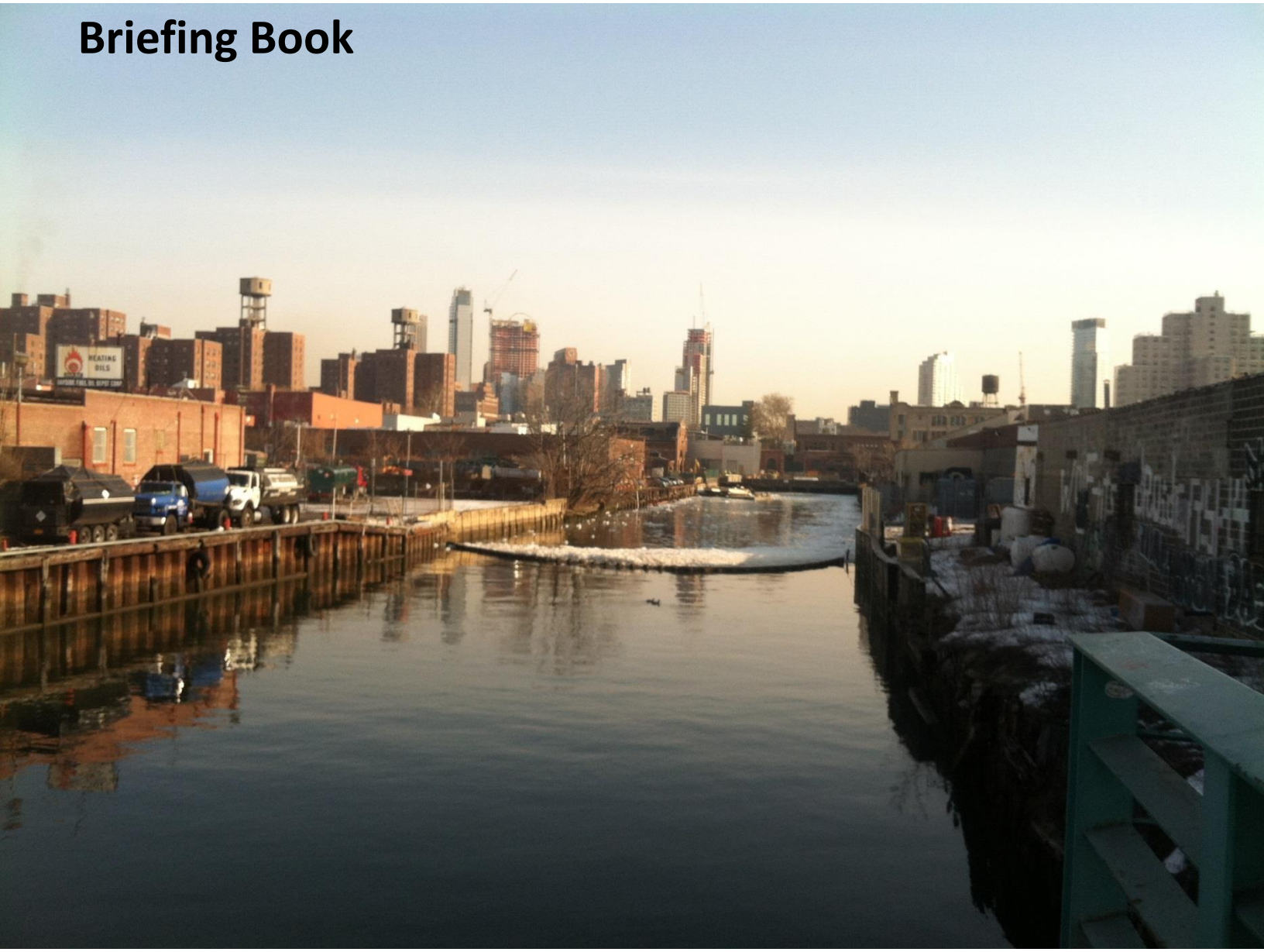
Urban Land New York Institute

Technical Assistance Panels

Gowanus Heat Island

Briefing Book



April 24 & 25, 2017

Fifth Avenue Committee

Contents

I. Study Area and Site ... 3
a. Questions to be Addressed by the Panel: ... 4
b. Physical Description and Maps ... 5
i. Land Uses within Study Area and Surrounding Land Use ... 14
i. Green Works: Open Spaces, Parks, Vegetation, and Green Infrastructure ... 17
ii. Transportation and Access ... 26
iii. Vacant Land – Location, Ownership, History ... 32
i. Employment Types and Trends ... 33
ii. Major Employers (location, # jobs, job types) ... 35
iii. Income Data ... 36
c. Demographic Data ... 38
i. Overview of City and Study area Population Trends, Households ... 38
ii. Education Levels ... 39
iii. Community Health Profiles & Vulnerable Populations ... 40
d. Residential Development ... 43
i. Housing Affordability and Gentrification Pressure ... 43
ii. Planned Residential Development ... 44
iii. Foreclosure and Vacancy Statistics ... 44
e. Commercial Development ... 44
i. Overview of Area Wide Commercial Development ... 44
ii. Brownfield Strategic Sites & "Soft Sites" for Development ... 47
II. Government ... 48
ii. Gowanus Rezoning – ULURP Process ... 50
iii. EPA Superfund ... 52
iv. Long-Term Control Plan (LTCP), DEP ... 54
v. FEMA Flood Infrastructure Planning ... 56
vi. Southwest Brooklyn Industrial Business Zone (IBZ) ... 57
vii. Waterfront Access Plan ... 58
viii. Bridging Gowanus – Community Visioning Project ... 59
ix. BQX – Brooklyn Queens Connector ... 61
x. Historic Sites ... 62
xi. Tax Increment Financing ... 63
xii. Mayor's Office of Sustainability: Urban Heat Island Working Group ... 64
III. Private Sector Involvement ... 65
i. Stakeholders: Neighborhood Associations or Community Development Associations Active in or Affecting the Study Area ... 65
ii. Public Services: Schools, Hospitals, Churches, etc. ... 67
iii. Financial Institutions, Foundations, Major Corporations ... 68
iv. Business Organizations ... 68
v. Social Service/ Workforce Development Providers ... 68
IV. Additional Background ... 70
i. Previous Plans & Studies Gowanus ... 70
ii. Recent UHI Studies ... 70
iii. News Articles and Reporting ... 70
V. Conclusion ... 70
VI. Sources ... 71

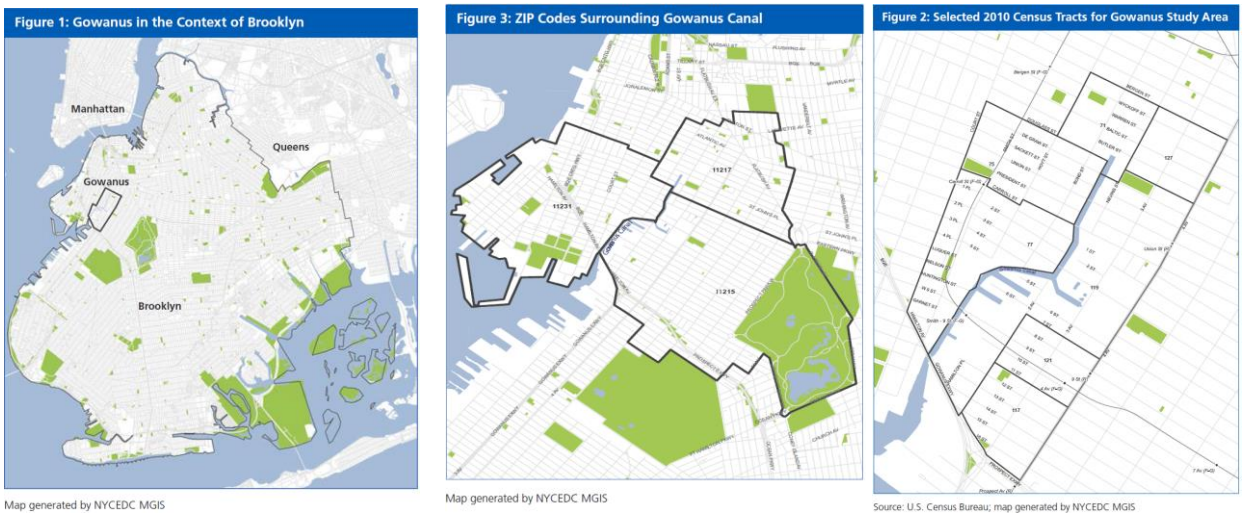


Figure 1: Gowanus Context Maps.
Source:[2] "Neighborhood Trends & Insights: Gowanus, Brooklyn". September 2013. NYCEDC Economic Research & Analysis

I. Study Area and Site

As large scale environmental remediation's and land use actions are now getting underway in Gowanus, Brooklyn there is an opportunity to explore how a Gowanus neighborhood rezoning, New York City Housing Authority (NYCHA) land use actions, the U.S. Environmental Protection Agency (EPA) Superfund and NYS Department of Environmental Conservation (DEC) Manufactured Gas Plant (MGP) clean-ups and NYC Department of Environmental Protection (DEP) green and grey forthcoming infrastructure investments can address the environmental threat of Urban Heat Island (UHI), encouraging building and neighborhood-scale mitigation and participation from the private and public sectors.

While Gowanus' historical legacy as an industrial and manufacturing hub, surrounding a working canal, continues to shape the character of the neighborhood, today it is also home to incubators, offices, small commercial businesses, an artist enclave, and a growing nightlife and indoor recreation destination. The neighborhood is also home to a relatively small but vibrant residential community dominated by three NYCHA public housing campuses north and west of the canal, and residents living in rent-stabilized housing concentrated between Union and Carroll Streets, between Nevins Street and 4th Avenue. It also comprises longstanding unregulated residential housing, such as attached 2 to 4 unit row houses, mostly built before the 1930's, and "grandfathered" into the neighborhood manufacturing zone designation established in the early 1960's.

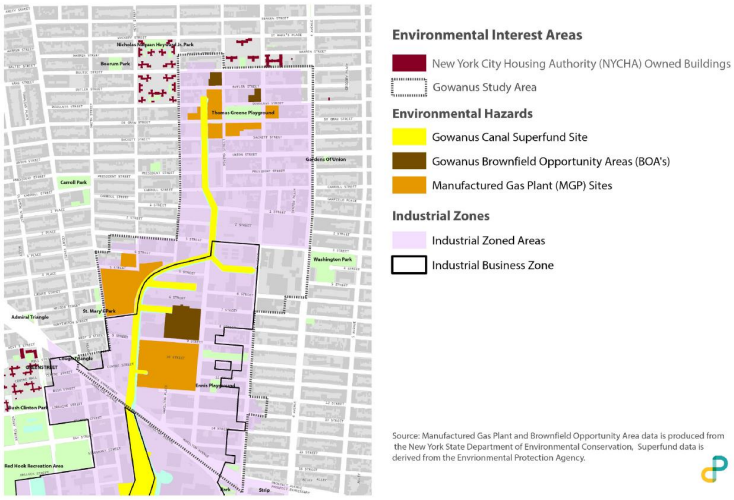


Figure 2: Gowanus Environmental Impact Areas
Source: [16] Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

The canal and the particular mix of uses in the neighborhood is what makes Gowanus distinct from the surrounding predominately residential neighborhoods of Brooklyn's Community District 6 (CD6), yet this community is also environmentally notorious as Brooklyn's first EPA Superfund site and for the sewage back-ups and toxic flooding that frequently make their way into the neighborhood. The neighborhood is also woefully deficient in green space and

street trees compared with its lusher and wealthier Brownstone Brooklyn neighbors of Park Slope and Carroll Gardens, as recognized under the City Environmental Quality Review (CEQR) "underserved greenspace".

Importantly, Gowanus is immediately surrounded by the predominately residential neighborhoods of Park Slope and Carroll Gardens. The land uses, and racial and economic demographics are quite different in Gowanus than in the surrounding brownstone Brooklyn neighborhoods but the community health indices that currently exist predominately at the community board level often mask the vulnerabilities that exist for local Gowanus residents, especially NYCHA residents who tend to be older and have higher rates of asthma and other chronic disease. The environmental health threat of Urban Heat Island (UHI) particularly as it disproportionately impacts the northern public housing communities and residents on the Eastern corridor of Gowanus is often not discussed in development and planning meetings focused on Gowanus because the pronounced neighborhood flooding, sewage overflow issues and brownfield contaminations have thus far dominated the resilience priorities for the neighborhood.

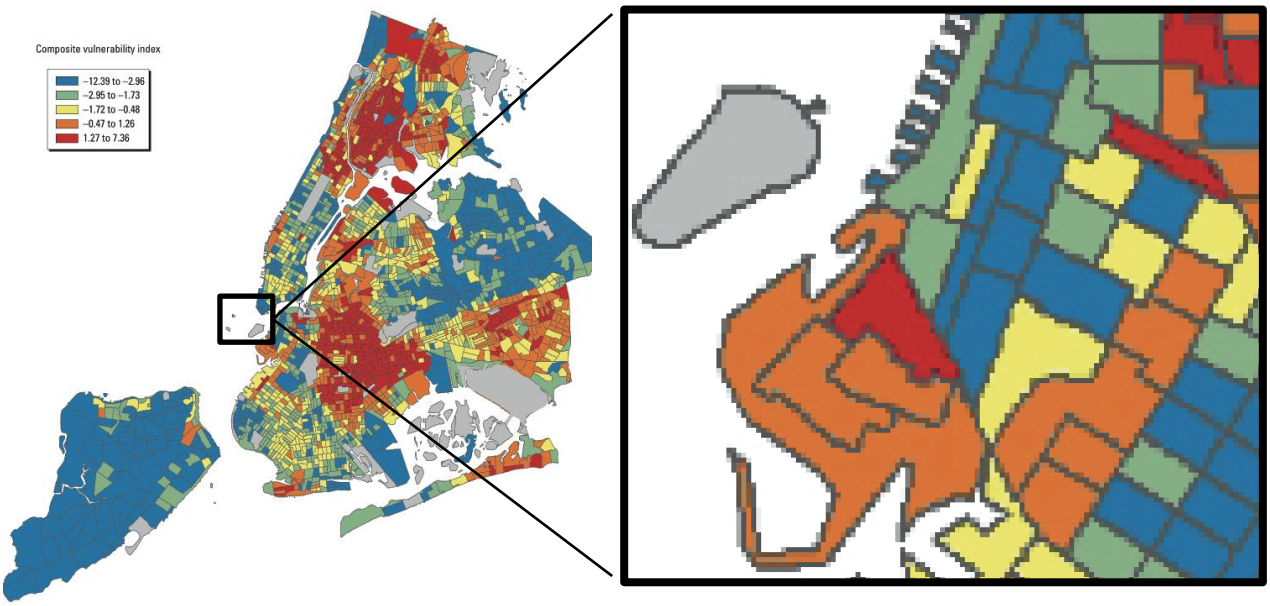


Figure 3: "Urban Heat Island (UHI) Vulnerability Patterns"
Source:[20] "NYC census tracts according to composite heat vulnerability index". Madrigano, J. et al. A Case-Only Study of Vulnerability to Heat Wave–Related Mortality in New York City (2000–2011). Environmental Health Perspectives. July 2015. Volume 123, Issue 7 https://ehp.niehs.nih.gov/1408178/#r8

A closer look at UHI vulnerability patterns from a "Case-Only Study of Vulnerability to Heat Wave–Related Mortality in New York City (2000–2011)" shows that the whole length of the eastern Gowanus corridor has a higher composite vulnerability heat index compared with Park Slope and Carroll Gardens, and that that area-level rates of "heat-associated mortality of seniors in NYC were correlated with prevalence of poor housing conditions, poverty, hypertension, impervious land cover, and high land surface temperature." The study also concludes that corresponding adaptation strategies are most usefully conceptualized at a local level.

a. Questions to be Addressed by the Panel:

While numerous programs and design mechanisms – such as cooling centers, green roofs, cool roofs and community engagement programs – offer means of addressing the risks of urban heat, the multiple land use actions and environmental clean-ups previously mentioned present an opportunity to address the pronounced environmental threat of Urban Heat Island (UHI) in Gowanus on a building and neighborhood-scale. The rezoning also offers a potential opportunity to integrate these approaches, as well as develop funding and delivery structures for more resilient outcomes, especially ones that target populations that are most at risk due to UHI.

The questions we would like the TAP to address are as follows:

1. What can property owners, property managers, NYCHA, NYC Parks, NYDOT and others responsible for the public and private realm do to reduce urban heat island effect without compromising industrial, manufacturing, commercial and mixed uses in Gowanus?
    - How can these adaptation/ mitigation strategies tie into planned large-scale remediation and sustainability projects that are part of the Gowanus Superfund cleanup?

2. In the context of all of the neighborhood's environmental problems – particularly Urban Heat Island and combined sewer overflows – what types of land use actions, design standards and other frameworks could be put in place through Special Districts, measures, and/or development standards as part of the expected Gowanus rezoning?
    - How can these measures address the neighborhood's long-term sustainability in anticipation of additional growth and increasing climate related impacts?

3. What have been key components of successful Environmental Improvement Special Districts nationally? What is the precedent nationally for a local Environmental Infrastructure fund that could support a range of green infrastructure, including maintenance of UHI offsetting measures, and green workforce development efforts?

4. Since Thomas Greene Park, Gowanus' only public park, will be taken offline for many years, where could a temporary park and swimming pool be located and how could their design showcase UHI offsetting measures?
    - What are some UHI offsetting measures that should be considered as part of any Thomas Greene Park re-design effort?

b. Physical Description and Maps

Gowanus has been the subject of numerous studies, many of which are referenced in this briefing book. Please note that the 'study areas' referenced in the briefing book often refer to the entire Gowanus neighborhood vs. the more narrow ULI Urban Heat Island Study Area primarily along the eastern 3rd Avenue corridor.

Because there is already an anticipated strategy in place to increase green space for the Gowanus Canal waterfront area, and because most pedestrian traffic is currently not in these areas, the selected study area for this ULI TAP is focused upon the 3rd Avenue corridor of the Gowanus neighborhood from Bergen Street to the North to the Prospect Expressway to the South, with an expanded area around the Thomas Greene Park and anticipated combined sewer retention tank area alongside the canal corridor (See Figure 4). This area was chosen because of the large scale environmental remediation and anticipated land use changes associated with the NYC Department of City Planning Gowanus area-wide rezoning and DEP ULURP processes which will impact the area and allow opportunity for these changes to specifically address urban heat island in a mixed-use neighborhood.

Additionally, in 2015, NYCHA announced that its Wyckoff Gardens development in Gowanus would become one of two pilot sites citywide for a 50% market rate/50% affordable housing development and in June 2016, NYCHA and the New York City Department of Housing Preservation and Development (HPD) released an RFP for the development of two mixed-income housing buildings at Wyckoff Gardens. The two sites for development comprise two parking lots, one of which is along 3rd Avenue, and also supports a grove of mature trees that provide for outdoor shaded space where residents frequently gather (See Study Area Sites of Interest Map, Sites #2 & 3). Exploring how this proposed development, which is also at the northern end of the neighborhood near Thomas Greene Park and along the Third Avenue corridor could also connect to neighborhood-scale mitigation recommendations to address UHI is also part of the assignment.

TAP Urban Heat Island Study Area

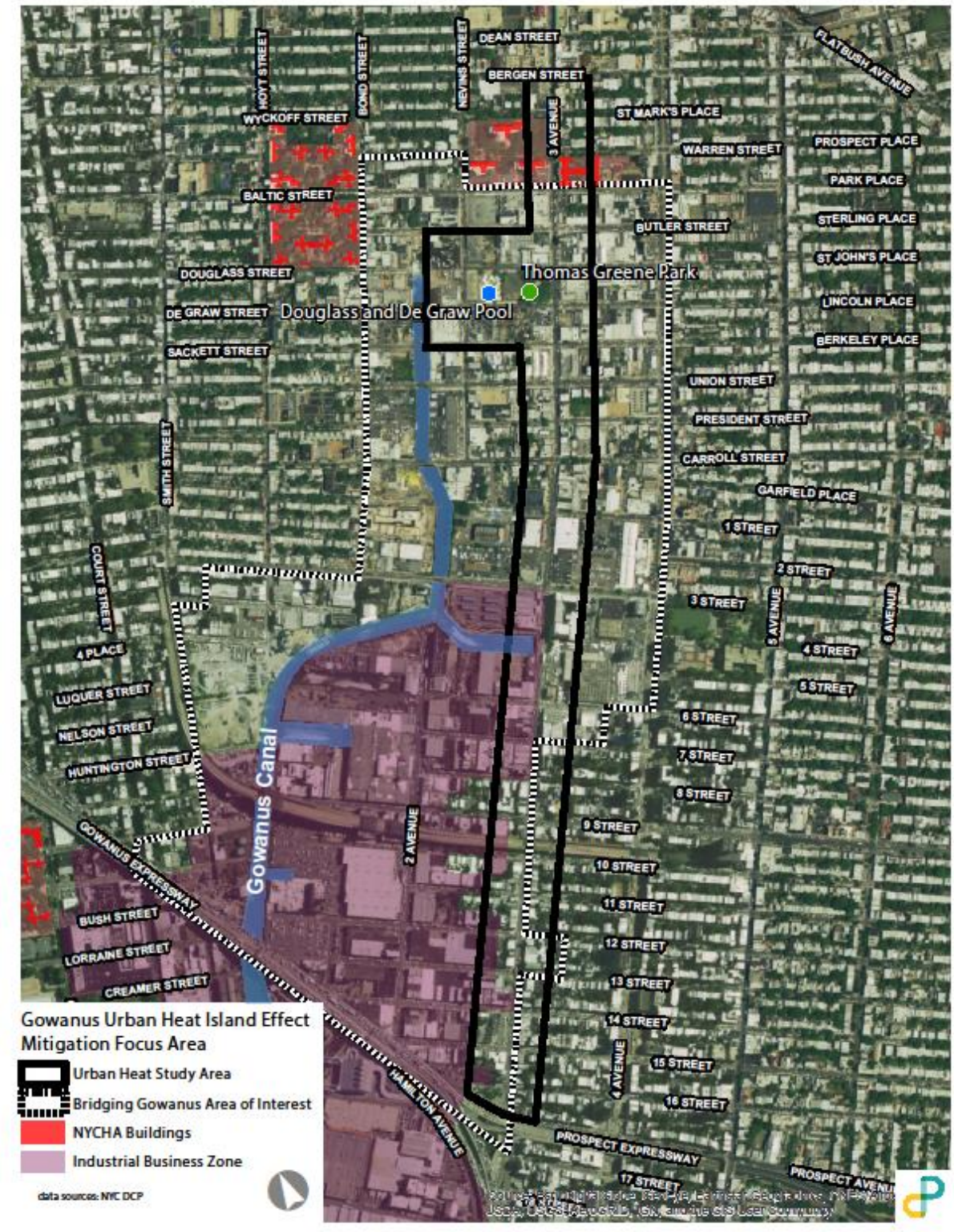


Figure 4: Gowanus TAP UHI Study Area: Aerial
Source: [13.5] Pratt GIS Product. Pratt Center for Community Development. Gowanus_UrbanHeatIsland_MitigationFocusArea_v3 (002).pdf

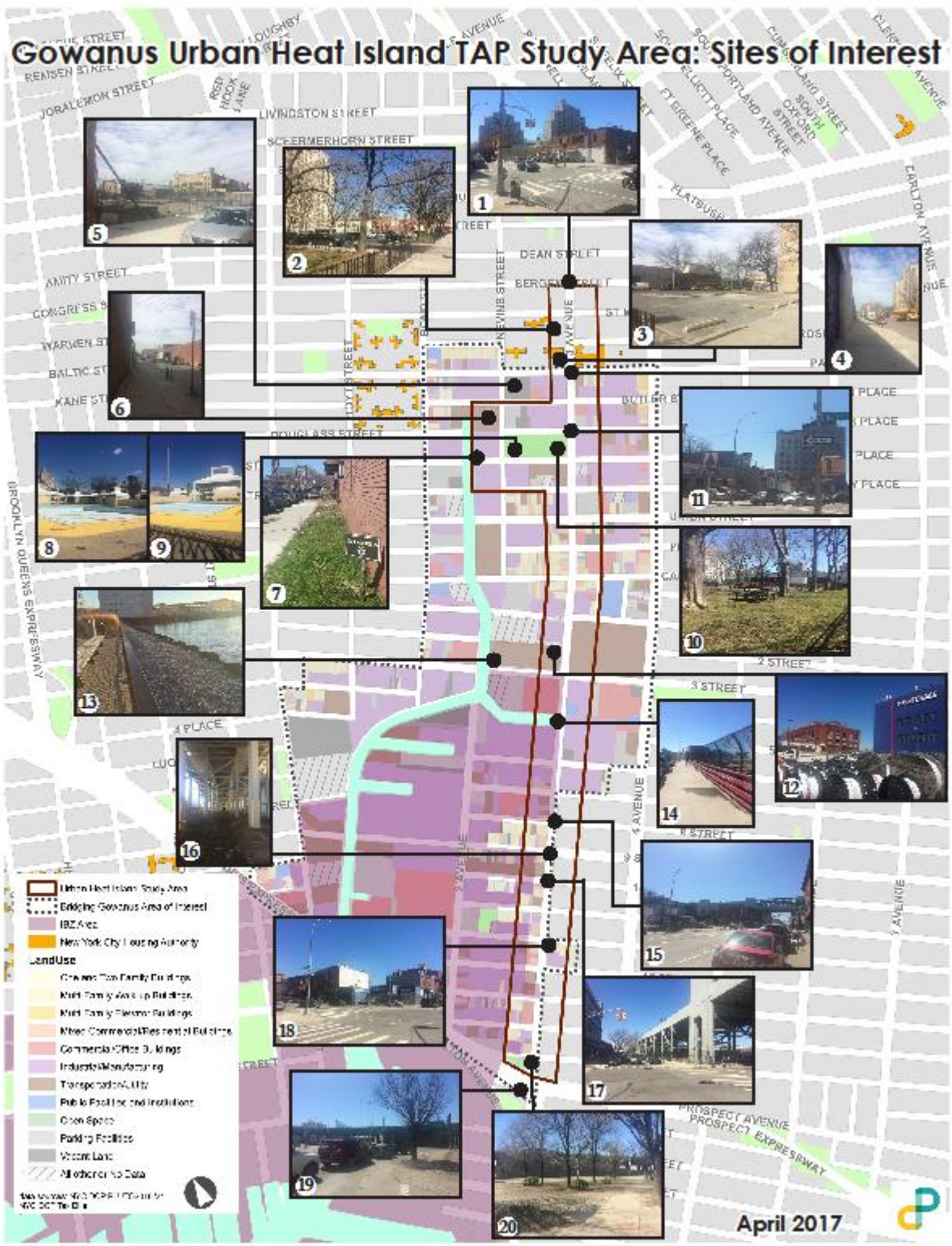


Figure 5 Gowanus TAP UHI Study Area: Sites of Interest

Source: [13.6] Pratt GIS Product. Pratt Center for Community Development. ULI_LandUse_Map_FINAL.pdf

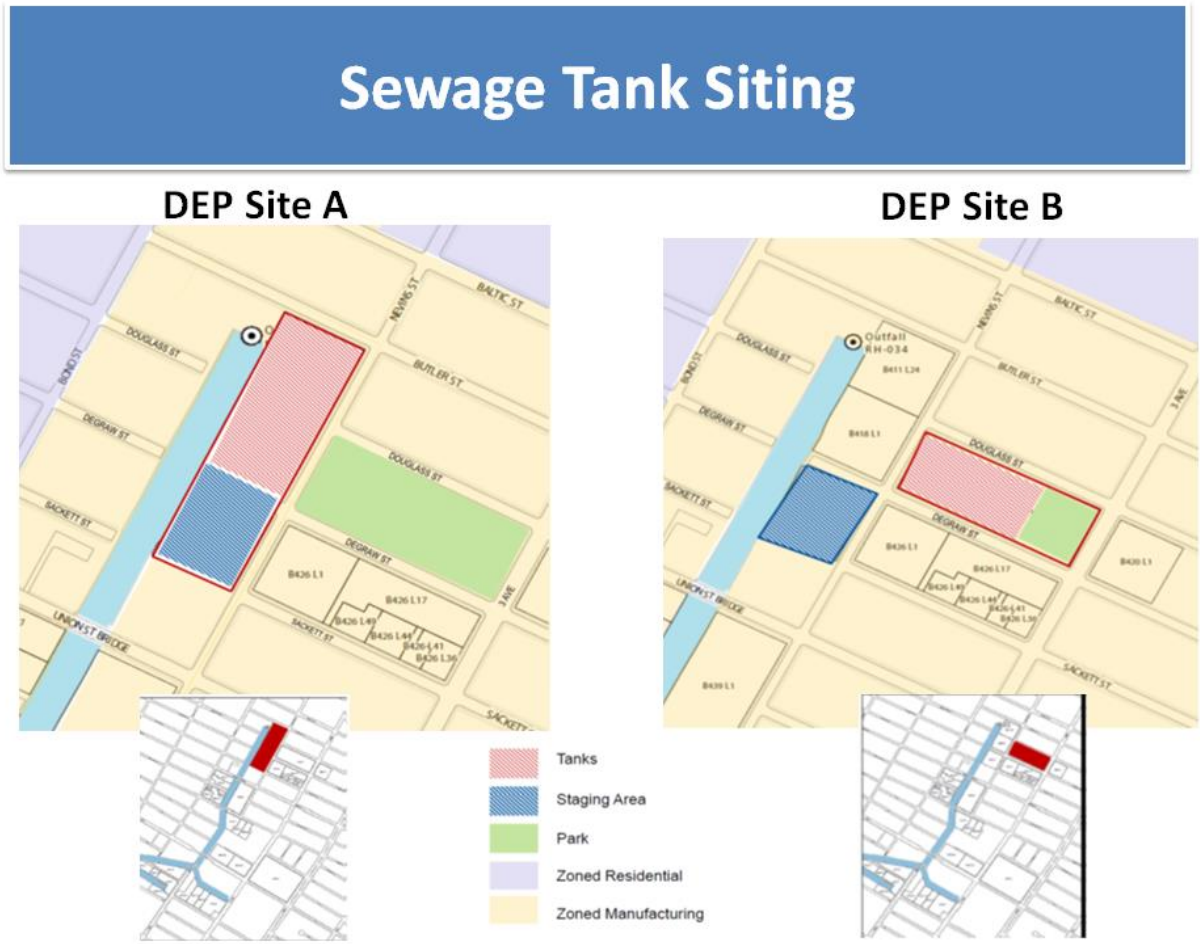
The one public park that currently exists in Gowanus is in the northern area of the neighborhood, called Thomas Greene Park, and it came under NYC Parks jurisdiction in 1938. The 2.25 acre park has a recently renovated children's playground with a water feature, picnic tables, a skate area, basketball courts, the popular "Double D" swimming pool and a unique toddler pool and hand ball courts. (See Study Area Sites of Interest Map, Sites # 8, 9, 10). It also has one of the few mature groves of street and park trees along 3rd Avenue.



Source: [6]: Friends of Thomas Greene Park, 2016

In 2010, the EPA Superfund Remedial Investigation process highlighted that the land beneath the western two-thirds of Thomas Greene Park contained remnants of the former Fulton Manufactured Gas Plant (MGP), which operated onsite from 1879 to 1929, and remains a major source of underground coal tar waste that is leeching into the canal. The NY State Department of Environmental Conservation (DEC) and the EPA will require energy giant National Grid to clean up the area and final agreements between the agencies and National Grid are still awaited to determine the length of time and amount of disruption that will take place on site at the Park. Meanwhile, in December 2012, the EPA further added the potential siting of an 8 million gallon raw sewage and storm water retention tank to be built by NYC Department of Environmental Protection (NYC DEP) beneath the Double D Pool in its proposed Superfund cleanup up plan to contain the massive Combined Sewer Overflow (CSO) problem at the northern end of the canal. After much community advocacy to avoid locating the sewage and storm water retention tank within the only neighborhood public park and swimming pool that predominately served the local public housing communities, in 2016 EPA entered in an Administrative Settlement Agreement with the City of New York to site the sewage holding tank across the street from the Park.

Through the agreement, the current estimated number of years of planned disruption for remediation efforts within the Park is anticipated to be cut in half, from approximately 10 to 12 years to between 4 to 6, and this agreement also avoids taking an estimated 1/3 of the Park for the sewage and storm water retention tank facility head house which would constitute permanent alienation of park space. Despite the improvement of locating the sewage holding tank across the street from the Park (See Study Area Sites of Interest Map, Sites # 6 & 7) and, thereby, extending open space in the community, the former Fulton MGP site remediation and the sewage tank construction will still temporarily disturb as much as two-thirds of the Park for excavation operations. Community priorities regarding temporary and permanent replacement facilities have been committed to by the EPA but details and orders have yet to be finalized. This agreement also presents an opportunity to increase parkland and public access to the canal waterfront in an area already highly deficient of greenspace that serves lower income populations and public housing residents that presently suffer disproportionately from the lack of access to open space and the effects of urban heat island. Temporary as well as permanent replacement facilities have been requested and verbally committed to by the EPA and members of the community have suggested that the corner lot owned by Con Edison on Nevins between Baltic and Butler be considered for the temporary Park and swimming pool space (See Study Area Sites of Interest Map, Site # 5).



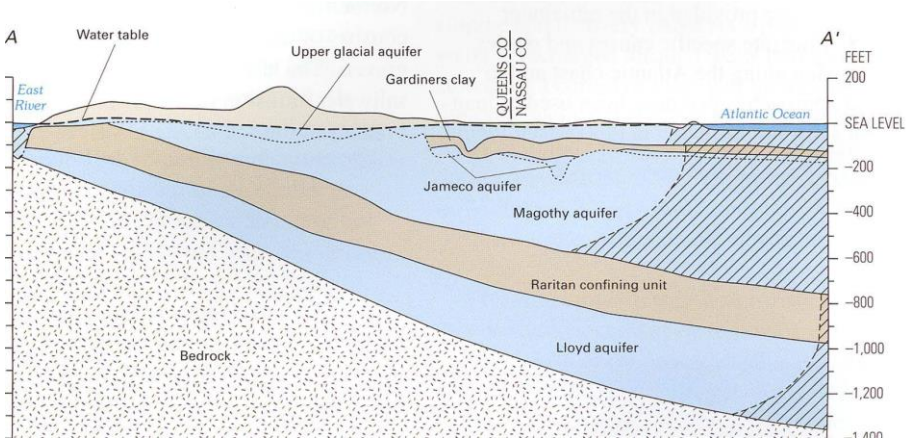
Source: [7] Sewage Tank Siting. NYC Department of Environmental Protection (DEP). Public Presentation 2016.http://www.nyc.gov/html/dep/pdf/cso_long_term_control_plan/gowanus_canal_cso_tank_siting.pdf



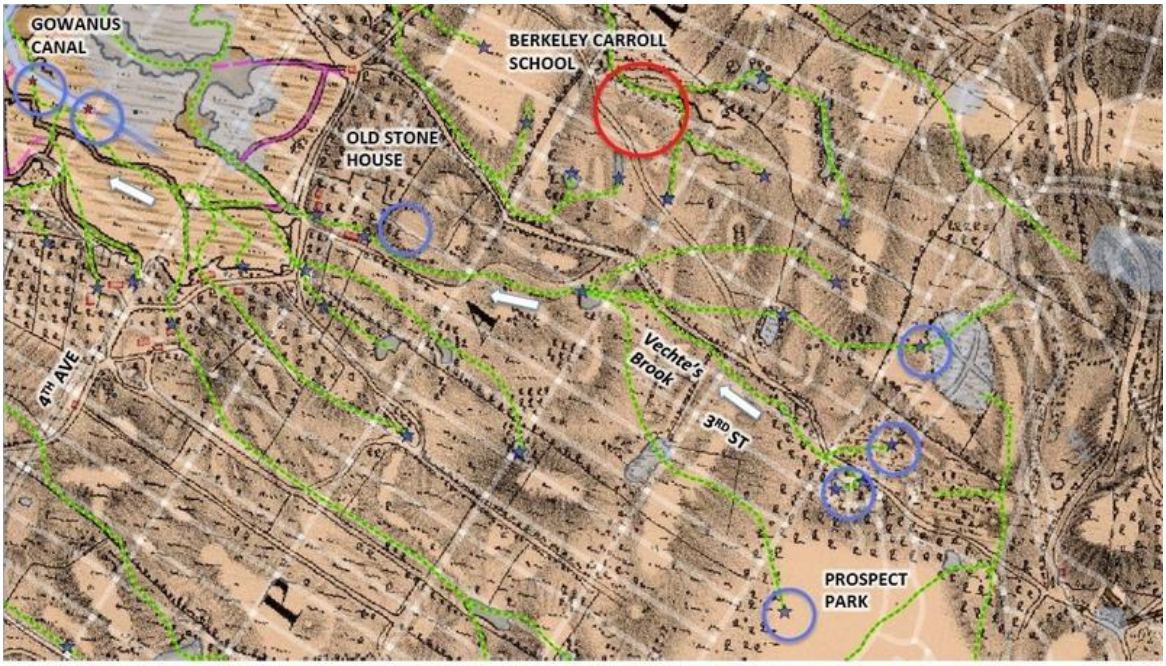
To add to the severe lack of neighborhood park space, and anticipated disruptions to what little green space currently exists; there is an observable dearth of mature street trees throughout the neighborhood. The large one story manufacturing, automotive and warehouse facility spaces, with numerous garage entrances, that also dominate the distinct Gowanus neighborhood buildings' character, particularly along the 3rd Avenue corridor and side streets also allow for direct summer sunlight to bake the concrete streets and buildings with little opportunity for pedestrians and residents to find cooling relief. While planting street tree groves and creating greenspace networks to offset the urban heat island effects is an obvious strategy to help mitigate urban heat island, there are may also exist underlying topographic reasons why street trees may not successfully root in the low lying water table area that need to more thoroughly assessed. Planned DEP sewer system upgrades and bioswale projects, as well as current manufacturing uses, will also most assuredly delay such straightforward implementations moving forward in the short term.



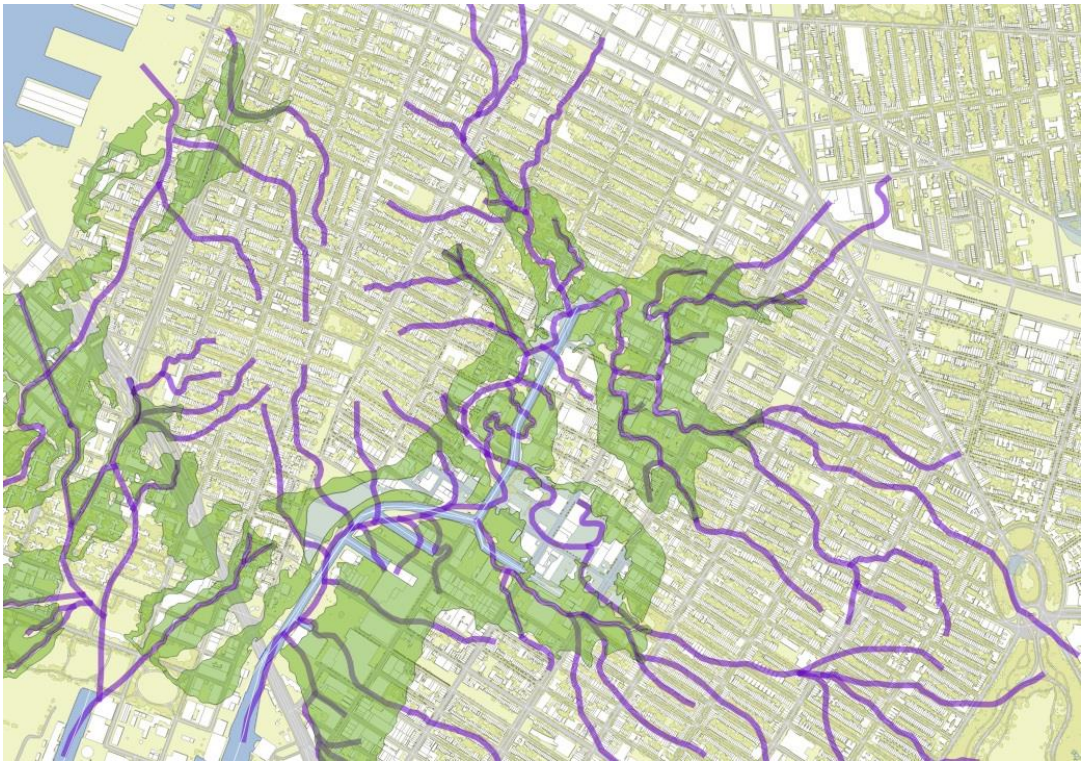
Actual Cross-Section of Brooklyn and Queens



Source: NYC DEP, Geology, Cross Section of Brooklyn and Queens Aquifer



Source: Atlas Obscura, "Finding Brooklyn's Ghost Streams, With Old Maps and New Technology", January 8, 2016



Source: Map of local streams in process by Eymund Diegel, Gowanus Canal is in the center of the map. Mother Board, "The Hunt for Brooklyn's Hidden Creeks", August 29, 2014

Recently the NYC Department of City Planning (DCP) has begun to move forward with their PLACES (Planning for Livability, Affordability, Community, Economic Opportunity and Sustainability) study for Gowanus in support of Mayor de Blasio's Housing New York plan and to help accommodate the growing population in the City as a whole. A part of the current neighborhood planning effort involves community working groups to address resiliency and public realm adaptations and mitigations which could improve public health and address more vulnerable populations needs. While some of the planning goals are focused on understanding the climate risks Gowanus faces now and into the future, including what existing and potential land uses, building types, and infrastructure systems can strengthen social and economic resilience, alongside the sustainability of buildings and infrastructure, and what standards could be appropriate for large-scale buildings to ensure such developments are resilient in the Gowanus floodplain, what is much less publicly discussed is how to address the more vulnerable populations needs in the context of urban heat island and how some of these mitigations may intersect to provide more resilient solutions.

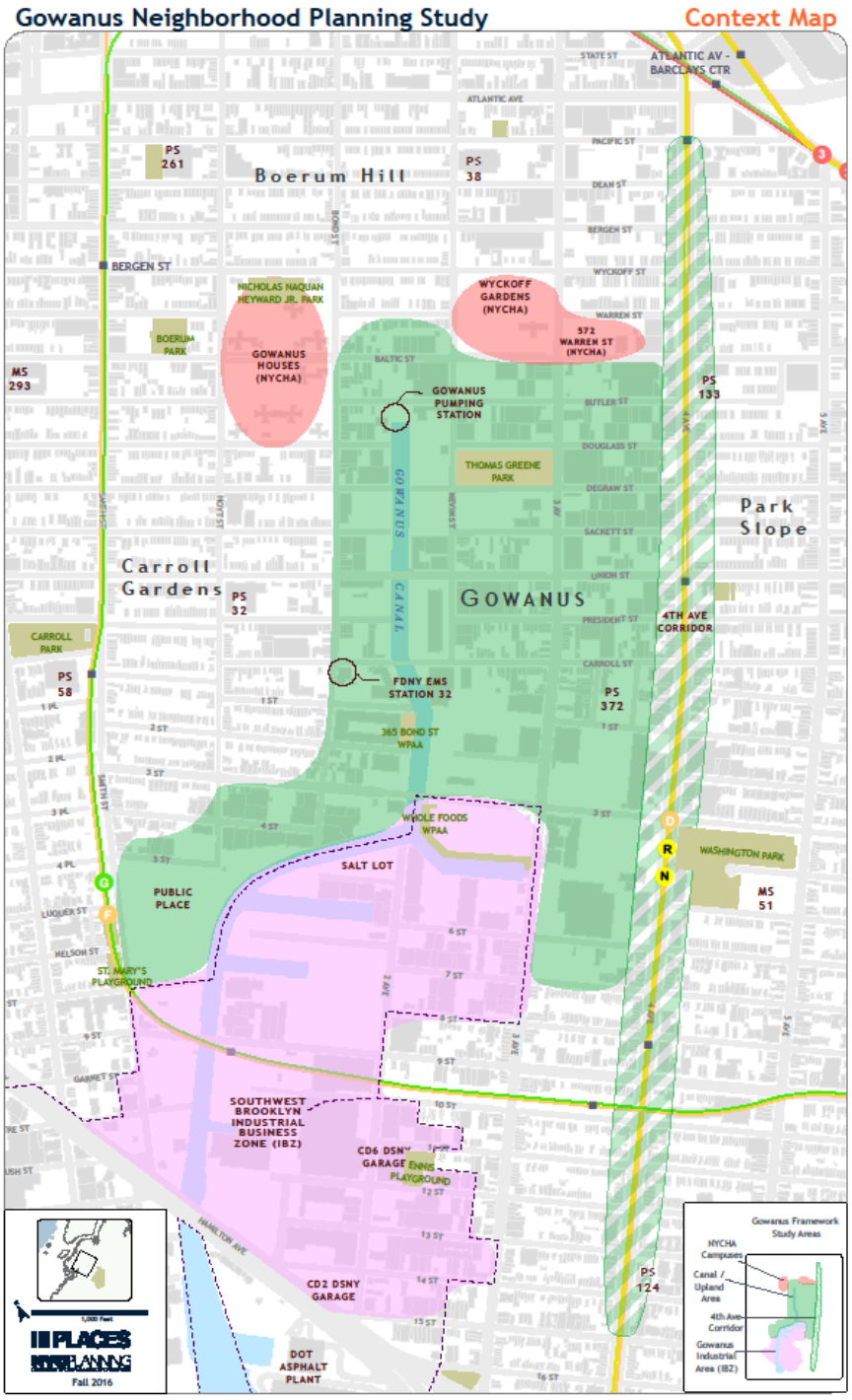


Figure 6: NYC DCP Study Area, Gowanus Rezoning
Source: [22] Gowanus Neighborhood Planning Study, Context Map. New York City Department of City Planning (DCP). Fall 2016. File: gowanus_context_map.pdf

The NYC DCP study area is broad comprising the whole neighborhood district though DCP has recently indicated that they do not anticipate proposing any land use changes within the Industrial Business Zone (IBZ). It is also understood that any planned land use changes along the canal will activate the Waterfront Access Plan (WAP) when properties are redeveloped that will bring certain open space requirements which could collectively contribute to open and greenspace networks along the Northern waterfront area as has already happened at the Whole Foods market and Lightstone development sites.




Source: [21]: Fifth Avenue Committee, 2017 [Left] View of Whole Foods Waterfront Access; [Right] View of Lightstone development site Waterfront Access..

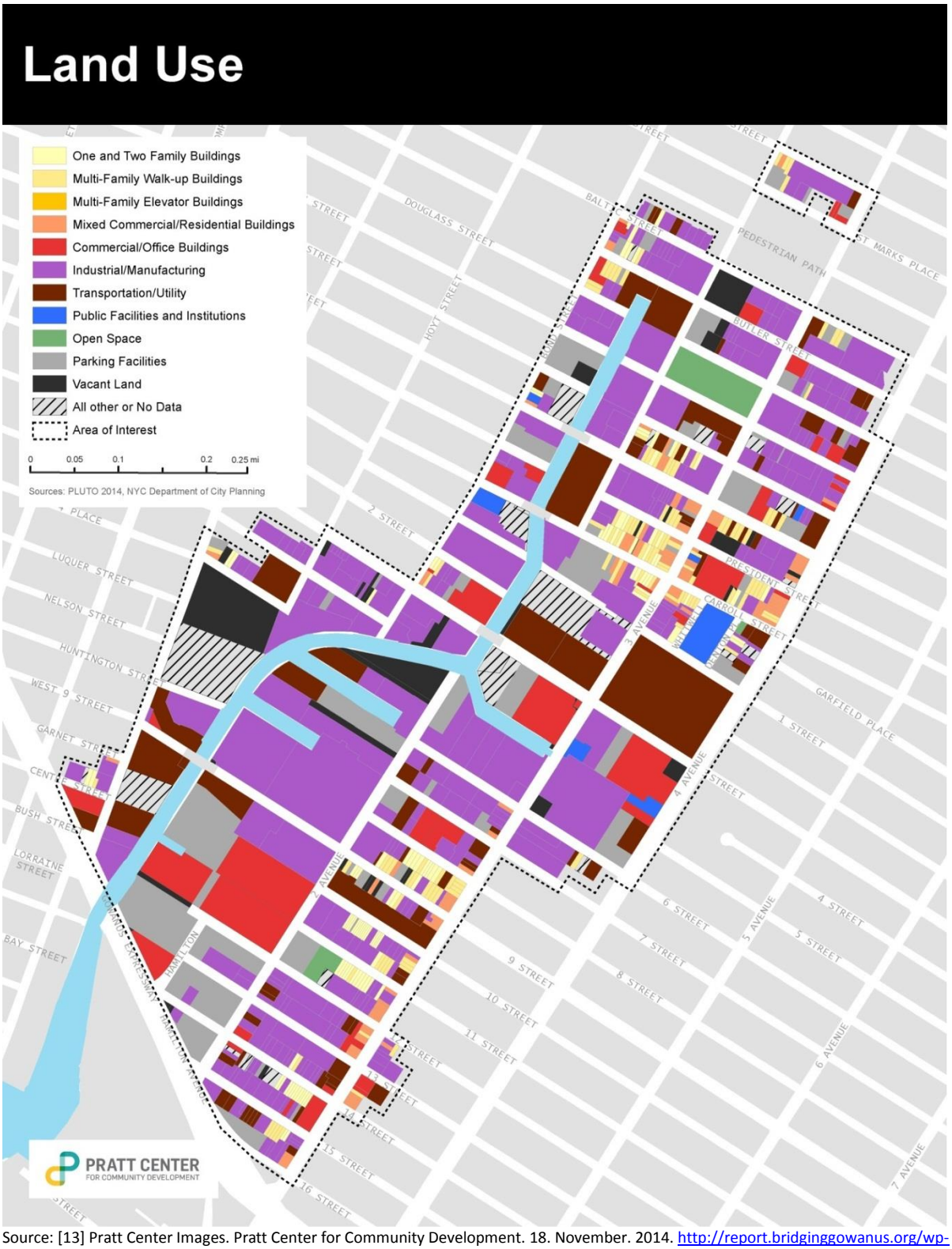
The Whole Foods and Lightstone Development sites straddle the fourth street turning basin of the Canal which presently ends at 3rd Avenue. As part of the EPA Superfund clean-up Record of Decision there will also be an excavation of the 4th Street turning basin where a portion of the turning basin underneath the 3rd Avenue bridge and extending about 25 feet to the east of the bridge will be dredged and restored (See Study Area Sites of Interest Map, Site # 14) which also presents an opportunity to address additional UHI offsetting measures along the Third avenue Corridor. The plan also calls for restoring about 475 feet of the former 1st Street turning basin. Additional Study Area Sites of Interest include the Powerhouse and Verizon sites (See Study Area Sites of Interest Map, Site # 12) across the street on the northwest corner from the Whole Foods and the 9th Street train overpass (See Study Area Sites of Interest Map, Sites # 16 &17) and some "soft sites" like gas stations and automotive repair sites (See Study Area Sites of Interest Map, Sites # 1, 11 & 18) and finally the triangle area at by the entrance to the Gowanus Expressway at the corner of 16th street and Third Avenue (See Study Area Sites of Interest Map, Sites # 19 & 20.)

While these suggested Sites of Interest from the Study are by no means exhaustive we welcome the Technical Assistance Panel's (TAP) expertise and perspective on how to knit together adaptation and mitigation strategies to address Gowanus Heat Island as all of the aforementioned large scale environmental remediation's and land use actions are now getting underway.

In addition to the NYC DCP Gowanus neighborhood rezoning, the NYCHA land use actions at Wyckoff Gardens, the EPA Superfund and NYS DEC MGP clean-ups and the DEP sewage holding tank construction; the DEP also has forthcoming grey (high level storm sewers) and green infrastructure investments planned for the Gowanus area. Fifth Avenue Committee, the sponsor for this TAP, also has a planned affordable housing development at the Public Place site on the western bend of the Canal near Third Street, called Gowanus Green. This project will not only bring 770 units of housing, 70% of which will be much needed affordable housing online, it will also create a new 1 acre public park.

To help bring the current and anticipated uses more into perspective the following land use maps and excerpts are taken from the numerous studies, such as the 2014 Bridging Gowanus and Gowanus Canal Brownfield Opportunity Area (BOA) studies, the 2009 tabled proposed Gowanus rezoning, and agency and community based organization presentations, to provide additional technical context for this TAP. The What's Going On In Gowanus table (see page 48) also lays out the numerous processes and timelines for reference.

i. Land Uses within Study Area and Surrounding Land Use



Source: [13] Pratt Center Images. Pratt Center for Community Development. 18. November. 2014. http://report.bridginggowanus.org/wp-content/uploads/2014/11/Gowanus_landuse_18NOV14_v11.jpg

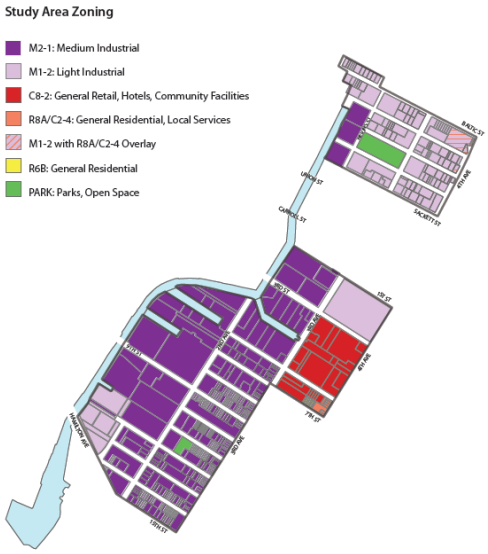
Gowanus Today: Land Use & Built Form

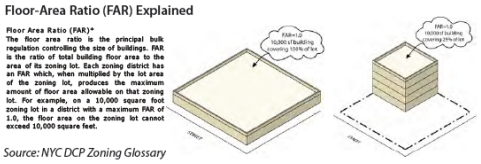
While the population and demographics of residential Gowanus are changing, built form in the study area remains largely the same as it was in the 1930s. The low-rise industrial architecture, typified by the one and two story brick warehouse, that distinguishes Gowanus from its upland neighbors inspires affection while simultaneously increasing vulnerability to floods and limiting business activity. New investments in the built environment are coming partially at the heels of changing land uses, and some business and building owners point to existing zoning as constraining their ability to make improvements. (For more on business owners' perspectives, see the Economic and Business Analysis, page 68.) Stakeholders seek a way to accommodate changing land uses in Gowanus while protecting industrial use, respecting the area's distinctive built form, and increasing local resilience to storms.

This section explores existing built form and land use in the study area, as well as the underlying regulations that shape it.

Zoning Context

Zoning defines the sphere of development possibilities within a district, specifying allowed uses, building bulk, and required open space. The study area is predominantly zoned for low-profile development, with a floor-area ratio (FAR) of 2.0. Industrial uses dominate, with 88% of the north and 86% of the south areas zoned for manufacturing. Industrial zones do permit other uses as of right; the light manufacturing district in the north allows several community

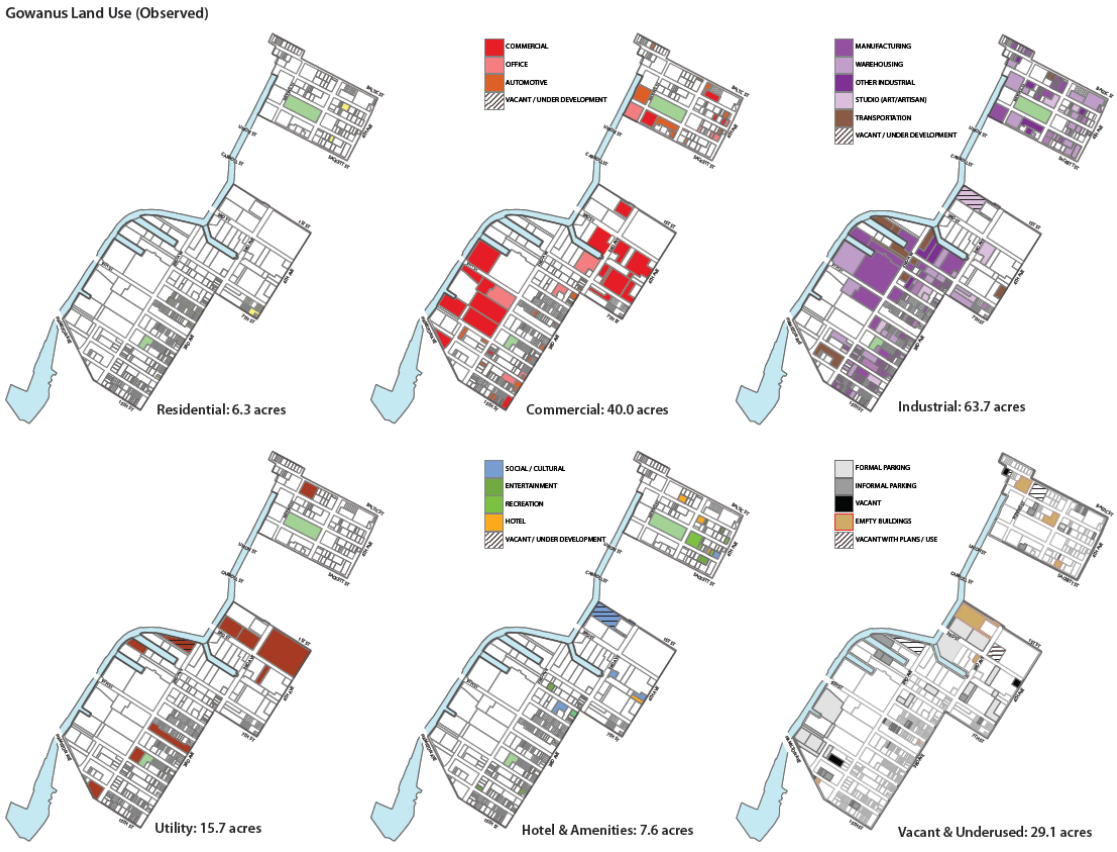




Zone	Acres	General Purpose	FAR	Notes
M1-2	34	Light Industrial	2	Allows hotels, ambulatory health care, houses of worship, event spaces, gyms, and other clubs. Construction yards must be enclosed.
M2-1	86	Medium Industrial	2	Allows more noxious uses than M1-2. Does not allow hotels or other uses noted above. Yards do not need to be enclosed.
C8-2	13	General Service	2	Provides necessary services for a wider area than just local. May generate heavy truck traffic; cannot have new residential development.
R8A/C2-4	0.68	General Residential / Local Service	max height = 12 stories	Accommodates general residential use and essential local services in buildings up to 12 stories tall.
R6B	0.31	General Residential	max height = 5 stories	Accommodates general residential uses in buildings up to five stories tall.

Source: NYC DCP

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.



Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

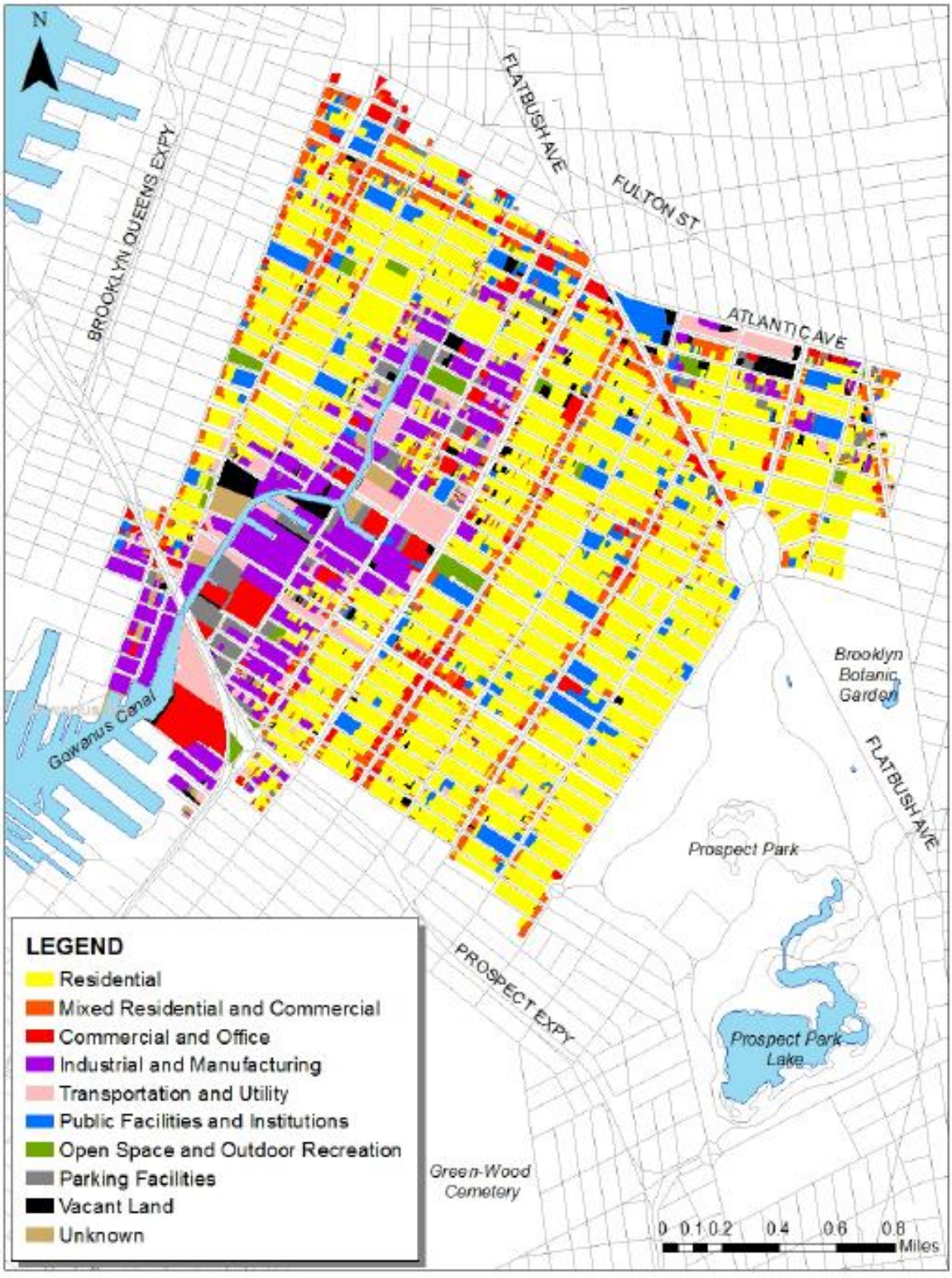


Figure 2-4. Land Use in Gowanus Canal Watershed

Source: [5] Combined Sewer Overflow (CSO) Long Term Control Plan for Gowanus Canal. NYC DEP. June 2015.File: gowanus-canal-ltcp-201506.pdf. Online: http://www.nyc.gov/html/dep/pdf/cso_long_term_control_plan/gowanus-canal-ltcp-201506.pdf

i. Green Works: Open Spaces, Parks, Vegetation, and Green Infrastructure

Gowanus has limited green space and tree canopy. A 2012 tree survey by Gowanus Canal Conservancy found that 24% of the inventoried blocks had no trees. The only open space in the ULI Urban Heat Island study area is the Thomas Greene Park.

Gowanus Vegetation



Grass/shrubs
Tree canopy
Bare earth
Paved
Roads/railroads
Buildings

This NYC LIDAR imagery from 2010 classifies types of landcover. The study area, highlighted in white, has very little vegetation.

Source: NYC Open Data file: landcover_2010_ nyc_3ft.shp



A tree survey conducted by GCC in 2012 found that 34% of inventoried block segments had no trees. Most of the barren blocks were in the BOA study area.

Source: Gowanus Canal Conservancy, TreeKit

Thomas Greene Playground



Thomas Greene Park Master Plan

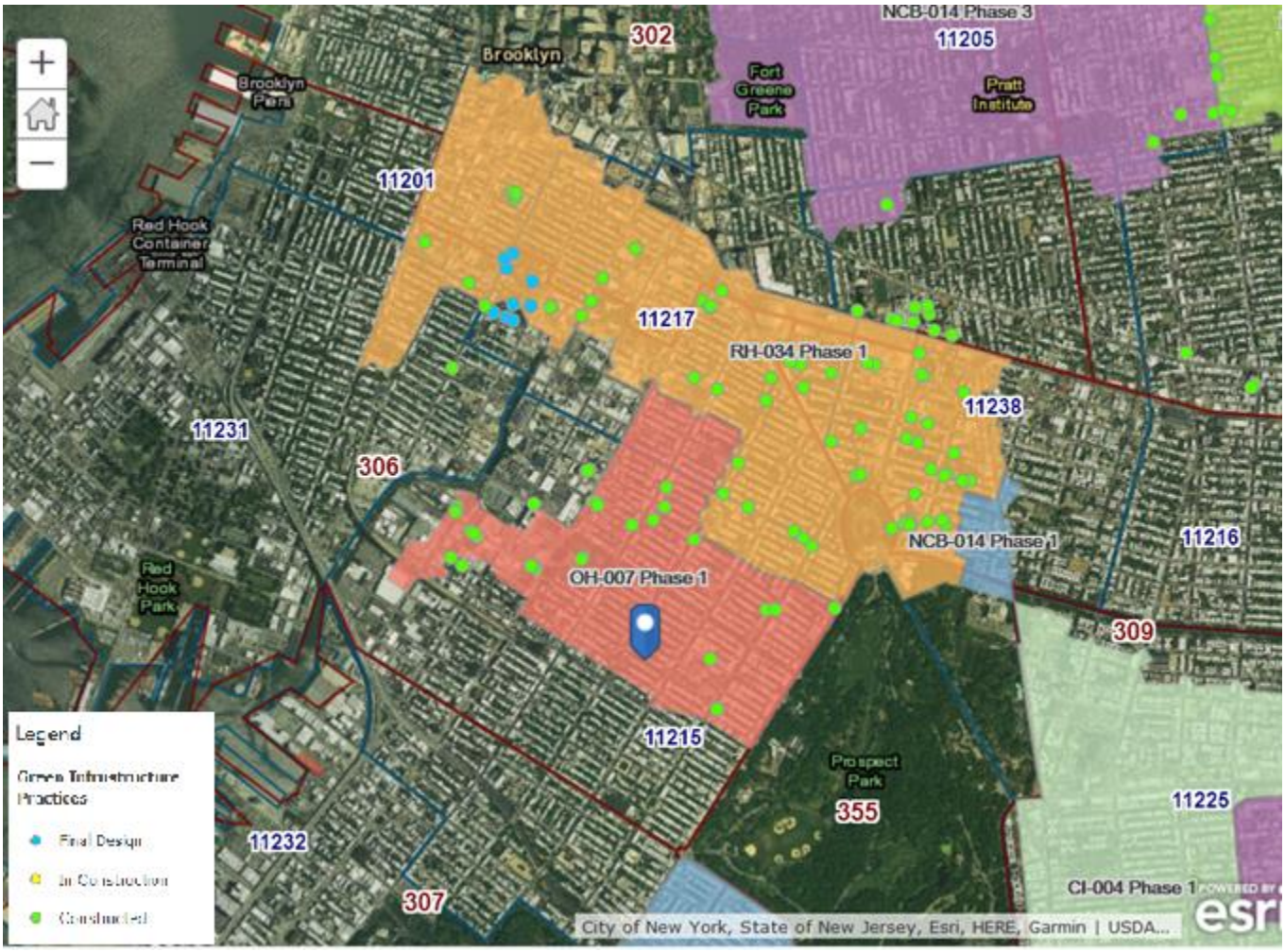


Plans for a rebuilt Thomas Greene Playground include a revamped playground, handball and basketball courts, a skate park, and a landscaped lawn, in addition to the Double D pool. Plans may be disrupted by necessary cleanup of the Fulton MGP site, which underlies the western part of the park. The possibility of disruption to use of the pool due to cleanup activities concerns many community members.

Image source: Friends of Douglass/ Greene Park website

Source: [4] “Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

DEP Green Infrustructure Program Map



Source: [25] DEP Green Infrastructure Program Map: http://www.nyc.gov/html/dep/html/stormwater/using_green_infra_to_manage_stormwater.shtml

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Goawnus Canal Conservancy Green Space Charettes:

Gowanus Greenscape Vision Slide Narrative

1. Gowanus Canal Conservancy envisions the evolution of an open, clean and alive Canal and Watershed with accessible, connective open space; clean water, soil and air; and vibrant ecological, economic and cultural activity. For the past 10 years, GCC has played a significant role in building, stewarding and advocating for ecologically productive public space along the Canal. GCC has leveraged this experience and range of partnerships into the launch of the Gowanus Greenscape Community Vision, a call for a vibrant, resilient and accessible network of parks and public spaces centered on the Canal. GCC and a growing network of community stakeholders see a unique opportunity to knit together expected investments by a range of private and public entities into the next great New York City park. This network will link and unify one of the City's most dynamic and ecologically interesting neighborhoods, reflect a vital industrial heritage, integrate community stewardship and education into park maintenance and programming, and strive for immediate and far-reaching influence on urban waterfront landscape ecology, design, and policy.

2. Over the past 18 months, GCC has led a planning process with approximately 300 community members, partner organizations, landowners, elected officials, and agency representatives to identify open space priorities from a diverse range of neighborhood stakeholders. This outreach has resulted in emerging concepts for Greenscape elements such as right-of-ways and circulation, green infrastructure, recreation and passive space, programming, water access, facilities, and improvements to existing parks and green space.

3. At community breakout charettes, a diverse range of participants discussed and mapped answers to the following questions:
   1. How do we use our existing public spaces?
   2. What activities and uses do we want to see in the emerging Greenscape? Where should these activities and uses go?
   3. What do we want to see on the Canal Edge?

4. We learned which neighborhood public spaces people felt positively and negatively about, and why. Positive things included views at Canal-side areas, treed areas, and park programming like the DD pool, playgrounds, markets, sports fields, and gardens. Negative things include lack of accessibility, dirty air and water, and lack of street trees.

5. We learned what routes people take around the neighborhood and how they feel about them. One takeaway was that north Canal residents tend to use North-South streets more often, whereas east and west Canal residents use East-West streets. 4th Avenue and 3rd Street where called out as the most dangerous traffic-wise.

Gowanus Greenscape Vision Slide Narrative

6. We learned what people want to see in the emerging Greenscape - see attached Greenscape Community Feedback document.

7. We learned what people want to see in the emerging edge of the Canal - see attached Greenscape Community Feedback document.

8. We have begun to pull together ideas for waterfront spaces that address some of the community priorities, including cafes, active programming soft shorelines, green infrastructure, soft shorelines, and flood protection.

9. We have also begun to think about how soft shorelines can be integrated into the Gowanus Superfund cleanup. Impermeable bulkheads to prevent recontamination can be fronted with bulkhead habitat enhancement, and constructed salt marshes.

10. At the 1st Street Turning Basin, the EPA is proposing a long, skinny salt marsh shelf, which we are concerned will become stagnant and won't provide good public space.

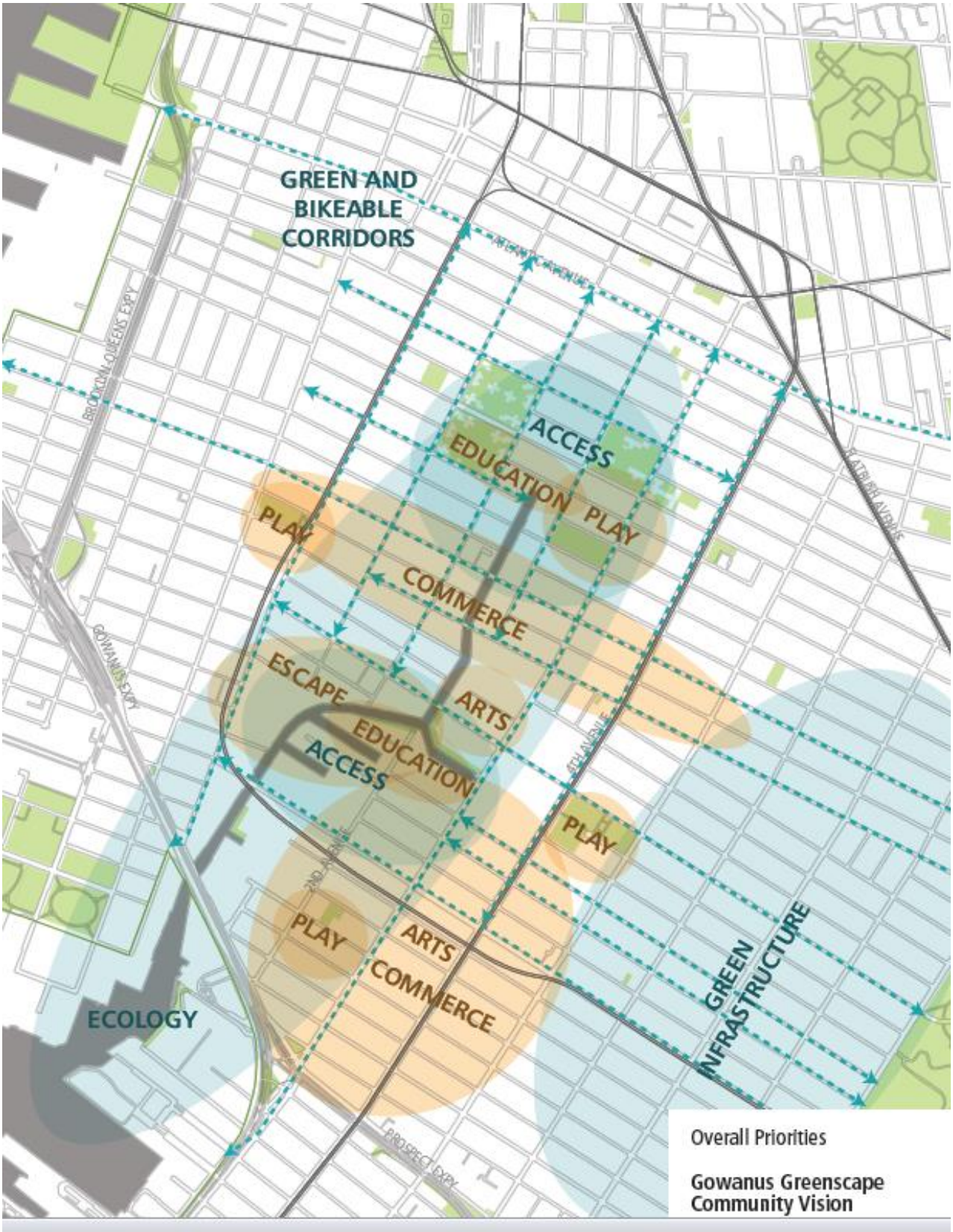
11. We propose integrating softer edges and less constricted turning basin entrances into the DCP Waterfront Access Plan. This may require tweaking of the 40' esplanade requirement for each site, so the esplanade is skinnier and wraps around the entrance to the turning basins.

12. We are currently working to hire a design team - see attached RFP - to coalesce, prioritize and advance ideas and information gathered from community engagement into a Gowanus Greenscape Master Plan. This will include another round of community outreach in the Summer and Fall, with the intent of dovetailing with the ongoing DCP planning process, to advocate for and facilitate implementation of community priorities in the zoning, and for elements that will not be encoded in zoning.

Source: [26] Gowanus Canal Conservancy, Gowanus Greenscape Community Vision, 2015



Source: [26] Gowanus Canal Conservancy, Gowanus Greenscape Community Vision, 2015



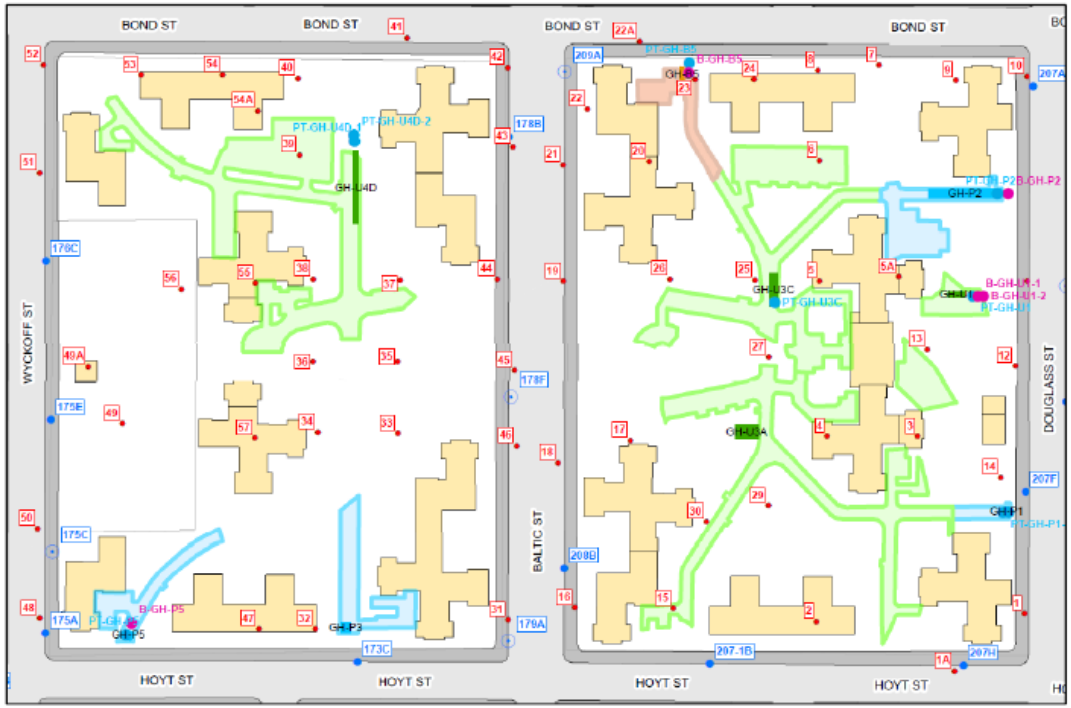
Source: [26] Gowanus Canal Conservancy, Gowanus Greenscape Community Vision, 2015



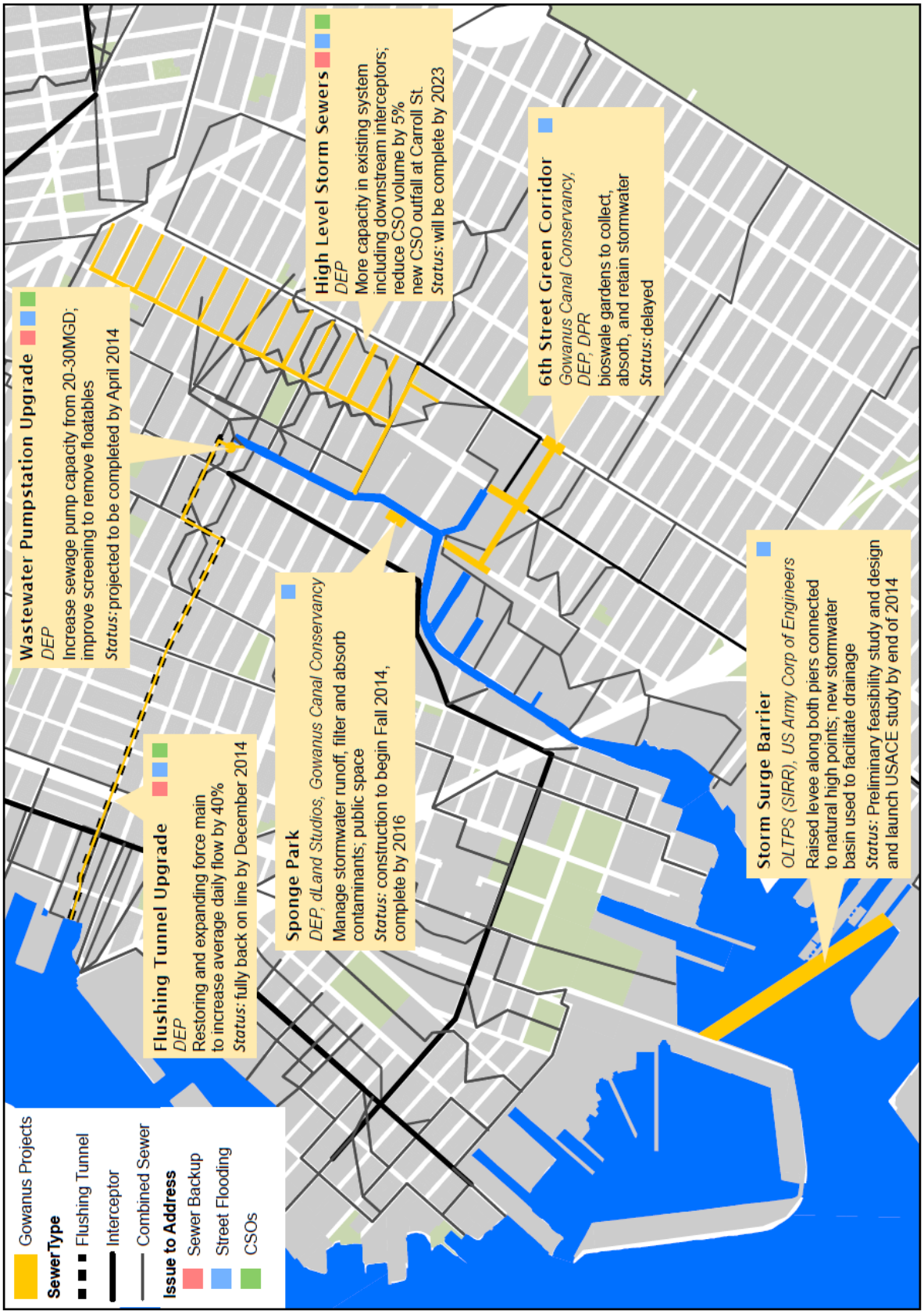
Source [11] Gowanus Canal Sponge Park. http://www.gowanuscanalconservancy.org/downloads/dlandstudio_GowanusCanal_SpongePark_9_24_08.pdf

Gowanus Houses Design Summary

- Total impervious surface area managed: 67,163 sq. ft
- Total volume stormwater managed per rainfall: 71,600 gallons
- Total volume stormwater managed annually: 3,437,000 gallons



Source [12] NYC Green Infrastructure Program. Gowanus Public Housing: Recovery and Resiliency. NYC DEP. December 7, 2016. DEP Gowanus Public Housing 12-7-16.pdf



Source: [13.4] Pratt GIS Product. Pratt Center for Community Development. Gowanus Canal Projects 03_11_2014.pdf

SEVEN THINGS TO KNOW ABOUT GOWANUS' URBAN FOREST

1. **The trees of Gowanus provide the neighborhood with environmental services equal to $360,000 in measurable benefits every year.** These services include energy savings, CO_2 capture, air quality improvement, storm water capture and aesthetic improvements.

2. **We need to diversify Gowanus' Urban Forest**. Over 60% of the street trees in Gowanus are made up of just six species. NYC Parks uses a rule of thumb when specifying new tree plantings in a given neighborhood: no more than 5% of any one tree and no greater than 10% of any one genera[1]. Measures should be taken to reduce or eliminate the planting of over-represented species and set ambitious diversity targets for future tree plantings.

3. Less than 20% of the tree species in Gowanus are native species. **More emphasis should be placed on planting native species in the watershed.** Native species have shown to provide increased habitat for bird animal and insect species and are often best adapted to the local environment in which they are planted[2].

4. **Gowanus has many tree stewards!** About half of the trees in the neighborhood showed at least one sign of stewardship. Compared to the available tree census data that has been released, only 28% of mapped trees city-wide showed at least one sign of stewardship.

5. **There are a lot of young trees in the neighborhood.** 35% of the trees in Gowanus are under 6" in diameter. Under 2% of the trees are over 24" in diameter (and they're almost all London Plane and Pin Oak) these individuals that provide the most benefits. Stewardship energy should be targeted at young trees while they are vulnerable and developing to ensure they make it to old age and won't cause problems down the road.

6. **The Emerald Ash Borer is coming** and Gowanus has 59 Fraxinus street trees that will need to be treated or removed. Treatment options, removal scenarios and potential funding sources should be discussed with various levels of local and state government

7. **Nearly half of the sidewalks around the street trees in Gowanus are damaged.** While the NYC Parks Department has improved their standards and now aims to make tree beds between 40-50 square feet[3], the neighborhood has been left with a legacy of too-small tree beds that stifle roots and create hazardous conditions for pedestrians. Funding for tree bed expansions and sidewalk repair should be explored. Funding for best BMP plantings using materials such as specialized soil or structured root boxes should be explored.

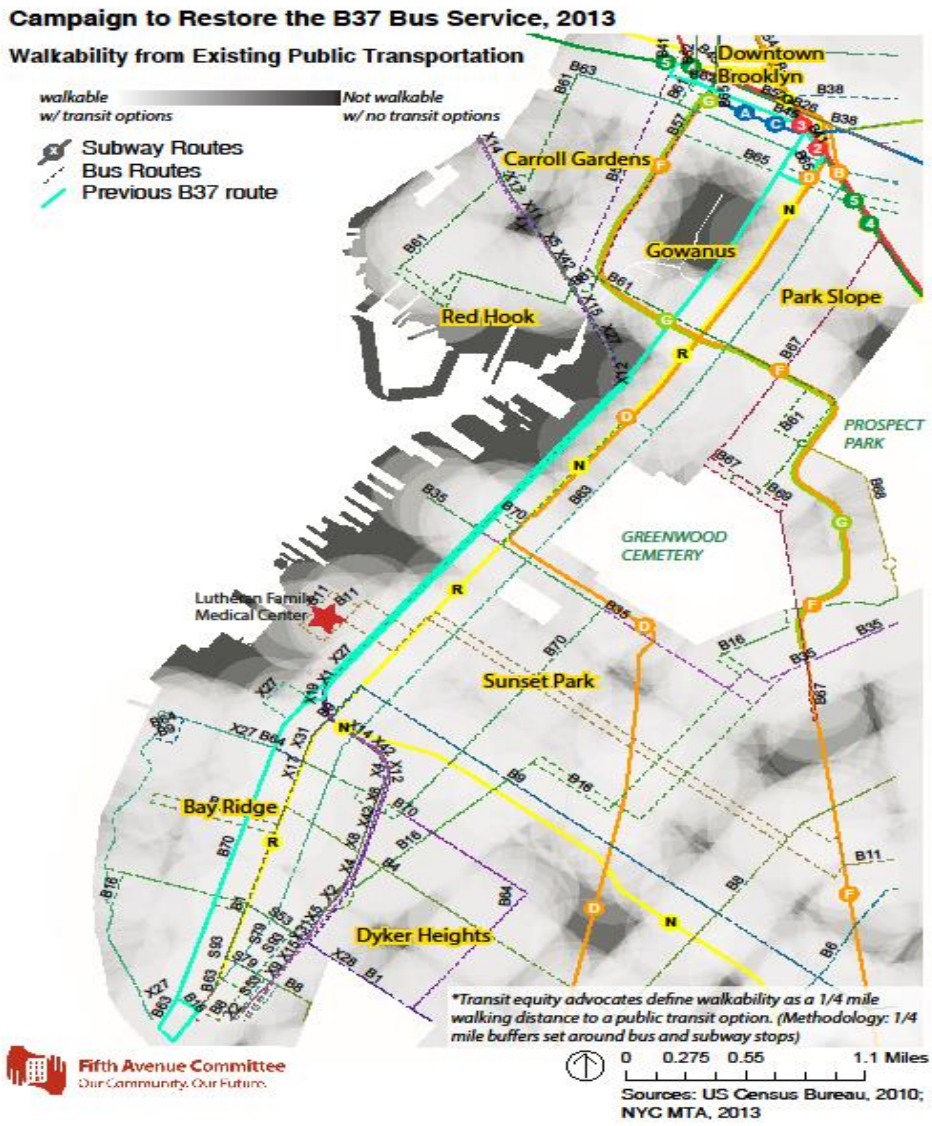
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[1] *How Diverse is Our Urban Forest*? Matthew Stephens, Presentation. August 29, 2013
[2] *Native Species Planting Guide for New York City*. City of New York Parks & Recreation. June 214.
[3] Tree Planting Standards. City of New York Parks & Recreation. February, 2014.

Source: [26] Gowanus Canal Conservancy, Gowanus Greenscape Community Vision, 2015

ii. Transportation and Access

Gowanus has good transit connections including subway access along 4th Avenue and Smith Street. Thanks to significant advocacy, MTA bus service was restored along 3rd Avenue which was important given the number of elderly and disabled residents along this corridor who needed to access Downtown Brooklyn and surrounding communities more easily. Additionally, bike paths have been added in recent years. There have been a number of pedestrian deaths over the years and crashes between cars, pedestrians and bikers. 3rd and 4th Avenues are major corridors for cars and trucks. Traffic is often backed up during the morning and evening commutes. Construction in the area has exacerbated these conditions.



Source: [24] Campaign to Restore the B37 Bus Service: Walkability from Existing Public Transportation. Fifth Avenue Committee. 2013

Transportation & Access

From its earliest days, Gowanus has relied on good transportation networks to connect its producers, suppliers, and markets. Today, businesses cite Gowanus's convenient access to local and regional markets as one of its primary locational advantages. The southern part of the study area provides easy access to the Gowanus, Prospect, and Brooklyn-Queens Expressways (BQE), as well as the Hugh L. Carey Tunnel to Manhattan. Third and Fourth Avenues, the eastern edges of the BOA study area, are both designated local truck routes in Brooklyn. The canal itself is still used for shipping by a handful of waterfront operators, and is seeing greater use by recreational boaters.

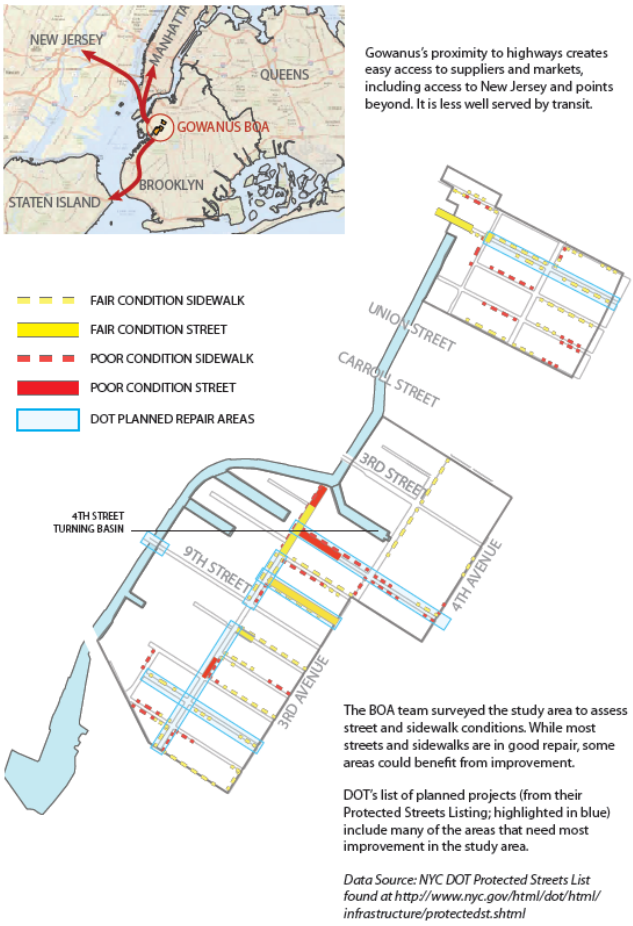
Evolving uses in the area and increased pedestrian through-travel are changing local behaviors in certain areas, and may lead to occasional conflicts. This section explores transportation facilities in Gowanus and offers ideas for simultaneously accommodating multiple modal groups.

Streets and Sidewalks

The study area comprises 29 regular blocks and 12 waterfront blocks of varying size. The majority of the streets appear to be in good condition, and several have had reconstruction or resurfacing in the past five years; however, a visual inventory of conditions revealed several areas where improvements are needed. Many of the streets in most serious need of improvements are already on DOT's planning list for reconstruction and resurfacing.[1]

One-way streets and the curving path of the canal limit connectivity in the study area. In the south, the canal and the jutting inlet of the 4th Street turning basin create a relatively isolated area that may benefit truck-dependent businesses. Second Avenue, which dead-ends at the canal, connects to Hamilton Avenue, a six-lane arterial south of the study area that provides easy access to the BQE and Hugh L. Carey Tunnel. Ninth Street, the study area's only east-west through-street south of the 4th Street turning basin, carries pedestrians, bicycles, transit, and cars across the canal without routing much traffic onto nearby streets, so truck traffic is relatively unimpeded in this area.

Transportation Access & Street Conditions



Gowanus's proximity to highways creates easy access to suppliers and markets, including access to New Jersey and points beyond. It is less well served by transit.

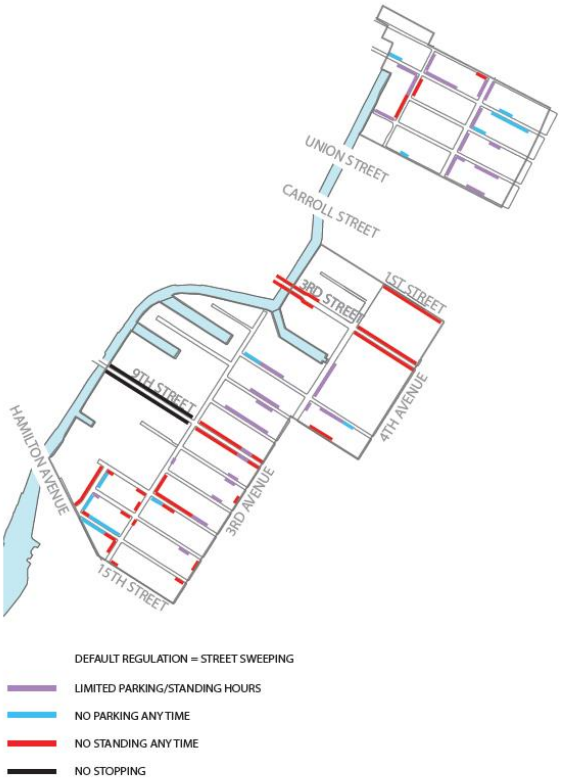
The BOA team surveyed the study area to assess street and sidewalk conditions. While most streets and sidewalks are in good repair, some areas could benefit from improvement.

DOT's list of planned projects (from their Protected Streets Listing; highlighted in blue) include many of the areas that need most improvement in the study area.

Data Source: NYC DOT Protected Streets List found at http://www.nyc.gov/html/dot/html/infrastructure/protectedst.shtml

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

On-Street Parking Regulations



Data Source: DOT map of parking signs; www.nycdot.info

during weekday business hours. Some areas, particularly in proximity to bridges and utility-owned parcels, have regulations against standing or stopping at any time. On the vast majority of block faces, however, the only parking prohibition is during street sweeping hours. Most of the blocks are scheduled for nighttime, bi-weekly sweeping (from 3am-6am).

During weekdays parking pressures are visible in the area, particularly on the blocks surrounding the DSNY garages, where cars frequently park on sidewalks. A traffic study conducted in 2011 as part of Whole Foods' Environmental Impact Statement found that 95-100% of available parking spaces were occupied during weekdays from 7am-2pm.[4] With little vacant land available for parking lots, and little market support for parking structures, the situation seems unlikely to change. Some formal surface parking areas, notably the Lowe's/Hamilton Plaza parking lots, appear consistently underused. This underuse may represent an opportunity both to support re-examination of parking requirements for large retail developments at the policy level, and to create shared parking space that could offset local demand.



Street and sidewalk parking along Baltic Street in the north study area.

In the northern study area, conflicts between trucks, pedestrians, and residential car owners are more common and problematic. Hotel guests and residents of upland residential neighborhoods appear to use the area for parking, while neighborhood facilities like Thomas Greene Park, the Douglass-Degraw pool, nearby gyms, bars, restaurants, and entertainment venues attract considerable foot traffic. As the waterfront develops with new, publicly-accessible amenities, pedestrian traffic through the area should be expected to increase, possibly compounding difficulties for truck access.

Parking

Parking is a common concern for many stakeholders. In addition to truck access, the study area must accommodate customer and workforce parking in order for businesses to function. Residents of the neighborhood also park in the area, and there are anecdotal reports of hotel guests and upland residents competing for parking as well.

As stated above, almost a third of block faces in the study area have parking regulations that limit non-business use of streets for parking



Outside the DSNY CD6 garage on 2nd Avenue, cars frequenly park on the sidewalk as well as on the street.

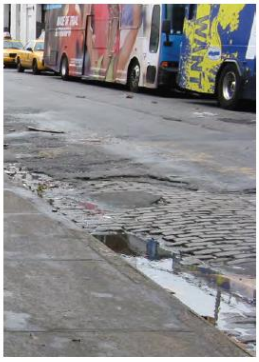
Whole Foods Parking Study



EXISTING ON-STREET PARKING SUMMARY

Peak Period	Approximate Legal Capacity	Number of Spaces Occupied	Percent Occupied
Weekday 7 - 10 AM	1,918	1,813	95
Weekday 11 AM – 2 PM	1,918	1,915	100
Weekday 4 - 7 PM	1,918	1,681	88
Saturday 12 – 5 PM	2,009	1,533	76

The traffic study conducted as part of Whole Foods' EIS in 2011 confirmed that parking within 1/4 mile of that property is challenging. Although the study examined only part of the study area, its findings are believed to be representative. *Source: Eng-Wong Taub, Whole Foods Traffic Study (March 2011), Table 3, pg. 8*





Poor street conditions (left) and sidewalk conditions (right) on 6th Street, which is on DOT's list to repair.

The majority of east-west streets in the study area dead-end into the canal. Several street ends are used for business operations by nearby property owners. Of the study area's 17 east-west streets, only 9th Street, 3rd Street, Hamilton Avenue, and one block of Baltic Street are bi-directional. These streets also provide the only westbound canal crossings in the neighborhood; Union and Carroll Streets, between the north and south study areas, both provide eastbound canal crossings. For travel north-to-south, Third and Fourth Avenues (both bi-directional) run the length of the study area, providing connection to Flatbush and Atlantic Avenues in the north, and the Prospect Expressway, Gowanus Expressway, and Belt Parkway to the south. West of 3rd Avenue, Nevins Street runs south from Flatbush Avenue to Union Street (and north-south from Union Street to Carroll Street); Second Avenue provides bi-directional connection between Hamilton Avenue and its terminus at the 4th Street turning basin. Second Avenue's limited connectivity and location have made it a de facto truck route, despite its susceptibility to flooding.

Circulation & Traffic[2]

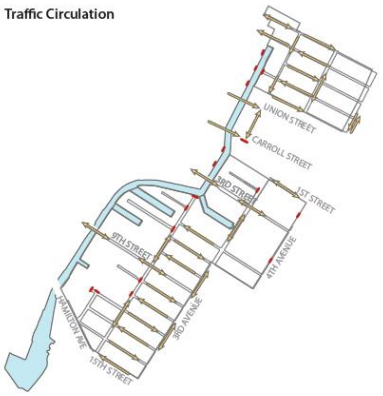
Traffic circulation in the study area is affected by the presence of the canal as a barrier and resulting limited connectivity of local streets.

Local east-west traffic largely travels over the (bi-directional) 3rd and 9th Street Bridges, with average daily vehicle counts of 9,300 and 10,300 in 2011, respectively. Hamilton Avenue, which sees more through traffic, had average daily volumes of 47,000 vehicles per day in the same year.

According to data from 2011, Fourth Avenue (between Union Street and the Prospect Expressway) is traveled by 35,000 vehicles per day. Third Avenue sees less volume, hitting 18,550 vehicles per day.

At the south end of Third Avenue, local highway interchanges see significant volume, with 140,000 vehicles traveling on the BQE in this area and 12,500 making the transfer between the BQE and Prospect Expressways. Although average daily traffic volumes were not available for the 3rd Avenue/Prospect Avenue entrance to the westbound BQE,

Traffic Circulation



Traffic circulation in Gowanus is complicated by the canal and a pattern of one-way streets and dead ends. Westbound travel over the canal is possible only at 3rd Street, 9th Street, and Hamilton Avenue.

In the southern part of the study area, these conditions, coupled with lack of residential housing, may be beneficial for truck access.

Transit Access



The study area has moderate transit access; only one bus passes directly through the area, and no subway stops fall within the study area boundary. More transit options are accessible just beyond the study area boundary, and Atlantic Avenue is a major transit hub. A local circulator bus could facilitate connections to the larger transit network.

1/4 mile from subway stop

Subway line

Bus line

Transit

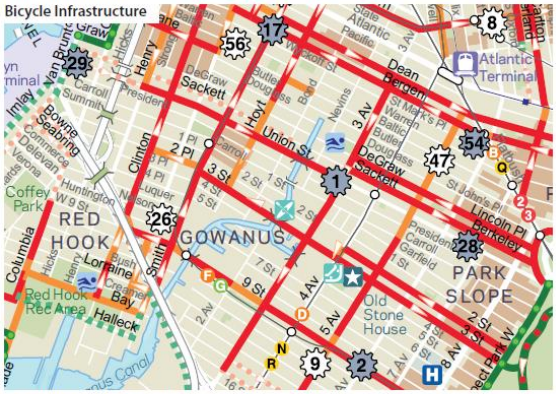
The source of parking congestion in the study area is unclear, and should be studied further so that appropriate remedies might be found. Where parking congestion arises from daily users (business owners, workers, and customers), improving transit access can help alleviate the problem.

Three subway lines and one bus route pass through the study area, with another three bus routes in proximity. The F and G trains travel from Manhattan and Queens, respectively, through Carroll Gardens and across the 9th Street Bridge. These lines are accessible at the 4th Avenue/9th Street and Smith/9th Street stations, a block beyond the study area limits to the east and west. The R train travels along 4th Avenue between Bay Ridge and the Atlantic Avenue station, where transfers are available to many other lines, including the Long Island Rail Road. Three R stops are within a quarter mile of the study area: Union Street, 4th Avenue/9th Street, and Prospect Avenue.

The one bus line that travels through the study area is the B61, which connects Windsor Terrace with Downtown Brooklyn via Red Hook and Columbia Street. Available on Smith Street, 2 blocks west of the study area, the B57 connects Maspeth, Queens with the IKEA terminal. The B63 runs along 5th Avenue in Park Slope between the Verrazano Bridge and Atlantic Avenue, where it turns west to reach Brooklyn Bridge Park. The B103, a limited-service bus that travels between Canarsie and Downtown Brooklyn, has a stop at Atlantic Avenue. Several express buses that connect outlying areas of southern and eastern Brooklyn pass through the study area en route to Manhattan without stopping.

The current level of bus service reflects system changes made for budget purposes in 2011. Prior to that, four bus lines (B37, B71, B75, and B77) passed through the study area. The MTA eliminated these routes, which had low and declining average ridership numbers. Although some of the service provided on those lines is retained in the new configuration, many stakeholders appeared to feel the loss of the B37 in particular, which traveled along 3rd Avenue, and the B71, which traveled along Union Street. The MTA is scheduled to reinstate the B37

Bicycle Infrastructure



Gowanus is surrounded by a dense network of bicycle infrastructure.
Source: 2013 NYC Bike Map; downloadable at http://www.nyc.gov/html/dot/html/bicyclists/bikemaps.shtml



Bi-directional bike lanes on Union Street bookend the eastbound vehicular traffic, reflecting the need for more westbound crossings.

in June 2014 along a curtailed route, but as the route largely parallels the R train, it is not expected to see great use. Local proponents are interested in developing an alternate route that would meld the old B37 route with the B71 to create a local circulator.[5] Addition of this route could help defray parking demand by providing commuter and customer access to local businesses.

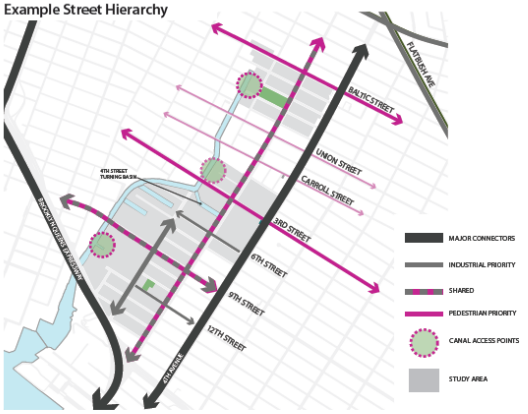
Non-motorized access

Bicycling is an extremely popular mode of transportation in this part of Brooklyn, and the DOT, which had a goal to triple the number of bicycle commuters in the city between 2007 and 2017, has been working to create a city-wide network of bike lanes. The biggest recreational bicycle attraction is the Brooklyn Waterfront Greenway, which will create a continuous waterfront route from Greenpoint to Sunset Park. Sections of the Greenway currently exist at Brooklyn Bridge Park and in Red Hook, and more stretches are in development. Bergen and Dean Streets, which provide access to the Greenway and the Manhattan and Brooklyn Bridge approach routes, are the biggest east-west bike connectors near the study area, but a number of smaller routes exist as well.

Four streets in the study area are designated bicycle routes. Union, 3rd, and 9th Streets are bidirectional east-west routes with painted lanes. Third Avenue, also a local truck route, bears a southbound bike lane which has to navigate the highly-used interchange with Hamilton Avenue and the BQE/Gowanus Expressways.[6]

Pedestrian activity is greatest in proximity to subway stops. The EIS performed for Whole Foods included pedestrian counts at major intersections and found 350 pedestrians per hour in the intersection at 4th Avenue and 9th Street, and 600 per hour at 4th Avenue and Union Street.[7] In the study area, pedestrian activity is concentrated near amenities and along routes that cross the canal, with the most activity occurring along Union, Carroll, and 9th Streets. Third Street has seen a considerable gain in pedestrian traffic since the opening of Whole Foods. As more businesses arrive that cater to foot traffic, and as the opportunity for waterfront recreation increases, pedestrians will become a larger presence on the streets of the study area.

Example Street Hierarchy



Opportunities for improvement (urban design analysis)

As the range of activities and uses in Gowanus continues to become more diverse, and as the neighborhood becomes a destination not just for business but also for recreation and environmental restoration, local streets and sidewalks will need to accommodate a wider range of users and travel modes. If industry and truck-dependent business is to remain and thrive in the study area, systems must evolve to integrate pedestrians, cyclists, and motorists into a truck-friendly neighborhood.

One method for achieving this integration could be implementation of a street hierarchy, which uses urban design elements to subtly prioritize different uses on different streets. Streets like 3rd Avenue and 9th Streets, which are major area connectors but also carry transit and have an array of pedestrian friendly businesses, could be designated as shared routes, while streets in the south study area that do not have sizable residential populations or many storefronts could prioritize industrial traffic, creating a relatively low-conflict circulation route for trucks. Other streets, such as Baltic, 3rd, Union, and Carroll Streets, could prioritize pedestrians, guiding walkers and cyclists away from truck-heavy areas by creating attractive alternatives through planting, street furniture, materials, or other street design elements. In this way, Gowanus's streets could accommodate a wide range of users with a minimum of conflicts.

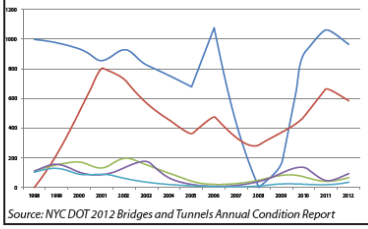
Canal Waterway

The canal itself is another transportation route, with another set of potential conflicts, this time between industrial and recreational users. While marine transportation use of the canal has fallen off considerably since its heyday, a handful of businesses still move material up and down the canal by barge, and stakeholders have confirmed that they wish to support this continued use of the canal. As DOT's annual bridge openings data demonstrates (below), the main use of the canal by vessels that require bridge opening (i.e. shipping vessels) occurs

Canal Use 1998-2012

Summary of Vessel Openings 1998 - 2012

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Hmltn Ave. (K)	996	982	933	832	946	824	757	677	1077	354	0	150	905	1060	965
9th St. (K)	0	192	513	808	733	547	457	360	480	333	287	387	475	670	585
3w St. (K)	112	157	178	117	212	152	99	43	31	39	49	89	74	27	68
Carroll St. (K)	110	174	102	80	124	186	49	22	28	13	38	91	146	29	95
Union St. (K)	103	144	85	101	62	24	21	11	9	5	10	28	32	4	36
Total G	**1321**	**1649**	**1811**	**1938**	**2077**	**1733**	**1383**	**1113**	**1625**	**744**	**384**	**745**	**1632**	**1790**	**1749**
TOTAL (CITY)	**5999**	**6352**	**6041**	**6761**	**6015**	**5935**	**6595**	**5163**	**5347**	**4652**	**3873**	**3666**	**4704**	**4901**	**4819**



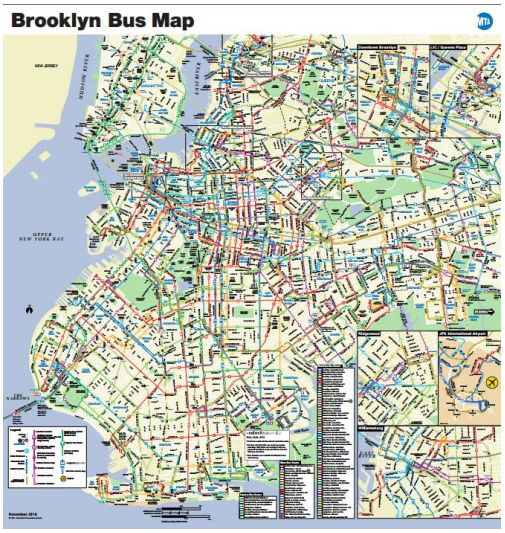
The five bridges along the canal open to allow ships through. The Hamilton Ave. Bridge, which has clearance below of 19' above mean high water, was replaced in 2008. Barges were able to pass beneath without the bridge opening.

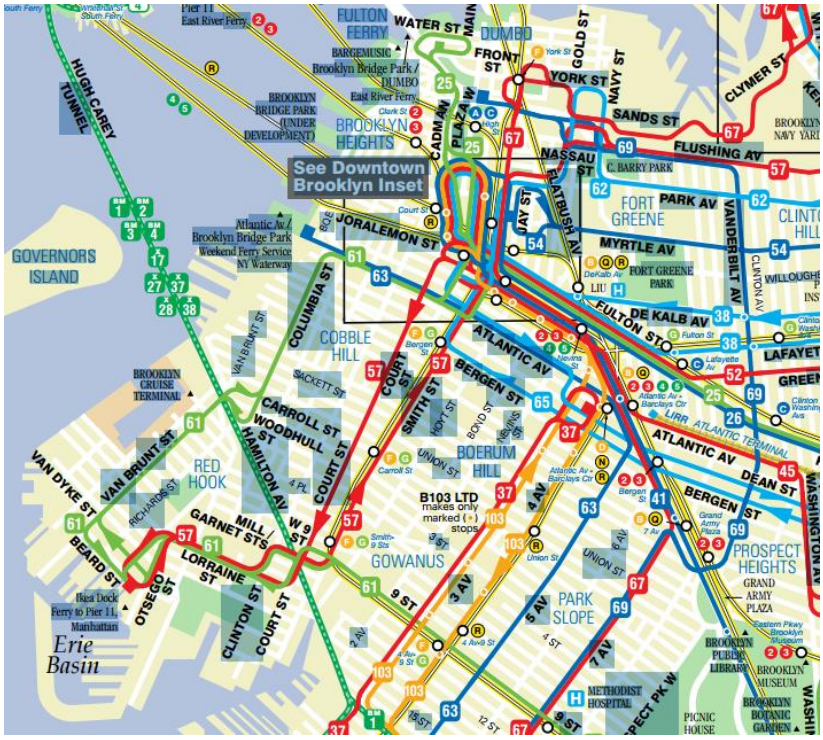
Source: NYC DOT 2012 Bridges and Tunnels Annual Condition Report





Source: [9.1] Subway Map. New York City Metropolitan Transit Authority (MTA). 2016.http://web.mta.info/nyct/maps/subwaymap.pdf





Source: [9.2] Brooklyn Bus Map. New York City Metropolitan Transit Authority (MTA). 2016. http://web.mta.info/nyct/maps/busbkln.pdf

iii. Vacant Land – Location, Ownership, History



Vacant and Underused Land

Very little of the study area's 29 acres of underused land is truly vacant. Roughly 19 acres are used for parking; another 3.3 acres are in use, in development, or being held for future use; and 4.6 acres are occupied by empty buildings. Only seven lots, about two total acres, are genuinely vacant.

1. Vacant Land with Use or Plans: 3.3 acres

   Several large assemblages of vacant land fall into this category. Con Edison 's north and south properties, discussed on page 39, are large vacant lots covered in gravel that are being reserved as possible future locations for electrical substations. The Salt Lot, a publicly owned piece of land co-operated by DSNY and the Gowanus Canal Conservancy, discussed on page 40, has a 30-year plan in place to become a center of community activity, waterfront education, and composting.



Source: NYC DOF, NYS DOS

Land Ownership[13]

The majority of land in the study area is privately owned, but a few parcels are publicly owned or held by quasi-public utility companies.

The City owns six parcels of land: the study area's two parks, the Department of Sanitation's CD6 garage, the Salt Lot, the Under the Tracks Playground, and former 12th Street, now a part of the Hamilton Plaza parking lot.

US Customs holds two lots of land in the north area, built out with an empty factory building. The parcels and all property thereon were forfeited to the agency in 1997 as part of a drug trafficking investigation. When the investigation is complete and clear title established, Customs will dispose of the property through a public auction.

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

Socioeconomic Data

i. Employment Types and Trends

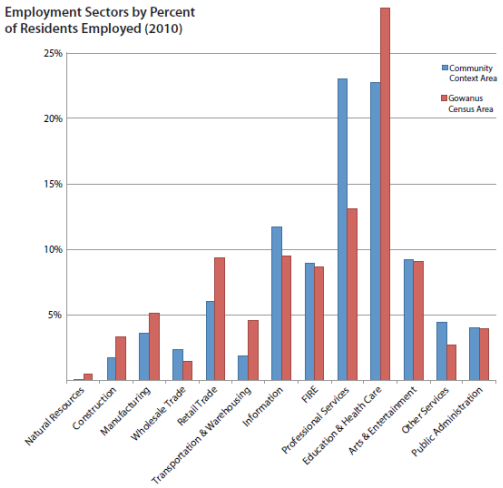
The following provide information about employment types and trends in Gowanus overall from various sources. Though Gowanus has an Industrial Business Zone (IBZ) and is known for its manufacturing uses, the number of uses is broader, reflecting the allowed uses in the area. More than 4,000 employers exist in Community Board 6, supporting over 40,000 employees. Though some Gowanus residents are employed locally, many are not.

Table 1: Employment Sectors of Gowanus Residents

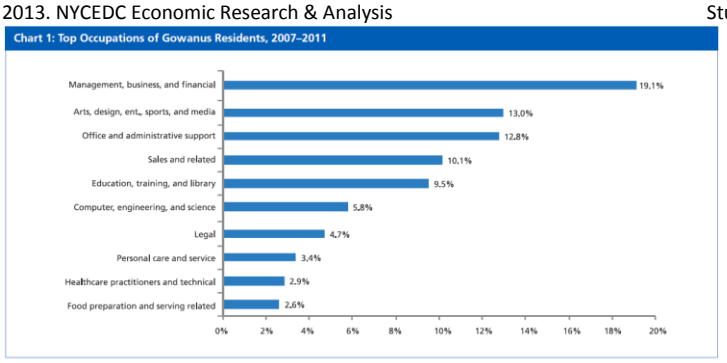
Industry	Employees
Professional, scientific, and technical services	2,001
Health care and social assistance	1,627
Educational services	1,531
Retail trade	1,194
Information	1,141
Finance and insurance	842
Arts, entertainment, and recreation	648
Manufacturing	523
Accommodation and food services	434

Data reflect civilian employed population of Gowanus, 16 years and over.
Source: U.S. Census Bureau, 2007–2011 American Community Survey

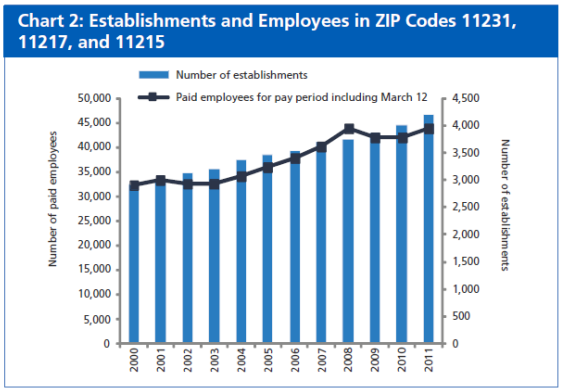
Source:[2] "Neighborhood Trends & Insights: Gowanus, Brooklyn". September 2013. NYCEDC Economic Research & Analysis



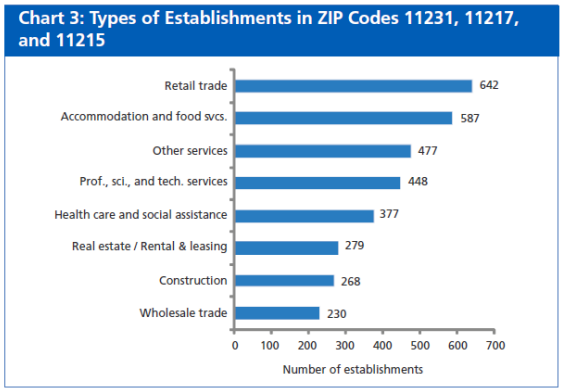
Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.



Source:[2] "Neighborhood Trends & Insights: Gowanus, Brooklyn". September 2013. NYCEDC Economic Research & Analysis

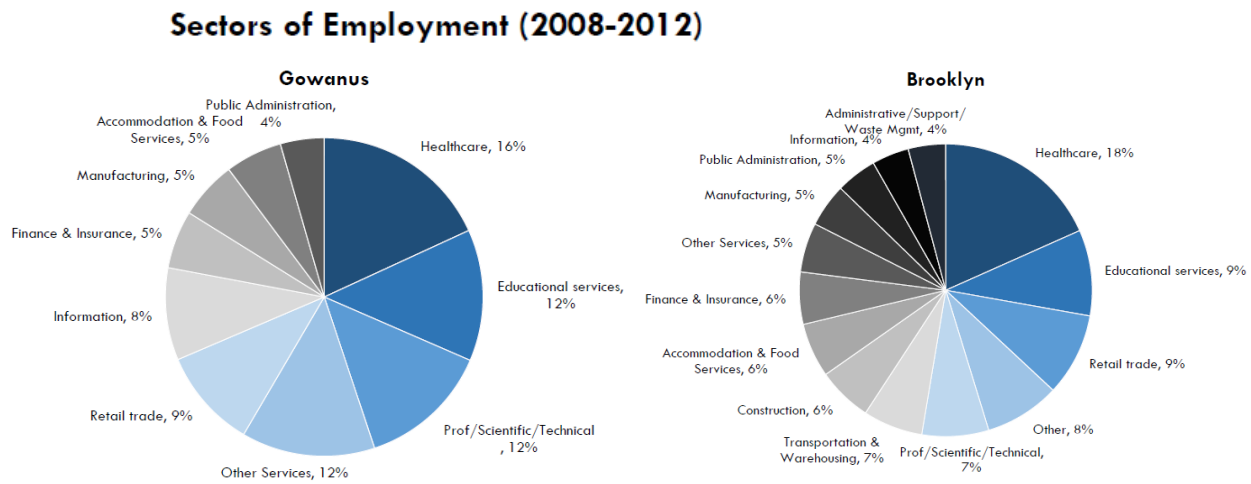


Source: U.S. Census Bureau, 2011 County Business Patterns



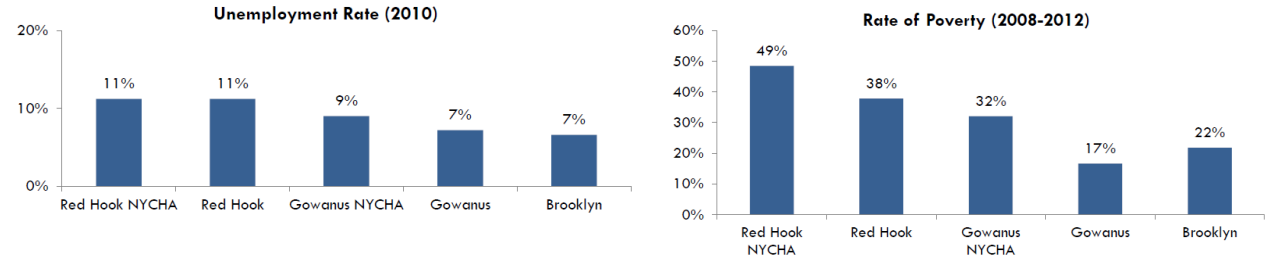
Source: U.S. Census Bureau, 2011 County Business Patterns

Source:[2] "Neighborhood Trends & Insights: Gowanus, Brooklyn". September 2013. NYCEDC Economic Research & Analysis



Source: [1] "Demographic Overview| D.A.R.E.S. Report". HR&A Advisors, Inc. February 24, 2015.

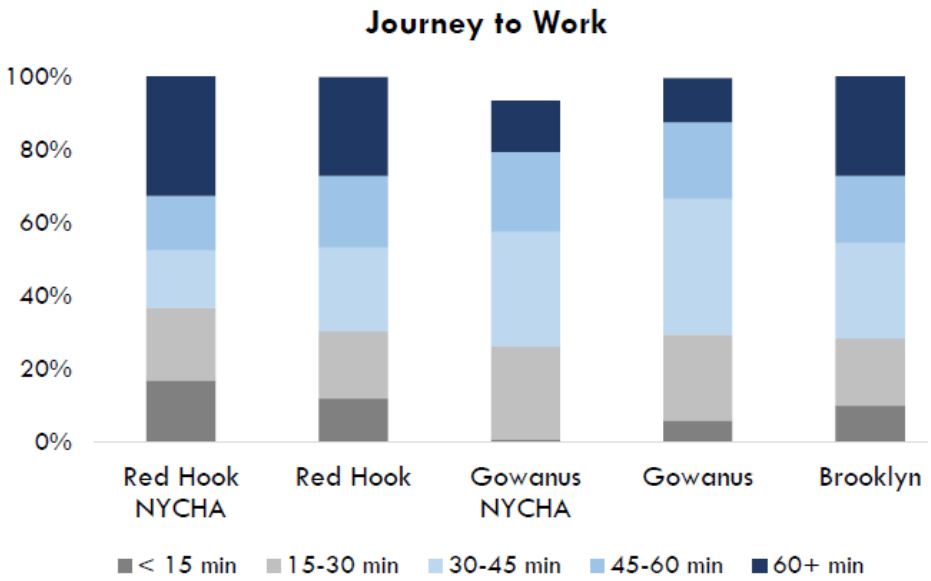
Unemployment levels and trends



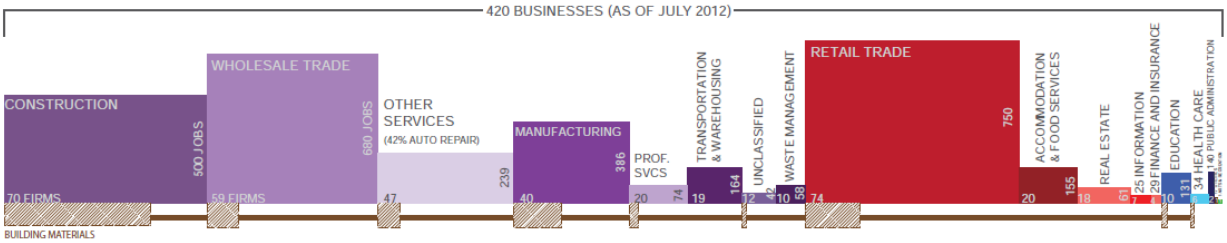
Source: [1] "Demographic Overview| D.A.R.E.S. Report". HR&A Advisors, Inc. February 24, 2015.

Unemployment rates in Gowanus are similar to Brooklyn as a whole though higher among public housing residents in NYCHA's Gowanus Houses, Wyckoff Gardens and Warren Street Houses. Poverty rates are lower in Gowanus than Brooklyn, but 10% higher in NYCHA developments in Gowanus.

ii. Major Employers (location, # jobs, job types)



Source: [1] "Demographic Overview| D.A.R.E.S. Report". HR&A Advisors, Inc. February 24, 2015.



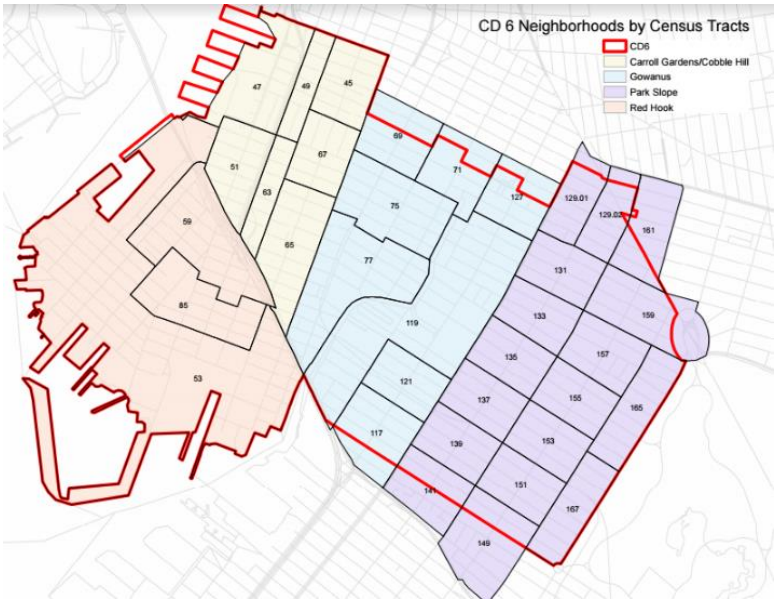
Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

The first graph shows the time to journey to work for Gowanus residents, including NYCHA residents. A higher proportion of Gowanus residents travel 30-45 minutes to work, but fewer travel less than 15 minutes or 60 or more minutes to work when compared to Brooklyn residents overall.

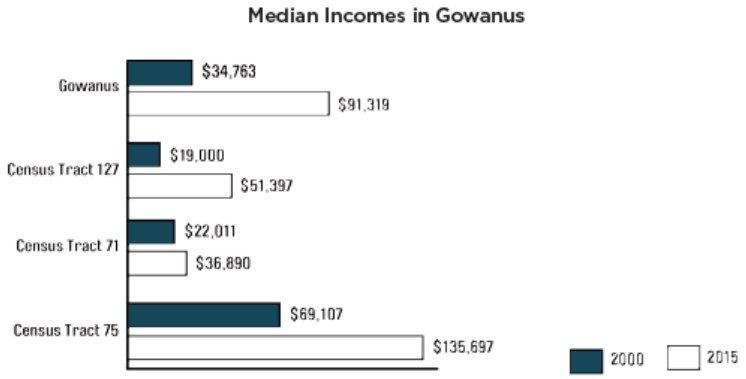
The second figure shows that retail and wholesale trade, construction and manufacturing are the most prevalent businesses in the area.

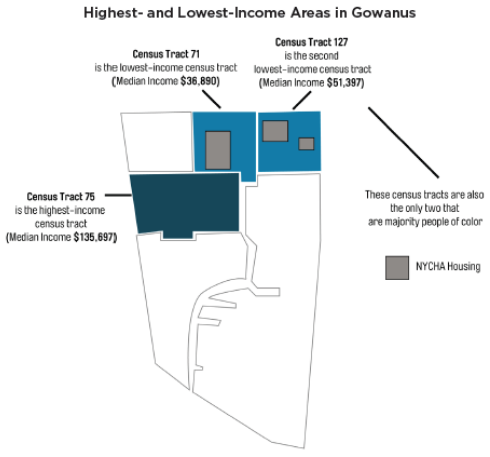
iii. Income Data

Neighborhood	Extrememly Low Income Households *Median Household Income Less than $24,500 0% - 30% AMI*		Very Low Income Households *Median Household Income $24,501 - $40,800 31% - 50% AMI*		Low Income Households *Median Household Income $40,801 - $65,250 51% - 80% AMI*		Moderate Income Households *Median Household Income $65,251 - $97,920 80% - 120% AMI*		Middle & High Income Households *Median Household Income $97,921 + 120% AMI +*		Median Household Income
CB6	**Percent**	**Number of Households**	**Percent**	**Number of Households**	**Percent**	**Number of Households**	**Percent**	**Number of Households**	**Percent**	**Number of Households**	
Carroll Gardens/Cobble Hill	10%	924	5%	451	11%	1028	17%	1548	57%	5310	$ 109,492
Gowanus	19%	2169	7%	819	15%	1710	16%	1913	43%	5026	$ 88,181
Park Slope	9%	2497	6%	1698	12%	3448	17%	4900	56%	16003	$ 107,466
Red Hook	51%	2358	12%	550	13%	578	11%	527	13%	576	$ 57,143
Neighborhoods Combined	15%	7948	7%	3518	13%	6764	16%	8888	50%	26915	$ 103,378



Source: [14] Community District 6 Census Tracts and Median Household Income, Association for Neighborhood Housing and Development, 2017





Source: [16]"Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf



Source: [13.3] Pratt GIS Product. Pratt Center for Community Development. Households_various_incomes.pdf

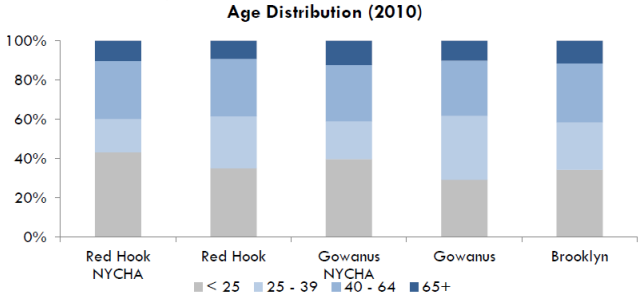
c. Demographic Data

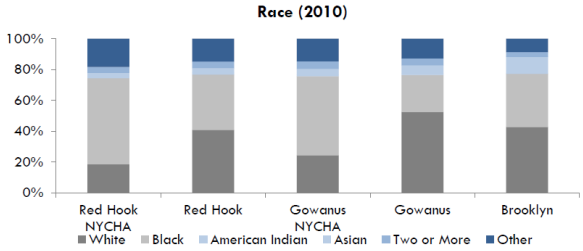
i. Overview of City and Study area Population Trends, Households

Population & Household Characteristics (2010)

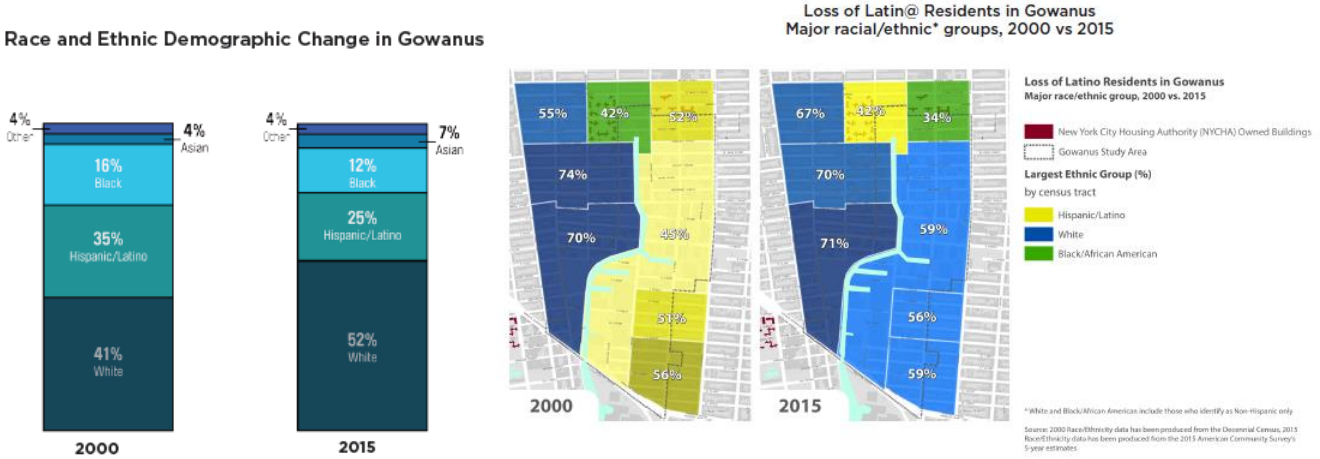
	Population	Housing Units	Households	Average Household Size
Brooklyn	2,504,700	1,000,293	916,856	2.69
Red Hook	12,399	5,604	5,302	2.33
Red Hook Houses	*6,948*	*2,846*	*2,829*	*2.46*
Gowanus	14,728	6,727	6,185	2.36
Gowanus Houses	*5,209*	*1,900*	*1,860*	*2.67*

Source: [1] "Demographic Overview| D.A.R.E.S. Report". HR&A Advisors, Inc. February 24, 2015.

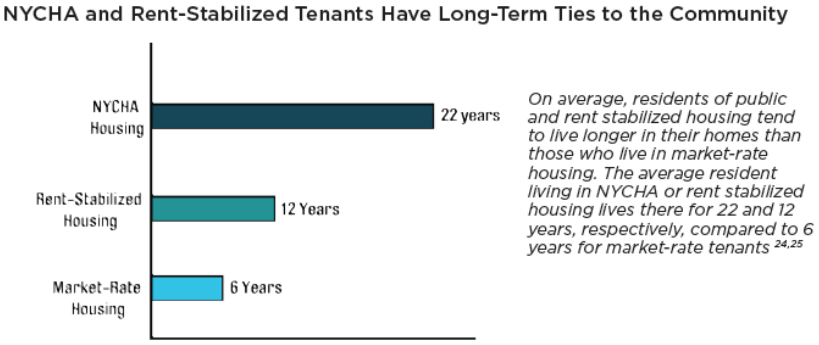




Source: [1] "Demographic Overview| D.A.R.E.S. Report". HR&A Advisors, Inc. February 24, 2015.

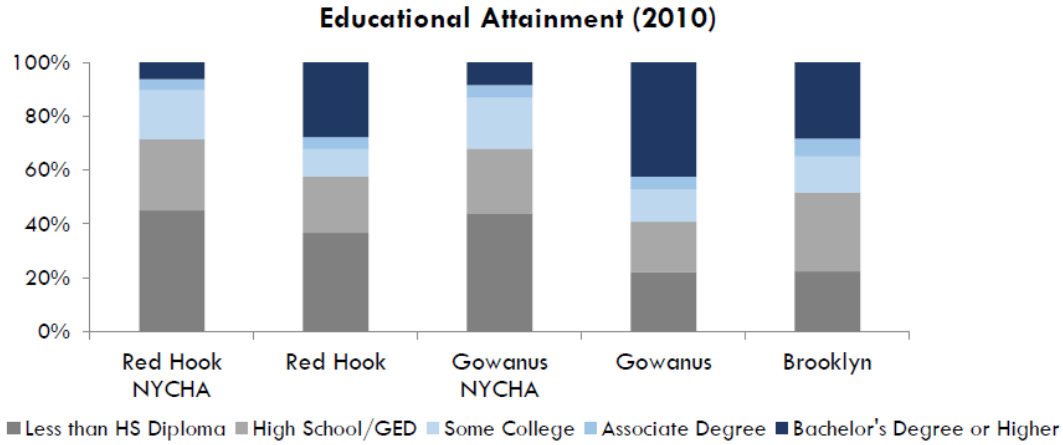


Source: [16]"Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

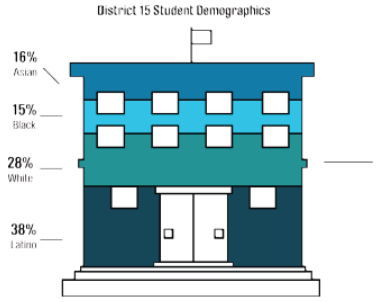


Source: [16]"Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

ii. Education Levels



Source: [1] "Demographic Overview| D.A.R.E.S. Report". HR&A Advisors, Inc. February 24, 2015.

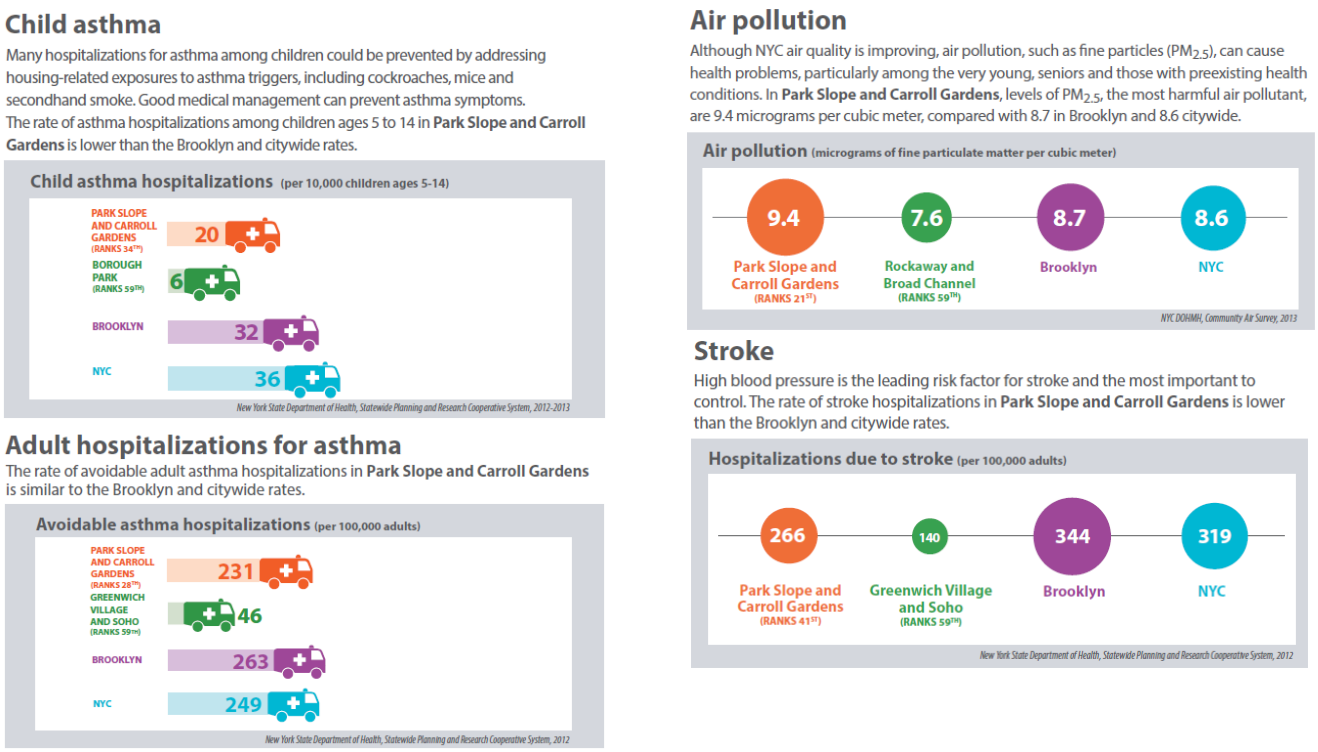


School Desegregation

Racial and economic segregation plague schools citywide; in Gowanus however, this issue is even more pronounced.[5] In District 15, where students from Gowanus, Red Hook, Park Slope, Carroll Gardens, and Sunset Park attend school, White students in the district comprise 28 percent of the student body while over 50 percent of the White middle school student population attend three of the District's most selective schools.[6] School overcrowding is a persistent problem for District 15, with an average classroom utilization rate of 111.5 percent.[7] The unprecedented development boom along 4th Avenue, in Gowanus, and in surrounding residential areas has already exacerbated existing problems. In the most recent 4 year period, citywide enrollment increased by 4% while enrollment increased by 13% for District 15.[8] Other obvious areas where desegregation is deeply needed include housing and in community spaces, and each of these are addressed in more detail in later sections.

Source [16] "Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

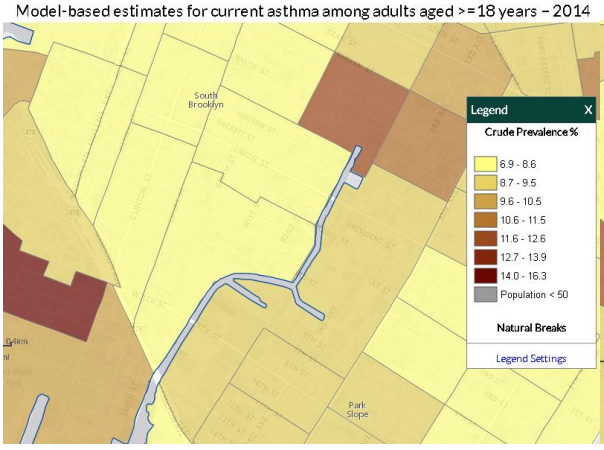
iii. Community Health Profiles & Vulnerable Populations



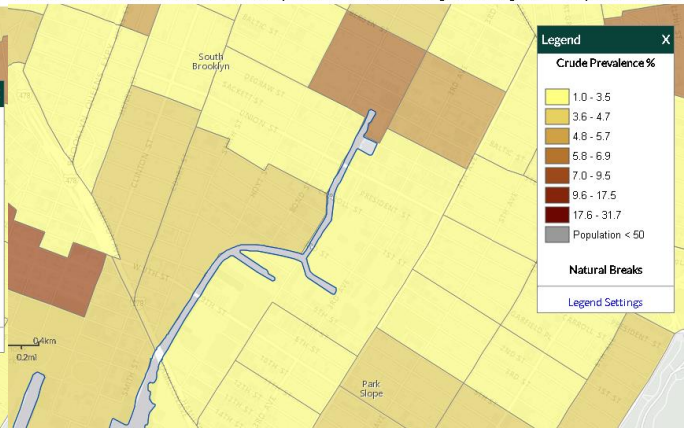
Source: [17] "Brooklyn Community District 6: PARK SLOPE AND CARROLL GARDENS (Including Carroll Gardens, Cobble Hill, Columbia Street, Gowanus, Park Slope and Red Hook)". COMMUNITY HEALTH PROFILES 2015. New York City Department of Health and Mental Hygiene (DOHMH). https://www1.nyc.gov/assets/doh/downloads/pdf/data/2015chp-bk6.pdf

The data above references all of Community Board 6 which includes Park Slope, Carroll Gardens, Cobble Hill as well as Red Hook and Gowanus. As shown in the maps below and on the next page that specifically break out various census tracks in the portion of CB6 that is referenced for the Urban Heat Island TAP, asthma, coronary heart disease, stroke and high blood pressure are more prevalent in Gowanus than in the brownstone neighborhoods of Park Slope and Carroll Gardens. This underscores the increased vulnerability to urban heat island effects for residents in this part of Community Board 6.

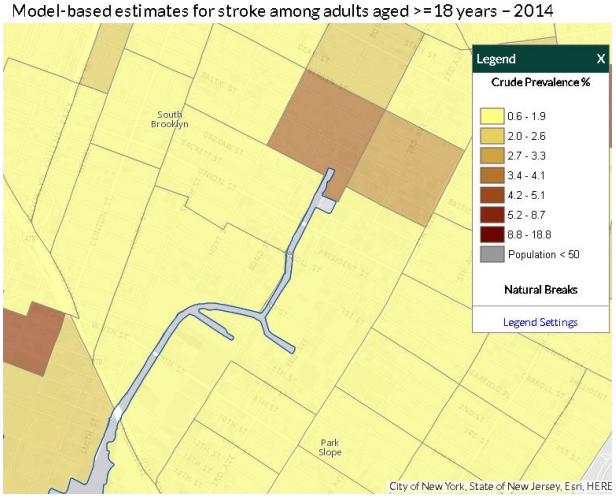
Model-based estimates for current asthma among adults aged >=18 years – 2014



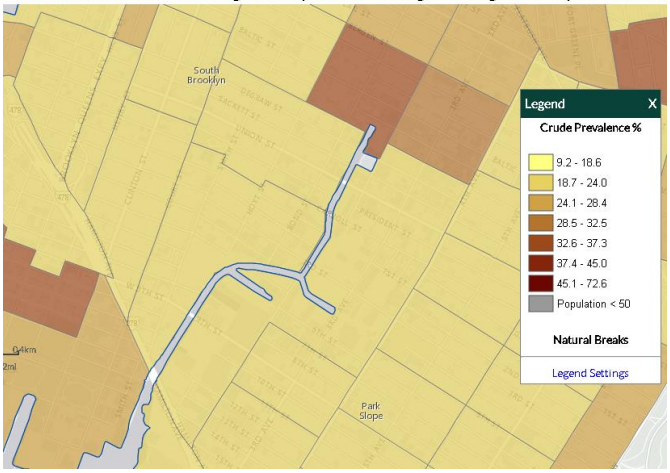
Model-based estimates for coronary heart disease among adults aged >=18 years – 2014



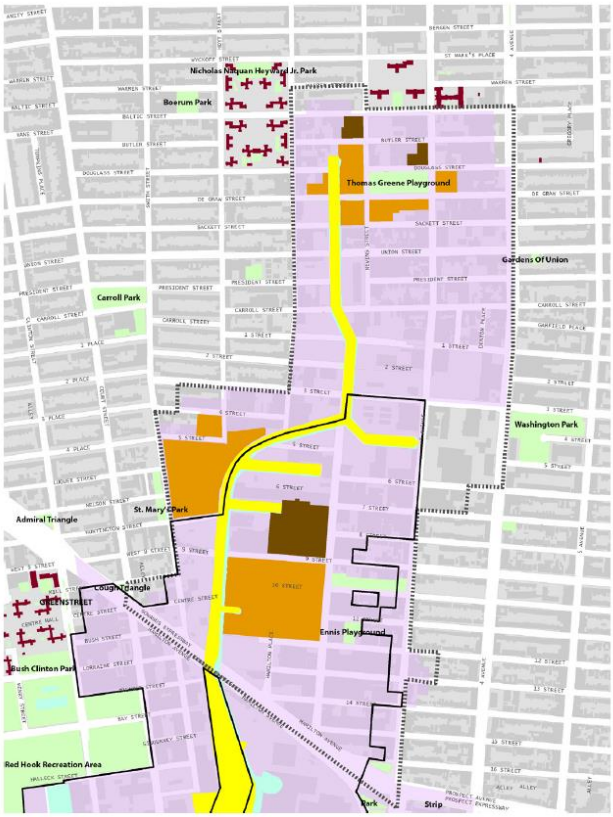
Model-based estimates for stroke among adults aged >=18 years – 2014



Model-based estimates for high blood pressure among adults aged >=18 years – 2013



Source: [19] 500 Cities Project: Local Data for Better Health. Centers for Disease Control (CDC). https://www.cdc.gov/500cities/



Environmental Interest Areas

- New York City Housing Authority (NYCHA) Owned Buildings
- Gowanus Study Area

Environmental Hazards

- Gowanus Canal Superfund Site
- Gowanus Brownfield Opportunity Areas (BOA's)
- Manufactured Gas Plant (MGP) Sites

Industrial Zones

- Industrial Zoned Areas
- Industrial Business Zone

Source: Manufactured Gas Plant and Brownfield Opportunity Area data is produced from the New York State Department of Environmental Conservation, Superfund data is derived from the Envrionmental Protection Agency.

Disparate Impacts

In recent years, especially propelled by the Gowanus Canal EPA Superfund designation in 2010, the City has begun to focus on sustainable development and addressing environmental hazards in the Gowanus neighborhood. As the City, State, and Federal government moves forward with the implementation of other neighborhood-wide sustainability measures, Environmental Justice (EJ) must be at the center of decision-making with respect to remediation of contaminated sites and implementation of environmental policies. EJ requires that no community should bear the disproportionate burden of negative environmental, health, and climate impacts from private and government policies and activities. To achieve Environmental Justice, communities who have suffered from injustices must be at the forefront of decision-making with regard to environmental resolutions and policies.

As the clean-up of the Canal proceeds, our community is already experiencing disparate impacts. In addition to the Superfund clean-up and the remediation of the former Fulton Manufactured Gas Plant (MGP) site, one of two Combined Sewer Overflow (CSO) multi-million-gallon retention tanks will be constructed near the Douglass and DeGraw ("Double D") community pool. Disruptions to the Thomas Greene Park and Double D Pool will potentially take both off-line for years. It remains undetermined how alternate facilities will be provided to the northern Gowanus community as a whole, and to public housing residents in particular, during these clean-ups that strip the area of the only park, public pool, and green space in the area.

Vulnerability to Climate Change

Three public housing sites, the Gowanus Houses, Wyckoff Gardens, and Warren Houses, are located adjacent to the Superfund site and/or near upland brownfiel sites, areas that are already prone to flooding during normal rainfall. For decades residents living in these NYCHA developments, as well as other locals, have had t contend with deplorable and inequitable conditions such as street flooding and t indoor housing conditions that include leaks, mold, lead, vermin, and sewage ov flows. These conditions lead to and exacerbate physical and mental health probl especially for children and seniors, and they heighten residents' vulnerability to c change impacts, as witnessed during Superstorm Sandy and its aftermath. In Oc 2012, Superstorm Sandy left one fifth of the City's public housing units damaged the storm, where people of color make up 80 percent of residents.[19] At the Gowa Houses 2,836 residents went without heat and electricity for 10 days when baser flooding destroyed boilers and shorted out electrical cables. Many residents, incl the elderly and people with disabilities unable to use the stairs, were stranded in upper floor apartments when elevators were out of operation. Similarly, affordab housing in Gowanus that is managed by Fifth Avenue Committee (FAC) was also impacted, with residents losing electricity and heat for days or weeks, depending the property. Meanwhile, other residents in Gowanus and in the adjacent neighborhoods of Park Slope and Carroll Gardens saw their power and heat rest immediately or were not similarly impacted.

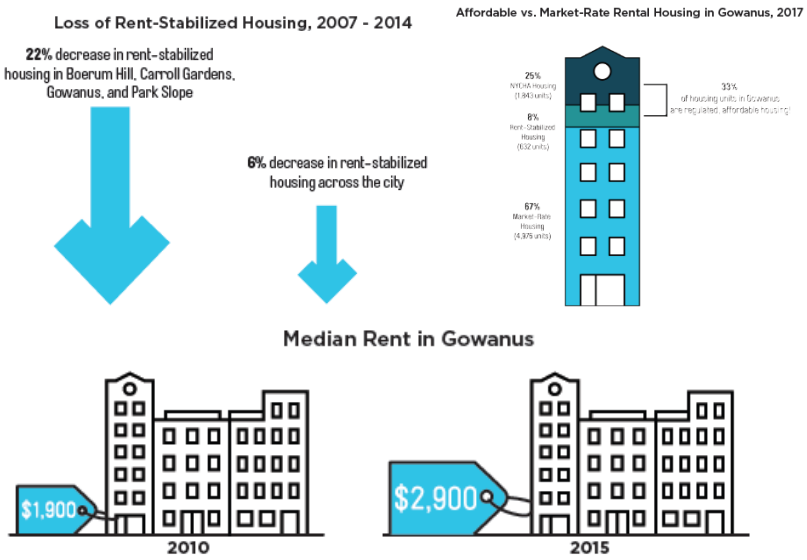
Source: [16] "Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017.
File: Survive and Thrive_FINAL 22mar17.pdf

d. Residential Development

i. Housing Affordability and Gentrification Pressure

Less than 10% of the uses in Gowanus are residential. The majority of the residential uses in Gowanus are grandfathered 1-4 family homes on the side streets, three NYCHA public housing developments, approximately 200 units of rent stabilized housing, and new market rate residential development on 4th Avenue and, to a more limited extent, on the side streets in the northern section of Gowanus.

Thirty three percent of the housing in Gowanus is either public housing or rent stabilized housing. Due to both market rate pressures and poor public policy, Gowanus has seen a dramatic decrease in rent stabilized housing stock when compared to New York City as a whole. Specifically, the 2003 North Park Slope and 2007 South Park Slope rezonings, which led to a dramatic increase in FAR on 4th Avenue with no requirement for mandatory inclusionary housing nor provided additional protections to low and moderate income rent stabilized tenants, led to the harassment of tenants and the demolition of rent stabilized housing. The 2008 announced but abandoned Gowanus area-wide rezoning led to increased speculation and displacement pressures both in existing multi-family properties but also industrial properties. Finally, the Downtown Brooklyn rezoning in 2004 and the nearly $5 billion Atlantic Yards project which was originally approved in 2006, both have led to increased indirect displacement pressures in Gowanus and the surrounding communities.



Real Affordability Needs

The community needs strategies to ensure the development and preservation of housing with deep affordability levels, specifically for households who make less than 40% of the area median income (AMI), or $32,640 annually for a family of three. NYCHA residents are the largest population in Gowanus, with a median household income of about $30,000.[18] Unfortunately, the current Mandatory Inclusionary Housing (MIH) program largely fails to meet this need. The two Options the City may require under the MIH program mainly serve families at 60% or 80% AMI - up to $65,250 for a family of three. Although MIH also includes a "Deep Affordability Option," developers cannot be required to elect this option, and it only requires 20% of the rent-restricted units be made affordable to households making 40% AMI. This means that the vast majority of apartments created with MIH would be out of reach for a majority of NYCHA families, limiting their opportunities to move out of public housing yet remain in Gowanus. Gowanus is one of the few neighborhoods announced for a neighborhood plan so far where the market rate units could support affordability levels deeper than what MIH outlines. The City must provide new affordable housing that truly meets the needs of the entire community and provides the opportunity for NYCHA residents to move into other affordable housing locally.

In addition to threats to rent stabilized and unregulated tenants living in privately owned housing, any rezoning or major land use action must address the conditions in Gowanus-area public housing. There are nearly 2,000 units of NYCHA housing in our community, home to over 4,300 residents. Housing conditions in the NYCHA developments are among the worst in our community, the result of decades of neglect and made worse by Superstorm Sandy. Addressing Gowanus-area NYCHA repair needs, bringing all public housing apartments into compliance with the NYC housing code regulations and improving social resiliency must be a goal of this rezoning. Improving NYCHA housing fundamentally aligns with the Mayor's goal to preserve 120,000 units of affordable housing citywide. Residents of public housing are important members of our community and deserve to benefit from the rezoning and public investment in the neighborhood. The City has a responsibility to fully incorporate NYCHA into the planning process.

Source [16] "Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

ii. Planned Residential Development

In the fall of 2016, the NYC Department of City Planning (DCP) announced Gowanus would be one of 15 neighborhoods city-wide to move forward with a PLACES (Planning for Livability, Affordability, Community, Economic Opportunity and Sustainability) study for Gowanus in support of Mayor de Blasio's Housing New York plan and to help accommodate the growing population in the City as a whole. It is anticipated that the Gowanus Area-wide rezoning will lead to increased residential development outside of the IBZ, much of which would be subject to the new Mandatory Inclusionary Housing (MIH) requirements.

Additionally, Fifth Avenue Committee and partners, Hudson Companies, Jonathan Rose Companies, and the Bluestone organization were selected via a competitive RFP in 2007 to redevelop the 5.8 acre Public Place site along the western portion of the Gowanus Canal between 5th Street, Luquer, Smith Street and the Gowanus Canal. The project has been delayed as a result of the US EPA Superfund designation of the Gowanus Canal. The project, called Gowanus Green, will go through a separate ULURP, is anticipated to break ground by 2022 when National Grid completes the environmental clean-up of the Citizens Gas site. Gowanus Green will result in at least 770 units of housing, 70% of which will be affordable to families at a range of incomes and a 1 acre public park.

NYCHA's Wyckoff Gardens 50% affordable/50% market rate development infill project will result in approximately 500 units of housing along 3rd Avenue and Nevins Street. This project will also go through a separate ULURP action.

Finally, as a result of the 2003 and 2007 North and South Park Slope rezonings FAR along 4th Avenue was increased substantially and this has led to increased residential development along the corridor and residential development on side streets in Gowanus, west of 4th Avenue, that were zoned for residential but had previously been used for manufacturing or business uses which were grandfathered.

iii. Foreclosure and Vacancy Statistics

As of April 1st, 2017, there are currently 11 properties in Gowanus that are in foreclosure or Lis Pendens which represents less than 10% of the total properties in the area that are in foreclosure or threat of foreclosure.

The vacancy rate for residential property in Brooklyn is less than 3%.

e. Commercial Development

i. Overview of Area Wide Commercial Development

Overall, commercial development in Gowanus has increased in the last 5 years with a number of planned and recently completed developments of new ground-up commercial buildings. Additionally, there have been conversions of former manufacturing spaces into commercial uses, particularly catering to creative class and cooperative workspace office uses.

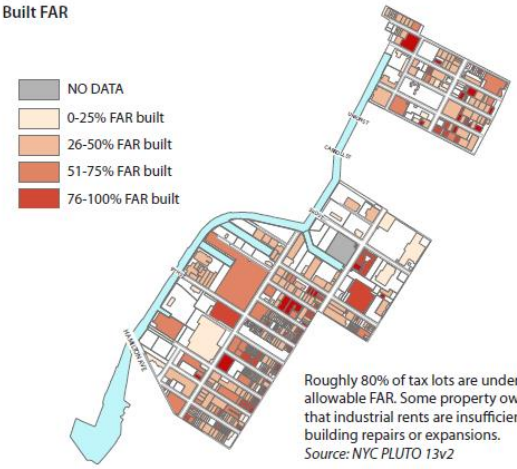
Figure 4: Change in Average Assessed Values by Block in Gowanus, 2004–2012



Source: NYC Department of City Planning, PLUTO database; analysis and map generated by NYCEDC MGIS

Source:[2] "Neighborhood Trends & Insights: Gowanus, Brooklyn". September 2013. NYCEDC Economic Research & Analysis

Built FAR



Roughly 80% of tax lots are underbuilt to allowable FAR. Some property owners say that industrial rents are insufficient to finance building repairs or expansions.
Source: NYC PLUTO 13v2

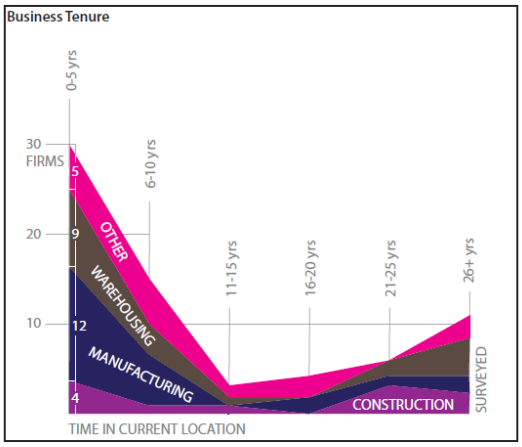
Sales Prices per Square Foot

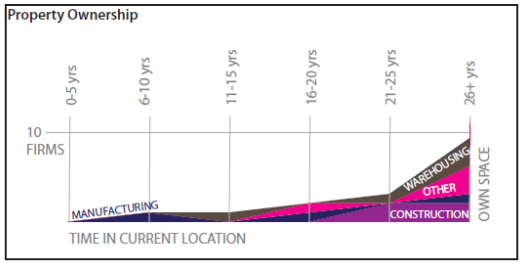
Column1	2007	2008	2009	2010	2011	2012	% Ch, 07-12
Industrial	$168.25	$168.74	$193.67	$647.56	N/A	$169.64	0.80%
Office	$285.85	$265.56	N/A	$184.88	$201.05	$295.86	3.50%
Retail	$453.92	$557.24	N/A	$172.11	$231.50	$418.85	-7.70%

Source: RCA

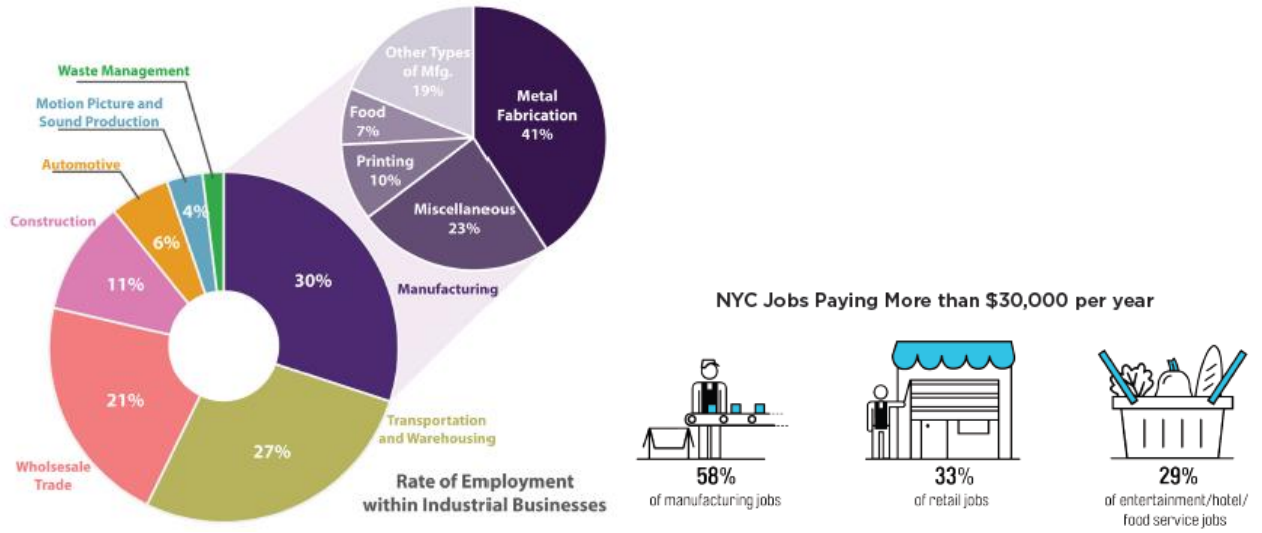
Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

Surveyed Business Characteristics

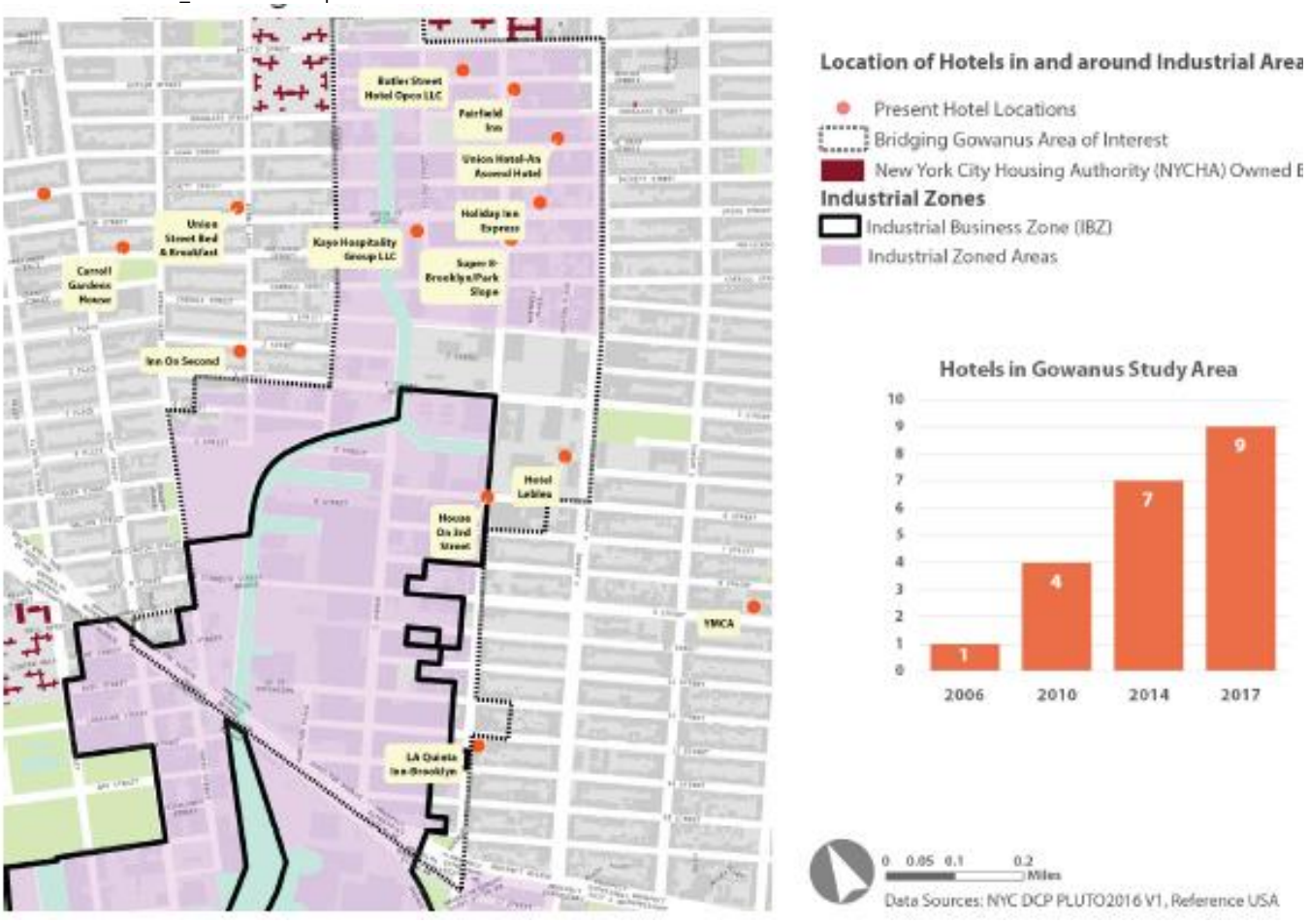




Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.



Source [16] "Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf



Source [16] "Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

ii. Brownfield Strategic Sites & "Soft Sites" for Development

Strategic Sites

Businesses need buildings, and an economic development plan to attract and retain industry must necessarily be site-specific. As part of this Nomination Study, the BOA team identified 19 properties where strategic investment and redevelopment could have a catalytic effect on economic development in the study area. An initial 18 sites were presented to the stakeholder group for review and prioritization on April 3, 2013. (The 19th site was added based on information uncovered following the April meeting.)

The initial 18 sites were identified as:

- underused or vacant properties;
- properties of significant size;
- advantageous locations;
- building or property types suited to attracting industry; or
- properties whose owners or occupants evinced interest in the BOA or in redevelopment.

Based on stakeholders' input, outreach to property owners, and further research, the team winnowed the list to five strategic sites: two sites where projects in line with the BOA goals are currently in development, and three target sites with the potential to fill identified real estate gaps in the study area and support significant job creation.

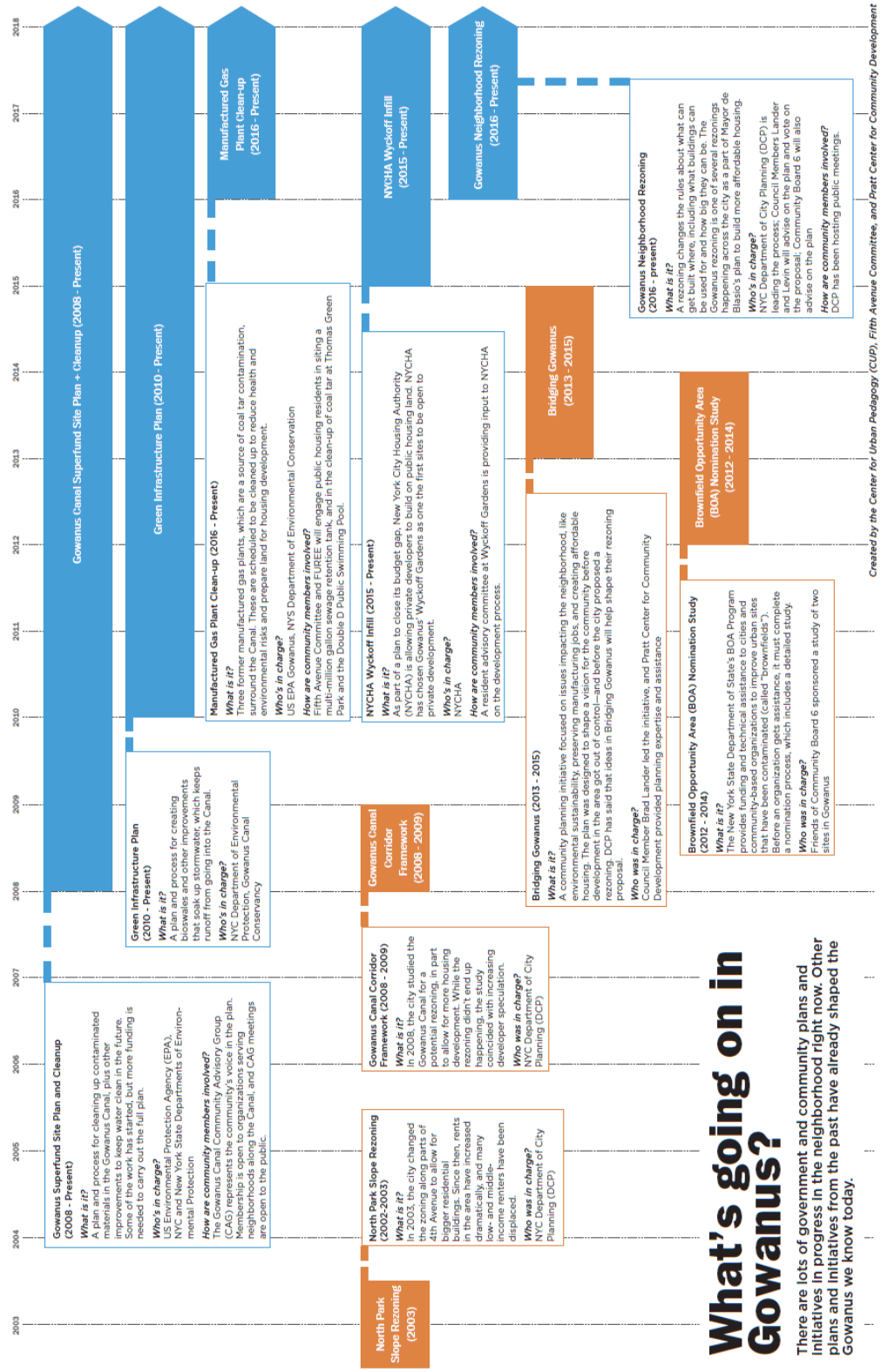


Strategic Sites

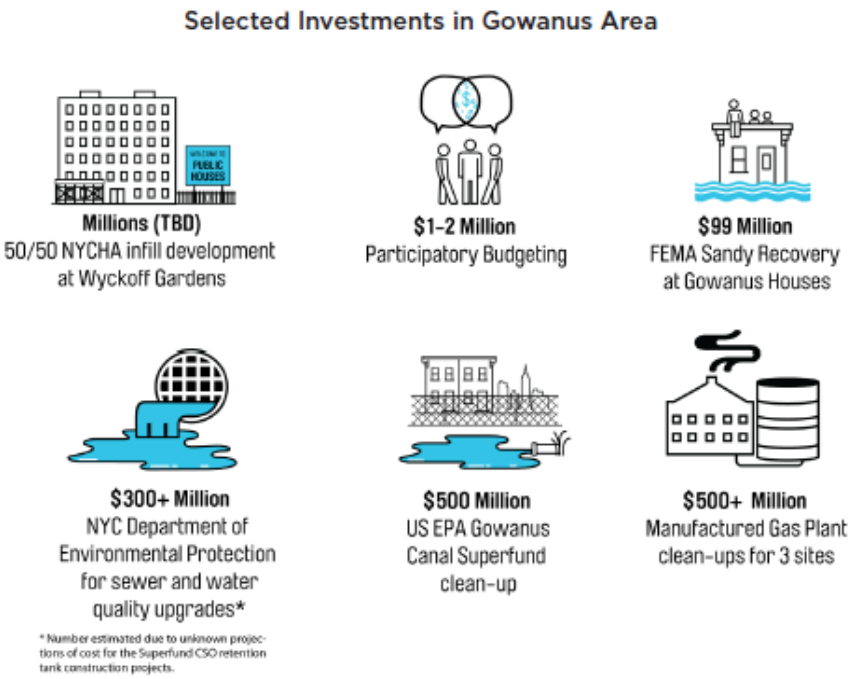
Site #	Site Name	Publicly Owned	Vacant/Underused	History of Contaminating Use	Owner or business interest	Location / Local significance / visibility	Size	Development / Industrial Job Potential	Public Use Potential	Historic Value	Description
1	RG Dun Building		•	•			•	•			Multi-story historic building with potential to house multi-tenant industry. Owner has been looking for development options.
2	Con Ed North		•	•				•			45,000sf vacant lot owned by Con Edison
3	Manifold Supplies Building		•		•		•				Vacant 4-story, 3 building complex. Owner was looking to demolish and redevelop.
4	Fulton MGP Sites		•	•					•		Five tax lots on the former Fulton MGP State Superfund site. Varying uses.
5	BRT Power Station		•	•		•	•	•	•	•	5-story historic energy generating facility surrounded by open space.
6	Verizon Sites		•	•		•	•	•			2 lots along 3rd Street; currently used for parking.
7	Con Ed 3rd Avenue Lot (Partial)		•	•		•					Approx. 36,000sf vacant graveled portion of lot owned by Con Ed; lightly used for parking.
8	Coignet Stone Building		•			•				•	NYC landmark building at the corner of 3rd Street and 3rd Avenue.
9	Salt Lot	•	•	•	•				•		City-owned lot used for salt storage; co-operated by GCC.
10	9th Street North Cluster		•								Several vacant lots on 9th Street, used for parking.
11	9th Street South Cluster		•								Several vacant lots on 9th Street, used for parking.
12	9th Street/2nd Ave		•								Vacant lot at 9th Street & 2nd Avenue.
13	Under the Tracks	•	•						•		Block-long space below Culver Viaduct between 3rd and 4th Avenues; former playground.
14	Lowe's Edge Lots			•		•			•		2 lots below the Culver Viaduct on 9th Street. Vertical room for development is limited.
15	DSNY BK6 Garage	•		•			•	•	•		Parking and operations garage for DSNY's District 6 operations.
16	Kentile Building			•		•	•			•	370,000sf industrial and warehouse building on the canal.
17	Roulston Grocery Complex			•		•	•	•		•	Multi-story, multi-tenant, 5-building complex at 2nd Avenue/9th Street.
18	Quality Woodworking		•		•			•			5 lots with industrial buildings; owner indicated need to sublet or subdivide.
19	Blue Chip Coffee	•	•					•			2 warehouses on Sackett Street held by US Customs for role in drug trafficking. Will be auctioned eventually.

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

II. Government

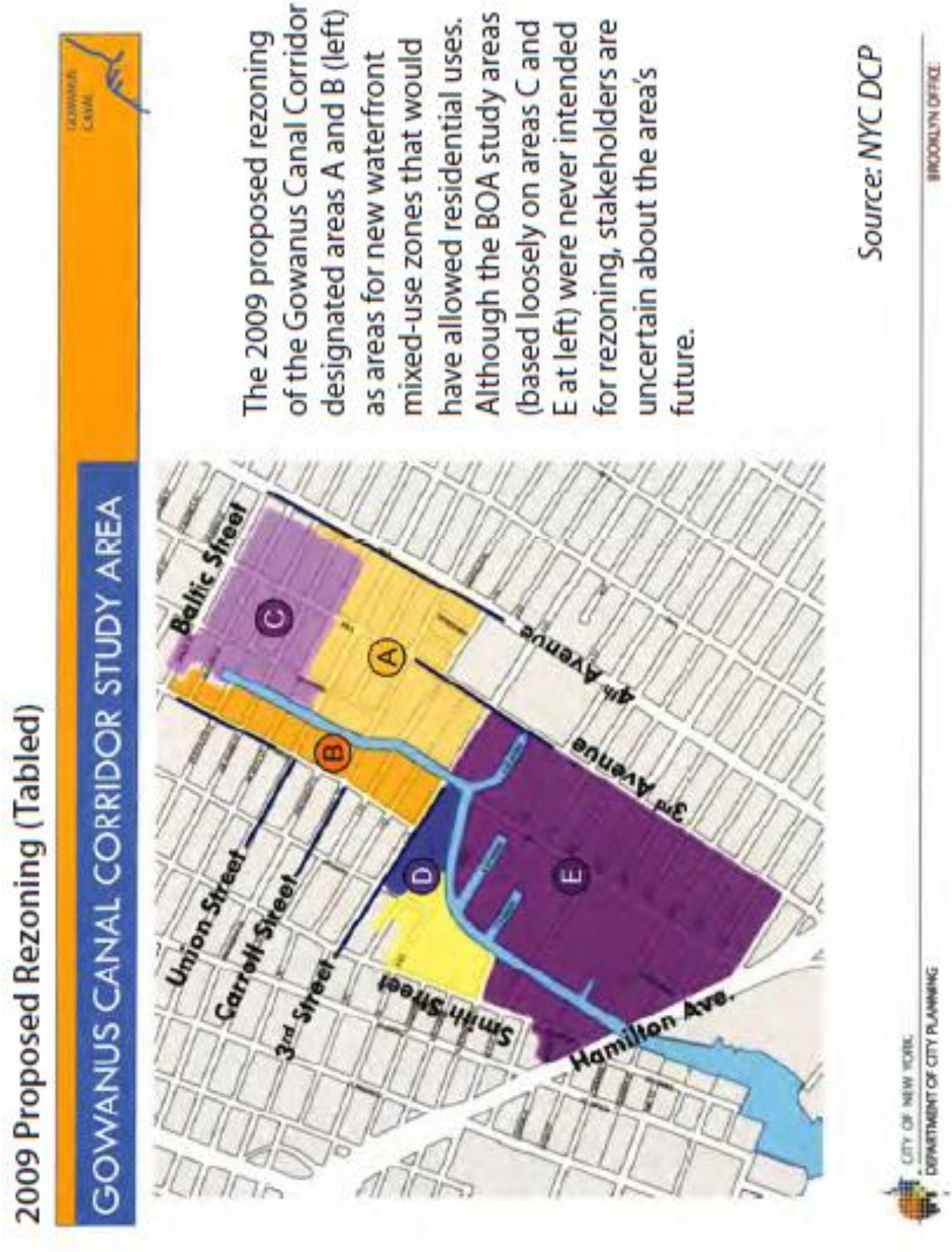


Source: [15] "What's Going On In Gowanus" . Infographic. Center for Urban Pedagogy (CUP), Fifth Avenue Committee, and Pratt Center for Community Development) . File: Gowanus Planning Map v3 30mar17.pdf

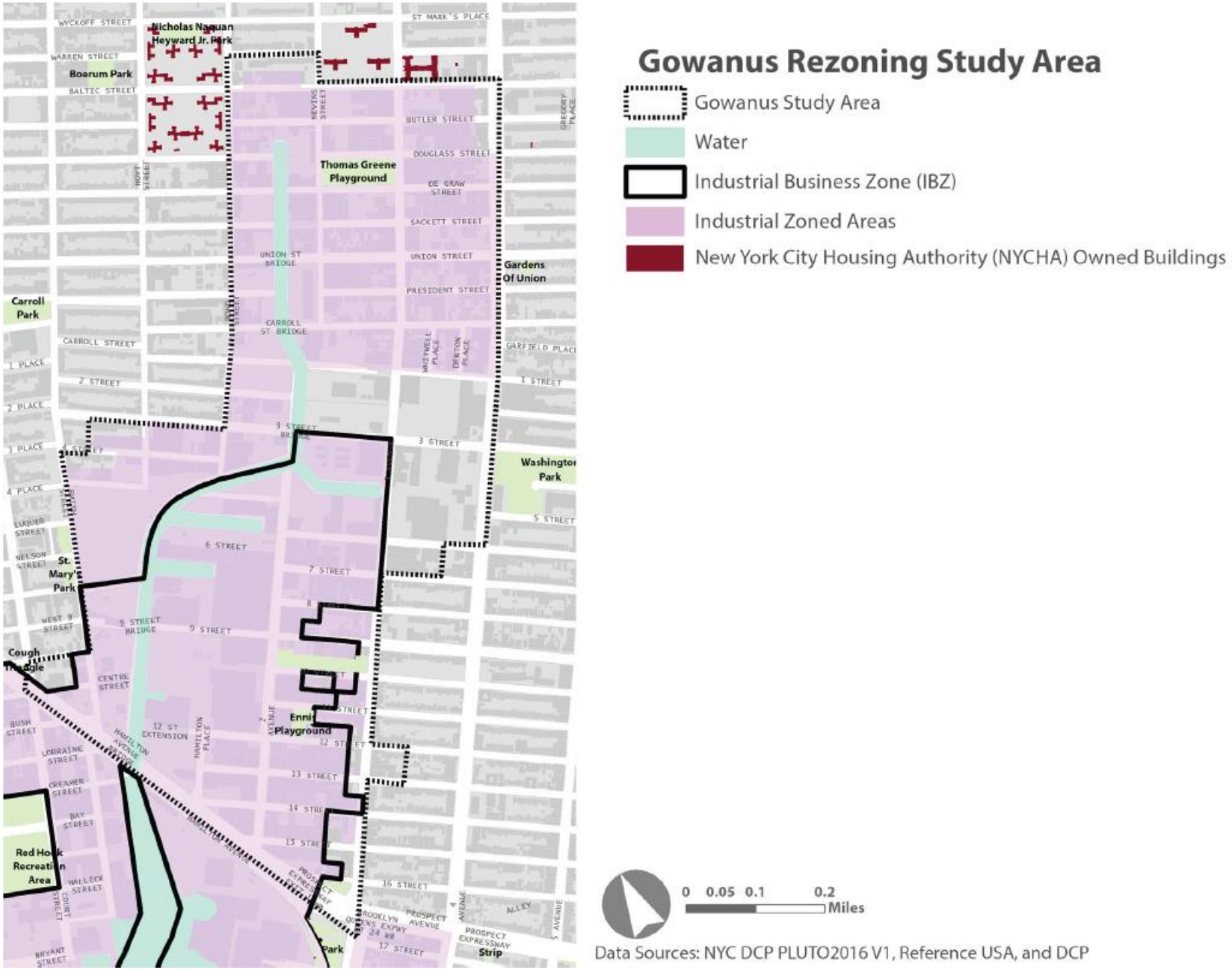


Source [16] "Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

ii. Gowanus Rezoning – ULURP Process (2009 tabled rezoning and Current PLACES Study effort)

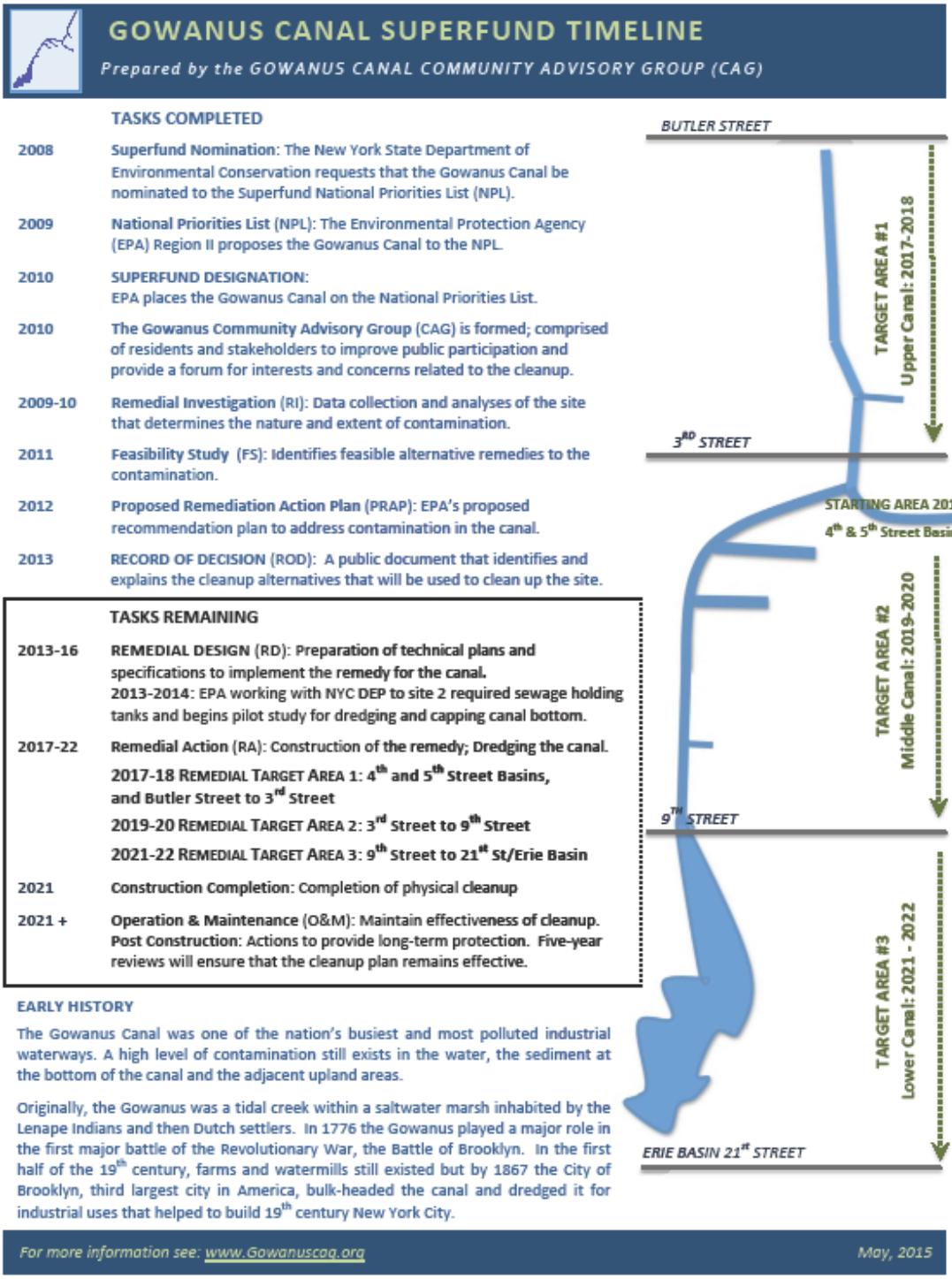


Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.



Source: [16]"Survive and Thrive: Towards a Justice-Focused Gowanus Neighborhood Plan". Gowanus Neighborhood Coalition for Justice. March 2017. File: Survive and Thrive_FINAL 22mar17.pdf

iii. EPA Superfund



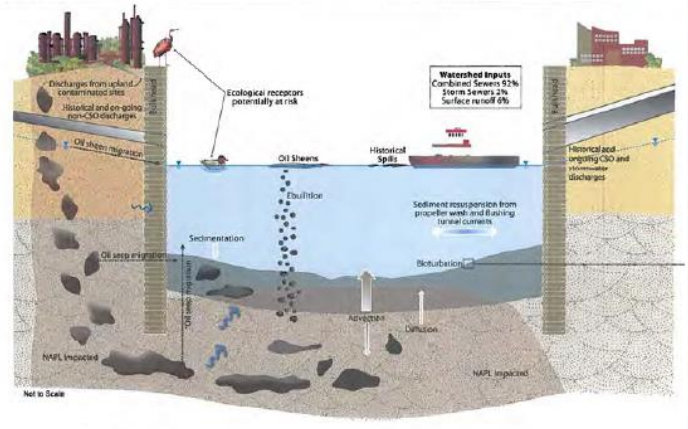
Source: [23] Gowanus Canal Superfund Timeline. Gowanus Canal Community Advisory Group (CAG). May 2016. https://gowanuscag.org/wp-content/uploads/2015/07/Gowanus-CAG-Timeline-V14.pdf#page=1&zoom=auto,-13,798



Gowanus's sheen of industrial pollutants led to its historic nickname "Lavender Lake."
Image Source: Brownstoner, 2009



The Gowanus Canal Superfund designation has attracted real estate speculation, environmental tourism, and artistic interpretation. Here, a logo developed by artist Tonky.



Conatmination in the canal comes from multiple sources, but CSO and historic industrial discharges are the primary offenders. These contaminants pose continuing health risks to humans, local wildlife, and benthic organisms. *Source: EPA, "Record of Decision: Gowanus Canal Superfund Site," Figure 4*

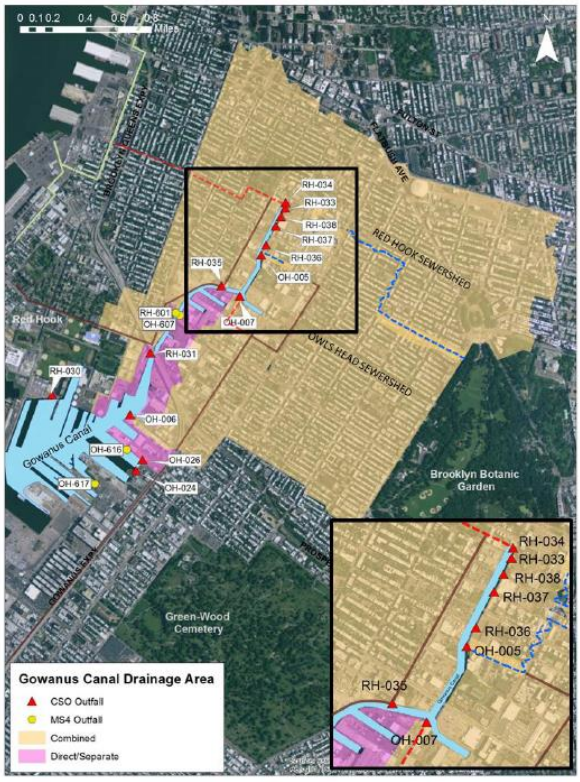


Figure 2-1. Gowanus Canal Watershed and Associated WWTP Service Areas

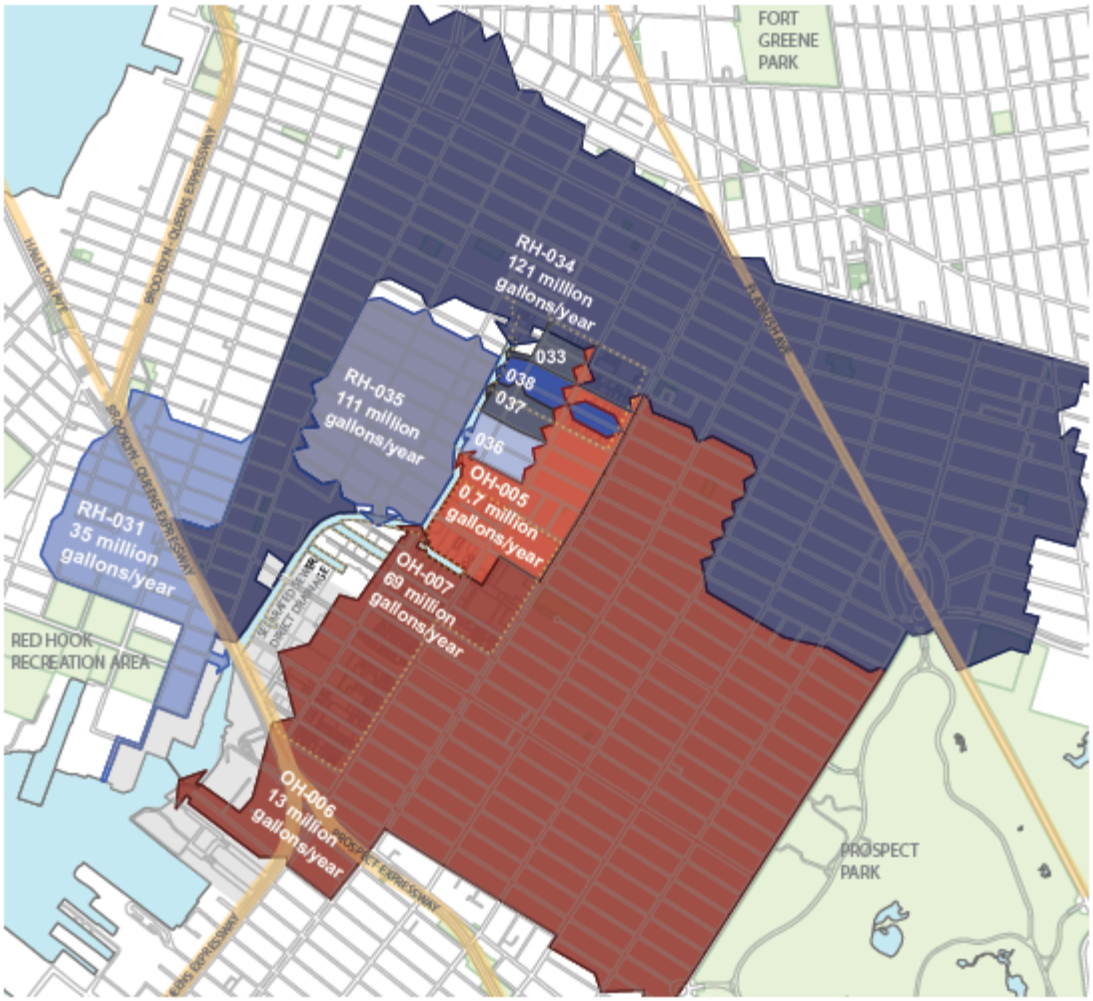
Source: (images) [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report; (map) [5] Combined Sewer Overflow Long Term Control Plan for Gowanus Canal. NYC DEP. June 2015.gowanus-canal-ltcp-201506.pdf / online: http://www.nyc.gov/html/dep/pdf/cso_long_term_control_plan/gowanus-canal-ltcp-201506.pdf

iv. Long-Term Control Plan (LTCP), DEP



Source: [3.2] Bridging Gowanus. Public Presentation. https://drive.google.com/file/d/0ByzTDw2V1t2iMjFLNkJ1RlR1cGs/view

CSO Sewersheds and Outfalls



Gowanus Canal Discharge Summary for Baseline Condition

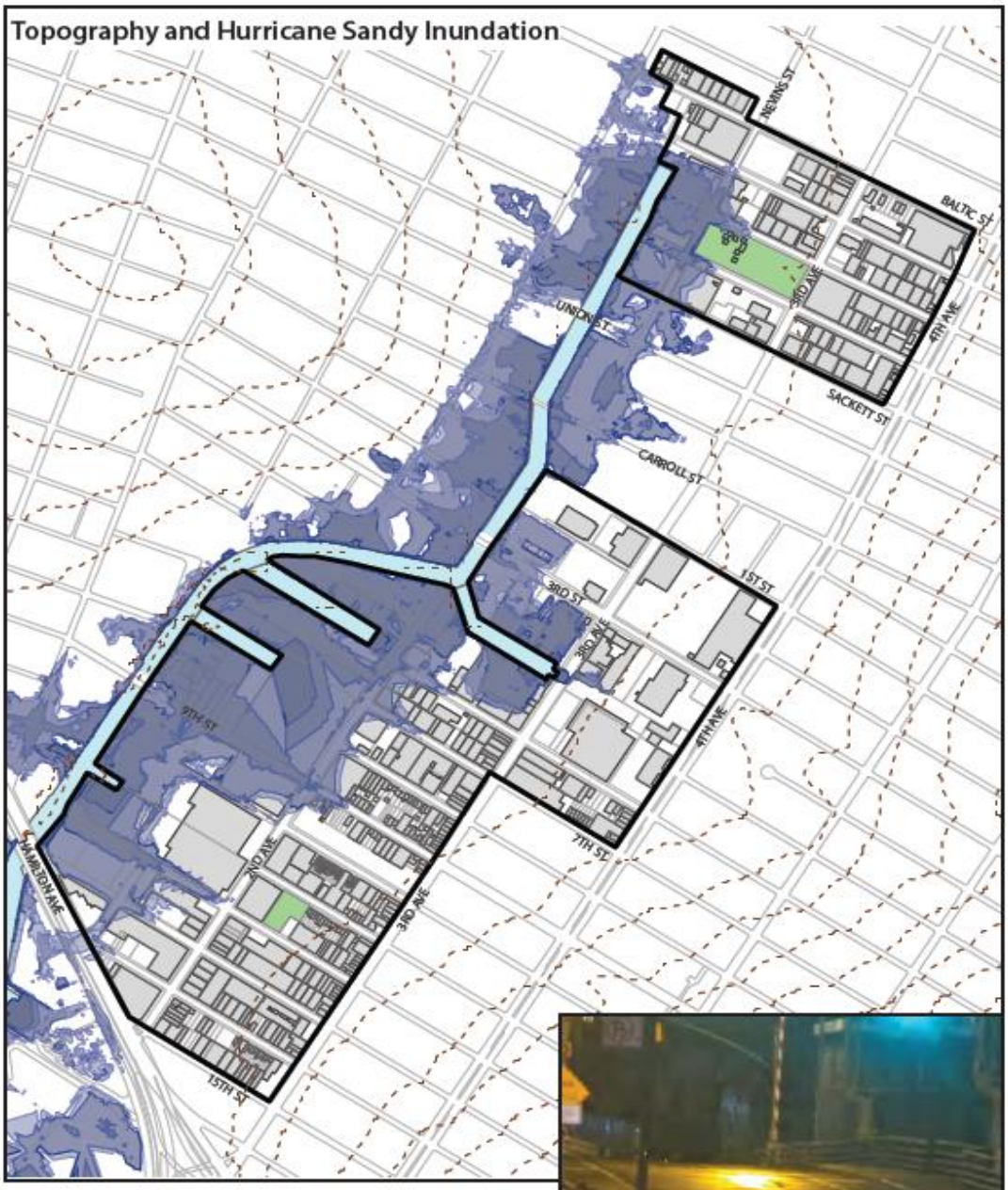
Outfall	Discharge Volume (MG)	Percentage of CSO or Stormwater Volume	Number of Discharges
Combined Sewer			
RH-034	121	32.1	56
RH-035	111	29.5	75
OH-007	69	18.4	47
RH-031	35	9.4	33
OH-024	23	6.2	35
OH-006	13	3.3	33
RH-036	1.6	0.4	21
RH-038	0.9	0.2	18
OH-005	0.7	0.2	5
RH-037	0.5	0.1	16
RH-033	0.2	0.1	14
Total CSO	377	100	75

The 1,758 acre Gowanus Watershed is served by the Owl's Head and Red Hook water treatment plants (red and blue, above). More than 350 million gallons of combined sewege are discharged into the canal each year when rainfall exceeds the treatment plants' capacities.

Source: NYC DEP, "Gowanus Canal Waterbody/ Watershead Facility Plan Report," August 2008

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

v. FEMA Flood Infrastructure Planning



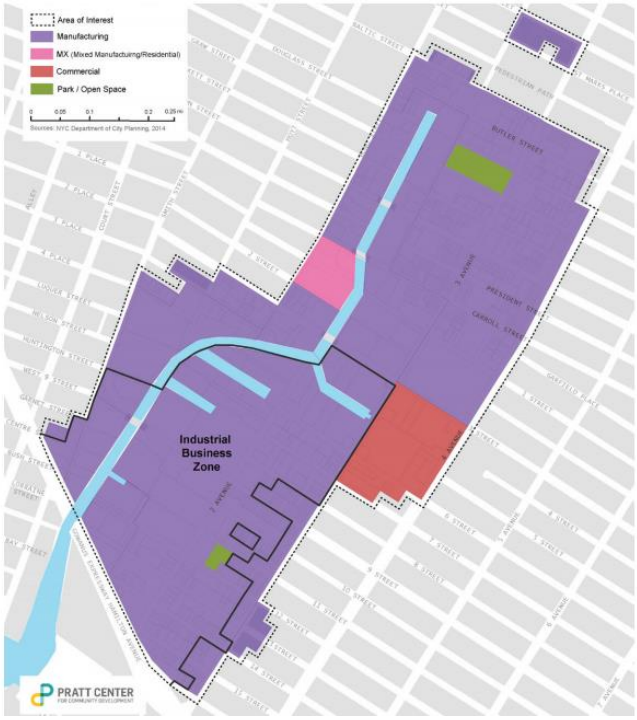


Storm surge and high tides in Gowanus Bay during Hurricane Sandy resulted in the Gowanus Canal overtopping its banks. Floodwater spread for several blocks inland, inundating buildings with up to four feet of water. At right, a car floated at the west side of the 3rd Street Bridge.

Inundation Map Source: FEMA, c/o NYCEDC
Photograph: foundinbrooklyn.blogspot.com

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

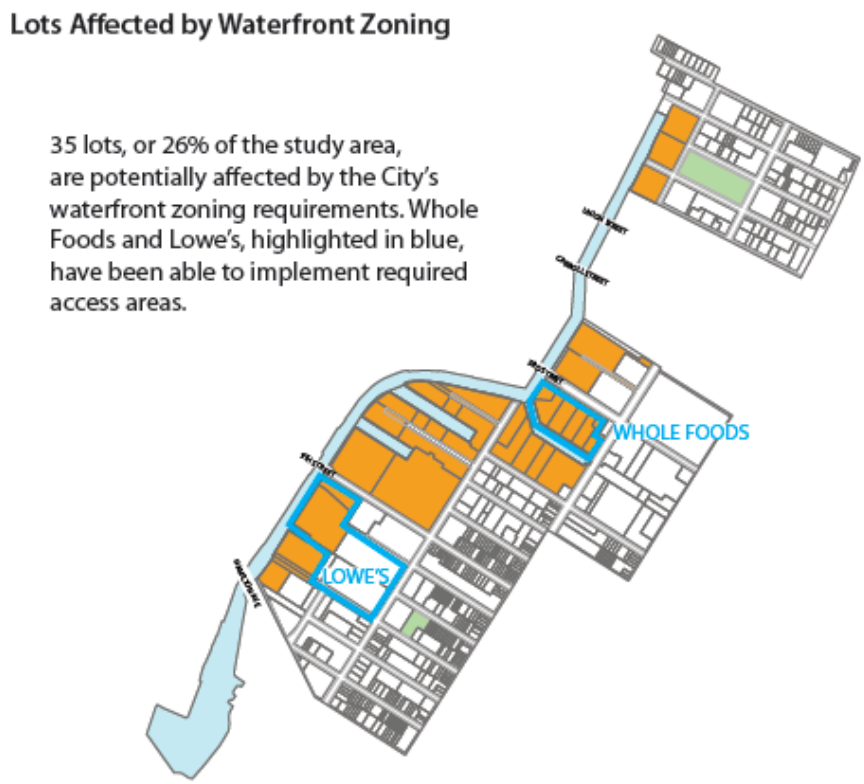
vi. Southwest Brooklyn Industrial Business Zone (IBZ)



Source: [3.1] Bridging Gowanus. Executive Summary. http://report.bridginggowanus.org//wp-content/uploads/2015/09/Executive-Summary_17Sept15.pdf;

vii. Waterfront Access Plan

Waterfront Zoning (2009)



Applied specifically to Gowanus in 2009, the City's waterfront zoning is the final piece to the Gowanus zoning puzzle.

The zoning, enacted citywide in 1993, requires the construction of waterfront amenities along parcels with uses that are neither industrial nor water-dependent.

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

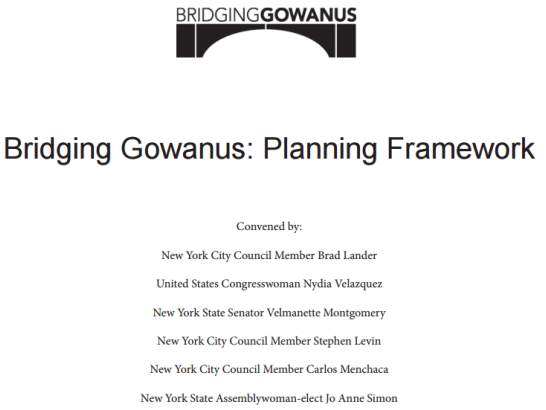
Any redevelopment along the Gowanus Canal will activate the Waterfront Access Plan (WAP) when properties are redeveloped that will bring certain open space requirements that collectively, will contribute to open and greenspace in the community. Specifically, a public promenade along the Canal will be triggered.

The required amenities include continuous, 40' wide, publicly-accessible waterfront esplanades, upland connections, and view corridors. The intent of the zoning is to create an active, engaging, publicly accessible waterfront that accommodates both economic use and recreation, while protecting industrial and water-dependent uses. When applied to Gowanus in 2009, the regulations complemented the proposed rezoning, ensuring that any residential or commercial development along the waterfront would provide community access to the canal.

Although the waterfront zoning protects industrial and water dependent uses, there is some feeling that it is too blunt a tool to address desirable economic growth in the area. Construction of the required amenities was no deterrent to Whole Foods, a big-box national retail chain whose new store is perceived by some as out of context. The necessary construction was not affordable, however, for a resident film business that wished to purchase and improve the waterfront structure it had been renting; as a consequence the business relocated. Although the film business was neither industrial nor water-dependent, it represented a contextual use, an instance of an industry with a growing presence in the area, and a resident business that would have improved a waterfront structure.

While the community desires public access space along the water, and does not wish to retreat from requirements that non-contextual uses provide amenity space, there is a feeling that the current regulations' applicability and design specifications could be refined to better serve the community.

viii. Bridging Gowanus – Community Visioning Project



Background and Goals
(Excerpt from Executive Summary)

For decades, cleaning up the Gowanus Canal has been a top priority for the Gowanus community and surrounding neighborhoods. With the EPA's (Environmental Protection Agency) Superfund Record of Decision, that possibility is finally moving forward and becoming a reality. Many leaders in the community have worked tirelessly – along with elected and appointed officials and community groups – to get sufficient attention and resources to reverse decades of neglect and bring disparate stakeholders together.

This is an important moment for Gowanus — and one the community felt it was critical to build upon. The Superfund process is a major step to a cleaner community, but there is much more that needs to be done to heal decades of environmental degradation. As Superstorm Sandy made clear, there are hard decisions about public investment in sustainable infrastructure and flood mitigation measures to protect Gowanus and surrounding neighborhoods. Stakeholders want to support manufacturing uses that have historically anchored Gowanus, as well as newer arts-oriented businesses in the neighborhood.

Meanwhile, it is no secret that there is mounting development pressure – as demonstrated by the Lightstone Group's new project on the Canal between Carroll and 2nd Street, a slew of new hotels, and many other new projects nearby. In the absence of a more unified community vision, the area could easily face a series of as-of-right developments, variances, or spot rezonings. This was made clear over the summer, when it was revealed that the New York State Department of Corrections and Community Supervision is planning to put a large-scale parole facility (the only one serving all of Brooklyn) on the banks of the Canal at Second Avenue. Without a plan to preserve and strengthen what stakeholders value about the neighborhood, and include the infrastructure, planning, and amenities necessary for a sustainable future, scattershot development will continue and likely degrade the quality of life.

In the summer of 2013, a group of 50 stakeholders gathered in the gymnasium of Our Lady of Peace church (convened by neighborhood elected officials) to launch a community planning process to respond to the moment. They agreed that the pending transition at City Hall – with a new Mayor and City Planning Commission – would present an opportunity for a better outcome.

They decided to establish a community planning process, with everyone at the table, to develop a comprehensive plan for the infrastructure and land use regulations needed for a safe, vibrant, and sustainable Canal area. The mission was to take this opportunity to develop and put forth a united vision that could serve as an innovative model for inclusive, sustainable, low-lying, vibrant, mixed-use urban areas on a warming planet. Community stakeholders – with diverse views – would shape that vision together.

A group of local elected officials reached out to the Pratt Center for Community Development to serve as the community planning consultant, to design and implement the planning process. Bridging Gowanus was established with the following goals:

- Bring community stakeholders together to build as much consensus as possible around a long-term vision for the Gowanus Canal area.
- Identify broadly-shared community goals.
- Create a space for honest conversation about different viewpoints.
- Develop the outlines of a comprehensive, community-based infrastructure and land use plan for a safe, vibrant, and sustainable Gowanus area.
- Shape the next NYC mayoral administration's thinking about the Gowanus Canal.

Participants recognized that building consensus around a comprehensive plan that balances a range of environmental, economic, and community needs would not be easy. Stakeholders have many different ideas for what they want to see along and around the Canal. They agreed to work through many open questions, including but not limited to:

- What infrastructure and amenities are necessary for the long-term vitality of the community?
- What sort of flood protection investments and regulations are needed?
- How can the Canal cleanup be built on to make the Gowanus area a model of sustainability?
- What mix of uses should be allowed? What mechanisms are needed to ensure a stable mix?
- What infrastructure and regulation is needed to preserve and strengthen affordable housing, manufacturing, industrial, and artisan uses?
- Are there areas where residential development should be allowed? If so, at what scale? With what provisions for design, sustainability, and open space? What level of affordability should be required?

(…)

Activating the Plan

Several elements of this plan are especially important to insure that the rules are followed and that the community's goals are achieved:

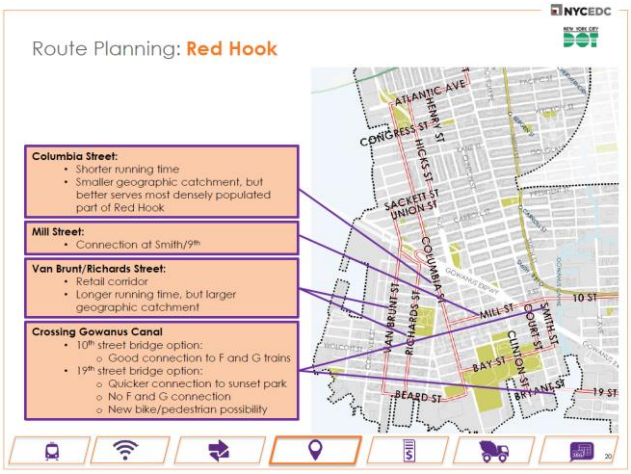
- **Upfront capital commitments** through the Superfund cleanup, Federal resiliency funds, the City's Capital Budget, and the Gowanus TIF (Tax Increment Financing) proposed here. These should not be promises or non-binding "Memorandum of Agreement." They must be real, binding commitments.
- **Environmental quality partnership**: A partnership of all levels of government and neighborhood stakeholders that builds on (and preserves) the EPA's Superfund authority should be established to coordinate across the wide range of environmental infrastructure projects and keep strong regulatory attention to cleanup obligations for years to come. The partnership must maintain significant community stakeholder engagement.
- **Manufacturing preservation** through enforcement by NYC DOB (in preventing illegal conversions), and incentives for developers to place their maker-space and affordable housing in the hands of mission-driven (generally nonprofit) organizations.
- **Anti-harassment and anti-displacement provisions for tenants**: New residential development should not be allowed without strong protections for existing tenants in the area. • Resources for essential programming: Certain critical goals of Bridging Gowanus, such as local job linkages, will require a commitment of programmatic resources.
- **Construction compact**: Environmental cleanup, infrastructure, and development projects in the Gowanus area will inevitably create headaches for local residents and businesses (as witnessed by the Lightstone development, Flushing Tunnel reconstruction, and High Level Storm Sewers project). To manage these to the best extent possible, a construction compact should be established, which includes all entities engaged in significant construction, together with stakeholder, agency, elected official, and Community Board 6 representatives.
- **Community oversight**: Local oversight representing residents and stakeholders is needed to track progress, address concerns, and solve problems that will arise in activating and implementing this community planning framework. Both Community Board 6 and the Community Advisory Group (CAG) for the EPA's Superfund effort should be central to this oversight – which may involve a new group dedicated to this task.

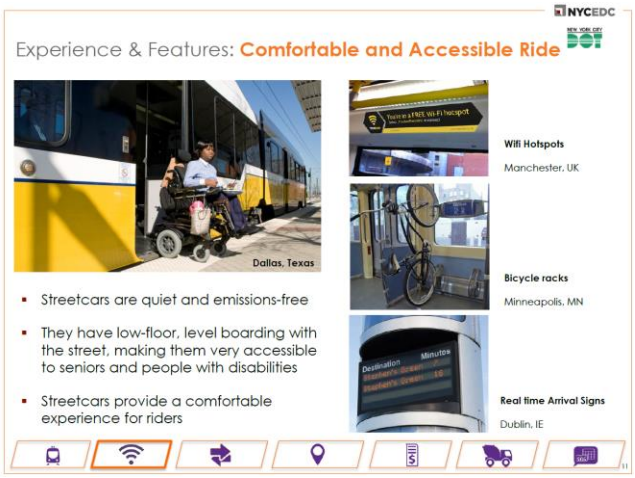
Source: [3.1] Bridging Gowanus Report. Executive Summary. http://report.bridginggowanus.org//wp-content/uploads/2015/09/Executive-Summary_17Sept15.pdf

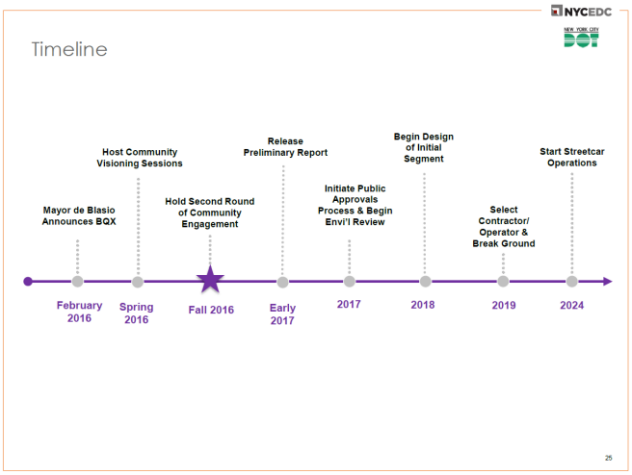
ix. BQX – Brooklyn Queens Connector

The proposed BQX light-rail project would intersect with Gowanus either at 10th Street or 19th Street, as part of connecting Sunset Park to Red Hook and provide additional transit options especially for residents and businesses in the southern portion of Gowanus.









Source: [10] BQX Brooklyn Queens Connector. Proposed Map. Friends of the Brooklyn Queens Connector. 11.01.16_BQX_Outreach_Deck.pdf

x. Historic Sites



	Site Name	Historic Status
1	Former ASPCA Shelter	SNRE (2008)
2	R.G. Dun & Company Building	SNRE (2008), GCHD Eligible (2008)
3	Brooklyn Rapid Transit Power House	SNRE (2004), GCHD
4	Coignet Stone Building (Brooklyn Improvement Company)	SNRE (2004), NYCL, GCHD
5	Old American Can Factory	SNRE (2008), GCHD Eligible (2008)
6	3rd Avenue Bridge	SNRE (2004), GCHD
7	5th Street Turning Basin	SNRE (2004), GCHD
8	Burns Brothers Coal Pockets	SNRE (2004), GCHD
9	Kentile Building & Sign	SNRE (2008), GCHD Eligible (2008)
10	Former Roulston Grocery Complex	SNRE (2008), GCHD Eligible (2008)

SNRE = State/National Historic Register Eligible
NYCL = New York City Landmark
(2008) = Identified by State Office of Historic Preservation
GCHD = Gowanus Canal Historic District
(2004) = Identified by Army Corps of Engineers

Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

xi. Tax Increment Financing

Note: Potential tool being considered for supporting investments through rezoning process.

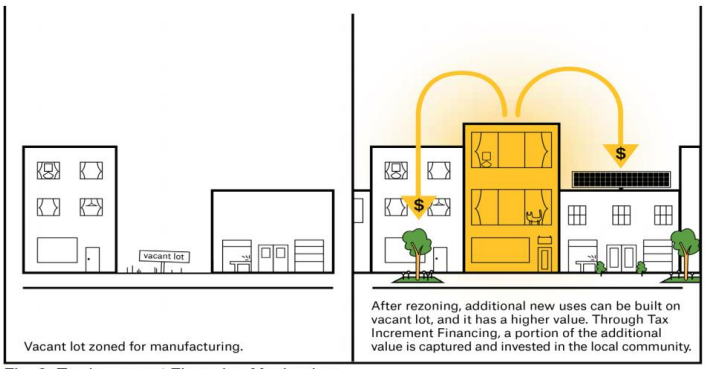


Fig. 3: Tax Increment Financing Mechanism

A Gowanus "tax increment financing" (TIF) mechanism, through which increases in property values are captured through taxes that are committed to area-wide infrastructure, allowing infrastructure bonds to be issued to pay for upfront investments. Gowanus is a good place to pilot a TIF, given significant local infrastructure needs and the substantial increases in value that could be created by rezoning (as evidenced through an analysis prepared by the City Council's Land Use Division, which identified significant increases in both land values and potential tax revenue if sites were rezoned).

Source: [3.1] Bridging Gowanus. Executive Summary. http://report.bridginggowanus.org//wp-content/uploads/2015/09/Executive-Summary_17Sept15.pdf;

xii. Mayor's Office of Sustainability: Urban Heat Island Working Group

Initiative 5

Mitigate the risks of heat

The effects of urban heat are well known. Extreme summer heat kills, on average, over 100 New Yorkers annually from heat stroke and the heat-related exacerbation of chronic health problems. Hundreds more need hospital care for serious heat-related illness. The risk of death from extreme heat is highest among those without air conditioning, in neighborhoods with higher poverty rates, and where there is less land covered by trees and other vegetation. By greening neighborhoods and increasing access to air conditioning, we aim to reduce heat-related illnesses and deaths, and reduce disparities in vulnerability to climate change.

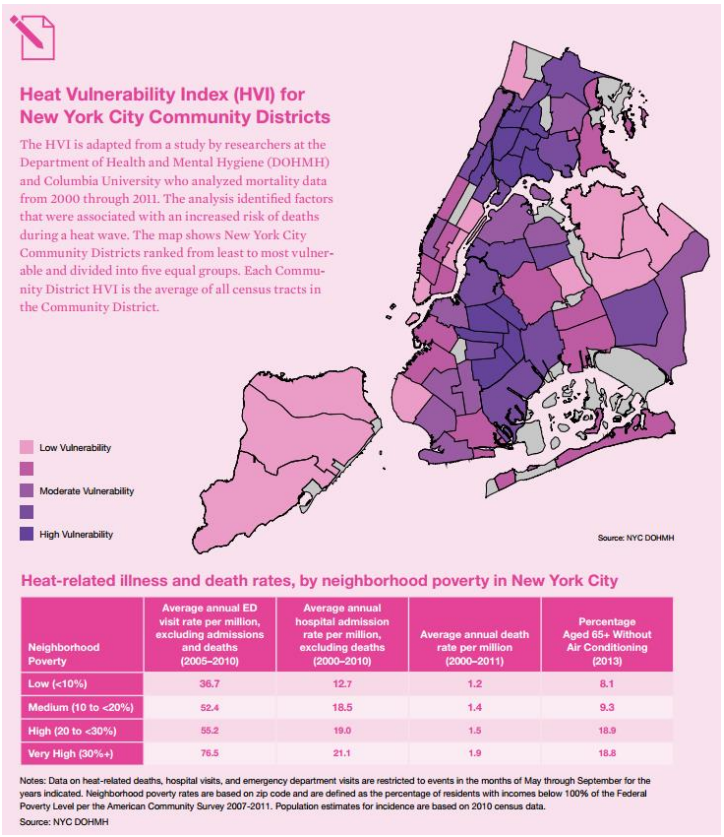
In partnership with The Nature Conservancy, the City is developing strategies to evaluate the best available science on the urban heat island effect in order to invest in better data collection and develop effective capital investment and operational strategies to adapt our city to the increasing impacts of urban heat. First, the City will identify urban heat mitigation and adaptation strategies to benefit the city's most heat-vulnerable communities by coordinating through a new Urban Heat Island Working Group that has already begun to meet.

The Working Group will make recommendations for the creation of a citywide air temperature monitoring system to enable the collection of community-level temperature data to guide urban heat mitigation and emergency response activities.

In order to measure heat mitigation activities accurately across the five boroughs, the City will seek updates to its 2010 LiDAR dataset, which will involve aerial data collection through remote sensing. This will help the City to quantify the investments that have already been made and will inform future strategies about how to plan the built environment. Additional insights from LiDAR data will include the extent of the tree canopy across the five boroughs, and better detail for the City's public mapping data, among others. The City is already working to secure federally-provided 2013 LiDAR data.

Additionally, the City will call on the State to ensure cooling access during extreme heat for low-income, heat-vulnerable populations through an expanded allocation of Federal Low Income Home Energy Assistance Program funds to assist with air conditioning purchase and installation, and utility costs. These air conditioners will be as energy efficient as possible, and are a life-saving resource for seniors and those with pre-existing health conditions.

Finally, the City will propose that the New York City Board of Health amend the health code to establish maximum allowable temperatures in residential facilities and supportive housing for vulnerable people to protect against heat-related illness.



Heat-related illness and death rates, by neighborhood poverty in New York City

Neighborhood Poverty	Average annual ED visit rate per million, excluding admissions and deaths (2005–2010)	Average annual hospital admission rate per million, excluding deaths (2000–2010)	Average annual death rate per million (2000–2011)	Percentage Aged 65+ Without Air Conditioning (2013)
Low (<10%)	36.7	12.7	1.2	8.1
Medium (10 to <20%)	52.4	18.5	1.4	9.3
High (20 to <30%)	55.2	19.0	1.5	18.9
Very High (30%+)	76.5	21.1	1.9	18.8

Notes: Data on heat-related deaths, hospital visits, and emergency department visits are restricted to events in the months of May through September for the years indicated. Neighborhood poverty rates are based on zip code and are defined as the percentage of residents with incomes below 100% of the Federal Poverty Level per the American Community Survey 2007-2011. Population estimates for incidence are based on 2010 census data.
Source: NYC DOHMH

Source: [18 "One New York: The Plan for a Strong and Just City". The City of New York. Mayor's Office of Long-Term Planning and Sustainability. April 2015. http://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf

III. Private Sector Involvement

i. Stakeholders: Neighborhood Associations or Community Development Associations Active in or Affecting the Study Area

- **Fifth Avenue Committee, Inc. (FAC)** is a community development corporation established in 1978 with the mission to advance economic and social justice in South Brooklyn and throughout New York City by building vibrant, diverse communities where residents have genuine opportunities to achieve their goals, as well as the power to shape the community's future. To achieve its mission, FAC develops and manages affordable housing and community facilities; creates economic opportunities and ensures access to economic stability; provides student-centered adult education and literacy; organizes residents and workers; and combats displacement caused by gentrification.
  A significant portion of FAC's catchment area in Brooklyn includes the low-lying and heavily contaminated community of Gowanus, Brooklyn, which is home to three New York City Housing Authority (NYCHA) developments housing over 4,000 low and moderate income residents, New York City's first US EPA Superfund site, three former Manufactured Gas Plan (MGP) sites, several additional brownfield sites and millions of gallons of sewage discharge annually.

  TURNING THE TIDE (T3) is a community-based collaboration led by FAC in partnership with Red Hook Initiative (RHI), Families United for Racial and Economic Equality (FUREE), Southwest Brooklyn Industrial Development Corporation (SBIDC), and engaged with the New York City Housing Authority (NYCHA).

  This climate-resilience initiative is focused on engaging and empowering South Brooklyn's low-income public housing residents in the climate movement, and informing significant resilience and sustainability investments at the New York City Housing Authority (NYCHA) locally, and in the Red Hook and Gowanus neighborhoods more broadly. T3 is designed to serve as a model of equity, inclusion, and resident empowerment for public housing authorities and mixed use waterfront neighborhoods around the country.

  T3 was formed to ensure two critical goals in mitigating the impacts of climate change. First, the project will help ensure that unprecedented, multi-billion dollar public and private investments - particularly in public housing - in South Brooklyn's Red Hook and Gowanus communities meaningfully contribute to New York City's ambitious sustainability, resilience and equity goals while improving the resilience of these low-income communities. Second, T3 will help inform and influence climate policy impacting NYC low-income residents and ensure that public policy and investments advance equity and meet resident needs.

- **Southwest Brooklyn Industrial Development Corporation**
  Southwest Brooklyn Industrial Development Corporation (SBIDC) provides advocacy and services to help businesses in the Sunset Park, Red Hook and Gowanus neighborhoods grow and create employment opportunities for local residents.

  OUR HISTORY

  Founded in 1978 by local businesses, SBIDC is a neighborhood-based economic development organization that works in the Brooklyn waterfront neighborhoods of Sunset Park, Red Hook and Gowanus. Since the organization's inception in 1978, SBIDC has been a driving force in the improvement of the Southwest Brooklyn economy by delivering a wide range of business services to local firms and acting as an advocate for business interests. Additionally, SBIDC provides local residents with employment services and

advocates for local improvements that improve the quality of life for residents. Jobs in the industrial sector have fewer barriers to entry and are generally of high quality. As wage disparity in New York City continues to grow, retaining and increasing quality working class jobs is key to diversifying and stabilizing the local economy. Working class jobs, including manufacturing and other forms of industrial employment, help to stabilize the regional economy by providing a secure source of tax revenues and employment that is less susceptible to market fluctuations than other industry sectors. Additionally, manufacturing has traditionally served as the first rung of opportunity on the social and income ladder for newly-arrived immigrants.

SBIDC is the go-to organization for businesses in Southwest Brooklyn who are looking to hire or need resources to grow. We host workshops, assist with storm preparedness planning and recovery, and advocate for business needs. In 2012, Hurricane Sandy devastated the areas we serve and we continue to help businesses recover while ensuring that they are prepared for future storm events. SBIDC will be submitting a Step 2 Brownfield Opportunity Area proposal covering Red Hook. Their application is referenced in several sections of this briefing book since much of the data also references Gowanus.

- **Gowanus Alliance**

  The mission of Gowanus Alliance is to promote Manufacturing, Industrial, creative, entertainment business sector through advocacy, education, marketing and promotion in and around the Gowanus section of Brooklyn.

  Advocacy – Direct government relations. The alliance will meet with elected officials and relevant city, state and federal agencies to improve the conditions and rules that the M.I.C.E sectors are required to operate under.

  Education – bringing relevant government agencies and peer businesses to discuss opportunities, changing regulatory environment, and best practices.

  Marketing – Utilizing a G2G trademark program to promote Gowanus made goods. Use of Social media to promote and inspire improvements to Quality of life issues affecting the existing business and existing residential community.

  Networking – Organizing events for local businesses to share ideas, products, and opportunities through Co-operative exchanges. Job Fairs and Job Training listings for available work opportunities within the community.

  Promotion & Distribution – Utilizing the Go-on-us program and identifying opportunities for the organization and relevant Committees to launch trade shows, events, trade missions or conferences that elevate the status of Gowanus made goods.

  Real Estate – Utilizing the connections to Real Estate & Development Committees to find and create affordable space for growing businesses.

  Community stewardship – The active sponsorship of local parks in co-operation with city and other not-for-profit community organizations for the improvement of public spaces.

Community Dialogue – Taking an active role in community meetings to discuss issues affecting the existing, active manufacturing community, with an objection to protect and create affordable space for the growing manufacturing, artisanal, creative, entertainment uses that currently find Gowanus an attractive HUB for mixed uses.

- **Boerum Hill Association**
  The Boerum Hill Association is a local nonprofit civic organization focused on the Boerum Hill section of Brooklyn, just to the north of Gowanus.

- **NYCHA Resident Associations (3 Separate): Gowanus Houses, Wyckoff Gardens, and Warren Street Houses**
  NYCHA has three public housing developments in Gowanus home to over 4,500 residents in Gowanus Houses, Wyckoff Gardens and Warren Street Houses. Each development has a resident led association of tenants of that development.

- **Gowanus Canal Conservancy**
  Mission:
  The Gowanus Canal Conservancy is a community-based non-profit organization that serves as the environmental steward for the Gowanus Canal Watershed.

  Vision:
  We envision the evolution of an Open, Clean and Alive Gowanus Canal and Watershed with accessible, connective open space; clean water, soil and air; and vibrant ecological, business and cultural activity.

- **Gowanus Canal Community Development Corporation**
  Our mission is to cultivate and activate an innovative future vision for the greater Gowanus region of Brooklyn, which includes South Brooklyn and Red Hook. Sustainable ecology diverse society and vibrant economy are the goals of our community efforts. We work across urban planning and affordable housing to improve our local infrastructure, and create economic opportunity. We include Transportation Oriented Development(TOD), and educational initiatives in this mission.

- **Friends and Residents of Greater Gowanus**
  Is a local nonprofit organization that works towards an eco-safe and healthy Gowanus Canal corridor and watershed including restoration of the natural environment;

  Save and protect its industrial heritage and support its innovative and creative future; and

  Maintain an organization that affords communication opportunities to the community at large.

ii. Public Services: Schools, Hospitals, Churches, etc.

P.S 32, located near Union and Hoyt streets on the western side of the Canal and P.S. 372 on Carroll Street on the eastern side represent the only two public schools in Gowanus proper. There are also a number of child care centers, Pre-K facilities and a planned Pre-K facility for 9th Street just off of 3rd Avenue. There are no hospitals located in Gowanus; Methodist Hospital in Park Slope is the closest hospital. Long Island College Hospital (LICH), which was a facility that was used by Gowanus residents, closed recently. There are a number of medical care facilities, most notably kidney dialysis centers and local doctor's offices in and around Gowanus. There are a number of local churches in and around Gowanus.

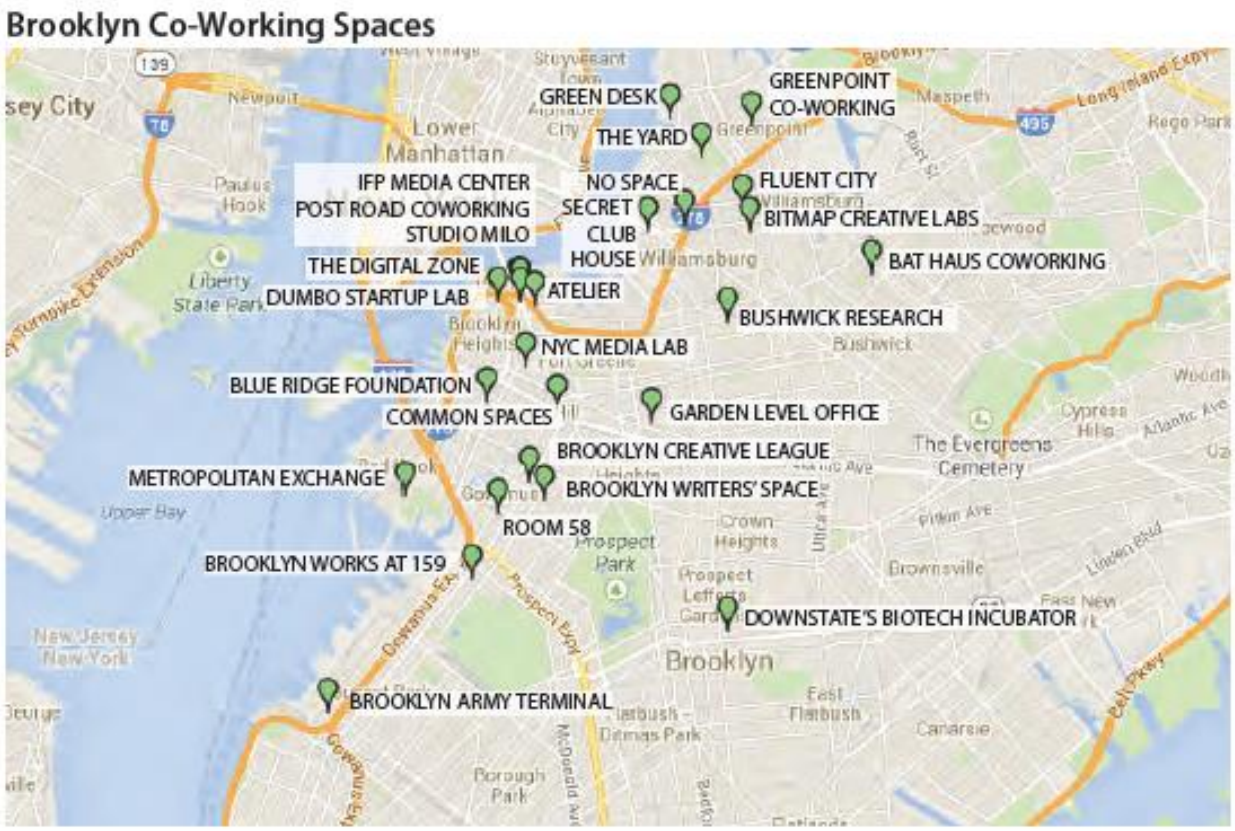
iii. Financial Institutions, Foundations, Major Corporations

There are no financial institutions or foundations in Gowanus. The major corporations represented in Gowanus include Whole Foods, UHAUL, Staples, Pep Boys, Verizon and Con Edison as well as a number of major hotel chains.

iv. Business Organizations

- **Southwest Brooklyn Industrial Development Corporation**
  See above.

- **Gowanus Alliance**
  See above.



Source: [4] "Gowanus Canal Brownfield Opportunity Area Nomination Study". April 2014. BOA Step II Nomination Study Report.

v. Social Service/ Workforce Development Providers

- **Fifth Avenue Committee**
  See above.

- **Brooklyn Workforce Innovations**

A FAC affiliate, that trains and places over 800 low and moderate income people annually with barriers to employment into living wage jobs with career ladders.

- **Southwest Brooklyn Industrial Development Corporation**
  See above.

- **RAICES**
  Local nonprofit that serves seniors.

- **CHIPS**
  Local nonprofit that operates a food pantry and transitional shelter for homeless women and children.

- **Vocal NY**
  Citywide nonprofit located in Gowanus that provides harm reduction services and advocacy.

- **Good Shepherd Services**
  Citywide nonprofit providing a range of social services to families and children.

- **YWCA**
  Citywide nonprofit that provides education and empowerment focused on women.

- **St. Augustine's Food Pantry**
  Local food pantry.

- **University Settlement House/Helen Own Carey Child Development Center**
  Citywide settlement house that provides afterschool programs in the area.

- **Imani House**
  Local nonprofit that provides afterschool programs and adult education programs in area.

- **Park Slope for Mental Health**
  Local nonprofit mental health provider.

IV. Additional Background

i. Previous Plans & Studies Gowanus

- DCP PLACES Study: http://www1.nyc.gov/site/planning/plans/gowanus/gowanus.page
- FAC Gowanus Neighborhood Coalition for Justice: http://files.constantcontact.com/c8b8a1ab001/63290a19-3bd3-48bb-8f82-5af92d8edf33.pdf
- NYCCC Engines of Opportunity: https://www.scribd.com/document/247145067/NYCC-Engines-of-Opportunity-11-19
- Gowanus Brownfield Opportunity Area (BOA): http://www.fbcb6.org/gowanus-boa/
- Bridging Gowanus: http://bridginggowanus.org/
- EPA Record of Decision Gowanus: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0206222
- DCP 2009 Proposed Rezoning: http://www1.nyc.gov/assets/planning/download/pdf/plans/gowanus/gowanus.pdf

ii. Recent UHI Studies

- A Case-Only Study of Vulnerability to Heat Wave–Related Mortality in New York City (2000–2011**):** https://ehp.niehs.nih.gov/1408178/#r8
- Reducing Urban heat island compendium of Strategies: https://www.epa.gov/sites/production/files/2014-06/documents/basicscompendium.pdf
- https://www.epa.gov/heat-islands/reducing-urban-heat-islands-compendium-strategies
- Exploring the Green Infrastructure Workforce Report: http://kresge.org/sites/default/files/library/natureworks-issue-brief-032317_final.pdf

iii. News Articles and Reporting

- https://drive.google.com/open?id=0Bxu91Ml9o1nXZFFXVEh5WFZTODA

V. Conclusion

The ULI Urban Heat Island TAP on April 24-25, 2017 will be the first formal discussion of UHI risks and possible mitigations involving the community and local stakeholders in Gowanus.

As many agencies and processes are now driving the future of this mixed use waterfront neighborhood, FAC believes the TAP's convening will support it's TURNING THE TIDE (T3) climate-resilience initiative's goals focused on engaging and empowering South Brooklyn's low-income public housing residents in the climate movement by drawing attention to this serious public health threat disproportionally impacting the lower-income residents of the neighborhood, and to serve as a model of equity, inclusion, and resident empowerment.



Source: [21]: T3, Environmental Justice Curriculum Graduation, FAC, 2017

Equally important we hope the TAP's public recommendations, with input from the community and agency stakeholders, will advance and inform upcoming land use and public investment decisions including the unprecedented, multi-billion dollar public and private investments – from the resilience and sustainability perspective. We hope that public policy and any investments will help to mitigate the impacts of UHI locally in Gowanus to improve public health and better meet resident needs for more greenspace and cooling measures. We thank you for your time and attention to this issue and we look forward to working with the TAP at this two-day panel and beyond.

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