

Green Spaces Profile for Manhattan Community Board 1

September 2014

As referenced in the Manhattan Community Board 1 (CB1) *District Needs Report* for FY 2016, CB1 advocates for a greening strategy for the district that includes green building infrastructure. Overall, this greening strategy should continue the trend of all new and retrofitted buildings, both commercial and residential, are Leadership in Energy and Environmental Design (LEED) rated and/or Energy Star certified. These measures can range from dirty heating oil conversions, white roofs, energy saving systems and other building infrastructure improvements. Projects proposed such as *Rebuild by Design's The Big U* and the New York City Economic Development Corporation's *Southern Manhattan Multi-Purpose Levee* will certainly help protect and fortify Lower Manhattan from future extreme weather events, but parallel investments in green adjustments and solutions can help minimize the need.

In terms of the objective measures of “greenness”, CD1 fares well: the district enjoys a near perfect walkability score, easy access to world-class public transit and green space, and a medium to high rise and high density built environment.

Nevertheless, despite the strengths and opportunities that CD1 has enjoyed in terms of greenness, the district still has considerable threats since much of the district lies within the Federal Emergency Management Agency (FEMA)-designated flood zone.

Greater measures must be made to fortify CD1 from flooding. One solution to climate change would be to continue investing in the green construction and retrofitting of commercial, residential, and civic buildings.

In light of the district's accomplishments and challenges, this guide documents the state of green spaces within CD1.

Background

Strengths

If we take the generally accepted measurements for a successfully green area, CD1 scores very high. The entire district is eminently walkable: one can walk to anywhere within the district within 15 minutes. The district also boasts low car ownership, with a majority of both owners and renters owning no household vehicles. Finally, CD1 has good access to world-class parks and green space, bike lanes and easy access to multi-modal public transportation. ¹

	2005-2009 ACS Estimate	Percent
OCCUPIED HOUSING UNITS BY VEHICLES AVAILABLE		
Total	22,901	100.0%
Owner occupied		
No vehicle available	3,375	14.7%
1 vehicle available	1,939	8.5%
2 vehicles available	194	0.8%
3 vehicles available	70	0.3%
4 vehicles available	13	0.1%
5 or more vehicles available	30	0.1%
Renter occupied		
No vehicle available	13,212	57.7%
1 vehicle available	3,585	15.7%
2 vehicles available	418	1.8%
3 vehicles available	65	0.3%
4 vehicles available	0	0.0%
5 or more vehicles available	0	0.0%

Source: U.S. Census Bureau, 2005-2009 American Community Survey

¹ See *Walkscore Maps* for more details.

51 Chambers Street

Tribeca, New York

Favorite

Map

Apartment Search

Walk Score
100

Walker's Paradise

Daily errands do not require a car.

Transit Score
100

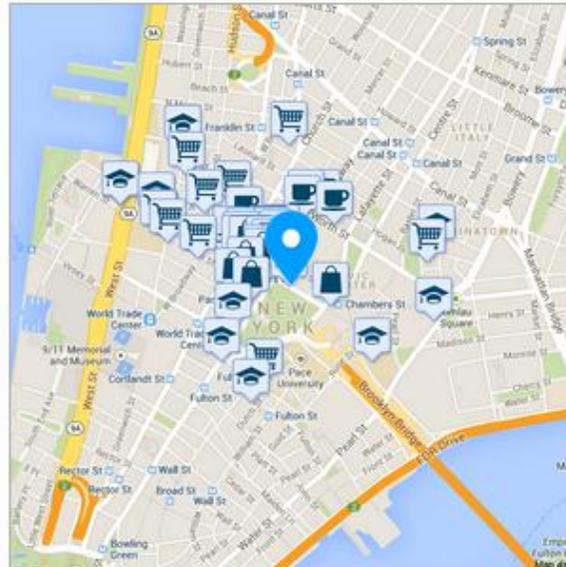
Rider's Paradise

World-class public transportation.

Bike Score
82

Very Bikeable

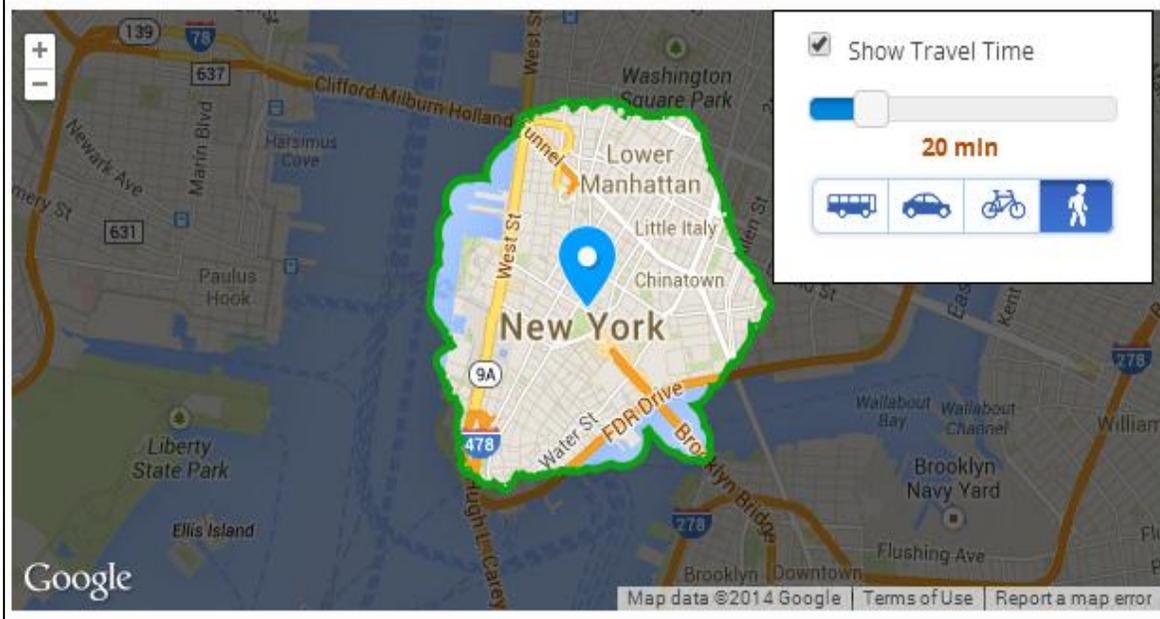
Flat as a pancake, excellent bike lanes.



www.walkscore.com

Travel Time Map

Explore how far you can travel by car, bus, bike and foot from 51 Chambers Street.



Bike Lanes

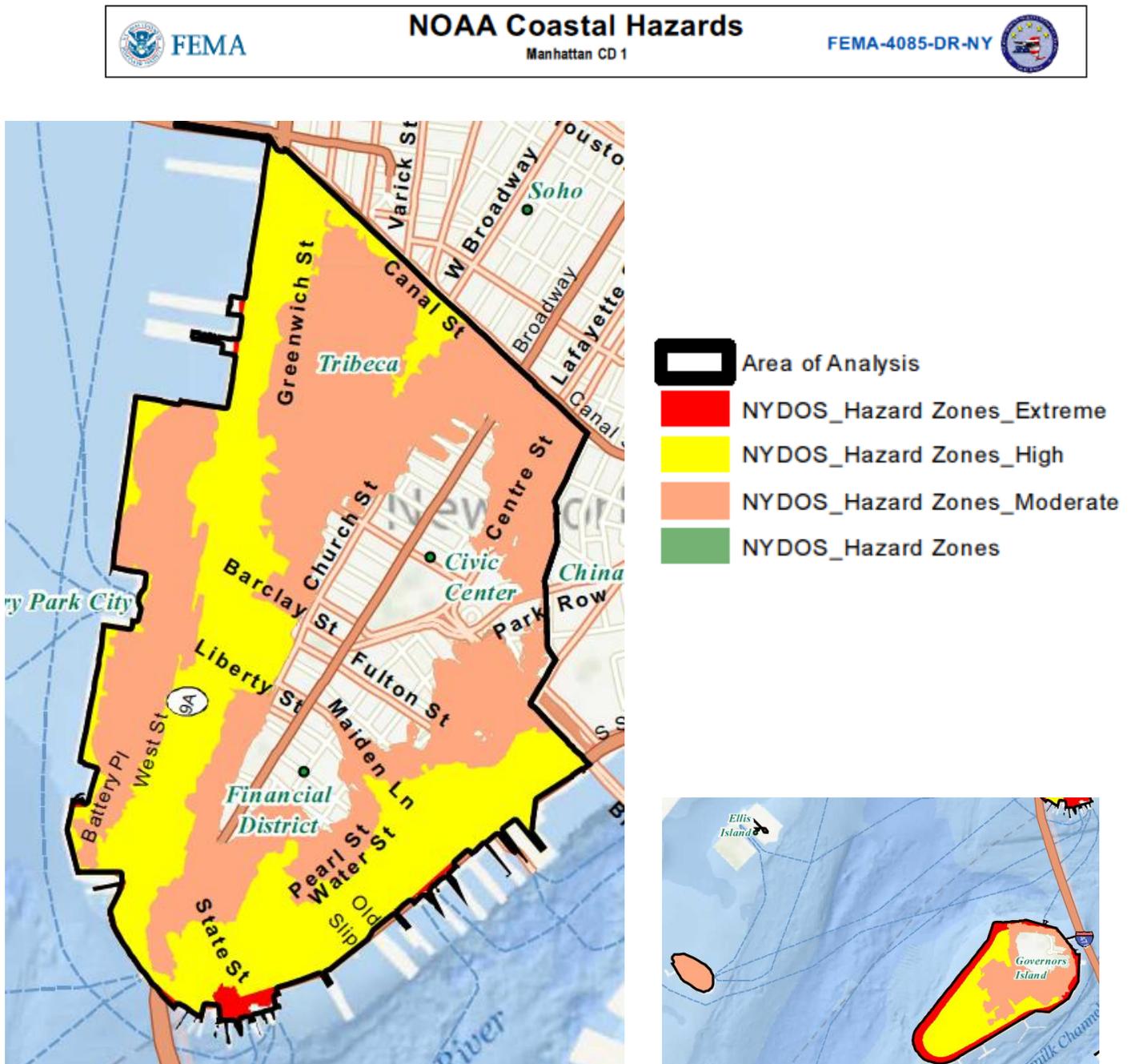
Please note that a large portion of the bike lanes in CD1 are on the outside perimeter along the waterfront, and that there are very few blocks with bike lanes in the heart of the district. Also, compared to neighborhoods north, there are few bike lanes in the core as can be seen by the New York City Department of Transportation 2014 Bike Map below.



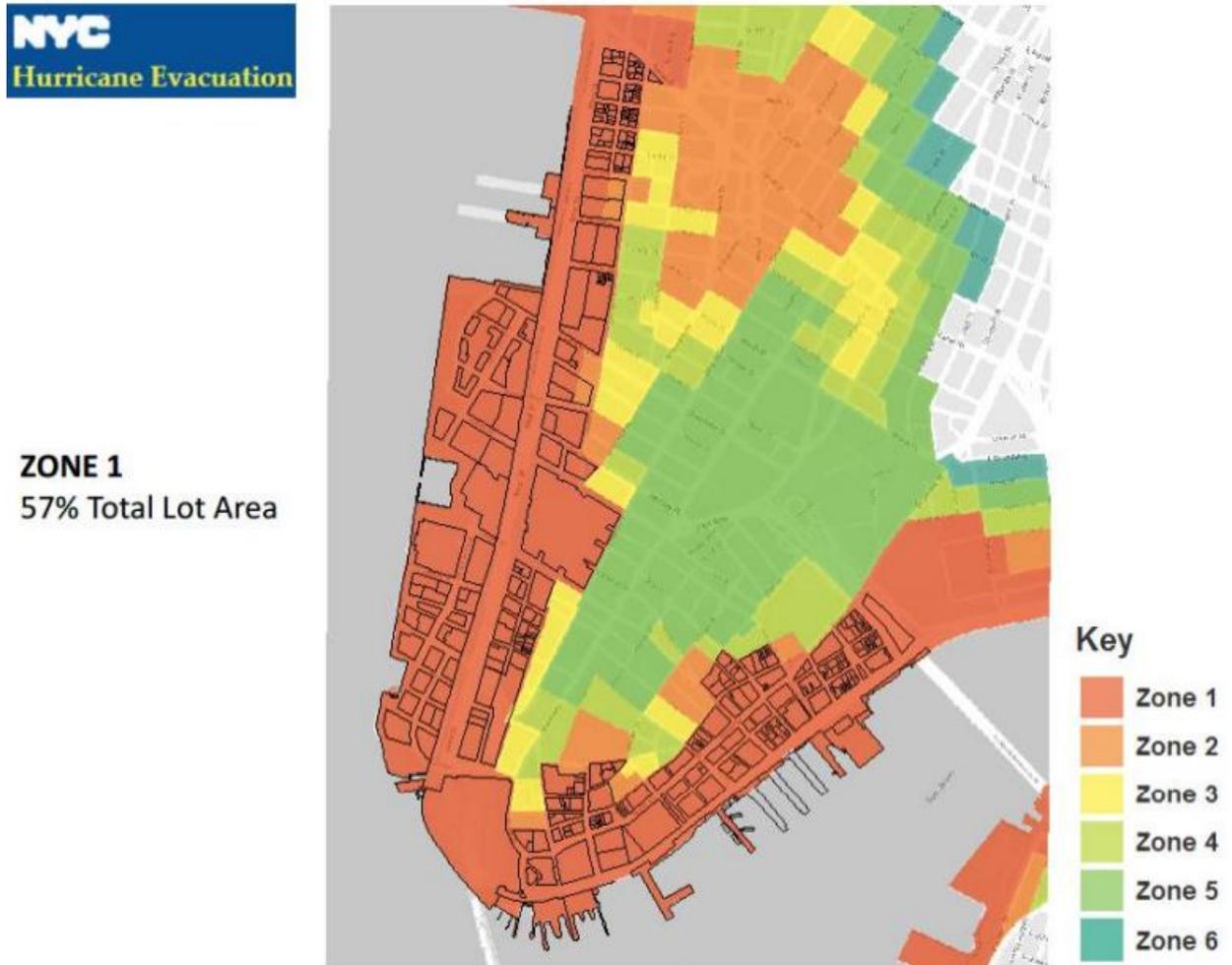
[NYC DOT 2014 Bike Map](#)

Challenges

Despite these achievements, CD1 still has a long way to go in order to achieve greater resiliency and sustainability. Much of the district lies within a flood zone but is not adequately protected from the risk of flood damage. Below is a map showing the extent of coastal hazards within CD1:



In June 2013, the New York City Hurricane Evacuation Zones were changed from zones A, B and C to zones 1-6. Community Board 1 conducted an analysis to determine the total lot area in each of the new evacuation zones. The analysis found that the majority of CD1 lot area, 57%, was located in the most vulnerable area, zone 1. The map below outlines the lot area located in zone 1, and the table shows the percentage of lot area in each zone.



[Community Board 1 Evacuation Zone/Lot Area Analysis](#)

EVACUATION ZONE	PERCENTAGE
Zone 1	57%
Zone 2	8%
Zone 3	8%
Zone 4	7%
Zone 5	20%
Zone 6	0%

Dirty Fuel Use in CD1

There are some buildings within the district that rely on heavy oils for heat. The emissions from these heavy oils are considered pollutants, a contributor to negative health effects, such as higher rates of asthma in a community.

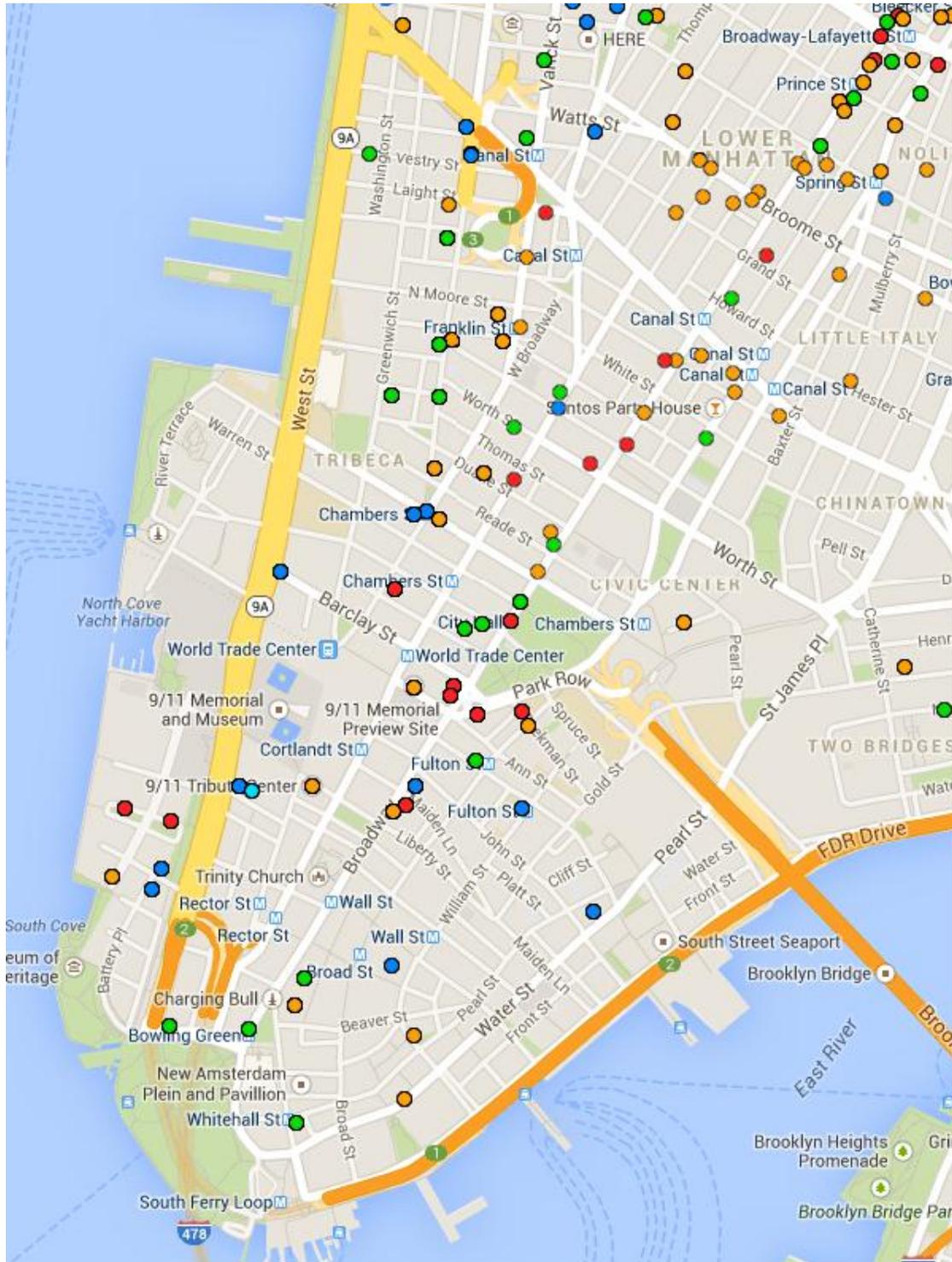
These heavy (or “dirty”) heating oils, the most common of which are No. 6 and No. 4 oils, may contain sulfur, nickel and other pollutants, and are very difficult to burn wholly. The residual soot spews out of chimneys and clogs hot water boilers. The partial success in eliminating the use of oil No. 6 has helped to alleviate the problem. In 2013 the Mayor's office announced that sulfur dioxide levels and soot pollution had dropped and that New York City had experienced its best air quality in more than 50 years as a result of the conversion from dirty heating oil to other energy sources

Depicted on the following page are the commercial, residential, and mixed use buildings that still burn dirty heating oils in CD1 (notated by red and orange points), as well as buildings that use cleaner alternatives (notated by green, blue, and teal points). The summary table below shows that significant progress has been made with 44% of the buildings that used dirty heating oil converted to ultra-low sulfur 2 oil, natural gas and steam. However, 13 buildings still burn No. 6 oil and 26 buildings still burn No. 4 oil, totaling 39 buildings still burning dirty oil.

FUEL TYPE	No. of Buildings	%
No. 6 Oil	13	19
No. 4 Oil	26	37
Conversion to Ultra-Low Sulfur 2 Oil	18	26
Conversion to Natural Gas	12	17
Conversion to Steam	1	1
Total	70	

As of August 2014. Source: NYC Clean Heat Database

FUEL USAGE BY TYPE IN MANCD1



nycleanheat.org/spot-the-soot

Legend

- | | | | |
|---------------------------------------|---|--------------------------------------|--|
| ● | <input checked="" type="checkbox"/> No. 6 Oil | ● | <input checked="" type="checkbox"/> Conversion to Ultra-Low Sulfur 2 Oil |
| ● | <input checked="" type="checkbox"/> No. 4 Oil | ● | <input checked="" type="checkbox"/> Conversion to Natural Gas |
| | | ● | <input checked="" type="checkbox"/> Conversion to Steam |

The residential buildings within the district generally use cleaner sources of energy for heating, with 73.6% of the district’s occupied housing units using either electricity or utility gas as a means of energy:

	2005-2009 ACS Estimate	Percent	MOE(±)	Reliability
OCCUPIED HOUSING UNITS BY HOUSE HEATING FUEL				
Total	22,901	100.0%	693	■■■
Utility gas	6,715	29.3%	523	■■■
Bottled, tank, or LP gas	146	0.6%	71	■■
Electricity	10,139	44.3%	617	■■■
Fuel oil, kerosene, etc.	4,761	20.8%	517	■■■
Coal or coke	0	0.0%	0	
Wood	23	0.1%	29	■
Solar energy	69	0.3%	54	■
Other fuel	584	2.6%	157	■■
No fuel used	463	2.0%	184	■■

Source: U.S. Census Bureau, 2005-2009 American Community Survey

Reliability: ■■■ high ■■■ medium ■ low

Spot the Soot

To find out if what source of energy your building uses for heat, visit:

www.nycleanheat.org/spot-the-soot

The map is part of the [NYC Clean Heat](http://www.nycleanheat.org) website, which provides information on the health impacts of burning heavy oil and the benefits of converting to cleaner heating fuels. The site also includes resources for building owners including information on technical assistance, financing, incentives, locating qualified professionals, and a step-by-step guide on how to convert to the cleanest fuels.

Although there are several incentives and rebates that a building may be eligible for when converting to cleaner fuels and additional incentives for incorporating energy efficiency measures at the same time, improving incentives and strengthening outreach can help in speeding the City’s transition from heavy, dirty sources of heat.

Green Buildings & Spaces Inventory

As of September 2014, there are at least 52 LEED certified (26) and/or Energy Star (26) rated commercial, residential, civic, or mixed use spaces within the district. In addition, there are 8 major green spaces that are pending. This number is significant considering the size and environmental impact of many of the spaces in the district which tend to be large and dense.

LEED Certification

As defined by the United States Green Building Council, LEED is a green building certification program that recognizes best-in-class building strategies and practices.

Buildings can qualify for four levels of certification:

- Certified: 40–49 points
- Silver: 50–59 points
- Gold: 60–79 points
- Platinum: 80 points and above

There are nine components that factor into the green building strategies and practices:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Indoor Environmental Quality
- Location and Linkages
- Innovation in Design
- Materials and Resources
- Regional Priority
- Awareness and Education

Energy Star Rating:

An Energy Star Rating is generated by scoring a building's attributes, such as its square footage and weekly operating hours relative to its monthly energy consumption. This process is known as "benchmarking" and reveals how a building's energy consumption compares to that of other similar buildings of the same space type, based on a national average. Earning a rating of 75 or above (on a scale of 1-100) is the first step towards achieving the Energy Star for a building. Energy Star performance ratings have been incorporated into some green buildings standards, such as LEED for new and existing buildings.

Below is the inventory and map of Green Spaces within CD1. The buildings are broken down by use (type), certification and neighborhood.² This inventory was built off of the Downtown Alliance's *Lower Manhattan Green Real Estate Inventory & Pipeline*.³

GREEN SPACES IN COMMUNITY DISTRICT 1				
Address	Certification/Rating	Neighborhood	Type	Source
70 Little West Street	LEED Platinum	BPC	Residential	NYSERDA, ADNY
20 River Terrace	LEED Platinum	BPC	Residential	NYSERDA, ADNY
211 North End Ave	LEED Platinum	BPC	Residential	NYSERDA, ADNY
7 World Trade Center	LEED Platinum	BPC	Commercial	NYSERDA, ADNY
77 Battery Place	LEED Platinum	BPC	Other	NYSERDA, ADNY
6 River Terrace	LEED Platinum	BPC	Commercial	NYSERDA, ADNY
200 West Street	LEED Gold	Tribeca	Commercial	NYSERDA, ADNY
One World Financial Center	LEED Silver	FD	Commercial	NYSERDA, ADNY
102-104 North End Ave	LEED Gold	BPC	Commercial	NYSERDA, ADNY
One River Terrace	LEED Gold	FD	Residential	NYSERDA, ADNY
30 West Street	LEED Gold	Tribeca	Residential	NYSERDA, ADNY
325 North End Avenue	LEED Gold	BPC	Residential	NYSERDA, ADNY
77 Water Street	LEED Gold	SSS	Commercial	NYSERDA, ADNY
111 Wall Street	LEED Gold	FD	Commercial	NYSERDA, ADNY
10 River Terrace	LEED Gold	BPC	Commercial	NYSERDA, ADNY
One River Terrace	LEED Gold	BPC	Library	NYSERDA, ADNY
125 Broad Street	LEED Silver	FD	Commercial	NYSERDA, ADNY
55 Exchange Place	LEED Silver	FD	Commercial	NYSERDA, ADNY
One Wall Street	LEED Silver	FD	Commercial	NYSERDA, ADNY
2 Rector Street	LEED Silver	FD	Commercial	NYSERDA, ADNY
100 Broadway	LEED Silver	FD	Commercial	NYSERDA, ADNY
120 Broadway	LEED Silver	FD	Commercial	NYSERDA, ADNY
199 Water Street	LEED Silver	SSS	Commercial	NYSERDA, ADNY
125 Maiden Lane	LEED Silver	SSS	Commercial	NYSERDA, ADNY
100 William Street	LEED	FD	Retail	NYSERDA, ADNY
60 Wall Street	LEED EB 2.0	FD	Commercial	NYSERDA, ADNY
250 Greenwich Street	Energy Star	FD	Commercial	NYSERDA, ADNY
2 Broadway	Energy Star	FD	Commercial	NYSERDA, ADNY
200 Liberty	Energy Star	FD	Commercial	NYSERDA, ADNY
40 Wall Street	Energy Star	FD	Commercial	NYSERDA, ADNY
90 Church Street	Energy Star	Tribeca	Commercial	NYSERDA, ADNY
101 Barclay Street	Energy Star	Tribeca	Commercial	NYSERDA, ADNY
115 Broad Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
100 Church Street	Energy Star	Tribeca	Commercial	Energy Star, NYSERDA

² <http://www.nyserda.ny.gov/>

³ <http://www.downtownny.com/programs/going-green-downtown/green-buildings>

180 Maiden Lane	Energy Star	SSS	Commercial	Energy Star, NYSERDA
14 Wall Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
60 Broad Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
195 Broadway	Energy Star	Tribeca	Commercial	Energy Star, NYSERDA
61 Broadway	Energy Star	Tribeca	Commercial	Energy Star, NYSERDA
120 Wall Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
33 Maiden Lane	Energy Star	FD	Commercial	Energy Star, NYSERDA
20 Broad Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
39 Broadway	Energy Star	FD	Commercial	Energy Star, NYSERDA
90 Broad Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
30 Broad Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
55 Broadway	Energy Star	FD	Commercial	Energy Star, NYSERDA
29 Broad Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
500 Pearl Street	Energy Star	CC	Civic	Energy Star, NYSERDA
290 Broadway	Energy Star	CC	Civic	Energy Star, NYSERDA
One Bowling Green	Energy Star	FD	Civic	Energy Star, NYSERDA
17 State Street	Energy Star	FD	Commercial	Energy Star, NYSERDA
20 Vesey Street	Energy Star	SCC	Commercial	Energy Star, NYSERDA
Total Green Spaces				52

PENDING GREEN SPACES				
MTA Fulton Transit Center	LEED Silver	FD	Commercial/Transportation	MTA
9/11 Memorial & Museum	LEED Gold	FD	Museum/Plaza	ADNY
1 World Trade Center	LEED Gold	FD	Commercial	PANYNJ
4 World Trade Center	LEED Gold	FD	Commercial	PANYNJ
3 World Trade Center	LEED Gold	FD	Commercial	PANYNJ
World Trade Center Vehicular Security Center	LEED	FD	Commercial/Parking	PANYNJ
World Trade Center Calatrava Transit Hub	LEED	FD	Transportation	PANYNJ
30 Park Place/99 Church Street	LEED Silver	FD	Commercial/Residential	Silverstein Properties Inc.
Total Anticipated Green Spaces				8

GREEN SPACES IN MN CD1

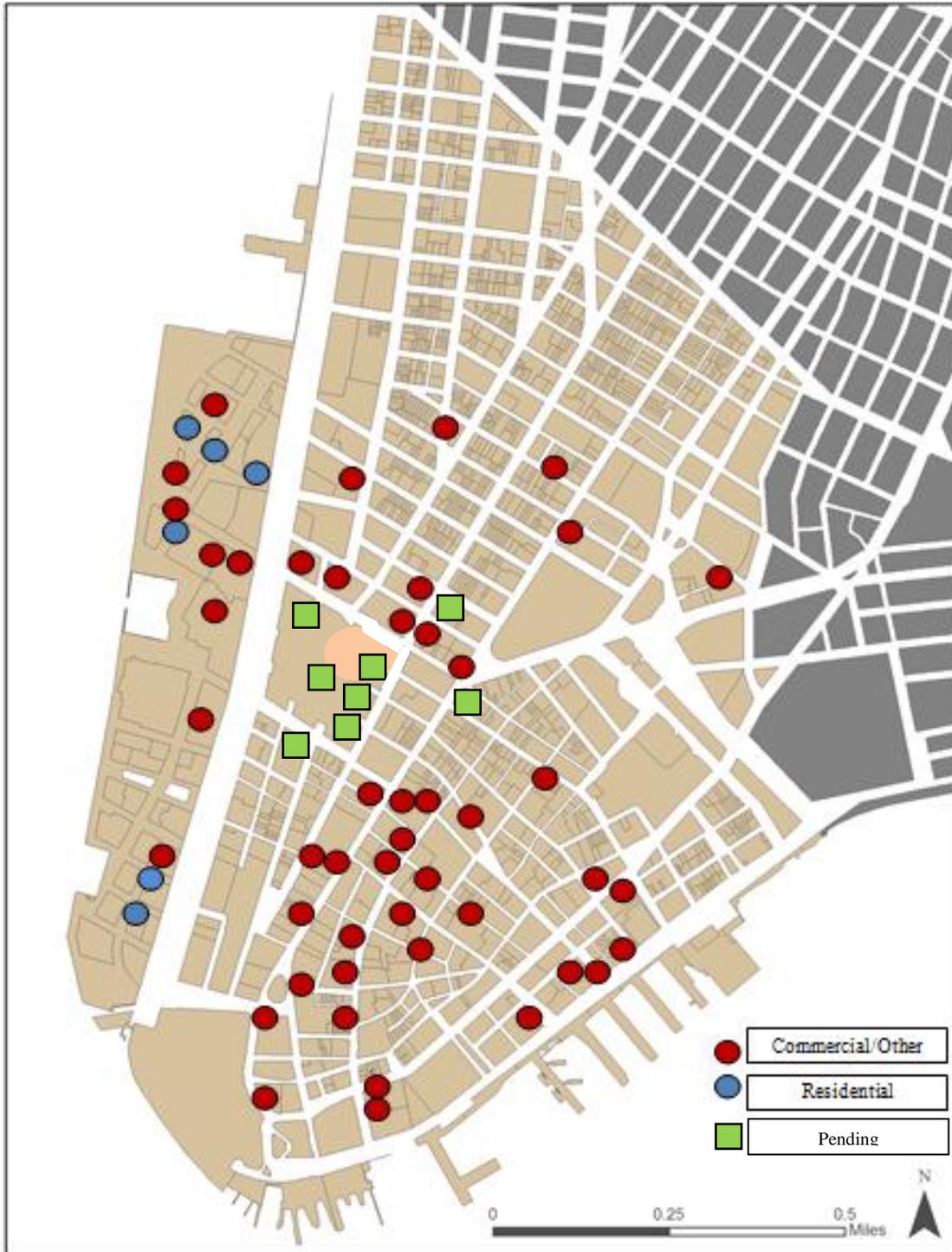


Julien P. Schmitz & Diana Switaj 2014

Sources: NYSERDA, Energy Star, Downtown Alliance

Green spaces include spaces with LEED certifications and/or Energy Star ratings as of September 2014

GREEN SPACES IN MN CD1 BY USE



Julien P. Schmitz & Diana Switaj 2014

Sources: NYSERDA, Energy Star, Downtown Alliance

Green spaces include spaces with LEED certifications and/or Energy Star ratings as of September 2014



110 William Street



70 Little West Street



30 Broad Street



One Bowling Green



One Wall Street



One River Terrace

All Photos by Noel Jackson

Additional Information

Initiatives

New York Rising:

The State-funded New York Rising Lower Manhattan Planning Committee released the Final Community Reconstruction Plan for Lower Manhattan in May 2014. Through the Plan, the Lower Manhattan community aims to improve the capacity and readiness of all community members to prepare for, respond to, and quickly recover from severe weather-related events; to address needs currently unmet by existing rebuilding and resiliency efforts; and to support the vital and diverse character and history of Lower Manhattan. It will be funded by \$25 million in HUD CDBG-DR funds to implement the Plan. The components are a Community Emergency Preparedness Program, Community Resource Center, Residential Resiliency and Education Program, Small Business Resiliency and Education Program, Stormwater Capture and Retention Study, Wetland Creation and East River Park, Berming and Deployable Walls at Battery Park, Targeted Flood Protection for Lower West Street, and Coastal protection study for east and west side. The Governor's Office of Storm Recovery is responsible for implementation.

<http://stormrecovery.ny.gov/nyrcr/community/lower-manhattan>

Rebuild by Design:

Founded as a response to Superstorm Sandy's devastation in the region, Rebuild by Design is dedicated to create innovative community- and policy-based solutions to protect U.S. cities that are most vulnerable to increasingly intense weather events and future uncertainties. Rebuild by Design's aim has been to connect the world's most talented researchers and designers with the Sandy-affected area's active businesses, policymakers and local groups to better understand how to redevelop their communities in environmentally-and economically-healthier ways and to be better prepared:

<http://www.rebuildbydesign.org/>

The BIG U proposal that arose out of Rebuild by Design contains plans for resiliency infrastructure in "Compartment 3", from the Brooklyn Bridge to the Battery in CD1. This proposal includes "Berms in the Battery" at the southern tip of Manhattan, "strategically located so as to protect the ducts of the infrastructure below and create a continuous protective upland landscape" as well as flood protection in the Financial District which would help protect against massive potential damages, including critical infrastructure underneath. The proposal would also help to protect the historic South Street Seaport area. Currently, there are no plans or funding for implementation of future BIG U phases past phase 1 in the Lower East Side. In June 2014, CB1 passed a resolution urging HUD to allocate dedicated funding for both study and implementation of the "Compartment 3" portion of the BIG U proposal, which would contribute to the overall hardening of Lower Manhattan and assist in bridging the gap between short-term measures such as rapidly deployable flood barriers, and long-term strategies like the Lower Manhattan Multi-Purpose Levee.

<http://www.rebuildbydesign.org/project/the-big-u/>

Southern Manhattan Multi-Purpose Levee:

The NYC EDC issued a Southern Manhattan Coastal Protection Study to evaluate the feasibility of a Multi-Purpose Levee to protect Southern Manhattan from the risk of coastal flooding. This proposal (formerly called Seaport City) will consist of major construction projects to support the coast of the levee and which will impact both Community Boards 1 and 3. There will be an extensive community review process. CB1 is concerned that this is a long-term project and little has been implemented yet to protect billions of dollars of assets in the short term.

<http://www.nycedc.com/resource/southern-manhattan-coastal-protection-study>

Reports

American Institute of Architects Post-Sandy Initiative:

The New York Chapter of the American Institute of Architects issued a report detailing options and opportunities for rebuilding efforts and for preparing the city for future storms. The “Post-Sandy Initiative” report, *Building Better, Building Smarter: Opportunities for Design and Development*, examines the storm’s effects on buildings, neighborhoods and the region and offers short, medium, and long term steps to build back better and smarter.

http://postsandyinitiative.org/wp-content/uploads/2013/05/Post-Sandy-Report_Full.pdf

American Planning Association: Post Sandy Testimony to New York State Senate

http://nyplanning.org/docs/APA-NYM_post-Sandy_Testimony_to_NYS_Senate_011713.pdf

Municipal Arts Society Greening Historic Buildings Manual

<http://www.mas.org/preservation/greenmanual/>

New York State 2100 Commission

This report examines and evaluates key vulnerabilities in the State’s critical infrastructure systems, and to recommend actions that should be taken to strengthen and improve the resilience of those systems. <http://www.governor.ny.gov/assets/documents/NYS2100.pdf>

Social-Ecological Resilience to Coastal Disasters

Resilient social-ecological systems incorporate diverse mechanisms for living with, and learning from, change and unexpected shocks. Disaster management requires multilevel governance systems that can enhance the capacity to cope with uncertainty and surprise by mobilizing diverse sources of resilience: <http://www.sciencemag.org/content/309/5737/1036.full>

Guidelines

Sustainable Design Guidelines

Outlines the guidelines identified by the Lower Manhattan Development Corporation for a more sustainable and comprehensive redevelopment of the WTC site:

http://www.renewnyc.com/content/pdfs/Memorial_Sustainable_Design_Guidelines.pdf

Renew New York City Implementation Matrix

http://www.renewnyc.com/content/pdfs/reference_manual/006_Implementation_Matrix.pdf

Battery Park City Green Guidelines

In January 2000, the Battery Park City Authority published the Residential Environmental Guidelines, to establish a process for the creation of environmentally responsible residential buildings, appreciably ahead of current standards and practices for development. These guidelines were responsible for the construction of the first "green" residential tower in the United States.

<http://www.batteryparkcity.org/Design/Green-Guidelines.php>

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