in creating new housing for people in a variety of jobs and with a wide range of incomes, can help stimulate the city’s economy. And what’s learned in Gowanus may benefit similar urban communities that are struggling to overcome legacy problems in a weakened economy.

We hope our report will kindle interest in Gowanus, stimulate debate about its future, and accelerate the positive trends now emerging. While Dutch settlers’ oyster exports to Europe may never be replicated, we can readily envision a healthy environment hospitable to many species: businesses, light industries, artists productively engaged in their pursuits, and residents affordably housed and participating in a vibrant civic life. The players who make this vision a reality will have contributed a stellar chapter to a global city’s history.

Jack S. Nyman, Director
The Steven L. Newman Real Estate Institute
Baruch College / CUNY
ABSTRACT

Following a steep decline from its former manufacturing might after World War II, the Gowanus Canal neighborhood of Brooklyn is now experiencing potent forces of change and renewal. The population is rebounding from its historic low in 1990 with a flood of newcomers, including artists and young professionals who are increasingly well integrated into the cultural and economic life of the larger city. Long abandoned buildings from the industrial era are seeing new life as modern-day enterprises in dynamic business sectors. Real estate values are rising as demand for the neighborhood’s comparatively affordable housing grows. In response, prominent developers are planning sizeable new projects on large tracts in the neighborhood.

Amid this transition, there is a growing call from groups within the Gowanus community to establish guidelines to steer the neighborhood’s redevelopment. Chief among their concerns are how to address the severe contamination of the canal and neighborhood from decades of industrial pollution and how to chart a plan for growth that does not undermine the neighborhood’s economic base or displace longtime residents.

In response to these changing dynamics, this report takes a fresh look at the neighborhood’s rich potential to sustainably support diverse new businesses, housing and canal-based recreation, and offers strategies for achieving these redevelopment goals. It begins by recapping Gowanus’s distinctive history as a commercial hub and moves forward to the present day by examining demographic trends and other factors shaping the neighborhood. The report concludes with a series of recommendations for addressing both the neighborhood’s environmental challenges and for crafting a comprehensive plan to preserve its distinctive character and diversity while setting the stage for new growth. The potential to create 3,000 new housing units, with a substantial number set aside for low and moderate-income wage earners, is among the findings.
RECONSIDERING GOWANUS:
OPPORTUNITIES FOR THE SUSTAINABLE TRANSFORMATION
OF AN INDUSTRIAL NEIGHBORHOOD

EXECUTIVE SUMMARY

The Gowanus section of Brooklyn, radiating out from the banks of its historic canal, is one of the city’s most distinctive neighborhoods. Long a commercial hub, its defining waterway powered some of the New World’s first grist mills and later supplied some of its early exports - oysters - to the Old World. Just after the Civil War, the original tidal creek was expanded into a canal, creating a bustling corridor for manufacturing goods such as coal, oil and building materials that traveled by barge from Upper New York Bay to the many depots that lined its banks. Industry boomed on the land as well, as factories sprang up throughout the neighborhood to turn out chemicals, cement and soap.

The neighborhood’s diverse building stock, a mix of tenement buildings, modest row houses, brownstones, former plants and warehouses, reflects its lively commercial history. From an architectural and socio-economic standpoint, the community presents a notable alternative to the more homogeneous and affluent residential neighborhoods that surround it.

But large swaths of Gowanus are now in distress. The departure of manufacturing after World War II, taking jobs and people with it, had a dramatic and disproportionate impact on this commerce-centered community. Decades of unchecked pollution, fouling both the canal and the industrial tracts on the uplands, have had a chilling effect on redevelopment that is still evident today. The canal is lined with vacant properties. From 1970 to 1990, the population declined from 33,000 to 24,000. It is only in recent years that the forces of gentrification sweeping through this part of Brooklyn have prompted an appreciable uptick.

These very challenges, as well as the canal’s recent Superfund designation, provide what the Steven L. Newman Real Estate Institute views as a compelling - indeed, historic - opportunity to take stock of this singular community and propose a roadmap toward a vibrant and sustainable future. It is the Institute’s strong belief that there should be a plan in place to both preserve the neighborhood’s social, economic and architectural fabric while setting the stage for eventual new growth. Notably, we see the chance to create critically needed affordable housing for lower wage earners in blue collar and service industry jobs who work in the city’s major employment centers but struggle to live within commuting distance.

As one of the only canal-based communities in the city, Gowanus brings rare assets to the table. A clean waterway would support new parks, bicycle pathways and waterfront housing. The building stock, which includes modest studio and one-bedroom apartments, stately brownstones, large public housing complexes and a mix of commercial and industrial structures, ensures a diverse and vibrant community. Situated next to major city highways and along two subway lines, Gowanus is unusually well connected to the rest of the city. The recent construction of new hotels along Fourth Avenue, namely the Hotel Le Bleu and a Holiday Inn Express, is a clear sign of these logistical advantages.

In response to these and other circumstances, and because of its continuing involvement in major planning and development initiatives in New York City, the Newman Institute initiated and led the Gowanus Canal Area Study. The basis of the study was the Gowanus Canal Corridor Study Graduate Planning Studio in the Department of Urban Affairs and Planning at Hunter College of the City University of New York.
The report that came out of this study offers a close analysis of the demographic trends that are actively reshaping the Gowanus Canal area, bounded by Bergen Street on the north, Fourth Avenue on the east, the Gowanus Expressway to the south and Court Street to the west. In perhaps the sharpest illustration of its shifting dynamics, the 2000 Census showed that almost two-thirds of the residents moved into the neighborhood over the previous decade. These new arrivals tended to be highly educated and to mostly work in major job centers in Manhattan and Brooklyn. But the data also identified noteworthy and distinct populations in sub-sectors of Gowanus.

The report closely examines the neighborhood’s economic base, including the many long-established businesses in traditional trades and industries as well as the recent influx of businesses in new sectors, such as business services, light industry and food processing that are linked to the more vibrant sectors of the city’s economy. The community’s large number of artists constitutes an economic and a cultural presence.

Finally, the report concludes with recommendations, both broad and specific, for the Gowanus area. These are primarily from an economic and urban planning perspective.

Thorough and coordinated planning for the cleanup of the canal and the polluted land nearby must precede any substantial new development. Prior to the recent Superfund designation, contaminated properties underwent remediation on a project-by-project basis and little was done to clean the canal’s water or halt the flow of sewage and storm water runoff that escapes from the neighborhood’s antiquated Combined Sewer Overflow (CSO) system and drains into the canal. The EPA has proposed a comprehensive approach toward identifying and resolving the area’s complex environmental challenges.

The report endorses rezoning within the Gowanus area to provide significant opportunities for affordable housing. It is also in favor of permitting new higher-density housing, while safeguarding mixed-use blocks that support jobs and lend the neighborhood character. Planned new housing would bring a large number of new dwellings to Gowanus, with a significant share set aside for lower and middle-income households.

Public investment in community assets that will enhance the quality of life, such as new open spaces and parks, new trees, improved sidewalks to encourage pedestrian travel, as well as walkways and bikeways for recreational use along the canal, is also deemed essential.
I. HISTORY

The story of Gowanus is in many ways a chronicle of the country’s commercial and industrial history in capsule form. Following its settlement by the Dutch nearly 400 years ago, its history can be divided into three distinct stages: growth and prosperity until just after World War II; a sharp decline beginning in the 1950s as industry departed; and the beginnings of a renaissance at the end of the 20th century with the emergence of vocal local advocacy groups, government commitment to revitalization and growing interest from private real estate developers.

Growth and Development

The first colonists named the tidal creek that cuts through the neighborhood Gowanus after the chief of a local branch of the Lenape tribe. They quickly established some of the New World’s first commercial enterprises along its banks, including the region’s first patented grist mill to grind grain. Decades later, oysters harvested from the creek were some of the colonies’ first exports to Europe.

The New York State Legislature authorized funding to widen the creek in 1848, almost a decade after construction of the Atlantic Docks in nearby Red Hook brought significant maritime activity to that part of Brooklyn and prompted the construction of more docking facilities and warehouses along its banks. Full dredging of the canal did not begin until nearly 20 years later, following another act of the Legislature. The completion of the canal corridor in 1869 marked the creation of one of the first planned industrial districts in the nation.3

Construction of the Gowanus Canal transformed the 1.8 mile waterway into the hub of Brooklyn’s maritime and commercial life. Barges that traveled to New York City through the Erie Canal unloaded and picked up goods from warehouses and factories along its banks. The area surrounding the canal teemed with manufacturers, many devoted to heavy industry.4

Sanborn maps from 1886 capture the variety of industries along the Gowanus Canal in its heyday: Walsh’s Stone Yards, D. Hirsch Coal Yards, Citizen’s Gas Works, Vesta Oil, Christian Building Material, Allen Sons’ Rope Factory, Hamilton Pottery, H.J. Baker & Brothers Chemical Fertilizers, and the Shaw & Truesdell Grain Elevator. Coal yards, gas manufacturing plants, oil refineries, machine shops, chemical plants, cement works, sulfur producers, soap factories, and tanneries were lined up side by side along both sides of the canal.5

These industries attracted workers of mostly Irish, German, and Scandinavian descent, who settled near the canal and in Red Hook. They lived in brick row houses, tenements and small apartment buildings, while business owners and managers built brownstones and other more luxurious buildings. Because of its numerous factories, the area came to be called the “Gashouse District.” Its residents acquired a notorious reputation for rowdiness. In the latter part of the nineteenth century, there were an estimated 23 taverns along Smith Street, the local commercial thoroughfare.6

A wave of development in Brooklyn toward the end of the 19th century necessitated construction of a sanitary sewer system and Gowanus bore the brunt of this “improvement.” For the next century, the system dumped raw and untreated waste from residences and factories in the surrounding communities into the canal.7 As a result, a putrid odor filled the air, dubbed eau de Canal Gowanus8 by some of the inhabitants. Another colorful local name, Lavender Lake, was inspired by the unusual tinge that manufacturing waste gave to the water. To alleviate pollution, a flushing tunnel was constructed in 1911 to much fanfare. The twelve-foot wide tunnel carried water from the nearby Buttermilk Channel to flush the stagnant canal water into the New York Harbor.9

The Gowanus corridor reached its peak industrial activity by the end of World War I. Each year, approximately six million tons of cargo were transported along the canal, significant tonnage for a port of its geography, size, and position. The coal yards in Gowanus handled as much coal as the rest of the city combined.

3Reiss, 1990. 
4Metropolitan Waterfront Alliance (“MWA”), 2003. 
5The Gowanus Canal Community Development Corporation (“GCCDC”), 2006. 
6Reiss, 1990. 
Decline

The volume began to ebb shortly after the war, and by 1950, the Gowanus was handling a fraction of its previous freight. What precipitated its decline was a structural shift in manufacturing and shipping in the United States. With an increasing network of highways, industry no longer needed to be at or near the centers of cities or near water to receive or ship goods. Containerization, which allowed goods to be loaded directly onto trucks and trains, required deep water for large ships and acres of staging space for the containers. With its shallow depth and limited land, the Gowanus Canal was at a great disadvantage.

Harry F. Pearsall, president of the Gowanus Towing Company, now long out of business, noted in a 1950 interview that while there had once been five lumberyards along the canal, a single one remained. The schooners loaded with building materials that used to jostle and fight for right-of-way along the canal had become as “scarce as a horse-drawn wagon on the streets,” he said, adding that trucking had displaced many of the businesses that had once been active in Gowanus.

The construction of major new highways in Brooklyn cut through the neighborhood, bringing disruption. The Gowanus Parkway, later renamed the Gowanus Expressway after an expansion, replaced the Third Avenue BMT elevated line in 1939. Construction of that highway and the Brooklyn-Queens Expressway displaced homes and stores in Gowanus and Red Hook, disturbing the long-established social fabric of the community. Emissions from the large volume of traffic on these roadways significantly worsened air quality.

The “terrible trio” of manufacturing toxins, untreated sewage and vehicular exhaust soon overwhelmed the neighborhood. The situation worsened when the flushing tunnel that pumped fresh water into the canal broke down in the 1960s. Rather than repairing it, the city simply took the tunnel out of commission. Two decades later, strong community pressure led to construction of the Red Hook Waste Water Treatment Plant to ease the burden of sewage on the canal. Construction of the plant came at a cost to the community, however, causing some buildings in Red Hook to collapse and shutting roads for long periods.

While the new treatment plant tapered the flow of raw sewage into the canal, long-term environmental contamination from the region’s many years as an industrial hub persisted. The economy suffered as well when many of these polluting industries departed, taking jobs with them. By around 1990, Gowanus’ population had reached its modern low of 24,000.

Massive infrastructure projects had altered the neighborhood’s fabric, and a large urban renewal plan was proposed in the 1960s that would have changed it further. It was never completed, but the possibility of its adoption, and the massive changes that represented, had a chilling effect on development that lasted into the 1970s and accelerated Gowanus’ decline by deterring private investment.

Resurgence

There were few major developments in the post-war period outside of the construction of two public housing projects in the northern part of the community. By the early 1990s, however, a wave of gentrification known as “the brownstone movement” sweeping the adjacent neighborhoods of Park Slope, Carroll Gardens, and Boerum Hill had reached Gowanus. Newcomers saw Gowanus’ more modest and moderately priced dwellings as an affordable alternative to the increasingly costly housing in these neighborhoods. Artists, who are often the pioneers in neighborhood renewal, began converting abandoned warehouses into work spaces.

In another sign of renewal, local, state, and federal government agencies began to assess and remediate some of Gowanus’ environmental contamination. In 1994, reconstruction began on the defunct flushing tunnel. Its reactivation in 1998 saw the immediate return of marine life, such as killifish, shore birds, crabs and ducks, to the canal. That year, the city’s Department of Environmental Protection (DEP) dredged 2,000 tons of sludge from the canal. Earlier this year, the U.S. Environmental Protection Agency designated the Gowanus Canal a Superfund site and announced far-reaching plans to clean it over the next 10 to 12 years at a cost of $300 million to $500 million.
The 1990s also saw the formation of local groups that celebrate the community’s unique character and advocate on behalf of its residents and workers. In 1999, for example, the Gowanus Dredgers Canoe Club began hosting canoe rides along the canal and serving as an environmental watchdog.

Outsiders began to pay attention. One notable source of information was a comprehensive community development plan released in 2006 by the Gowanus Canal Community Development Corporation. The neighborhood was perceived to have a bright future during healthy economic times and thus experienced some of the sharpest increases in real estate values in New York City. For instance, between 2003 and 2007, prices for industrial properties rose steeply from $108 to $270 a square foot, although they have likely fallen in the last few years in line with values in other parts of the city.

Recent zoning changes have brought new, mostly market-rate apartment houses along Fourth Avenue, near the Gowanus community. A new housing complex, Gowanus Green, slated for a large city-owned plot along the canal, once the site of a coal gasification plant, will include a substantial amount of affordable units among its 774 dwellings, as well as open space.

Other private developers are also interested in building along the canal. Toll Brothers, for example, has assembled properties for a new residential complex, although it recently withdrew those plans. Individual property owners and smaller developers are buying buildings and renovating them, much as they did in Park Slope 20 years ago. Lowe’s Home Improvement opened a large store in the southeastern part of the corridor. Nearby is a new Pathmark supermarket, while Whole Foods intends to build its Brooklyn flagship store on the eastern edge. Three hotels have opened recently, signaling a new chapter for Gowanus in Brooklyn and in the city. However, the Superfund designation and cleanup may delay or stop some of these plans.

One locally initiated remediation project, the Gowanus Canal Sponge Park, has recently won funding from the federal government and a prestigious design award. The park is composed of engineered waterfront spaces designed to both slow and filter the contaminated stormwater runoff that drains into the canal, while also adding green park land to the waterway’s banks. Planned for both sides of the canal, it employs meadow plants, filtration swales and terraced wetland basins to capture runoff. The plants draw heavy metals out of the water through a process called phytoremediation. Floating wetlands and oyster beds would also provide aquatic organisms that work together to absorb and break down contaminants.

Sponsored by the Gowanus Canal Conservancy, the park has already received $300,000 in congressional funding toward construction. The park’s designer, Brooklyn-based dlandstudio, won a 2009 Award of Merit in the Unbuilt category from the New York State chapter of the American Institute of Architects.

To help guide future growth, the New York City Department of City Planning is considering comprehensive zoning changes for Gowanus that would preserve some areas for light manufacturing while encouraging new housing in other sections. But not all members of the community embrace these changes. Some residents and businesses fear that they will be squeezed out by mounting real estate market pressures and that the new initiatives will mainly benefit newcomers from other social and economic backgrounds. The Ferrara Brothers Concrete Plant, with its 100 employees, may be displaced, for example, when the city-owned Gowanus Green site it now occupies is developed for housing and parks.

Figure I-1 shows Gowanus’ street layout and land use patterns as of 2007, according the New York City Department of City Planning.

---

19GCCDC, 2006.
22Cobble Hill Courier, April 29, 2007.
FIGURE 1: Existing Land Use in Gowanus
Although almost all of the industrial firms that depended on the Gowanus Canal are gone, the neighborhood is still an important production center, combining traditional trades, such as automotive repairs and apparel, with dynamic newer ones, typified by high-end food processing and business services. Three active commercial sectors have recently taken hold in Gowanus: large and specialty retailing, working artists and hotels. In the future, Gowanus will remain a substantial, albeit diminished and changed, economic center in New York City.

Industry

Long before Gowanus was a place to live, it was a place to work. Its industrial roots date back to the mid-1800s, when the original creek was widened under the authority of New York State. For a century it was a flourishing and diverse industrial district; coal yards, gas works, oil refineries, machine shops, chemical plants, cement works, sulfur and soap factories, tanneries and the like lined both sides of the canal. Maps from the 1880s capture the variety and nature of the industries dependent on the canal: stone works, coal yards, petroleum dealers, suppliers of building materials, rope factories, potteries and chemical producers. All of these firms and many of their successors are now gone. At the end of World War I, the Gowanus Canal Corridor reached the peak of its industrial career, when its coal yards handled as much coal as the rest of the city.

The structural shifts in manufacturing, transportation and consumption that followed World War II marked the end of Gowanus’ role as a major center of industry. With an increasing network of highways, industry no longer needed to be at or near the centers of cities or near water to receive or ship goods. Containerization, which allowed goods to be loaded directly onto trucks and trains, required deep water for large ships and acres of staging space for the containers. With its shallow depth and limited land, the Gowanus Canal was at a great disadvantage.

Although no longer an industrial powerhouse, Gowanus remains a significant industrial district amid the vestiges of its illustrious past. A survey of Gowanus’ industrial districts (excluding the mainly residential areas) shows the continuing predominance of industry and manufacturing as land uses. They occupy 48% of the land area and 62% of the building area, compared to merely 8% of the land area and 14% of the building area for housing. Reflecting its industrial history, 14% of the land area is used for parking, almost twice the amount used for housing. More land is vacant, 13%, than is used for housing. The amount of building space devoted to housing, 14%, is less than twice its land area, 8%, indicative of lower density residential uses in smaller buildings. The industrial ratio of 48% land to 62% building also signifies low density development, typified by the many older, one-story, high-ceiling industrial structures. The large share of the land that is either vacant or used for parking, 27%, and the low industrial densities strongly suggest opportunities for residential redevelopment, provided that viable plots can be assembled and limiting environmental conditions overcome.

As the map of existing land use shows, industrial, transportation and automotive activities are still highly concentrated along the Gowanus Canal, although only a handful depend on the canal, with most located one or two blocks away. Of the 5.34 million square feet of industrial space, 58% is used for production, 20% for storage and 22% for garaging. As with the figures on overall land use, there is ample latitude, subject to environmental and other constraints, for reusing industrial land for housing and other activities.

A 2008 land use survey, excluding the concentrated residential area in the northwest, offers insight into the types of businesses in Gowanus. Of the 290 businesses identified, the largest share, 29%, were engaged in distribution and warehousing, 26% in the growing business services sector, 21% in manufacturing and 18% in automotive lines. The large share in distribution and warehousing echoes Gowanus’ history as a port and its proximity to the region’s highway network. The average business occupies 10,000 square feet of space.

Gowanus’ economic base is mix of traditional and new industries. Tradition is represented by firms dealing in stone, metal fabrication and auto and truck repairs. New business lines are food processing, specialized business services, art products and architectural woodworking. Figure II-1 shows a row of woodworkers in brick buildings along Baltic Street. Typical new firms that are strongly integrated into the regional (and even national) economy are Jauchem and Meth, manufacturers of specials effects for Broadway, the fashion industry and concerts, Kodiak Studios, fabricators of displays for museums around the country, as well as Aegean Foods, producers for Garden of Eden groceries in New York City. Considering Gowanus’ exemplary highway and transit connections, industrial history and supply of
reasonably priced space, its economic future would seem to be in such growing fields as food processing, architectural woodworking and business services that add substantial value and are linked to regional strengths. The favorable future for selected types of production is supported by manufacturing wages in Brooklyn, which were $36,000 per year in 2006, up from $28,600 in 2001, and about $10,000 more than wages in retailing.

Small businesses predominate in Gowanus. A 2007 survey by the Southwest Brooklyn Industrial Development Corporation of the core industrial area identified 206 firms with 1,796 employees on-site (excluding the off-site workers at the largest employer), an average of nine workers per firm. The small size of industrial firms in Gowanus is consistent with other findings; half of the manufacturers in two zip codes that include Gowanus have one to four workers and one-fifth have five to nine workers.

Since 2003, the cost of non-residential – industrial and commercial – property has risen sharply, and at a faster rate than residential prices. Price increases have been especially strong for larger properties with at least 4,000 square feet of space; in 2003 the average sale price for properties of this size was around $800,000 and by 2006 it had risen to close to $3 million. Rising price levels may reflect a growing demand for space by viable businesses, such as business services and specialty manufacturing, as well as the expectation that the rezoning will permit the land now zoned for manufacturing to be used for housing.

Rising values are demonstrated by data from the New York City Department of Finance for industrial property transactions in the Gowanus area. In 2003, the average sale price for the 12 sales of factories and commercial garages for which complete information was available was $108 per gross square foot of building space. By 2007, in a burgeoning real estate market, the average for 11 sales had risen 2-1/2 times to $270 per gross square foot. The overall market for vacant and improved property has improved in recent years, going from 39 transactions in 2003 to 44 in 2007, with transfers of vacant land, a good barometer of development interest, rising from 7 to 11 transactions.

Commerce

Generally, the Gowanus Canal Corridor appears deficient in smaller and mid-size retailing serving daily needs. Perhaps because of its dispersed residential character, particularly east of the canal, and the dominance of industrial land, it lacks a neighborhood commercial center. The level and concentration of retailing may well change if and when the proposed Whole Foods store opens in the north sub-area and large clusters of new housing are built.

In recent years, three dynamic commercial sectors have sprung up in Gowanus, attracted by the availability of land and building space at reasonable costs, good transportation and proximity to prosperous neighborhoods, such as Park Slope, Carroll Gardens, Brooklyn Heights and downtown Brooklyn. These new sectors are: large and specialty retailing, working artists and hotels.

Retailing

The southern part of Gowanus is home to two new large retailers; Lowe’s Home Improvement (Figure II-2) and the Pathmark Supermarket on 9th Street. After protracted remediation of the polluted site, Whole Foods intends to build a large new store at Third Avenue and Third Street to serve Gowanus and nearby neighborhoods, although construction has been delayed. New large retailers have been lured to the neighborhood by the availability of large parcels of suitably
zoned land, convenient highway transportation and a supportive market in Gowanus and other parts of Brooklyn. The other new retail sector is the “restaurant row” along Smith Street, complementing the older Italian shopping street one block away on Smith Street. Smith Street’s varied and higher-priced dining places are attuned to the prosperous neighborhoods in this part of Brooklyn, such as Carroll Gardens. As more affluent newcomers move into the new housing and some current residents choose to move out, the demand for retailing in Gowanus, especially at the local level, is likely to increase. Residents west of the canal use the shops along Court Street for daily needs, while those to the east rely mainly upon Third Avenue.

Working Artists

Gowanus is already home to a large and varied artist community. It can be expected to grow as other neighborhoods come under the pressure of real estate development, often accelerated by zoning for higher density housing. The Annual Gowanus Artists Studio Tour (AGAST) represents over 140 artists with studios in Gowanus. Figure II-3 shows an old factory on Nevins Street that is now living/work quarters for local artists. Low real estate values have attracted artists from Manhattan and other parts of Brooklyn, where prices for studios and housing have sharply increased.

In addition to supporting artistic production in Gowanus, AGAST advocates for affordable studio space. Recognizing the inevitably of changes in Gowanus’ real estate market, they are willing to accept higher density development if the first and second floors are reserved for industry or studios.

Hotels

Surprisingly, Gowanus and its borders are home to three relatively new hotels. Two are reasonably priced, namely the Holiday Inn Express and the Stratford Manor Bed & Breakfast, and one is decidedly expensive for this part of Brooklyn. In respect to the 48-room Hotel Le Bleu, a three-year old boutique-style inn, there may be some question as to how many people will pay up to $350 to spend a night on the nondescript Fourth Avenue, surrounded by a Staples and a taxi garage. (Figure II-4) All three new hotels are on or near Fourth Avenue, with its subway line. Perhaps these hotels are designed to accommodate visitors to the affluent nearby communities, such as Park Slope and downtown Brooklyn and the planned huge Atlantic Yards mixed-use development at Atlantic and Flatbush Avenues. It is hard to know if they will be the forerunners of other hostelries.
III. DEMOGRAPHICS

A demographic profile of the Gowanus Canal Study Area reveals dramatic changes over the last three decades. The population has started to rebound, young, well-educated professionals are moving in, and the poverty rate has dropped sharply. Turnover is high, especially among renters, and a significant number of people are moving to Gowanus from other counties, states and countries.

Wide disparities remain, however, among the populations concentrated in different sub-areas of the corridor. The west sub-area looks increasingly like the affluent Carroll Gardens neighborhood next to it. Residents there are by and large wealthier, more educated and white. The east sub-area is predominantly Hispanic, significantly poorer and growing at a much faster rate. An understanding of these complexities is vitally important to the formation of a redevelopment plan that meets the needs of the neighborhood’s diverse citizenry.

Much can be learned by examining Gowanus’ demographics: its total population as well as its distribution by age, gender and race. Also significant are household groupings, education levels, the languages spoken at home, income levels, occupations and commuting patterns.

FIGURE III-1: Map of Gowanus Area Census Tracts
Figure III-1  Map of Gowanus Area Census Tracts

The demographic data considers:
- The Gowanus Canal Study Area
- The census tracts in the surrounding neighborhoods of:
  - Boerum Hill
  - Carroll Gardens
  - Park Slope
- The entire borough of Brooklyn

The Gowanus Canal Study Area can be divided into three sub-areas that collectively include the nine census tracts shown in Figure III-1. The north sub-area consists of tracts 71 and 127; the east sub-area of tracts 117, 121, 123 and 125; and the west sub-area of tracts 75, 77 and 69.

![Population Change by Neighborhood](image)

**FIGURE III-2:** Population Change by Neighborhoods from 1970 to 2000 (U.S. Census)

![Population Change in Study Area](image)

**FIGURE III-3A:** Population Change by Study Area, from 1970 to 2000 (U.S. Census)
Total Population

In 2000, approximately 26,000 people lived in the Gowanus Canal Study Area. This represents a 21% decline from 1970, when there were 33,000 residents. The study area has followed Brooklyn’s general trend over the past three decades, with major declines between 1970 and 1980 and smaller declines during the 1980s. Since 1990, the populations of both Brooklyn and the study area have rebounded by about 7%, a faster rate of growth than the largely gentrified adjoining neighborhoods of Boerum Hill, Carroll Gardens and Park Slope, which grew at rates of between 1% and 4%. Figure III-2 shows population changes between 1970 and 2000 for the Gowanus study area, surrounding neighborhoods and the entire borough.

The eastern sub-area underwent the steepest decline during the 1970s, with the population falling by close to one-third. This area also experienced the most dramatic rebound during the 1990s, with growth of 19%. The northern sub-area did not experience a similar shift, as its population remained stable in the 1990s, while the west sub-area grew by 10%. The only tract in the study area to show a population loss in the 1990s (tract 71) is located in the north sub-area, with a 13% decline. The two public housing projects in the study area are in this sub-area.

The changes in total population clearly indicate different dynamics in the three sub-areas, with virtually no growth in the north, moderate growth in the west and relatively fast growth in the east. Possible explanations are a continued exodus of both white and African-American residents from the north sub-area and a rapid increase in immigrants in the east. Interestingly, the Carroll Gardens section (west-sub area) and the Park Slope section (east sub-area) of Gowanus are both growing significantly faster than the wider neighborhoods. Figure III-3A shows population changes by study area, while Figure III-3B displays population variations by census tract.

![Population Change in Study Area](image)

**FIGURE III-3B:** Population Change by Census Tract from 1970 to 2000 (U.S. Census)
Due to changes in the way race was defined in the 2000 Census, with respect to the Hispanic population in particular, this discussion does not include data from prior census years. In 2000, the study area was 41% white, 16% African-American and 35% Hispanic. These figures are significantly different from the Brooklyn figures of 35% white, 34% African-American and 20% Hispanic.

Although the study area is integrated as a whole, there are strong racial concentrations in sub-sections. Thus, the west sub-area is 72% white, the east more than half Hispanic and the north 40% Hispanic. While white residents are the predominant ethnic group within the study area, only three of the nine census tracts have a white majority, including two tracts in the west sub-area and tract 69 in the north sub-area.

In both the north and east sub-areas, Hispanics are the largest population group. This holds at the tract level as well, with the exception of tract 71, which has a slightly higher African-American population. The largest African-American concentration is in two census tracts, 71 and 127 in the northern part of the study area, that are 42% and 34% African-American respectively.

Figure III-4A shows the racial composition of the study area, compared to surrounding neighborhoods and to Brooklyn, while Figures III-4B and C examine racial composition in the study area and in census tracts.

FIGURE III-4A:
Racial Composition by Neighborhood, Study Area, and Census Tract (U.S. Census)
Gender

Women make up a slight majority of the study area’s population, at 51.8%. The gap is smaller than that of Brooklyn as a whole, where the population is 53% female. However, since 1970, the trend in the borough, neighborhood and study area has been towards a growing proportion of men. In the study area, the number of men grew from 46.6% in 1970 to 48.2% in 2000. Only in the east sub-area, where the male population underwent a relative decline, has the trend differed. These are also the only census tracts that had a majority male population in 1970 and 1980.

Age

As Figure III-5 shows, the population of the study area is getting older. Census data from 1970 through 2000 show that the largest cohort has shifted from 5-14 years of age in 1970, to 15-24 in 1980, and to 25-34 in both 1990 and 2000. The same trend can also be seen in all census tracts in the study area and in the surrounding neighborhoods. Between 1970 and 2000, the share of the population in the prime working age bracket of 25 to 44 years grew enormously, from 15% to 40%, reflecting the entry of a large number of well-educated professionals. Gowanus’ age trends differ from that of the borough. For example, the 2000 census showed that the largest age cohort in Brooklyn had shifted back to 5-14, while, as shown in Figure III-5, most people in the Gowanus area are 25 to 34 years old. Also of note is the increase in the number of residents 75 years and older in the study area.

Average household size has decreased since 1970 throughout Gowanus, as it has in the surrounding neighborhoods. Starting in 1990, it diverged from the trend in Brooklyn; average household size in the borough rose from 1990 to 2000, while it continued to decline in the study area. For the entire study area, average household size shrank dramatically, from 3.2 persons in 1970 to 2.4 in 2000. At the sub-area and tract level this change has been most pronounced in the north and west, with decreases of over one person per household in four of the five census tracts in these areas. The east sub-area has seen the smallest decrease in household size, dropping from 3.1 to 2.6 between 1970 and 2000.

Coupled with a growing population, the decline in household size has several implications. It indicates an increasing demand for housing, particularly smaller apartments. Smaller households may also signal fewer children, as can be seen in the age distribution, influencing the demand for services such as schools.
Educational Attainment and Occupation

Shifts in educational attainment and occupational status are some of the more dramatic changes in the study area between 1970 and 2000. For the population 25 years and older a plurality of residents had an elementary education and only a small percentage a college degree in 1970. By 2000, following a sizeable influx of more affluent residents, the reverse was the case. The number of residents with four years of college skyrocketed from 1.5% in 1970 to 20.0% in 2000, while the number with some college education rose from 3% to 16%. Within the study area, large majorities hold college degrees in the three census tracts along Court Street, while high school degrees are the norm in the remaining six tracts.

The higher levels of education and income correspond to changes in residents’ occupational status. In 1970, 7.5% of employed residents 16 years of age and older worked in management, business and finance and 3.2% worked as professionals in other fields. Thirty years later, nearly 16% worked in business and finance, and the number of people working in various other professional fields had increased tenfold to 33.1%.

Language Spoken at Home

Similarly to Brooklyn as a whole, English is the predominant language spoken at home in the study area. Specifically, 65% speak English at home in the Gowanus area, while the same is true for 66% of the residents in Brooklyn. This is also similar to Boerum Hill, where 66% of residents speak English at home, but significantly lower than in Carroll Gardens or Park Slope, where 75% and 73% speak English at home respectively.

The highest incidence of English is in the west sub-area, where over 83% of households speak English at home. The lowest is in the mainly Hispanic east sub-area, where only 49% speak English at home.

The second most commonly spoken language in the study area is Spanish, used by 34% of households, much higher than the borough average of 18%. In the study area and surrounding neighborhoods, but in contrast to Brooklyn, the overall trend has been an increase in the use of English at home and a decrease in Spanish and other languages. Two tracts (121 and 125), both in the east, run counter to this trend. As shown in Figure III-6, the east study area has over 40% of the population speaking Spanish at home.

Foreign Born Population

The borough has seen a rapid increase in the share of foreign-born residents, rising from 18% in 1970 to 38% in 2000. The study area has also seen a rise in the share of foreign-born residents, but at a much lower rate than the borough, rising from 14% in 1970 to 18% in 2000. This follows similar trends in Boerum Hill and Park Slope. However, there are significant differences at the sub-area level. The mainly Hispanic east has seen a major increase in the share of foreign-born, from 13% to 27%, while in the west it declined from 19% to 14%. The drop in the west parallels changes in Carroll Gardens, which saw a decline from 16% to 14%.
Migration and Residential Stability

Migration and residential stability patterns show that residents of Gowanus are on the move.

In 2000, almost two-thirds of the households in Gowanus had moved into their current residence within the last ten years. One out of five had moved within the last year. Among owners, four of ten had moved in the 1990s, while for renters the share was far higher, at 70%. These figures are consistent with the changing social and economic composition of Gowanus, as measured by educational levels, occupations and migration.

Since 1970, there has been a decline in the share of residents who have either lived in the same house within the study area or moved from other areas of Brooklyn during the five years before the census. At the same time, there has been an increase in people moving to Gowanus from other counties in New York as well as from other states.

As Figure III-7 shows, in 2000, about one-quarter of Gowanus’ residents had moved there during the previous five years from another county in New York State, another state or from another country. During this five-year period, 9% of residents moved to Gowanus from other counties in New York State, compared to 7% between 1985 and 1990. Between 1995 and 2000, 13% moved from other states, as compared with 7% between 1985 and 1990. Some of the influx from other New York counties is a result of migration from Manhattan. The large increase in migration from other states may also be attributable to the expensive housing market in Manhattan, compelling city-bound newcomers to seek more affordable locations. Another fifth moved to Gowanus from other parts of Brooklyn, perhaps from nearby high-cost neighborhoods, such as Park Slope.
Median Annual Household Income

In 2000, the median household income in the study area was $40,224, markedly higher than in Brooklyn as a whole, where the median was $31,726. Households in the study area have a slightly lower income level than in nearby Boerum Hill and a significantly lower income level than in either Carroll Gardens or Park Slope. Income and race are correlated; the highest household income levels are in the west sub-area, at $55,021, where there are large numbers of white residents, and the lowest in the east, at $31,082, where Hispanics are concentrated.

A breakdown of median household income by owners and renters reveals a huge disparity by tracts. Among owners, the difference ranges from almost $110,000 in tract 69 in the west to $40,000 in tract 125 in the east. The gap is particularly noticeable in the north sub-area.

In tract 71, owner households on average earn five times more than their renter counterparts. This likely indicates housing succession, as higher income residents bought houses, particularly in the brownstone sections of the study area. For renters, the gap is not as striking. Figure III-9A shows owner incomes, renter incomes, and the difference between the two by census tract.

Population Living Below the Poverty Level

Consistent with other changes, the percentage of people in the study area living below the poverty line dropped appreciably in recent years, from 28% in 1980 to 22% in 2000. This trend is similar to the surrounding neighborhoods, all of which experienced
decreases in the share of people living in poverty between 1980 and 2000. However, Brooklyn as a whole sustained a small increase, from 24% to 25%.

In the Gowanus area, the largest drops in poverty levels occurred in the census tracts along Court Street, where the incidence of poverty dropped by 38%. In two tracts in the east sub-area (121 and 123), however, the poverty rate increased by 32% and 62% respectively, as shown in Figure III-9B.

Journey to Work

Gowanus residents are highly integrated into the economy of Manhattan and the city as a whole. In 2000, 12,009 members of the workforce 16 years of age and older lived in the Gowanus study area. Of these residents, well over half, 57%, worked in Manhattan, 34% worked in Brooklyn, 4% in the other boroughs and 5% outside of New York City.

Gowanus’ excellent transportation network, mainly the subway lines along Fourth Avenue and Smith Street, offers convenient access to the Brooklyn and Manhattan business districts as well as to surrounding communities. Census data show that two-thirds of Gowanus’ workers commute by subway or railway, compared to only 46% of all workers in Brooklyn. Sixteen per cent of Gowanus’ workers commute by car, compared with 30% for the borough. Interestingly, 4% of Gowanus’ workers are home-based, twice the share for Brooklyn as a whole, and likely reflecting the large number of artists and freelance professionals who live there. Commuting times were moderate, with the largest group of workers, 25%, spending 30 to 34 minutes to get to work.
IV. HOUSING

Comprised of modest row houses, tenement buildings, small apartment houses, loft buildings and more opulent brownstones, the housing stock of Gowanus is as architecturally diverse as its inhabitants. Most residents live in small buildings in low-density blocks, where well over half the housing units are in buildings with one to four dwellings. Compared to the surrounding communities, such as Park Slope and Boerum Hill, the community is relatively affordable.

But what truly sets Gowanus apart is its potential to support significant new housing on vacant and underutilized properties that were once occupied by manufacturing and commercial enterprises. Indeed, an analysis of land-use patterns in Gowanus suggests the neighborhood could sustain a 30% increase in its housing supply, an unusual expansion for a settled urban area. As of the middle of 2009, about 1,300 new units were in various stages of development, although some of them may be delayed or even withdrawn because of the economic downturn and the uncertainty surrounding the Superfund cleanup.

Furthermore, there is rising demand for housing in Gowanus, as signaled by the recent influx of newcomers to the neighborhood. Recent development trends indicate that the dominant reuse of land in Gowanus will be for housing. Community groups representing workers and residents in Gowanus are urging policymakers to mandate that a significant number of these units be set aside for low and middle-income residents to preserve the neighborhood’s social and economic diversity.

Overview

In 1970 there were a total of 10,349 housing units in the Gowanus Canal Study Area, of which 3.1% were vacant. By 1990, the number of units had increased to 10,778, and the vacancy rate had risen with it, to 5.1%. The slight growth in the number of dwellings was accompanied by a decline of 27% in the population, as the average household size shrank with the aging of longtime residents and the influx of younger, smaller households. A decade later, in 2000, there were 11,071 housing units in Gowanus, a gain of almost 300, and the vacancy rate had dropped to less than two percent, with the addition of 1,800 residents.

The last decade saw a surge in the construction of new apartment housing in the wider Gowanus neighborhood, propelled mainly by a zoning change along Fourth Avenue that permitted higher density development. For the most part, this has meant the replacement of older commercial structures by high-rise, market-rate apartment buildings. So far, an estimated 1,200 units have been built along the Fourth Avenue corridor. Within the study area itself old loft buildings in the west sub-area have been converted into residences and some in-fill housing has been built. Several large new projects are being planned or considered and a comprehensive environmental cleanup, as recently proposed by the EPA, in addition to possible zoning changes, could eventually bring even more new housing to Gowanus. The bulk of the recently completed and planned new housing is composed of smaller units at market prices that appeal to younger professionals.
Gowanus is overwhelmingly a neighborhood of renters. The 2000 census showed that 78% of the occupied units were rented. However, the number of owners is slowly rising, from 19% in 1970 to 22% in 2000. Owners are typically newer arrivals to the neighborhood.

Most residents live in small dwellings. In 2000, single-family structures accounted for 8% of the dwellings, while two-family structures comprised 19%, and buildings with three or four units made up 30% of the housing stock. At the other end of the scale, larger structures with 20 or more dwellings, a common type of shelter in New York City, accounted for just a fifth of the housing units.

About one-third of the housing units in Gowanus have one bedroom, an equal share two bedrooms and 15% are studio apartments. Less than one out of ten dwellings has three or more bedrooms, mainly in smaller, owner-occupied buildings. By the late 1980s, newspaper reports characterized the growth of Gowanus as the result of an influx of young college graduates who required lower rents than what were available in Manhattan and had the desire to be in an area that was no less trendy than other areas of Brooklyn.

The average rent in Gowanus is higher than the average for New York City or Brooklyn, but lower than the surrounding Community Board 6. In 2000, half of the rental units in Gowanus were priced at less than $749 per month. In the city as a whole, the same percentage rented for less than $649 a month and in Brooklyn, for less than $599. In Board 6, however, half the units rented for less than $999 a month.

Gowanus’ lower rents, compared to other desirable neighborhoods, have brought younger people to the neighborhood. By the late 1980s, newspaper reports characterized the growth in Gowanus as the result of “young professionals seeking refuge from the high rents and frenetic pace of Manhattan and the no-less-expensive trendier Brooklyn neighborhoods.”

As in other parts of the city, many renters in Gowanus pay what is considered an excessive share of their income for housing. Of the approximately 8,400 renter households in Gowanus in 2000, an estimated one-third paid over 30% of their income for rent. (A key measure of affordability indicates that paying more than 30% of income for housing is excessive.) In 2000, among households with annual incomes of less than $10,000, about 85% paid over 30% of their income for housing. For households earning between $10,000 and $20,000, the number paying more than 30% of their income dropped to 55% and for those earning $20,000 to $35,000, it declined even further, to 35%. In the next income bracket, those earning from $35,000 to $50,000, slightly less than 10% of households, paid over 30% of their income for rent, while for those earning $50,000 or more, the number fell to about 3%.

By far, the largest and most affordable housing structures in the Gowanus study area are the two adjacent public housing projects in the north sub-area. Together they have 1,308 dwellings, accounting for about 15% of the neighborhood’s occupied rental units. Gowanus Houses is the larger of the two, with 881 apartments, while Wyckoff Gardens has 427 units. As much of the public housing in New York City, the buildings are in need of repair. Tenant organizations report continuing problems such as elevator breakdowns, interruptions in heat and hot water and neglected maintenance. Drug trafficking and other criminal activity are also observable. Furthermore, the community center, as well as youth and job readiness programs that serve a wide community, may be threatened by cuts in the Housing Authority’s budget.

New Development

Gowanus is attracting a growing number of buyers who are drawn by its relatively affordable prices. Newer residents are buying single-family dwellings as well as those with rental units.

Two major new residential developments have been proposed for sites along the Gowanus Canal. A Toll Brothers project was slated for three acres of privately-owned land along the west shore of the canal on a plot bounded by Carroll Street to the north, Second Street to the south and Bond Street to the west. As planned, it would have included about 500 dwellings, consisting of a mix of sale, rental and condominium units in multi-family buildings and townhouses, with one-quarter reserved as affordable housing. However, the project was recently withdrawn because Toll Brothers felt that the pending Superfund environmental cleanup would make it impossible to obtain financing.

The Hudson Companies, The Bluestone Organization, Fifth Avenue Committee and Jonathan Rose Companies have been selected to develop a 5.8-acre, city-owned plot between Smith Street and the Gowanus Canal. As planned, Gowanus Green would contain 774 units, of which a significant number would be reserved for low and middle-income households.

A third canal-side project, Gowanus Village, had been proposed for a large tract bounded by Third Avenue, Third Street and Carroll Street. It would include a mix of light industrial space, housing and open space. The latest news is that the entire assemblage is on the market and that work has been halted on the project. All three sites on the canal have significant environmental contamination that would require extensive remediation before they could be developed.
V. ENVIRONMENT

If redevelopment of the Gowanus neighborhood for new housing, commerce and waterfront recreation rests on a single factor, it is the comprehensive cleanup of the canal and the land around it. For generations, prior to the adoption of modern environmental controls, industrial businesses along the busy commercial waterway polluted both the canal and the surrounding residential and commercial blocks.

Layers of contaminated sediment at the bottom of the canal are among the legacies of this industrial era. While there is little heavy industry in the neighborhood today, recent samplings of sediment found high levels of residual contaminants, including polychlorinated biphenyls (PCBs), heavy metals, volatile organic compounds, pesticides and coal tar. Former industrial properties throughout the neighborhood have also been identified by environmental regulators as requiring remediation before they can be redeveloped.

This past March, following public hearings, a comment period and months of debate, the U.S. Environmental Protection Agency assumed control of the canal’s cleanup by designating it a Superfund site. The EPA-led remediation, now in the investigative stage, is expected to take between 10 and 12 years and cost up to $500 million to complete.

Water and Land

Pollution of the Gowanus Canal has two principal sources. The manufactured gas plants, coal yards, concrete-mixing facilities, tanneries, chemical plants, oil refineries and other businesses that operated along or near its banks discharged toxic waste directly into the water. Contaminants also seeped into the ground, and possibly the groundwater, under these industrial sites.

A second significant source is the runoff from local streets and sewer overflows during heavy rains. In Gowanus, as in other parts of New York City and many older municipalities, sanitary sewage and storm water are collected by the same system. Compounded by Gowanus’ bowl-shaped topography, the aging and overtaxed system cannot handle the combined flow of sewage and storm water during heavy rains, and the overflow is discharged directly into the canal.

Efforts to alleviate pollution in the canal date back almost a century, when public pressure resulted in the construction of a 12-foot-wide tunnel stretching to nearby Buttermilk Channel, where fresh water was drawn in to flush the canal. The tunnel broke down in the 1960s and was decommissioned. When the tunnel and pump were restored in 1999, after a 38-year hiatus, fresh water flowed freely again, substantially reducing noxious odors emanating from the canal and enabling the return of marine life. The Gowanus was last dredged in 1998.

Urban waterways can be some of the most difficult and time-consuming sites to clean, and the Gowanus, which extends about 1.8 miles from Butler Street to the Gowanus Bay, may be polluted by several sources. While they continue to test canal sediment and water, EPA officials say they will also investigate upland properties to determine whether they are leaking contaminants into the waterway. In its recent filing, the agency designated the canal as the Superfund site, but said it cannot estimate the extent of the contributing pollution or describe the ultimate dimensions of the site until its investigation is complete. Agency investigators are installing wells, for example, to monitor water under the ground near the canal to determine if contaminated groundwater is a contributing factor in the canal’s pollution.

The EPA expects to finish its environmental investigation by the end of this year, to complete a feasibility study evaluating cleanup alternatives by next year, and to select a remedy by 2012. Businesses and other operations that polluted the canal and neighborhood, the so called potentially responsible parties, would be expected to pay for much of the cleanup. An aspect of the EPA’s investigation is identifying present and former polluters.

The decision to place the canal on the federal National Priorities List of hazardous sites came after considerable debate among policymakers, environmental advocates, developers and community activists over the most efficient and cost-effective approach toward remediating the canal and the neighborhood.

New York City’s Department of Environmental Protection (DEP) and the U.S. Army Corps of Engineers began collaborating in 2000 on a plan to clean the canal and the surrounding areas by removing toxic sediments, reducing
runoff and remediating contaminated land along and near the canal. Under that plan, the Army Corps would pay for most of the work in and along the canal, while the government agencies expected to collect the rest of the necessary funding through voluntary, binding agreements with the parties responsible for the pollution. Businesses that contaminated properties near the canal would be expected to pay for those cleanups.

In December of 2008, however, the New York State Department of Environmental Conservation asked the EPA to designate the Gowanus a Superfund site after determining that the canal was so thoroughly contaminated that it required a comprehensive cleanup. Four months later, the EPA proposed listing the site and began environmental testing to assess the level of hazard the canal presented.

The Bloomberg administration soon after proposed an alternative plan that city officials described as a “Superfund-quality cleanup with EPA oversight” that would address canal sediment, water quality and land discharges in an expedited timeframe. Under the city plan, the Army Corps would have retained its role in the cleanup, assuming responsibility for dredging the canal. The city argued that the likelihood of public money for some of the cleanup, including Water Resources Development Act funding, would create an incentive for responsible parties to participate voluntarily.

After proposing the canal’s designation, the EPA received more than 1,300 comments in the form of petitions, e-mails, post cards and letters. Those who favored the Superfund designation cited the complexity of the pollution and their belief in the EPA’s staying power, accountability, legal enforcement authority and ability to mobilize resources. The federal environmental agency, supporters argued, would best ensure a thorough restoration of the waterway, a comprehensive cleanup of the land along the canal and the remediation of contaminated inland properties that contribute pollution to the canal.

Opponents argued that the EPA’s mandate to identify responsible parties and compel payments through litigation, if necessary, could substantially prolong the cleanup. They also questioned whether the plan would adequately mitigate sewage and storm water runoff.

City officials expressed concerns that the EPA’s involvement would give it effective control over much of the proposed rezoning around the canal. Some residents and developers also feared that a Superfund designation would stigmatize the neighborhood, lowering property values and deterring planned and future investment. Indeed, following the announcement, Toll Brothers withdrew its plans for a large new residential project along the canal.

Following the EPA’s announcement, however, Bloomberg officials indicated they would cooperate with the federally-led cleanup, and the Army Corps stated that its efforts were complementary with the EPA’s work and would continue. The EPA pointed out several months ago that the designation does not prevent the city from going forward with plans to dredge decaying organic material from the canal or to upgrade a local pumping station to reduce sewer overflows.

Presently, contaminated land in Gowanus is remediated project-by-project as sites are redeveloped. Although the New York State Brownfield Cleanup Program provides some public funds for remediation, much of the cost is ultimately borne by developers.

The New York State Department of Environmental Conservation has identified five former industrial sites in Gowanus requiring remediation before they can be redeveloped. Four of these sites, including Gowanus Green on Smith Street, are slated for housing and will require “brownfield” level cleanup before they can be reused. Before it suspended work, Whole Foods had begun cleaning up the fifth site, at Third Street and Third Avenue, for a supermarket. Numerous other sites in Gowanus are also likely to be contaminated.

**Air**

Air pollution in Gowanus can be traced to cars and trucks using the elevated Gowanus Expressway, which cuts through the southern part of the neighborhood, as well as to industrial activities and odors emanating from the canal. Local industries and the trucks that serve them are thought to account for most of the 467 air pollution complaints filed in Community Board 6 in 2007, the third highest number in Brooklyn. The continuing exodus of manufacturing businesses and heavy commerce will most likely reduce air pollution, although the mixed-use districts permitted under the proposed rezoning may heighten local environmental conflicts.
VI. REALIZING THE POTENTIAL

There is growing consensus within the Gowanus community for an inclusive framework for redevelopment that will both preserve its distinctive social, economic and architectural fabric and set the stage for growth. At the center of this approach is a restored Gowanus Canal that will serve as a catalyst for development, not just along the waterway but throughout the neighborhood. Walking paths along the banks, waterfront parks and aquatic recreation are some of the many new features that would enhance Gowanus’ character.

The demand for new development, particularly housing, is amply demonstrated by the continued arrival of newcomers and the strong interest expressed by prominent builders in Gowanus. To satisfy this demand, a good deal of the vacant land and the abandoned industrial properties in the neighborhood would likely be developed for new residences.

By protecting the neighborhood’s economic base, including core manufacturing, and creating affordable housing, the framework would go a long way toward addressing the concerns of residents who fear redevelopment will cater only to wealthier newcomers.

Land-Use Policy

New York City’s Department of City Planning has proposed a land-use plan that addresses many of the primary concerns in Gowanus from an urban planning perspective. The city’s proposal for rezoning 25 blocks in Gowanus would create significant opportunities for higher density residential development, especially along and near the canal, protect industrial areas and permit mixed-use blocks where housing and industry would exist side by side.

As Figure VI-1 shows, the study area is now zoned predominantly for manufacturing in the M1-2 and M2-1 districts and for residences in the R6 category. Figure VI-2, Proposed Land-Use Framework, shows how the area has been broken up into five sub-areas for charting land-use policy.
Under the city’s proposal, sub-areas A and B above Third Street would undergo the most significant change, from manufacturing to residential. The blocks below Sackett Street and east of the canal, about half of the rezoned area, would be designated M1-4, a manufacturing zone, mixed with either R6-B or R7-A as medium or high-density residential zones. The blocks below Carroll and Third Streets, on either side of the canal, would become a higher density, mixed-use district, while the area west of the canal between Carroll and Degraw Streets would be designated a less dense, mixed-use district. Industrial uses would be preserved in sub-areas C and D and in the large sub-area E, which has already been designated an industrial business zone.

The plan also addresses concerns that rapid development will spill over Gowanus’ borders, prompting unwanted growth in adjoining communities. Through rezoning, the plan offers the possibility of preserving lower housing densities in bordering neighborhoods, such as Carroll Gardens.

The Municipal Art Society has questioned the rezoning plan’s emphasis on housing, partly out of concern that the land is too polluted to support new housing at the proposed densities, particularly along the northern part of the canal. Instead, the organization advocates protecting and expanding the community’s industrial base. The Superfund cleanup, which will include an investigation of upland sites in the neighborhood that may be leaking pollution into the canal through runoff or groundwater, may allay the concerns about housing on former industrial land by requiring their remediation.

Community Organization

In recent years, vocal community organizations have emerged in Gowanus to advocate on behalf of residents, workers and businesses, among other constituencies, and to insist on a role in the decisions affecting the neighborhood. Groups such as Friends and Residents of Greater Gowanus (FROGG) and the Annual Gowanus Artist Studio Tour (AGAST) have been joined by block associations and organizations, including the Gowanus Canal Conservancy and the Gowanus Canal Community Development Corporation.

At the end of 2008, community organizations, labor unions, housing groups and industrial advocates convened the Gowanus Summit to promote responsible development in the neighborhood. The participants called for building affordable housing while preserving existing rent-controlled units, limiting “out-of-scale” development in residential neighborhoods, creating a special district for light-industrial, artisan and arts-related activities, preserving jobs in manufacturing, protecting the environment and enforcing fair labor practices in new construction. The summit participants continue to seek support for these goals from other groups in the community and from elected officials.

Housing Policy

The signs of gentrification are evident in Gowanus, with the steady influx of younger, more affluent households beginning in the 1990s. Setting aside a significant fraction of the new housing units for lower and middle-income households is one way to ensure both stability and diversity in this unique neighborhood.
Most of Gowanus’ residents live in rented houses and apartments in the west and east sub-areas. These districts, with their tree-lined streets and variegated architecture, give the neighborhood its distinctive residential character. Preserving them and protecting their occupants from displacement as real estate values keep rising, despite the recent downturn, presents a challenge for planners and city policymakers. Older residential buildings east of the canal on blocks where manufacturing and commerce are mixed are also vulnerable under the new zoning proposal.

Although racially integrated as a whole, the demographic analysis in Chapter III shows that Gowanus is internally divided, with wide disparities in income and education among sub-areas. New affordable housing would also enable Gowanus to become a more economically and racially integrated community.

Artists represent a growing and vocal presence in Gowanus. Their main organization, AGAST, has 140 members and is active in community affairs. While artists in Gowanus see the value in new development, they also want to make sure that their interests are not ignored. They have advocated, for example, that redevelopment plans reserve for artists those loft buildings in mixed-use districts that are deemed unsuitable for industry. Artists in the neighborhood have already converted some of these buildings into studios.

The neighborhood’s longstanding manufacturing businesses represent yet another constituency with a stake in Gowanus’ future and concerns about its redevelopment. They value its central location, affordable space, good transit system and access to major roadways, as do businesses in other surviving industrial districts in New York City, such as Port Morris in the Bronx.

Manufacturing firms across the city are deeply concerned about the lack of suitable space, constraints on expansion, the high cost of operating in the city, real estate volatility and a difficult business environment, according to the findings of a task force of the Mayor’s Office of Industrial and Manufacturing Businesses. Real estate pressures created by commercial and residential development have forced otherwise viable industrial firms out of business or out of the city in recent years. These are real issues in Gowanus, where higher density housing has the potential to outbid low density industry in the real estate market.

Industrial space in Gowanus, however, is still moderately priced, relative to other areas in the five boroughs. According to the Southwest Brooklyn Industrial Development Corporation (SBIDC), vacancy rates in areas zoned for industry were in the three to five percent range before the recent downturn and rented for around $12 a square foot.

Rezoning that preserves most of the active industrial blocks - and is actively enforced - would allay some apprehensions within the business community about the plan’s ability to protect existing light industry in the neighborhood and to encourage new businesses.

Preservationists also fear the loss of some of Gowanus’ distinctive industrial buildings, which serve as a visible reminder of the neighborhood’s illustrious history as a manufacturing powerhouse and commercial hub.

Businesses have raised other concerns about their future in Gowanus, where industrial and commercial businesses now exist side by side on many blocks. The mixed-use districts in the rezoning plan are meant to safeguard industry and allow it to co-exist with housing on designated blocks. However, this arrangement has been known to make for uneasy relations. Commenting on Gowanus in late 2007 to Crain’s New York Business, real estate agent Ken Freeman observed, “It’s not easy to find a business-friendly location in the city for the right price where people aren’t going to be complaining about your trucks, your noise, and your smell.”

The supportive business environment that many firms seek is composed of a number of public and private ingredients. Among them are city programs for financial, technical and marketing assistance and an active organization, such as the SBIDC, that refers firms to available space, connects them to city programs, advocates for their interests and encourages the formation of an effective local business association.

Restoring the Neighborhood’s Historic Corridor

The Gowanus Canal, the very core of one of New York City’s only canal-side neighborhoods, presents a unique opportunity for new parks, walkways and housing, as well as recreation. As illustrated by Figure VI-1, much of the property along the canal is now zoned exclusively for manufacturing and current uses are largely industrial and commercial. About 20% of the 3.3 miles of canal frontage is publicly owned and used mainly for storage and parking city vehicles. Another 11% is vacant, and 10% is taken up by street ends.
The city rezoning plan recommends limits on building heights for construction along the canal, specifies building setbacks and reserves its banks for a public walkway. However, with nearly 90% of the canal frontage in use, albeit much of it lightly, and roughly 70% in private hands, it will take an unusual degree of public and private cooperation to create an esplanade and other public spaces along its banks.

Constructing a walkway presents design, development and financial challenges as well. It is uncertain, for example, what form it should take and how it will be created while other redevelopment along the canal currently takes place project by project. It is also unclear how the esplanade and other public improvements will be financed, and whether this will be possible through developer fees or taxes tied to rising land values.

**Achieving PlaNYC in Gowanus**

New York City’s path-breaking PlaNYC 2030, A Greener, Greater New York, has enormous relevance for Gowanus. Indeed, the neighborhood can be seen as a model for achieving several of its key objectives, particularly those relating to sustainable development. These include developing a significant amount of affordable housing, cleaning up and reusing contaminated land, reclaiming the polluted canal for active use, and greening the neighborhood through a variety of measures.

PlaNYC calls for increasing the city’s housing supply by 300,000 to 500,000 units. Gowanus, with its sizeable stock of underutilized properties, has the potential to contribute significantly toward this goal by adding up to 3,000 new apartments and houses. PlaNYC’s strategies for achieving these goals are largely applicable to Gowanus. Chief among these are comprehensive rezoning, the efficient use of government-owned property, locating new development near transportation, energy efficiency and creating affordable housing to support critical sectors of the workforce.

PlaNYC also offers useful strategies for restoring and reusing contaminated properties through a variety of approaches, including seeking new sources of financing, establishing community/developer partnerships and pursuing brownfield cleanups through the city’s new Office of Environmental Remediation. The redevelopment of Public Place as a site for the new Gowanus Green housing is one of the case studies prominently featured in the PlaNYC.

Reclaiming the city’s polluted waterways is an important goal in PlaNYC’s sustainability plan and has the potential to affect life in the city in many ways. In keeping with these goals, a restored Gowanus Canal would not only provide a healthier environment and new opportunities for recreation, but would help catalyze redevelopment along the waterfront and throughout the neighborhood.
VII. RECOMMENDATIONS

The decision by the U.S. Department of Environmental Protection (EPA) to designate the Gowanus Canal as a Superfund site will substantially protract the time horizon for additional residential and commercial development along the canal. However, the estimated 10 to 12 years that it will take to complete the Superfund’s environmental cleanup offers the city, the community, and private developers an opportunity to plan for additional remediation and future development.

Several important measures that can be taken during the next decade:

1. Remediation of Contaminated Upland and Replacement of the Combined Sewer Overflow System

New York City can work closely with the U.S. EPA to assure full remediation of contaminated lands surrounding the canal, and importantly, to control the raw sewage and stormwater runoff that drains into the canal from the neighborhood’s antiquated Combined Sewer Overflow (CSO) system.

By employing the natural processes of microorganisms and plants to absorb contaminants, bioremediation is a cost-effective and environmentally friendly method for cleaning contaminated sites that merits consideration in Gowanus. The award-winning Gowanus Canal Sponge Park, proposed for the canal banks, includes the use of meadow plants, filtration swales and terraced wetland basins to capture runoff on both sides of the canal. The plants draw heavy metals out of the water through a process called phytoremediation. Floating wetlands and oyster beds would additionally provide aquatic organisms that work together to absorb and break down contaminants.

2. Adopt The Proposed Land-Use Plan to Facilitate Future Housing and Economic Development

Adoption of the proposed comprehensive rezoning and land-use plan that is now under consideration by the city would create distinct zones for heavier industrial uses, and mixed-use blocks of residential, light manufacturing and commercial buildings, while encouraging the conversion of vacant land and buildings into new residential developments.

- The New York City Department of City Planning (DCP) has proposed a detailed plan, now under discussion with neighborhood groups, to accomplish these goals.

- This plan would preserve the district’s existing economic base while providing for future residential and commercial development.

3. Recommended Goals for Future Economic Development

In future years, the economic base of the Gowanus neighborhood will in all likelihood continue to evolve towards a more broad-based service and retail economy. Yet, it is also a goal of city and local economic development agencies to maintain areas for light industry and production, and to encourage development in the creative industries.

Under the proposed rezoning, it will be possible for to establish zones for light manufacturing as well as to encourage more retail, restaurant, office and cultural ventures. The overall objective should be to ensure that the district remains a place of work, yet with a strengthened residential sector.

In order to maintain the existing economic base, as well as to provide for further growth of the commercial, light industry and residential sectors, four new economic sub-zones could be created:

- An IndustrialZone in the southern section for heavier manufacturing and traditional industries such as concrete plants and lumber yards, that is set apart from the residential areas.

- A Buffer Zone for light manufacturing, between the industrial zone and residential areas, which could include businesses such as high-end woodworking, architectural and ornamental metalwork, printing shops, light manufacturing, food preparation and services.

- A Mixed-Use Zone in the residential blocks in the northern section of the district for activities such as graphic arts and/or media, special effects and set prop design, museum exhibitions, pottery and ceramic glazing, offices for professionals in the fields of architecture and engineering, and artists’ lofts. This area would be set apart from large-scale commercial districts.
4. Plan for Additional Residential Development and Affordable Housing

Once the environmental cleanup is well underway and the new land-use plans are adopted, it will be possible to encourage development of new housing and the conversion of older industrial buildings to accommodate the likely influx of new residents drawn by the neighborhood’s easy access to the rest of the city and its unique character.

Before the combination of the recent economic recession and the uncertainty surrounding governmental jurisdiction over the cleanup, almost 1,300 housing units were in various stages of development or planning in the Gowanus Canal area. As of Spring 2010, some of these projects had been delayed or cancelled, exemplified by the recent announcement that Toll Brothers was canceling plans for a large scale, mixed-use project that would have included 477 residential units.

In the future, an environmentally restored Gowanus area could support an additional 1,500 to 2,000 housing units above those already planned, of which no fewer than 30% should be affordable. The occupants of this housing will likely work in Manhattan and Brooklyn job centers, strengthening the neighborhood’s already firm links to the city’s economy. The commitment to affordable housing in a rebuilt Gowanus has been one of the main principles of the Gowanus Summit and has been firmly endorsed by many community advocates.

5. Plan for Public Investment in Amenities to Enhance the Quality of Life by the Gowanus Canal

Improvements that go beyond environmental remediation and infrastructure investment to correct problems with the CSO are recommended to make the Gowanus area a more livable neighborhood. Many of these improvements would likely depend on public sector investment, in most cases by the City of New York.

These improvements could include:

- Planting hundreds of trees throughout the community, developing small open spaces and parks, and creating paths along the canal for walking and bicycling.
- Adding a junior high school and expanding capacity in the elementary schools to accommodate the borough’s recent and projected increases in the school-age population.
- Completing a proposed traffic calming project and pedestrian crossings along Third and Fourth Avenues to significantly improve pedestrian safety, particularly for school children traveling to and around the neighborhood schools.
- Converting one of the older industrial buildings into a museum that highlights the colorful and dynamic history of the Gowanus neighborhood.

6. Consider Designating Gowanus as a Special Purpose Development District

Finally, in order to secure and protect the public investment necessary to transform the Gowanus area into a renovated, reinvigorated, healthy and economically viable neighborhood, it may be advantageous to designate it as a special purpose development zone, similar to the proposed plan for Hudson Yards in Manhattan. This measure could facilitate tax increment financing to underpin the bonds that will supplement city capital budget funds for improving the quality of life in Gowanus.
BIBLIOGRAPHY

Articles:

Brooklyn Central, October 1954
Brooklyn Eagle, October 14, 2007
The Brooklyn Paper, March 4, 2006
The Brooklyn Paper, “City could be Holding Bags for Feds at Gowanus Cleanup”, April 23, 2009
The Brooklyn Paper, “EPA Honcho: Superfund Can’t Stop the Stink”, May 12, 2009
Cobble Hill Courier, April 29, 2007
MAS_NYC, “Gowanus: A Great Place to Work, But to Live”, April 9, 2009
MAS_NYC, “Reclaiming the Gowanus: From Lavender Lake to Superfund”, April 21, 2009
The New York Observer, “Developers: Gowanus to Build or Not”, April 14, 2009
The New York Times, “From Open Sewer to Open for Gentrification”, November 28, 2005
Park Slope Courier, June 11, 2007

Organizations:

Annual Gowanus Artists Studio Tour (AGAST), www.agastbrooklyn.com
Friends and Residents of Greater Gowanus
Gowanus Canal Community Development Corporation (GCCDC), www.gowanus.org
Gowanus Dredgers Canoe Club (GDCC), www.waterfrontmuseum.org/dredgers
Metropolitan Waterfront Alliance, www.wateralliance.org
New York City Department of City Planning, www.nyc.gov/html/dcp
New York City of Environmental Protection, www.nyc.gov/html.dep
New York City Department of Housing Preservation and Development, www.nyc.gov/hpd
New York City Department of Transportation, www.nyc.gov/dot
New York City Economic Development Corporation, www.nycedc.com
New York State Department of Environmental and Conservation, www.dec.ny.gov
New York State Department of Labor, www.labor.state.ny.ur
Southwest Brooklyn Industrial Development Corporation, http://swbidc.org

Reports:
City of New York, Alternative Cleanup Plan for the Gowanus Canal, May 2009
Metropolitan Waterfront Alliance, Imaging the City: Gowanus Canal, April 16, 2003
New York City Industrial Policy, Protecting and Growing New York City’s Industrial Job Base, 2005
New York Industrial Retention Network, Manufacturers Almanac, 2007
New York State Department of Environmental Conservation, Site Priority Classifications, www.dec.ny.gov/chemical/8663.html

Websites:
www.cincinnati.com
http://gowanuslounge.blogspot.com
http://thegowanusproject.blogspot.com
A Timeline of the Gowanus
by Dan Wiley

1636 Native Americans (led by Chief Gowane) sell lands in the wetland area later called “Gowanus Creek” to Dutch settlers. The creek’s large oysters become a notable export to Europe.

1600s Dutch farmers dredge areas of the creek to build tidal mills and fill in adjacent wetlands to create farm fields.

1776 During the Revolutionary War’s Battle of Brooklyn, General Washington retreats by the “skin of the teeth” across Gowanus Creek and the East River.

1825 The Erie Canal opens, connecting New York to the Midwest and increasing docking and warehouse demand on the waterfront.

1834 The town and village of Brooklyn become a city.

George Hayward, “Gowanus Bay”
A view of Gowanus Bay in the early- to mid 19th century. Source: Brooklyn Public Library.
Atlantic Basin built in nearby Red Hook by Daniel Richards. The 40-acre basin is the largest pier and warehouse complex in the port of New York.

Unrealized alternate path for the Gowanus Canal, devised in 1847
Major D.B. Douglass’ plan to cut the canal from Gowanus Bay northeast all the way to Wallabout Bay/ Navy Yard. Although the Gowanus Canal was not built to Douglass’ plan, his work anticipated the flushing system built in the early twentieth century.

The New York State Legislature authorizes funds to widen Gowanus Creek into an industrial canal based on Daniel Richards’ plan for the city of Brooklyn.

Daniel Richards, Gowanus Canal Plan, 1848
The canal is to extend from Gowanus Bay and stop at Butler Street. Prepared for the City of Brooklyn, this plan defined the alignment of the Gowanus Canal’s main section as approved in 1849 and built between 1853 and 1870. Source: U.S. Army Corps (2004 study project area indicated red).

Initial canal construction begins, funded by nearby landowners, including Edwin C. Litchfield, who prospered from the railroads, and Edward W. Fiske, another landowner and politician. Dredge gangs of Irish laborers housed in nearby one-room shanties make a 100-foot wide channel largely without finished walls.
1857  The City of Brooklyn completes the world’s first comprehensive sewer system (without treatment).

1857-69  The Erie Basin is constructed in Red Hook. William H. Beard, an Irish immigrant and railroad contractor, builds a mile-long breakwater using ballast from visiting ships. The 60-acre basin accommodates more canal boats from upstate.

1866-70  The Gowanus Canal Improvement Commission creates a 100-foot-wide channel extending from Butler Street south to Hamilton Avenue (widening to 300 feet in Gowanus Bay).

1868-74  Private basin construction. Landowners along the canal build side basins extending the canal into their properties.

![Composite map useful for understanding the route chosen by canal engineers](image)

*Composite map useful for understanding the route chosen by canal engineers*
*(base map: Colton 1849; Coles mill pond from Bleecker 1836; canal outline in red from U.S. Army Corps of Engineers 1942)*

1870  Park Slope develops with new brownstones and sewers that drain into the canal.

1873  The Coignet Stone Company builds its headquarters at 3rd Street and 3rd Avenue. The structure later becomes the office of Edwin C. Litchfield, head of the Brooklyn Improvement Company, who sells farmland for industrial development.

1877  View of an unidentified section of the Gowanus Canal, Circa 1877

*View of an unidentified section of the Gowanus Canal, Circa 1877*
*Taken within about a decade of completion of the main canal, this view suggests the rapid industrial growth along the waterway. Source: Brooklyn Public Library.*
1880 A huge “relief sewer” is laid to connect existing sewers that drain seven square miles. Water from streets and buildings empties into the head of canal at Butler Street. The new sewer ends flooding but creates public outcry over the stench from raw sewage and industrial waste flowing into the canal, now a hub for Brooklyn’s maritime and commercial activity.

1886 S.W. Bowne grain storehouse built at the mouth of the canal near Hamilton Avenue for the urban hay, feed and grain processing industry.

1888-89 Carroll Street Bridge, an 1872 iron-swing bridge, is replaced with a retractile bridge.

1890s The “Gashouse” district along Smith Street becomes notorious for bars, brawls and gangs. The area takes its name from the manufactured gas plants (MGPs) that gasify coal at numerous sites along canal (at the present day “Public Place” site, Lowes site, and Fulton Municipal Works near Thomas Greene Park).

1902 The Brooklyn Rapid Transit power house is built to house four dynamos. The larger complex includes boilers, coal pockets and pits. By the turn of the century, BRT owns every steam railroad, elevated line and streetcar line in Brooklyn except one, and is later folded into Brooklyn-Manhattan Transit, or BMT.

1903 To the south, Irving T. Bush incorporates the Bush Terminal Railroad to serve his 200-acre industrial park, a massive complex of buildings, piers, rail, and roads.

1911 The flushing tunnel, a 6,280-foot long, 12-foot wide, brick-lined conduit, is constructed to “flush” the canal.

1915-38 Burns Brothers builds 18 coal pockets. Coal becomes one of the most heavily shipped commodities on the canal. (While most coal pockets in the U.S. were used for loading railcars, these structures were used to move coal from canal barges to trucks and wagons.)

1920s The Gowanus is among the nation’s busiest commercial canals, with six million tons of cargo moving through it annually. The “Black Hand,” the beginnings of the Mafia in New York, sets up on Columbia Street in nearby Red Hook.

1922 The Port of New York grain elevator terminal building is built on the Red Hook waterfront to serve the Erie Canal barge system with storage capacity of two million bushels.

1931 The 9th Street Subway viaduct is built over the canal as an extension of the Culver line (now F train); at 87.5 feet, it is the city’s tallest railroad bridge.

1939-42 The Gowanus “parkway” is built on the pillars of the old 3rd Avenue BMT elevated line and over the canal on a rebuilt Hamilton Avenue bascule bridge.
1940s Natural gas reaches Brooklyn by pipeline, allowing the reduction of reliance on manufactured gas plants along the canal.

Map of the Gowanus Canal and its industries, 1942

1945 World War II generates booming business for port industries.

1950s New Jersey container ports draw business away from the New York side of the harbor.

1957-64 The Gowanus Parkway is widened to a six-lane highway viaduct that ploughs through the neighborhood and rises higher over the canal. The new highway connects the Brooklyn-Queens Expressway and Brooklyn-Battery Tunnel to the north and the Verrazano-Narrows Bridge to the south, but it further isolates the Red Hook peninsula from the rest of Brooklyn.

1960s Community activists secure the city’s commitment to build a sewage treatment plant to divert sewage from the canal.

1969 The Gowanus flushing tunnel propeller breaks.

1983 The Department of Environmental Protection (DEP) issues a facilities plan to rehabilitate the flushing tunnel in response to a court order to bring the water up to federal standards.

1989 The DEP Red Hook sewage treatment plant opens in the Brooklyn Navy Yard to help handle sewage that would otherwise flow into the canal.

1995 The New York City DEP begins the reconstruction of the flushing tunnel, pump, and propeller.

1997 Brooklyn Center for the Urban Environment (BCUE) begins a series of public tours and forums focused on the Gowanus Canal, funded by the Levitt Foundation. Gowanus cruises become the organization’s most popular public tour.

1999 The Flushing tunnel is reactivated.

Lavender Lake, a documentary film on the environment and culture of the Gowanus Canal, is released by Alison Prete (Rough on Rats Productions).

2000 Congresswoman Nydia Velázquez hosts a boat cruise press conference up the canal with Army Corps of Engineers Assistant Secretary Joseph Westphal, the DEP commissioner, and many other agencies and elected officials to promote the coordinated study and eventual dredging of the Gowanus.

2002 The Gowanus Canal Ecosystem Restoration Feasibility Study begins with a cost-sharing agreement between the U.S. Army Corps of Engineers and the New York City DEP. The city and federal agencies agree to share the $5 million cost.
2003

An injured harbor seal, later nicknamed “Gowanda,” swims up the Gowanus, jumps ashore, and is nursed back to health over a period of months.

The fan club of Tama-Chan, a sister seal surviving urban waters, visits from Yokohama, Japan.

Keyspan, which inherited many of the gas and oil sites along the canal, begins a voluntary agreement with the New York State Department of Environmental Conservation on a remedial site investigation focused on the “Public Place” site at the western bend in the canal.

Aerial photo identifying historic structures eligible for the National Register
(note: Forman Blades Lumber warehouse has since been demolished for the Toll Bros. development)

2006

A community-driven comprehensive plan for the Gowanus Canal area, funded by Rep. Velázquez, is released by Gowanus Canal Community Development Corporation, following a multi-year study and work with stakeholders and the public.

The Gowanus Canal Conservancy is formed for the preservation, restoration and green development of the canal.

2007

The New York City Department of City Planning kicks off a rezoning effort for the Gowanus area with a framework study.

2009

Apr 8

At the urging of the New York State Department of Environmental Conservation, the U.S. Environmental Protection Agency (EPA) nominates the Gowanus Canal for Superfund, the National Priorities List (NPL), a list of the most contaminated sites in the country.

Jul 8

The public comment period ends for the EPA site nomination process (which had been extended from June 8).

Sep 23

In a Federal Register publication, the EPA announces sites nominated and added to the NPL. The nominated Gowanus Canal is still under review for official listing, and Newtown Creek is added to the nomination list.
Appendix B

Contamination

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>POTENTIAL CONTAMINANT TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893</td>
<td></td>
</tr>
<tr>
<td>1 Atlantic Ave. Railway Co.</td>
<td>Metals, Chlorinated Solvents, Fuels</td>
</tr>
<tr>
<td>2 Builders Materials</td>
<td>Carbon tetrachloride, arsenic, fuels</td>
</tr>
<tr>
<td>3 Citizens Gas Light Co.</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>4 Coal yard</td>
<td>PAHs</td>
</tr>
<tr>
<td>5 Decorated tin goods</td>
<td>Heavy metals</td>
</tr>
<tr>
<td>6 Egging Factory</td>
<td></td>
</tr>
<tr>
<td>7 Egging Works</td>
<td></td>
</tr>
<tr>
<td>8 Gas Works</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>9 Glass works/showholder</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>10 Glass works</td>
<td>arsenic</td>
</tr>
<tr>
<td>11 Grain Elevator</td>
<td>fungicides - carbon tetrachloride and ethylene dibromide</td>
</tr>
<tr>
<td>12 Hobby &amp; Doody Lumber &amp; Masons Building Materials</td>
<td>Carbon tetrachloride, arsenic, fuels</td>
</tr>
<tr>
<td>13 Ice Factory</td>
<td></td>
</tr>
<tr>
<td>14 International Tile Company</td>
<td></td>
</tr>
<tr>
<td>15 Iron Foundry</td>
<td>arsenic, copper, lead, iron</td>
</tr>
<tr>
<td>16 Lumber yard</td>
<td>Carbon tetrachloride, arsenic, fuels</td>
</tr>
<tr>
<td>17 Municipal Gas Light Company</td>
<td>Metals, Fuels, PAHs</td>
</tr>
</tbody>
</table>

| 1915                          |                                               |
| 1 Albro J. Newton Co. Lumber Yard | Carbon tetrachloride, arsenic, fuels |
| 2 Americas MFG Co. Jute & Cordage | Petroleum hydrocarbons, chlorinated solvents |
| 3 Arthurs Hoyt, Destine Gums    | Fuels                                         |
| 4 R.T. Reilly Trucking          |                                               |
| 5 Barnett Mfg Co Tar Felt Paper| PAHs                                          |
| 6 Barnett Mfg Co.              |                                               |
| 7 Base Bres Grounds             |                                               |
| 8 Braile & Johnson Inc. Sewer Pipes & Kosmoocrete | Metals, Fuels, PAHs |
| 9 Brooklyn Alcanatz Asnait Co.  | Hydrocarbons and tar                          |
| 10 Brooklyn Builders Supply Co. | Carbon tetrachloride, arsenic, fuels         |
| 11 Brooklyn Lumber Co.         | Carbon tetrachloride, arsenic, fuels         |
| 12 Brooklyn Rapid Transit      | Fuels                                         |
| 13 Brooklyn Union Gas Company  | Metals, Fuels, PAHs                          |
| 14 C. Bunsir Wagon Works       | Metals, fuels chlorinated solvents - assuming railway wagons |

Source: Eco-Gowanus: Urban Remediation by Design - editors Richard Plunz and Patricia Culligan
54

Source: Eco-Gowanus: Urban Remediation by Design - editors Richard Plunz and Patricia Culligan
<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>POTENTIAL CONTAMINANT TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliance Paint Co. Paint Mfg</td>
<td>heavy metals</td>
</tr>
<tr>
<td>S.W. Bowno Co.</td>
<td></td>
</tr>
<tr>
<td>Sash, Door, &amp; Blinds</td>
<td></td>
</tr>
<tr>
<td>Scanton &amp; Lehigh Coal Co.</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>Schroeder &amp; Hortmann Coal Yard</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>Shaw Treadel Grain Elevator &amp; Feed Mill</td>
<td></td>
</tr>
<tr>
<td>Standard Oil Co. of New York</td>
<td>oils</td>
</tr>
<tr>
<td>Storage of Cotton in Bales &amp; Loose Jute, hemp fiber</td>
<td>petroleum hydrocarbons, chlorinated solvents</td>
</tr>
<tr>
<td>Tartaric Acid</td>
<td>Tartaric acid</td>
</tr>
<tr>
<td>Terminal Ornamental Iron Works Inc.</td>
<td>heavy metals, chlorinated solvents</td>
</tr>
<tr>
<td>The Brucken McKervey Co. Stainers</td>
<td></td>
</tr>
<tr>
<td>The Brooklyn Vitrified Tile Works</td>
<td></td>
</tr>
<tr>
<td>The Cupples Cordage Co.</td>
<td>petroleum hydrocarbons, chlorinated solvents</td>
</tr>
<tr>
<td>Thomas Harrington’s Sons Co. Contractors</td>
<td></td>
</tr>
<tr>
<td>Thompson &amp; Co. Coal Yard</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>Thees Roulston Wholesale Grocer</td>
<td></td>
</tr>
<tr>
<td>V. DeVoe &amp; CT Reynolds Paint Works</td>
<td>heavy metals</td>
</tr>
<tr>
<td>W.G. Greene &amp; Co. Brooklyn City Foundry</td>
<td>arsenic, copper, lead, iron</td>
</tr>
<tr>
<td>Viau Chemical &amp; MFG Co. Asphalt Products</td>
<td>Metals, Fuels, PAHs</td>
</tr>
</tbody>
</table>

**1939**

**Location of Industry**

**Possible pollution by industry**

Source: Eco-Gowanus: Urban Remediation by Design - editors Richard Plunz and Patricia Culligan
### INDUSTRY vs. POTENTIAL CONTAMINANT TYPES

<table>
<thead>
<tr>
<th>No.</th>
<th>Industry</th>
<th>Potential Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Cooperage</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Cornell Contractors</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Crawford Company</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Cupples Co. MFG Inc.</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Cut Stone Co. Stone Yard</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Cut Stone Works</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Dale Coal &amp; Coke Corp.</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>31</td>
<td>David E. Kennedy Cork Flooring</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>DCW Borough of Brooklyn</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Dept. Storage yard</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Devoe &amp; Raynolds Paint Works</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Door &amp; Sash</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>E. Zobe Co. Pitch Paint MFG</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Garage</td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Gin Elevator &amp; Feed Mill</td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>Gas Holder</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>General Builders Supply Corp.</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Greason Son &amp; Daizell Coal Yard</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>42</td>
<td>Hardware MFG</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Howard Coal &amp; Coke Corp.</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>44</td>
<td>Hurtmann Highley Coal Yard</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Hygrade Coal Co.</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Independent Salt Co.</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Iron &amp; Coal Pockets</td>
<td>Metals, Fuels, PAHs</td>
</tr>
<tr>
<td>48</td>
<td>John Laney Coal Yard</td>
<td>Metals, Fuels, PAHs</td>
</tr>
</tbody>
</table>

### Source: Eco-Gowanus: Urban Remediation by Design - editors Richard Plunz and Patricia Culligan
### Table: Industrial Sites and Contaminants

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>POTENTIAL CONTAMINANT TYPES</th>
<th>Source Sites</th>
<th>DNAPLs</th>
<th>LNAPLs</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thos. R. Roulston Inc. Grocer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weber &amp; Quinn Coal Yard</td>
<td>Metals, Fuels, PAHs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Williamsburg Power Plant Corp Central Power Station</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood Box MFG</td>
<td>Carbon tetrachloride, arsenic, fuels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woodworking</td>
<td>Carbon tetrachloride, arsenic, fuels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**1942**

| 1. Alloy Manufacturing Corps.                      | Carbon tetrachloride, arsenic, fuels                            |              |        |        |         |
| 2. American Can Company                            | Heavy metals                                                   |              |        |        |         |
| 3. Ashland Oil Co.                                 | Fuels                                                          |              |        |        |         |
| 4. Brooklyn Alcatraz Asphalt Co.                   | Metals, Fuels, PAHs                                             |              |        |        |         |
| 5. Brooklyn Trust Co. (Vacant)                     |                                                                |              |        |        |         |
| 7. Brooklyn Union Coal Co.                         | Metals, Fuels, PAHs                                             |              |        |        |         |
| 8. Burns Bros.                                     |                                                                |              |        |        |         |
| 11. City of New York Board of Transportation       | Fuels                                                          |              |        |        |         |
| 12. Coal & Coke Corp.                              | Metals, Fuels, PAHs                                             |              |        |        |         |
| 13. Colonial Sand & Stone Co. Inc.                 | Heavy metals and dissolved                                      |              |        |        |         |
| 15. Cupperle Cordage                               | Petroleum hydrocarbons, chlorinated solvents                    |              |        |        |         |

**Overlay of all projected plumes as a result of industrial activity dating back to 1993**

Source: Eco-Gowanus: Urban Remediation by Design - editors Richard Plunz and Patricia Culligan
Q.
The Gowanus Canal seems to be left over from Brooklyn’s industrial past. So, why spend billions trying to clean it up and restore it to a usable waterway? Why not drain it, cover it, and move on? Wouldn’t that be far cheaper? — Posted by peters

A.
Even if it were advisable from an environmental or engineering standpoint to contain hazardous releases at a water-based site by this method, such an approach ignores both the canal’s prominent history and its new role as a catalyst for redevelopment. Its restoration is central to the neighborhood’s economic health and further revitalization. Indeed, it is Gowanus’ defining feature, and this sense of place must not be lost. The community is clamoring for its remediation.

On a more fundamental level, the canal is a focal point for referencing and valuing the relationship of land to water, as well as city dwellers’ connections to water and their historical ties to this once renowned waterway. A well-conceived urban design, with ecologically sound landscaping that includes open spaces, parks and pathways, would create a significant new link to the revitalized neighborhood and to the city as a whole. It is also important to remember that the canal, which began life as a creek before it was enlarged in the 19th century to accommodate shipping, is part of the New York-New Jersey Harbor Estuary and supports wildlife. We should support its further restoration, not pave it over.

Q.
Why is this project going to take so long to complete I would think they could block/dam the canal, drain it and dredge it easily. — Posted by Craig Raphael

A.
Thorough and lasting environmental remediation is based on careful analysis, planning and execution. Sites such as the Gowanus Canal, polluted by a complex array of toxic chemicals deposited over many decades, require the very closest scrutiny. As the Environmental Protection Agency embarks on a more comprehensive investigation of the site following its initial assessment of risk, the agency may uncover as yet unidentified, perhaps even present-day, sources of pollution, which the cleanup plan would address. As the canal cuts through a densely settled community, its remediation must be conducted in the safest, least intrusive manner possible. This, too, takes thoughtful planning. Lastly, the Superfund program was created not only to safeguard public health and the environment, but to protect taxpayers. Where possible, the federal government identifies businesses and other entities responsible for the pollution and orders them to help pay for the cleanup.
Q.
The Gowanus Canal is left over. Because of that, it is nicely situated within a bunch of resurgent neighborhoods. To the north is New York bay; to the south is Prospect Park. The boundaries between the neighborhoods, once distinct, and harsh, have blurred. Fourth Avenue is no longer the great divide. Then again, neither is Third Avenue. Gentrification wafts over the old boundaries. The canal could, if cleaned and given the time to redevelop, add to the intrinsic quality of life in this part of Brooklyn. My questions:

1. Is San Antonio’s River Walk still a viable comparison?

2. Wouldn’t cleanup and redevelopment — as opposed to fill-in — provide a greater return on investment (cleanup) over the long run in terms of real estate taxes, jobs, misc. economic activity?

— Posted by Ron

A.
The city of San Antonio and the neighborhood of Gowanus could not be more different in terms of geography, climate, scale, project economics, marine ecology or economic activity. However, both communities have been shaped by waterways, which remain potent sources of identification in each of them and integral to redevelopment. Just as San Antonio’s bustling River Walk, with its hotels, restaurants and shops, is a powerful draw, so a restored and sustainably redeveloped canal in Gowanus would create a distinctive destination for people throughout the larger metropolitan area.

Preserving and enhancing this vital feature of the neighborhood, with its rich history and promising future, is critical to the neighborhood’s economic viability going forward. Redevelopment of the Gowanus should be appropriate to its scale, however, and would probably include public parks and pathways, recreational activities and new housing along its banks.

Q.
What are the boundaries of the new Superfund site? Has it been determined what properties will be included?

— Posted by Greg Smithsimon

A.
As initially defined by the Environmental Protection Agency following preliminary environmental sampling, the site includes the canal, which extends about 1.8 miles from Butler Street to Gowanus Bay (pdf). However, the dimensions of the cleanup area may change as the agency comprehensively explores both sources of pollution and the extent of the contamination. In a recent filing accompanying the canal’s Superfund designation, agency officials said, for example, that later investigations may determine that releases extend to “upland areas” surrounding the canal.

Q.
Why are the environmental benefits of industrial retention so seldom considered in discussions of “transforming” Gowanus? The canal is a fabulous location for niche and specialty manufacturers. The fact that diverse manufacturing activity has returned to the Gowanus Canal despite price pressures and speculation caused by the super-gentrification of neighborhoods to the east and west should influence future land use decisions, no? Is there ever a limit to “highest and best use” development? The affordable housing crisis has nothing to do with the inaccessibility of neighborhoods like Gowanus to residential real estate developers. — Posted by John Buckholz
A.
The Gowanus Canal was for decades one of the city’s busiest industrial arteries, and while the waterway no longer plays that role, the surrounding neighborhood retains a solid manufacturing base. Food processing and specialty manufacturing firms are some of the dynamic new clean industries locating in the neighborhood. Indeed, old and new businesses constitute one of several important constituencies with a stake in the area’s future, and both groups are key to the community’s economic base and its distinctive identity. Any thoughtful and sustainable redevelopment plan should most certainly protect existing industrial areas and create new zones that welcome light manufacturing.

Q.

Does Maspeth Creek have similar issues? Is it in similar condition? What are plans for it? — Posted by Vinchi

A.
The Maspeth Creek’s issues are similar in terms of the remediation process yet dissimilar in terms of magnitude and timing. Maspeth Creek is a tributary of Newtown Creek. It flows from 49th Street in Queens into Newtown. Newtown flows between Queens and Brooklyn and empties into the East River. The Maspeth Creek is believed by local sources to be significantly more polluted than the Gowanus Canal, as it contains years of heavy oil contamination courtesy of major oil companies that will require extensive cleanup and environmental dredging. However, plans for its remediation at this time are still unclear. It is estimated that at approximately 17 million gallons of oil contamination, the Maspeth Creek contamination is at least six million gallons larger than the 1989 Exxon Valdez oil spill in Alaska. If the magnitude of the Newtown Creek’s and its associated waterway’s pollution is accurate, its remediation will have a much longer time frame than that of the canal.

The Gowanus Canal has in fact had the slight advantage of dredging that began in 1975 on the justification of navigation safety, but that was the last time that it was dredged as shipping fell off considerably after that period. Its sewage remediation commenced in part with the construction of the Red Hook Sewage Treatment Plant and the Gowanus Canal Flushing Tunnel improvements in the early 1980s. These improvements have in fact curtailed much of the effluent that previously had flowed directly into the canal, but they are preliminary measures only and more cleanup will be required. Modernization of the sewers is still needed such as an upgrade to the Bond-Lorraine branch sewer.

Q.

I’ll ask the obvious question. Could you briefly describe what you think the general impact will be on residential property values (condos and co-ops) as a function of time and distance from the site? For example in lower Park Slope area, say around 5th Avenue after five years, vs. after 10 years from now? I’ve looked at prior academic studies of the effect of Superfund sites and they seem to be very site-specific. I realize you can only speak in generalities, but applying what you have learned to this particular site would be very useful to a lot of concerned residents. — Posted by Peter Farnum

A.
So many variables are at play in determining future property values that it is difficult to single out the effects of a Superfund designation. In Gowanus, relevant factors include the health of the city’s economy, the speed and scope of the remediation, city support for rezoning measures that would permit more housing to be built in the neighborhood, the availability and cost of credit, and housing demand. The impact of a designation depends in part on whether it is perceived as a taint or an investment that adds value to the neighborhood.

Property values in the vicinity of some Superfund sites have fallen in the short term, but then risen following remediation.

In 2008, the New York City Department of Housing Preservation and Development selected a consortium, the Gowanus Green Partnership, to develop Public Place, a mixed-use project on city-owned land between Smith Street and the Gowanus Canal that will include 774 units, including a substantial fraction set aside for low- and moderate-income households. After the Superfund designation, the consortium announced its intention to proceed with the development. As with the Public Place project, city initiatives to spur private sector development in the neighborhood should ultimately prove to be positive for property values over the long term.
Q. New York has a combined sewer system. If after a rain, sewage from waste-water treatment plants overflow into the canal, will the canal ever really be clean? — Posted by Henry living near the canal

A. One of the primary concerns expressed early on by opponents of the canal’s Superfund designation was that the Bloomberg administration’s plans to upgrade sewer systems in the Gowanus region could potentially be set aside or put on hold. In a recent filing accompanying the designation, the E.P.A. addresses the issue in commenting that hazardous substances discharged by C.S.O.’s (combined sewer overflows) are regulated under the Superfund program. The agency says further that at a later stage of the process “E.P.A. can consider under what authorities the C.S.O.’s should be addressed.”

Q. Are there any industrial uses at all left along the canal that depend on or routinely use actual canal access to function? — Posted by Jeff Graf

A. The Gowanus area has a functional industrial component dominated by relatively small companies with fewer than 50 employees each. It is believed that the only business currently dependent upon access to the canal waterfront is an established scrap metal yard south of Hamilton Avenue that uses the waterway for barge transportation.

Q. The record of actual cleanup of Superfund sites is rather dismal. And NYS commitments are laughable – witness the never-ending battle to clean up PCBs from the upper Hudson River at Ft. Edward.

Other than the symbolism, what does the community stand to gain with this designation? Superfund designation seems to simply add new layers of red tape to thwart any actual cleanup. A cleanup that might otherwise have been financed by developers eager to build at the location. — Posted by George

A. Although federal oversight under a Superfund designation can appear heavy handed and bureaucratic, it has proven to be more effective than state and private sector cleanups in complex situations where there is no identifiable or solvent responsible party or where the area of contamination is very large and/or owned by different entities.

Superfund designation does add layers of red tape, and it can slow a cleanup that might otherwise be performed by developers — that’s the big downside of this designation. However, the countervailing argument is that it also has many advantages.

Federal oversight under the Superfund program provides a comprehensive package of committed funding, expertise and management, and this approach, while potentially slower, gives more certainty to cleanup over the long term. It was the deep pockets of the Superfund, and its long-term commitment, for example, that excavated radioactive soil in one densely populated community in the metropolitan region where blocks of houses had to be lifted off the ground and their inhabitants temporarily relocated. The end result was proper remediation.

While the Superfund program got off to a creaky start in the 1980s, the pace of cleanups has accelerated since then. Sites that require the most sophisticated engineering, such as areas with polluted groundwater, typically take the longest to remediate. Cleanups in densely settled areas are some of the most expensive and tricky to plan.

The residents, community activists and environmental groups that favored the Gowanus Canal’s Superfund designation cited the complexity of the neighborhood’s pollution and their belief in the program’s staying power, accountability and legal enforcement authority as reasons for doing so.
Q. Can the cleanup proceed before SuperFund has recouped expenses from the “polluters?” Is there any reasonable timeline on this cleanup project? 10 years? 25 years?

There has been much speculation on the impact of lending in the 3,000’ radius around the new SuperFund site, which includes nearly all of Boerum Hill and much of Carroll Gardens (among other neighborhoods). What is the history of lenders’ comfort with lending for two- to four-family structures near a Superfund site? NYC is an unusual market, so not all lenders will be able to understand it. In your opinion, will the SuperFund designation hamper real estate transactions in the areas around the canal?

As for comparisons to San Antonio Riverwalk, it should be noted that the founding corporation that did the initial critical work there went bankrupt years ago. It was a VERY expensive project. Also, the Gowanus Canal is a tidal creek. Part of its stench is the normal sulfury smell of any tidal basin. Unless you line it with cement (like the San Antonio River), it’s gonna smell.

— Posted by CK Johnson

A. Because of the complexity of the contamination and the unpredictability of environmental cleanups due to hydrogeological and technological factors, among others, it is impossible to give a reasonable timeline for the cleanup project until the Remedial Investigation and Feasibility Study are concluded. The EPA estimates that it will have the RI and the FS concluded and a Remedial Plan selected by mid-2012.

It is unlikely that the Superfund designation will have much affect on mortgage lending or real estate transactions near the canal, especially for residential and multifamily real estate. Unless there is a potential for an owner to be a potentially responsible party (PRP) from whom the EPA will seek to recover costs (which is only an issue for industrial sites) or for the contamination to migrate from the canal at high risk levels, most lenders should not be deterred from financing residential real estate transactions in the area. Although it depends on an individual lender’s level of comfort, most lenders are willing to finance real estate transactions near a Superfund site (barring the potential PRP or migration issues previously mentioned) because EPA oversight gives lenders assurance that there is funding available for the cleanup, the responsible parties have already been identified, and the cleanup will be done in accordance with regulatory standards.

Although the Superfund designation may create a stigma in the view of some potential buyers, the rising popularity of the adjacent neighborhoods coupled with their many amenities and proximity to Manhattan and Prospect Park should support a strong real estate market notwithstanding the Superfund designation.

Q. I recently was considering buying a condo on Hunters Point in LIC near the Newtown Creek (separating Queens from Brooklyn). I decided not to because of the heavy industrial use of that whole area, and with fear that bringing up a family so close to the toxic hot mess would be a bad idea, or at least not the best choice if there were other condos available in less toxic areas. My question is this: Do condo developments do any kind of research into toxics they are building near, and do they have any kind of responsibility to potential buyers? For instance, I called them and asked if they had any water or filtration system in place, but they did not return my call. — Posted by AW

A. The answer to this question is complicated as it depends on the developer, the developer’s consultants and the experience they have had in this area.

There are no legal or statutory requirements to investigate adjacent properties for contamination or toxicity. However, most reputable developers, acting on common-sense principles, will avoid potential liability by conducting environmental studies of possible contamination in the area if they sense any risk of its migrating onto their property. For their own protection as well, they will typically do this in the development’s preliminary stages, before they have made significant investments in the project.

Although some environmental laws make property owners liable for remedial costs and damages related to environmental conditions, they do not require disclosure of environmental status to a potential purchaser before a sale.
Q.

#26–AW brings up a key problem with redevelopment in places like the Gowanus. Prior to the EPA Superfund listing, the city of NY granted a rezoning to the Toll Brothers to build 470 condo units at the edge of the canal. The city also started a general rezoning that would allow residential development throughout this old manufacturing zone. City Planning said that the environmental issues of a site would be addressed through an “E” designation noted on the department of buildings application. What that “E” designation actually means in terms of making a healthy environmental for residential uses is totally unclear. There is no imposition of state brownfield cleanup standards through this process unless the builder volunteers to enter the state BCP. Toll on the Gowanus was not part of that program, so what would they have done to clean their site if they had gone forward with their development and EPA hadn’t stepped in? Would there have been any verification of any claims to site cleanup? And might a company feeling financial strain in a down economy cut corners where there was no outside oversight? Wasn’t the mayor’s plan to rely on the good will of these developers to cleanup their sites as they saw fit?
— Posted by Gowanus Local

A.

The “E” designation is a city-run program that gives the city some control over sites with environmental contamination, including ultimate signoff authority as to whether a development may proceed. The Department of Environmental Protection can, as part of the process, order the developer to assess and remediate a site if it is deemed necessary. City regulators also have the authority to withhold building permits and certificates of occupancy if they are not satisfied that all environmental standards have been met. The “E” designation process not only deals with major contamination issues, but with a range of situations, from noise abatement to air quality issues.

The Brownfield Cleanup Program (BCP) is a state-run program. Its goal is to accelerate cleanups of polluted properties known as brownfields by private-sector developers and, as a consequence, to reduce development pressure on more pristine “greenfields.” Developers can’t cut corners, because of the regulatory oversight provided by both the “E” designation and the Brownfields Cleanup Program. The worst-case scenario would be that a development would not be completed because the developer would not or was unable to clean up a site.

The mayor’s plan is to provide oversight and funding to developers to help them clean their sites according to regulatory standards. To that end, the mayor created the Mayor’s Office of Environmental Remediation (OER) to provide incentives and guidance to developers of sites with light to moderate levels of contamination that would not qualify for admission into the state’s Brownfield Cleanup Program.

Q.

I was glad to see the federal government step in and order the cleaning of the canal before Michael Bloomberg’s friends planted down 490 housing units. Now that they did that good deed they should take a good look at the way waterfront development has gotten out of hand by the Bloomberg administration. In Coney Island, Sheepshead Bay, Rockaway Beach, to name a few locations I know about, housing developers are breaking city, state and federal laws by blocking existing public access and visual corridors to the water. Will the same happen with the housing development around the canal?
— Posted by John Baxter
There is widespread support within the Gowanus community for sustainable redevelopment of the neighborhood’s underutilized, and, in some cases, polluted properties. The restoration of the canal is the very centerpiece of this vision, which calls for walking paths along the banks and waterfront parks.

City planners support this approach as well. Their proposals for rezoning sections of the neighborhood recommend limits on building heights and setbacks along the canal, while also reserving its banks for a public walkway.

Indeed, there is already tangible progress toward these goals. A locally initiated remediation project, the Gowanus Canal Sponge Park, calls for engineered waterfront spaces that are designed to both slow and filter the contaminated stormwater runoff that drains into the canal, while also adding green park land to the waterway’s banks. Sponsored by the Gowanus Canal Conservancy the park has received $300,000 in congressional funding toward construction.

Well-planned public access along the waterways incorporated into an urban sustainability model is essential to the regeneration of the Gowanus. The Baruch College Newman Institute’s forthcoming report, Reconsidering Gowanus: Opportunities for the Sustainable Transformation of An Industrial Neighborhood, calls for pathways, public parks and recreational activities along the waterfront. It supports the idea of recognizing the unique urban ecology of this area and calls for sensitivity in creating an appropriate urban design model of land/water user-interface that will benefit all Gowanus residents and that will be a welcoming model of waterfront enjoyment drawing New Yorkers from other parts of our great city.
Appendix D

Gowanus Canal Environmental Categories

<table>
<thead>
<tr>
<th>Sewage/CSOs</th>
<th>Land/Water Interactions</th>
<th>The Canal Itself</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEP</td>
<td>DEC/OER</td>
<td>EPA/Army Corps/DEP/OER</td>
</tr>
<tr>
<td>under DEC/EPA oversight</td>
<td>under EPA oversight</td>
<td></td>
</tr>
<tr>
<td>Wastewater/Storm Water Infrastructure</td>
<td>CSOs/Outfalls</td>
<td>Canal Sediment</td>
</tr>
<tr>
<td>Flushing Tunnel/Force Main</td>
<td>Bulk Pollution</td>
<td>Dredging/Capping</td>
</tr>
<tr>
<td>Sewage Treatment</td>
<td>Bulkheads</td>
<td>Ecosystem</td>
</tr>
<tr>
<td>Storm water collection system</td>
<td>Remediation</td>
<td>Habitat</td>
</tr>
<tr>
<td></td>
<td>Uplands</td>
<td>Wetlands</td>
</tr>
<tr>
<td></td>
<td>Brownfields</td>
<td>Side Basins</td>
</tr>
<tr>
<td></td>
<td>Remediation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Land Pollution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bulkheads</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rebuilding/Access</td>
<td></td>
</tr>
</tbody>
</table>

Schematic Model

---

1This draft schematic was produced by Dan Wiley, Community Coordinator for Congresswoman Nydia Velázquez, for use in a public forum on the environmental issues of the Gowanus Canal held April 27, 2006 organized by local elected officials and including multiple environmental agencies (Federal, State, and City). The schematic was designed to help community stakeholders frame questions. Dan Wiley revised it for Center for Urban Pedagogy’s (CUP) forum held Tuesday, July 7, 2009 “Goo Gone: Risk Responsibility and Toxins in the Landscape” (a CUP People and Buildings program), where he presented it in an introduction to the local context of the Gowanus Canal preceding a discussion of the EPA Superfund program.
This map shows the original creek, marsh, and mill ponds of the Gowanus Canal. The base map was likely prepared c.1839, prior to completion of the first Hamilton Avenue bridge over Gowanus Creek. The disappearance of Coles Mill Pond from the landscape between c.1836 and 1839 suggests the ephemeral nature of ponds created in salt marsh environments. This map is especially useful for understanding the engineering design of the canal route, as the detailed street grid plan (a close semblance of what exists today) was not actually implemented until after the canal was constructed.

US Army Corps of Engineers, National Register of Historic Places Eligibility Evaluation and Cultural Resources Assessment for the Gowanus Canal area map: Colton 1849; Coles Mill Pond outline from Blecker 1836; canal outline in red from U.S. Army Corps of Engineers’ 1872.
Appendix F

Rezoning
NOW THAT BROOKLYN’S GOWANUS CANAL is officially one of the most hazardous sites in the nation, development will take a backseat to cleaning up the toxins.

Following last week’s Superfund designation by the Environmental Protection Agency, developer Toll Brothers Inc. quickly did what it had long promised: It abandoned plans to build a sprawling residential complex along the canal’s banks. At least a dozen smaller residential projects have also perished in the shadow of what the EPA says could be a 12-year cleanup, according to the Clean Gowanus Now Coalition, a business group that lobbied against the designation. Only city-backed Gowanus Green, a mixed-income development, remains on track.

The EPA estimates it will cost as much as $500 million to clean up the 1.8-mile canal. Others argue that it will cost far more and take far longer.

—AMANDA FUNG

<table>
<thead>
<tr>
<th>POLLUTANTS: Cancer-causing PCPs, heavy metals, mercury</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>POLLUTERS</th>
<th>Description</th>
<th>Tenants</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>BROOKLYN UNION GAS</td>
<td>19th-century industrial complex</td>
<td>Filmmakers, designers, artists, manufacturers</td>
<td>130,000 square feet in six buildings</td>
</tr>
<tr>
<td>CITY OF NEW YORK</td>
<td>Asphalt plant, coal-burning power plants, garbage incinerators, other plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. NAVY</td>
<td>Facilities for shipbuilding, ship repair and naval support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONSOLIDATED EDISON</td>
<td>Substation, service yard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEVELOPMENTS</th>
<th>Location</th>
<th>Completion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOWANUS GREEN</td>
<td>Near intersection of Smith and Fifth streets</td>
<td>2007</td>
<td>Nine buildings with 774 units of housing, 45,000 square feet of community and retail space, parking lot, three axes of open space</td>
</tr>
<tr>
<td>TOLL BROTHERS GOWANUS</td>
<td>Two former industrial blocks along the west bank from Second to Carroll streets</td>
<td>Canceled after Superfund listing</td>
<td>Mix of townhouses and low- and mid-rise apartment buildings, with 450 residential units, includes community facility, parking lot</td>
</tr>
</tbody>
</table>

Sources: U.S. EPA, Clean Gowanus Now Coalition, Baruch College’s Steven L. Newman Real Estate Institute