

The background of the entire page is a map of Brownsville, New York. The map is rendered in a blue and white color scheme, showing a dense grid of streets and building footprints. A specific area in the center of the map is outlined with a dashed red line, indicating the focus of the study. Within and around this outlined area, there are several red circular icons with white Wi-Fi symbols, representing digital access points. A white rectangular box is superimposed over the upper-middle portion of the map, containing the title and subtitle text.

BROWNSVILLE'S DIGITAL ACCESS NEEDS

**Finding from the community need assessment
for the BklynConnect pilot project.**

BROWNSVILLE'S DIGITAL ACCESS NEEDS

CONTENTS

- 3** Introduction
- 4** Broadband in the US
- 5** Methodology
- Brownsville
 - 6** Neighborhood Snapshot
 - 8** Broadband Access
 - 10** Wi-Fi Locations
 - 12** Existing Internet Access Initiatives
 - 14** Library Services
- 16** Neighborhood Opportunities

VERSION 1.0 - 2017

PROJECT CREDITS

BklynConnect documents a project undertaken by the Brooklyn Public Library, and TYTHEdesign. This project is made possible in part by the [Institute of Museum and Library Services \(IMLS\)](#) National Leadership Planning Grant.

Facilitators and Researchers: TYTHEdesign with the support of Project Urbanista and Julia Marden

Report prepared and designed by: TYTHEdesign

Brooklyn Public Library (BPL) is committed to serving a diverse community in Brooklyn. Through BklynConnect, BPL aims to address the needs of the community in a time where technological innovations are drastically changing the role of libraries. To cater to the evolving needs of the community, BPL is exploring new models and technologies for engaging with patrons. One opportunity is to provide public Wi-Fi access outside the four walls of the library, utilizing mesh networks, point-to-point networks, or portable hotspots.

The overall purpose of BklynConnect is to uncover neighborhood broadband needs collectively, the opportunities for programming/services such as access to information, education digital literacy and inclusion, to collaborate with fellows and to provide a playbook to share strategies and document the research process.

This document is the result of many conversations, workshops with community partners, neighborhood surveys, data research, tabling experience and fieldwork. The report can be used as:

- a guide to understanding digital access and literacy in Brownsville
- a shared resource for existing initiatives and Wi-Fi access points in the neighborhood
- a comprehensive overview of relevant data and community insight
- a starting point for future public Wi-Fi initiatives or education services.

Life is becoming increasingly digital. Whereas we used to access the internet for email or browsing, it has now become an important component of everyday life. Fundamental services such as applying for government benefits, accessing education and applying to jobs are increasingly moving online making access to Wi-Fi a necessity. However, having Wi-Fi at home is expensive, and not everyone is comfortable with the technology. Many cities have made bridging this digital divide a top priority; the NYC Mayor's Office, under the OneNYC plan, aims to give every resident affordable, reliable and good quality broadband by 2025.

BPL launched BklynConnect with a grant from the Institute of Museum and Library Services (IMLS). BPL will pilot a small scale public Wi-Fi access point in one Brooklyn neighborhood through a process of co-creation, while simultaneously using the opportunity to learn about the neighborhood needs and existing assets and initiatives. The following report details what we found out during our work and research with the neighborhood of Brownsville.

WHO HAS ACCESS ACROSS THE USA?

Checking your email, going on Facebook, searching for job listings, sending in applications, playing an online game, seeing the latest music videos, filing taxes, applying for housing, using e-government, finding directions, and just surfing the internet. Access to Wi-Fi, and the digital literacy needed to navigate the internet, has become a critical component to social inclusion.

According to Pew Research Center, **broadband access, or access to high-speed Internet, in American households has plateaued at 67%¹**. While 76% of households in Brooklyn had home broadband access in 2014², many families still struggle with low-quality service, service cutoffs, or old technology³.

Approximately 33% of Americans lack broadband access at home, and the majority of those people state cost as the most important reason. An increasing number of Americans are now smartphone-only, meaning they don't access the internet via a home computer Wi-Fi connection, but do have a data plan. This can be challenging due to data ceilings or limited usability of their devices⁴.

So where would you go to find Wi-Fi elsewhere? Some people go to local community centers; others go to the library or find a local café with Wi-Fi. According to Mayor de Blasio, every New Yorker should live within an eighth of a mile to a place that provides free Public Wi-Fi⁵.

Let's clarify some digital definitions so we are on the same page for the remainder of this document.

Broadband Access: This term refers to having high speed internet in the home, and specifically, the ability to transfer large files and 'stream' data. This is when you connect to the internet using a physical cable, be it a telephone line (DSL) or a cable line (cable), or a fiber optic line (FIOS). It is typical for Broadband in the home to include a Wi-Fi network. But broadband does not include Wi-Fi through a phone connection.

Digital Divide: This refers to the divide between people that do have access and people that don't have access to broadband. It often is the already vulnerable populations that lack access to broadband such as lower income populations or homeless populations. Broadband access is particularly important for locating and applying for opportunities that support family well-being and mobility, including jobs, access to health care, and poverty alleviation programs⁶. Once the access to the computer has been established, the digital divide is focused more on digital computing such as coding skills.

Digital Literacy: Not everyone is comfortable with technology. Digital literacy refers to the ability to not only connect to the internet but to also have the skills, knowledge, and familiarity in using the technology (internet and computer). Populations that are vulnerable to digital illiteracy include elderly populations and low income households⁷. To take it one step further, Pew (2017) refers to Digital Readiness as being able to use Digital resources for learning purposes, such as adult education⁸.

¹Horrigan, John B., and Maeve Duggan. "Home broadband 2015." Pew Research Center, December 21 (2015): 4.

² Mayors Office of Operations. Social indicators reports. New York City. (2016).

³ Rideout, Victoria, and Vikki S. Katz. "Opportunity for All? Technology and Learning in Lower-Income Families." In Joan Ganz Cooney Center at Sesame Workshop. Joan Ganz Cooney Center at Sesame Workshop. 1900 Broadway, New York, NY 10023, 2016.

⁴ Horrigan and Duggan, "Home broadband 2015".

⁵ Mayors Office of Operations, "Social indicators reports"

^{6,7} Rideout and Katz, "Opportunity for All?"

⁸ Horrigan, John B. "Digital Readiness Gaps." Pew Research Center (2016).

HOW DID WE GO ABOUT THIS RESEARCH?

We used a wide range of research methodologies to investigate three Brooklyn neighborhoods: Bedford Stuyvesant, East New York, and Brownsville. We conducted neighborhood need assessments using traditional research methods such as demographic data research but also employed human-centered design methodologies such as community partner workshops, tabling activities, and collective mapping. Throughout the research, transparency, co-creation and broad usability have been key drivers.

Every research process starts with a question or a goal, so what was it exactly that we are trying to find out? First, we wanted to understand neighborhood context, data, and behavior in relationship to existing Wi-Fi and provide a relevant overview of the state of broadband access. Second, we wanted to provide BPL with some considerations to inform their selection of a pilot neighborhood.

BPL, TYTHEdesign and local library staff co-created the following criteria and research goals:

Assessing Neighborhood demand for free Wi-Fi

- Personal physical access to the internet
- Existing Wi-Fi access points in neighborhood
- Digital literacy in the neighborhood

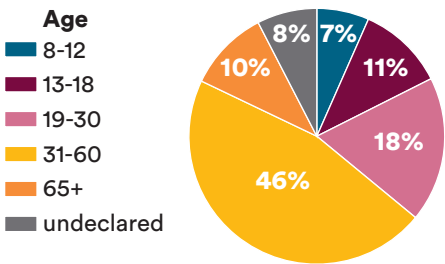
Researching existing neighborhood context and social capital

- The demographics of the neighborhood
- The potential for collaboration with existing social capital (including community based organizations, government agencies, etc)
- Existing neighborhood internet access initiatives

In the spirit of co-creation, transparency and broad usability, our aim is to present our findings with neighborhood organizations, local service providers, local library branches and all other interested parties, ensuring that the neighborhood need assessment is valuable outside of the pilot project.

The need assessment was subject to a couple of limitations. First, working with a short time frame limits the breadth of the research. Also, although the collected social capital and Wi-Fi access points are what we identified during the research period, it doesn't necessarily mean that it is comprehensive; we might have missed or excluded some. Finally, we have predominantly connected to community members that were already interacted with the Brooklyn Public Library, which leads to pre-existing positive bias or buy-in and fewer counter insights.

620 **Surveys Collected**
across all three neighborhoods



260 **Brownsville Community Surveys Collected**

10 **Tabling Experiences**
Estimated at total of 26 hours

27 **Wi-Fi Hotspots Tested**
Estimated at total of 9 hours

155 **Patrons Observed**
on Library Computers

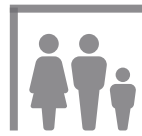
27 **Library Staff Surveyed**

66 **Participants attended the four community workshops**
17 Brownsville stakeholders

WHAT NUMBERS MATTER? NEIGHBORHOOD SNAPSHOT

Assessing Brownsville's strengths, challenges, needs, and assets through the numbers is an essential first step to better understand its existing neighborhood dynamics. The following two pages provide a snapshot of some of Brownsville's relevant demographics, existing assets and economic factors that impact the neighborhood need for free public Wi-Fi service.

Population⁹
127,468



Households¹⁰
46,351

20% are NYCHA households

Highlights¹⁶

33.7 yrs old

is the median age of the residents, which is slightly lower than the Brooklyn average of 34.7.

74 yrs old

is the average life expectancy of people in the neighborhood¹⁷.

24.5% of people speak other languages than English at home, with the largest percentage being Spanish speakers.

90% of the foreign-born population's place of birth is Latin America.

16.4% is the home-ownership rate of Brownsville, which more than 10% lower than the Brooklyn average of 28.7%.

70% of the employed residents use public transportation to get to work.

\$870 is the median rent, which is lower than the Brooklyn average of \$1,300.

20.2 is the crime rate per 1000 residents in the neighborhood, which is higher than the Brooklyn average 11.6.

Race & Ethnicity¹¹

71% Black

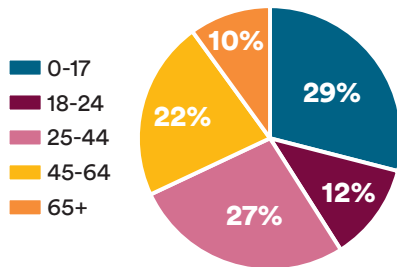
2% White

2% Asian

1% Other

24% Hispanic

Population by age range¹²



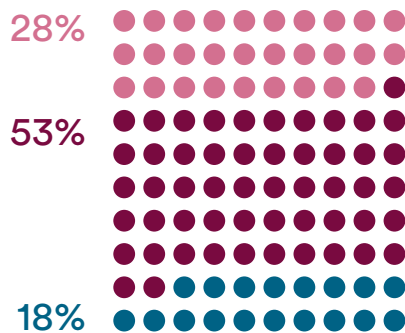
Household Composition¹³

34% are households with children under 18 years

31% are foreign-born, lower than the Brooklyn average of 38%

46% are single mothers

Educational Attainment¹⁴



- Less than high school
- High school graduate / some college
- College graduate

Accessibility¹⁵



100% Residential units within ½ mile of a subway station

86% Residential units within ¼ mile of a park

47 Mean travel time to work (minutes)

^{9,10,11,13,16,18} American Community Census 2015 (1-year estimates)

^{12,14} U.S. Census Bureau Population Estimates, 2013

¹⁵ American Community Census 2015 (1-year estimates), NYC Department of Transportation, NYC Department of Parks and Recreation

¹⁷ King L, Hinterland K, Dragan KL, Driver CR, Harris TG, Gwynn RC, Linos N, Barbot O, Bassett MT. Community Health Profiles 2015, Brooklyn Community District 16: Brownsville; 2015; 40(59):1-16.,

¹⁸ Statement of Community District Needs and Community Board Budget Requests for Fiscal Year (FY) 2018

²⁰ New York City Housing Authority, 2016

²¹ IPUMS-USA, University of Minnesota, NYU Furman Center

²² American Community Census 2015 (1-year estimates) and <https://www.optimum.net>, visited on July 26th, 2017

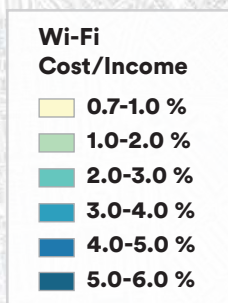
Category	Count	Visual Representation
Food Pantry/Soup Kitchen	31	31 blue squares
Youth Services	26	26 dark blue squares
Community organization & Non Profit	24	24 teal squares
Workforce development	10	10 dark purple squares
Homeless shelters and services	8	8 maroon squares
Senior Center	8	8 pink squares
Community Health Care	8	8 orange squares
NYCHA Community Center	6	6 yellow squares
Firehouse	4	4 grey squares
Local economic development	3	3 light grey squares
Other	3	3 dark grey squares

- Crime
- Affordable Housing
- Health Care Services

about two-fifths of the amount in Brooklyn: \$51,690

Income Level	Percentage
≤\$20,000	37%
\$20,001-40,000	24%
\$40,001-60,000	15%
\$60,001-100,000	16%
\$100,001-250,000	8%
>\$250,000	>1%

For this purpose, we have estimated the monthly cost at ~\$60 per month (\$39.95 (basis)+ \$10.00(modem)+ \$5.00 (installation)+ tax) for the first year. This is based on the available providers in this neighborhood. [Optimum 60Mbps]



WHO LACKS ACCESS TO THE INTERNET?

Let's get down to the question that is at the center of this research: "Who has access to the Internet in the neighborhood?". To understand the need and capacity for a free Wi-Fi service in the neighborhood, it is important to look at all factors including broadband access at home, data plans and ownership of devices as this affects what you use the internet for. The American Community Survey (ACS) from 2014 and 2015 provides some insights about Brownsville.

In Brownsville the main providers are Optimum (cable) and Verizon (DSL), some parts (~33%) of the neighborhood have access to Verizon FIOS, a much faster connection²³.

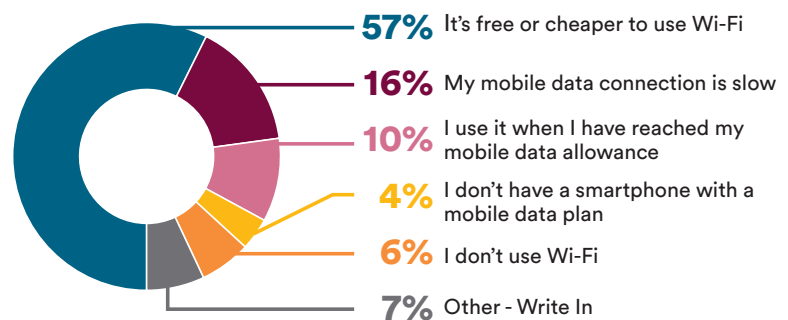
In addition to the information from the ACS it is important to take the residents that don't have broadband at home into consideration. The following information was collected and analyzed through a survey distributed in Bed-Stuy, Brownsville and East New York. A total of 620 surveys were collected. Since there were no large differences between the three neighborhoods, we have decided to compile data for the entire research area.

57.2% Household with broadband access ²⁴
13% lower than the Brooklyn Average: ~70%

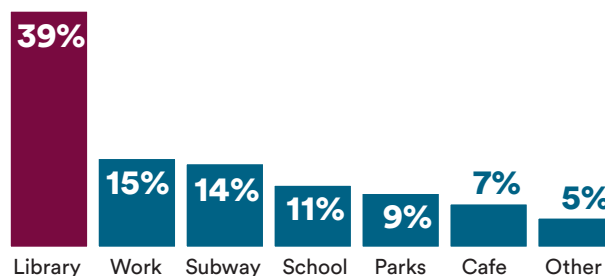
What devices do people own to access the internet? ²⁵

70% Smartphone or handheld computers **71%** Desktop, laptop, or notebook computer

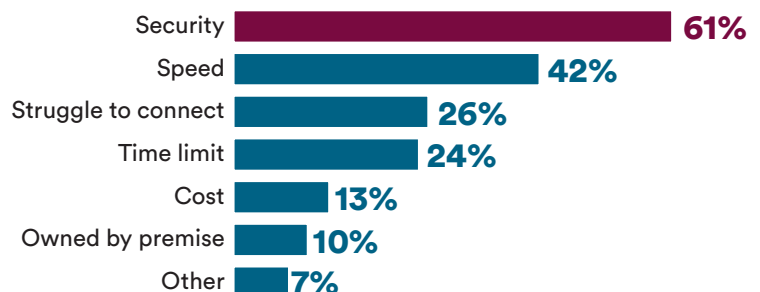
Why do you use Public Wi-Fi?



In the last two months, where did you connect to the internet in your neighborhood?



What concerns do residents have when using public Wi-Fi?



²² <https://broadbandnow.com>, visited on August 29th 2017

^{23,24} American Community Census 2015

²⁵ American Community Census 2015 (1-year estimates)

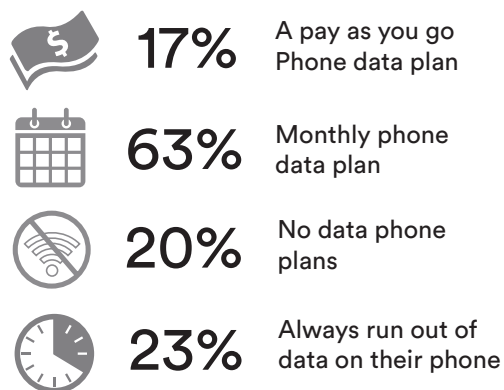
Source: The BklynConnect survey (n=598)

“Do you have Wi-Fi at home? No? Why not?” The Pew Research Center (2015) states that cost is the major reason for households not to have internet at home (33%). Another 10% states that the cost of the computer itself is their main reason for not adopting broadband at home. Other reasons include being able to access the internet elsewhere (10%) and having sufficient access via smartphone (12%). There is also an inequality when it comes to quality of services, some areas are underrepresented by broadband providers, other areas are subject to older technologies. Finally, digital literacy can be a reason for not purchasing broadband access, the older generation are sometimes not tapped into the internet.²⁶

Increasing access to public Wi-Fi would be beneficial to many people, but some population groups might need it more than others. Let's start off with cost as a reason in mind. Pew's research (2015) shows that households that experience low income, unemployment, homelessness or lack of education are more likely to have barriers to Wi-Fi access.²⁷ Furthermore, keeping digital literacy in mind, we also consider older adults (65+) a group of higher need²⁸. Finally, non-English speaking families are considered to have less access to broadband at home²⁹.

Based on the 2014 American Community Survey, 42.8% of the households in the neighborhood do not have broadband access at home. The data does not stipulate who these residents are, but based on the research, the high needs population in Brownsville are the following:

What data plans are people paying for?



^{26,27,29} Horrigan, John B., and Maeve Duggan. “Home broadband 2015.” Pew Research Center, December 21 (2015): 4.

²⁸ Nguyen, Mai Thi, & Emma Boundy. “Big data & smart (equitable) cities.” In Seeing Cities Through Big Data, pp. 517-542. Springer International Publishing, 2017.

LOW INCOME HOUSEHOLDS³⁰

37% households have an **income < \$20,000**
15% lower than the Brooklyn Average: ~22%

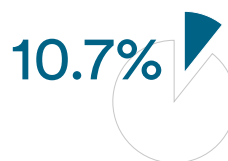
NYCHA HOUSEHOLDS³¹

5.2% of all of Brooklyn's NYCHA developments are in Brownsville.

with seniors **33%**
with children **39%**

9074
21,400 residents

POPULATION 65+³²



~13,600 seniors residents in Brownsville.

26% of those are living below the poverty line.

POPULATION 25+ WITHOUT A HIGH SCHOOL DIPLOMA³³

~32,600 individuals
6.1% higher the Brooklyn average: 19.5%

25.6%

UNEMPLOYMENT RATE³⁴

13.8% ~17,600 individuals
Almost double the Brooklyn average: 7.6%

HOMELESS FAMILIES³⁵



1 in 5 students have experienced homelessness in the last 5 years.

16 Family Shelters
18% of all in Brooklyn

403 Family Units
14% of all in Brooklyn

³⁰ IPUMS-USA, University of Minnesota, NYU Furman Center American Community Census 2015 (1-year estimates)

³¹ New York City Housing Authority, 2016

^{32,33,34} American Community Census 2015

³⁵ NYC Department of Education, unpublished data tabulated by the Institute for Children, Poverty, and Homelessness, NYC Department of Homeless Services, 2016, Institute for Children, Poverty, and Homelessness ICPHusa.org

WHERE CAN YOU ACCESS WI-FI IN BROWNSVILLE?

On this page you find a list of Wi-Fi access points in the neighborhood. There are different ways of accessing the internet outside of the house. We identify three distinct types of Wi-Fi access points:

Public Wi-Fi: this is any Wi-Fi that is accessible to everyone and has no cost associated with it e.g. parks, the library and subway station.

Semi-Public Wi-Fi: These are places that have free access, or sometimes even computer classes, but there can be prerequisites to using the internet such as being a resident or a member e.g. Workforce 1 Centers, NYCHA community centers, Senior centers.

Establishment: These places are open to the public but have a direct or indirect cost affiliated with Wi-Fi e.g. restaurants and coffee places.

We have identified 31 Wi-Fi access points in Brownsville. There are a couple things that stand out. First the lack of subway access, which is due to most of the stations being above ground. Also, there is an concentration of public Wi-Fi at Fulton Street, which is partly due to LinkNYC coming to the neighborhood. Other accumulations are around Rockaway Ave and 98th Street. In contrast, there are some residential pockets that have no identified Wi-Fi spot at all, in the northwest corner of the neighborhood.

Public Wi-Fi

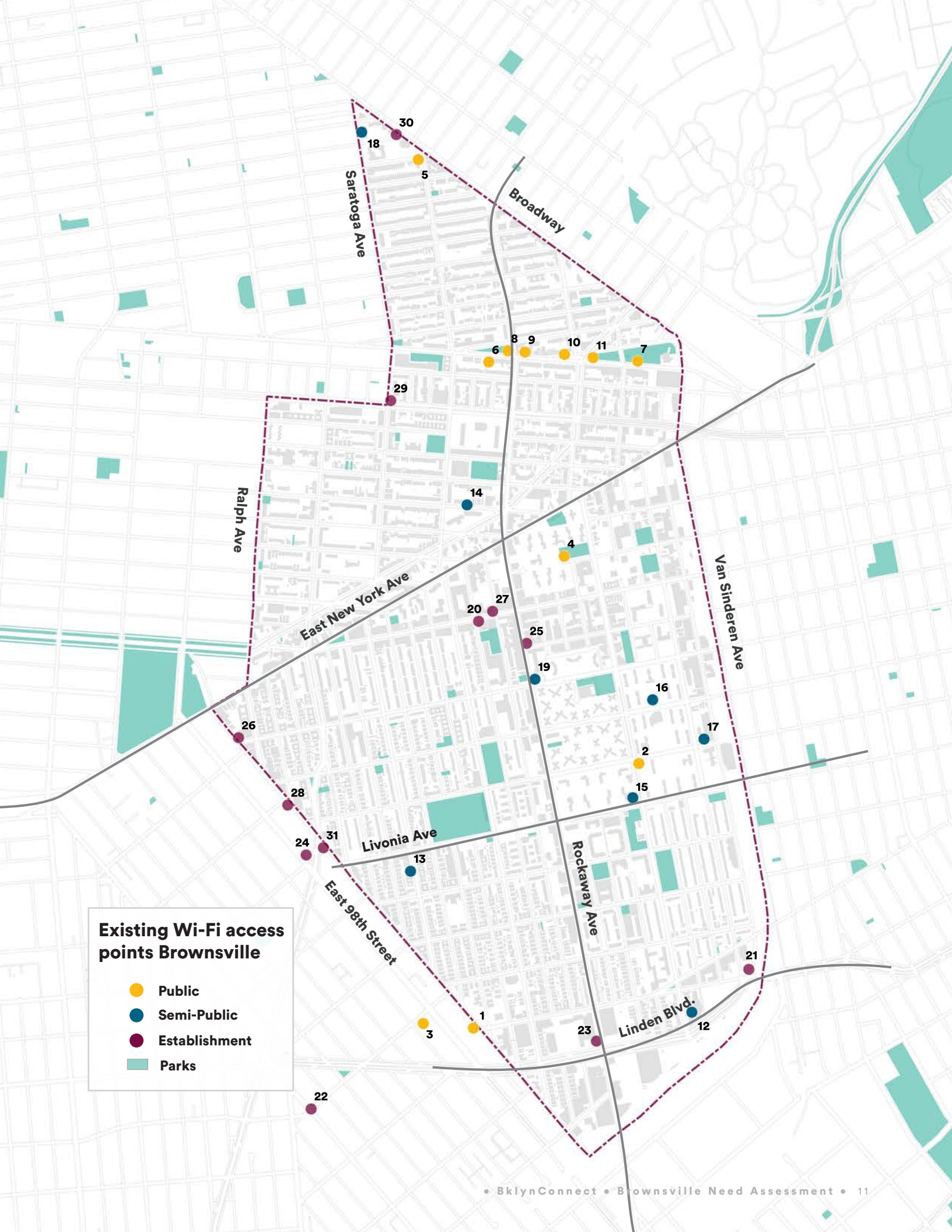
- 1 **Brookdale University Hospital**, 1 Brookdale Plaza Stone
- 2 **Avenue Library**, 581 Mother Gaston Blvd
- 3 **East Flatbush Library**, 9612 Church Ave
- 4 **Brownsville Brooklyn Library**, 61 Glenmore Ave
- 5 **Saratoga Library Branch**, 8 Thomas S Boyland St
- 6 **Rockaway Ave** (subway)
- 7 **Broadway Junction** (subway)
- 8 **LinkNYC** (Fulton St at Rockaway Ave)
- 9 **LinkNYC** (Fulton St at Rockaway Ave)
- 10 **LinkNYC** (Fulton St at Easter Pkwy)
- 11 **LinkNYC** (Fulton St at Easter Pkwy)

Semi-Public Wi-Fi:

- 12 **Brownsville Recreation Center**, 1555 Linden Blvd
- 13 **Urban Strategies Shelter**, 808 Saratoga Ave
- 14 **Rev. R. Brown Senior Center**, 1630 St Marks Ave
- 15 **Tilden Community Center**, 630 Mother Gaston Blvd
- 16 **Van Dyke Community Center**, 330 Powell St
- 17 **Woodson Senior Center**, 460 Dumont Ave
- 18 **Saratoga Community Center**, 940 Hancock St
- 19 **Gregory Jackson Center**, 519 Rockaway Ave

Establishment:

- 20 **MacDonalds**, 1642 Pitkin Ave
- 21 **Burger King**, 1663 Linden Blvd
- 22 **Burger King**, 9006 Church Ave
- 23 **Dunkin Donuts**, 1427 Linden Blvd
- 24 **Dunkin Donuts**, 241-A Rockaway Pkwy
- 25 **Three Black Cats**, 3 Belmont Ave
- 26 **Blendzville**, 5 Sutter Ave
- 27 **KFC**, 1667 Pitkin Ave
- 28 **Crown Fried Chicken**, 6 Sutter Ave
- 29 **Dunkin Donuts**, 1993 Atlantic Ave
- 30 **Dunkin Donuts**, 1610 Bushwick Ave
- 31 **Cricket**, 1621 Pitkin Ave



Existing Wi-Fi access points Brownsville

- Public
- Semi-Public
- Establishment
- Parks

EXISTING INTERNET ACCESS INITIATIVES

The intention of this section is to provide an oversight of already-existing initiatives happening throughout Brownsville, aimed at closing the digital divide. Both the public and private sectors understand that internet service is essential to the city, to a neighborhood's competitiveness, and to civic life.

LinkNYC

As part of the OneNYC initiative, the City committed to bringing every New Yorker affordable, high-speed internet access by 2025. In 2016 LinkNYC kiosks were installed on commercial streets. Each kiosk provides providing free high-speed Wi-Fi, free phone calls, free phone charging, and direct access to 911 and 311. This is an initiative of the New York City Department of Information Technology & Telecommunications (DoITT)

[In Brownsville 4 kiosks installed, along Fulton Street between Rockaway Avenue and Eastern Parkway.](#)

Free subway Wi-Fi

MTA Transit Wireless, is an initiative of the Metropolitan Transportation Authority (MTA) and New York City Transit Authority (NYCTA) to provide free Wi-Fi to New York City subway riders. Currently, all underground stations have Wi-Fi but no timeline has yet been released for the above ground stations.

[In Brownsville 1 station on the A-C line has Wi-Fi; Broadway-Junction.](#)

Free Wi-Fi on Buses

As part of the Metropolitan Transportation Authority (MTA) initiative to improvement of bus services, 2,000 new buses with Wi-Fi and USB charging ports will be added to its fleet in the next five years. By the end of 2017, all express buses (including existing buses) will be retrofitted with Wi-Fi and USB charging ports.

[By mid-October of this year, in Brownsville the B8 and B35 will include Wi-Fi and USB charging ports.](#)

NYCHA Initiatives

NYCHA has deployed several initiatives to support their residents who don't have the financial means to have internet access in their home.

NYCHA Digital Kiosk (Self-service Portal): 24/7 kiosks are located in each NYCHA development; residents can access NYCHA's online services and access the internet.

NYCHA deployed three Digital Vans, a computer-lab on wheels that tours housing developments throughout the city to provide internet access to NYCHA residents. The vans rotates between developments in Brooklyn, [to view the schedule visit the monthly calendar:](#)

<http://www1.nyc.gov/site/nycha/residents/digital-van.page>

Dept. of Parks and Recreation

NYC Parks has collaborated with several different internet services, to provide Wi-Fi to park visitors. The internet services are either provided by AT&T (with no limits) or by Altice USA and Spectrum (both with limits, allowing 3 free 10 minute sessions every 30 days or purchase a 99 cent day pass through midnight).

[In Brownsville, the Brownsville Playground near Hegeman Ave has limited free Wi-Fi.](#)

Department of Education

Career and Technical Education (CTE) courses provide adults with an opportunity to acquire technical, trade, construction, or entrepreneurial skills, including basic Computer Literacy and Microsoft Certifications. CTE classes are offered to adults without a high school diploma.

[P.S. 13 Roberto Clemente - 557 Pennsylvania Avenue, Brooklyn, NY 11207.](#)

[Course calendar: http://schools.nyc.gov/community/AdultEd/classes/ProgramInfo.htm](http://schools.nyc.gov/community/AdultEd/classes/ProgramInfo.htm)

NYC Connected Communities

To support high need communities throughout the city, DoITT NYC Connected Communities expands the availability of public computer centers and classes, in partnerships with other agencies the following initiatives are available in Brownsville.

The NYCHA Community Computer Centers offer Internet access, computers and printing at select NYCHA locations across New York City that currently lack these resources.

In Brownsville there are five NYCHA Community Computer Centers, refer to page 10-11 for the full list.

To increase access to training opportunities, the Department of Aging is collaborating with Older Adult Technology Services (OATS) to provide free computer classes and use of computers to their members.

In Brownsville, there are a total of 2 senior centers providing computer classes.

NYC Parks Department provides basic computer classes for adults and seniors including instruction in topics like web browsing, Internet security, resume writing and web design. All classes are free to Parks Department Recreation Center members.

In Brownsville, there are classes held at the Brownsville Recreation Center, 1555 Linden Blvd, Brooklyn. Check out the schedule: <https://www.nycgovparks.org/facilities/recreationcenters/B270/schedule>

Brooklyn Public Library

The library has many different programs related to BklynConnect. The following is a sample of those that touch on digital literacy and access to broadband that are currently planned in Brownsville. For details and an updated list - <https://goo.gl/JP7zog>

Brownsville Branch Programing

All ages

- Computer Classes

Young Adults and Teens

- Teen Tech Time

Kids

- Kids Tech Time

Stone Avenue Branch Programing:

Adult

- Crochet Step by Step
- Introduction to Computers
- WWW for Adults
- Kanopy Movies

Seniors

- Introduction to Computers

Young Adults and Teens

- Library lab (STEM)
- Teen Tech Time

Kids

- Kids Tech Time
- Bloxels: Design Video Games

Saratoga Branch Programing:

Adult

- Computer Classes

Seniors

- Computer Classes

Young Adults and Teens

- Teen Coding Camp
- 3D Printing
- Teen Tech Time (gaming)

WHO USES THE LIBRARY INTERNET SERVICES?

A little over two-fifths of Brownsville households currently don't have broadband access in the home, leading them to look elsewhere for their access needs. For many, the local branch libraries are that resource. In the last year, it is estimated there were 857 sessions per computer/year across all of the three Brownsville branches. Even though not all individuals without internet use the branches, those who do provide a snapshot of the typical use of public Wi-Fi and the community's digital access and literacy needs.

Brownsville Library Wi-Fi and Computer use³⁶

12,626	Wi-Fi Sessions at the Brownsville branches
104,395	PC sessions at the Brownsville branches
68%	of computer users in Brownsville branches are adults

What are neighborhood patrons using the computers for?

To build a better understanding of neighborhood use of public Wi-Fi services, we asked library staff in a survey to share how they see patrons using the library computers. We combined that information with the insights of participating student BklynConnect fellows, who observed 59 adults in 3 branches in Brownsville using the computer for a few hours. Initially we had heard many assume that patrons mostly use computers for job search or filling out government forms, however according to their observation most patrons were using the computers for general browsing (34%), e-mail (37%), and social media (25%). Adults were also using the computers for games (14%) and job applications (11%). It is clear that for many patrons, the computer as a resource is not only for accessing services but also for enjoyment.

³⁶ Brooklyn Public Library

Did the neighborhood patrons display any digital literacy challenges?

As part of both the library staff survey and fellow observations, patrons displayed a variety of comfort levels. Many were comfortable with the computer, technology and were even seen coding, while others expressed a low level of digital literacy, personal anxiety, impatience, and even unwillingness to learn something new.

Of the patrons observed, 41% were seen pecking (using one finger to type), 17% had general discomfort with the mouse, and 9% asked for help. At the Brownsville branches library staff provided help with printing, technical computer issues such as sticky keys, creating a resume, and more internet-related challenges such as uploading and downloading documents in e-mail. The absolute largest challenges expressed by the library staff were resetting passwords and general patron frustration with waiting for their turn to secure computer space and time. Library staff expressed the following:

Patrons tend to be intimidated by technology and tend to want staff to complete tasks for them as opposed to teaching them how to do it themselves.

Patrons ask "I have to show you my shelter address every time I get a laptop."

Impatience with making mistakes.

Slow server, Patrons don't understand how to download documents, frustration of patrons on how to use system as a whole.

How comfortable were neighborhood patrons using Wi-Fi in a public place?

A key aspect of providing free Wi-Fi services is to do it in a way that ensures that individuals are comfortable using it. As the library is a very public place, we were interested to see what privacy concerns or behaviors might be present. BPL fellows found that 43 % of the observed patrons (155) showed privacy-seeking behavior such as wearing headphones, covering the screen with their hands or a cover, constantly checking over their shoulder, or turning the screen away.

Existing available computers in Brownsville Branches

Brownsville  23  13

Saratoga  19  18

Stone Ave  19  19

 Laptops  Desktops

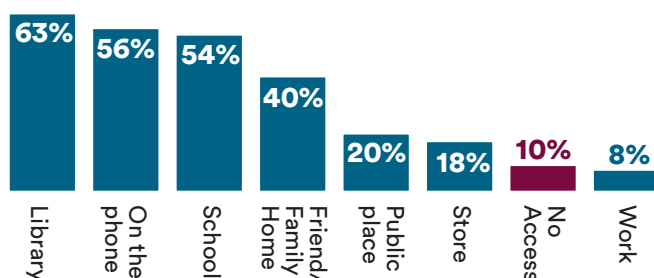


CASE STUDY: MIFI HOTSPOT

In the school year 2016-2017 Brooklyn Public Library lent out 1500 portable Wi-Fi hotspots to patrons, informally called a MIFI device. The goal of this project was to provide students with an entire school year of free internet access. For a household to be eligible for the programs they had to lack internet access, have a child that attends NYC public school, be over 18 years old and hold a valid library card.

Both the Brownsville branch and the Saratoga branch were part of the pilot. The data collected by the participating neighborhood patrons provides insights into the internet access needs of low income families with school age children.

Before the hotspot, where do the kids access the internet?



Source: Brooklyn Public Library

The following data is from the Brownsville households who filled out the exit survey:

51% did not have Wi-Fi access at home over the last three years

83% of participants finished high school or higher education

62% of the participants were women

47% of the participants were from low income households

The MIFI program ran in collaboration with the New York Public Library and the Queens Public Library and was the largest program in the US. The following data is derived from the exit survey filled out by participants across all three boroughs. The relevance in this data lays in the similarity of the target audience of BklynConnect.

60% of all participants indicated that they don't have Wi-Fi at home due its to high cost

58% of all participants indicated that have a cellphone with a data plan

42% of participants finished high school or higher education

WHAT WE HEARD IN BROWNSVILLE

To ensure we are gathering neighborhood input as part of this need assessment, we held a workshop conversation on the 10th of July with a group of community-based organizations, service providers, local computer trainers, local branch librarians, and key neighborhood stakeholders. We started the afternoon by discussing how additional public Wi-Fi could be of benefit to the neighborhood and their organizations, used a series of scenarios accompanied by a map to gain understanding of consideration regarding additional Public Wi-Fi. Hundreds of insights were collected.

We were specifically interested in how free public internet access could impact their services, organization and how it might affect neighborhood residents. Many felt that ‘almost everything is online today’ from housing to school information to job listings. The fact that nearly all city services require online forms means that for someone without access to the internet there is a barrier to those benefits, leaving those residents stuck on the wrong side of the door to opportunity.

Overall, it was clear that all community stakeholders felt that access to free Internet would not only play a major role in supporting residents’ everyday life but also support a more equitable access to services and resources, and to support building personal relationships.

The key benefits of providing free Wi-Fi services expressed by Brownsville community stakeholders include:

- Providing residents access to online services, forms and resources
- Supporting students of all ages with school homework
- Increase the ability for local service provider to do outreach and provide direct support
- Directly support residents transitioning out of shelters

It will give parents the opportunities to read together (with their children) – by being able to access online books.

- Non-profit Day-care provider

It may help with tabling and other forms of outreach, by supporting both NYC agencies and other local organizations.

- Civil servant working at NYC Dept of Health

Community stakeholders also expressed that the opportunity to link residents to information was one of the largest benefits to providing free Wi-Fi in the neighborhood. When asked what type of information could be most beneficial, the following were suggested as most needed based on their first-hand experiences with Brownsville residents:

- Calendar of local events and free classes
- Directory of local services and neighbored resources
- Direct access to NYC government forms (Housing, Tax, Immigration...)
- Educational opportunities for both adults and children
- Local and NYC-based job board

Free internet would have a great impact to my students. It would be easier for them to learn by the way of tablets and the use of there own devices to use the Internet. Additionally, it would reduce the expenses of the person – people are paying up to 200 a month and not everyone can afford that.

- Local Adult Computer and Digital Literacy Teacher

Free public internet would help the shelter children with their online homework assignments and research projects. Additionally support their parents with employment search and apartment searches.

- Director of a Local Family Shelter

It would improve community productivity, as it would enable resident to use their smart devices to access online employment opportunities.

- Staff from Local Workforce Development Center

More Wi-Fi will be better for the community, as the library closes either at 6pm or 8pm, so the time constraints limit searching for the many patrons that visit.

- Local branch librarian

Where would additional public Wi-Fi be most beneficial? There are many different opportunities to consider. As part of the needs assessment process, BPL presented a series of scenarios to workshop attendees from the neighborhood to gather insight about not only potential locations for the pilot technology but also its feasibility, benefits and concerns.

The effort to provide free internet connectivity to those who frequent or live in the neighborhood holds different approaches that might address different audiences, evoke different issues or trigger different types of Wi-Fi use. The following provides an overview of the findings.

Commercial corridors

Free Wi-Fi along a neighborhood's both heavily trafficked and less trafficked corridors.



Target Audience: Broad. This could benefit shoppers, commuters, businesses, Business Improvement Districts (BID) and residents living along or in proximity of the corridor

Examples of use: Searching shopping coupons, getting directions, checking bank accounts before purchases and surfing the web. The service would be most beneficial in terms of reducing the burden of an individual data plan.

Benefits: Attract more individuals to the corridor which will have a positive impact on local business owners.

Concerns: Might increase loitering; might be difficult to promote due to competition of already existing Wi-Fi networks.

Public Plazas or outside Community Centers

Free Wi-Fi surrounding a public plaza (potentially along a commercial corridor) or an existing community center.



Target Audience: Broad. Residents living close, co-located service providers and shoppers that are taking a break.

Examples of use: This might be beneficial to individuals for receiving services, accessing online resources and surfing the web.

Benefits: This could have a positive economic impact for co-located services providers or surrounding businesses, foot traffic higher than other areas and individuals typically spend more time in a plaza.

Concerns: Public Wi-Fi might increase the plaza's popularity and therefore its safety concerns and could require an increase in security or staffing; Individuals who are not affiliated with a community center might be less inclined to use the plaza and the service.

Public Parks

Free Wi-Fi located inside or along a public park or community garden.



Target Audience: Broad. All daytime park visitors. Families, kids, teens and residents living along the park edge.

Examples of use: This service may support students working on their homework, parent's multi-tasking online while being in the park with family and reducing the burden of an individual data plan.

Benefits: This could leverage existing resources such as community programming, enabling organizations to host meetings in the park; It could promote being outdoors and potentially lessen the congregation of kids and teens on street corners.

Concerns: Weather conditions and opening times might limit the audience; Kids might trade playtime for screen time; Safety.

Residential Areas

Free Wi-Fi located along a residential block or outside of a NYCHA housing development.



Target Audience: Smaller, as it would most directly benefit residents living on that block.

Examples of use: This service may support students working on their homework, reducing the burden of an individual data plan and providing access to those who do not have data plans.

Benefits: The service could reach a high-need audience that could potentially free services more heavily based on economic circumstances (quality vs quantity).

Concerns: Exclusion of an audience as residents who do not live on the block might not easily get to use the service; there might be an increase in loitering due to lack of seating. Higher density use might limit Wi-Fi speed.

Family Shelters

Free Wi-Fi located outside of a family shelter or near transitional housing.



Target Audience: Smaller. Residents living in these shelters as well as service providers supporting these families.

Examples of use: This service may support students working on their homework, reducing the burden on data plan, providing access to those who do not have data plans and be a resource for organizations providing services to marginalized populations.

Benefits: The service targets a high need population that could use it after shelter computer labs close; local service providers could use the Wi-Fi for tabling or programming.

Concerns: Might cause some loitering because of lack of outdoor seating. Some shelters have a curfew which would limit the use of the service.

Food Pantries and Soup Kitchens

Free Wi-Fi located outside of a food pantry or soup kitchen.



Target Audience: Smaller. Benefits residents receiving support at these locations, residents that live close and could serve as a resource for organizations providing services to residents.

Examples of use: Support reducing the burden on data plan, providing access to those who do not have data plans.

Benefits: Potentially easier to promote, since foot traffic and queues for services are higher than other areas; less concern with loitering because people are already there; potential for local services to use for programming.

Concerns: No outside seating; limited opening times might limit the time frame for the service.

There is no Wi-Fi in our shelter rooms. If residents wanted to get it themselves they would have to purchase hotspots or access our computer room before 6p. If free public Wi-Fi was accessible, it would be beneficial for our residents to research for jobs and housing applications and be provided with all the resources to be able to move out of their predicament
- Local Family Shelter provider

Free public internet would help the shelter children with their online homework assignments and research projects. Additionally support their parents with employment search and apartment searches
-Director of a Local Family Shelter

Key considerations we heard about Wi-Fi coming to the neighborhood.

Although community stakeholders expressed many potential benefits to bringing Wi-Fi to the neighborhood there were several concerns and questions were expressed as well. The following are the syntheses highlights:

Target Audience: When considering a location, be conscious about who these services are trying to reach and benefit. Not all locations are equally attended, accessible or open to the public, and not all audiences, including many elderly residents, are as mobile.

Impacts on the Surroundings: How does adding Wi-Fi impact its surrounding? Could it negatively impact business or attract larger crowds?

Time Constraints: Many places have limitations in terms of time such as a curfew or closing time. Is there value to turning the Wi-Fi on and off?

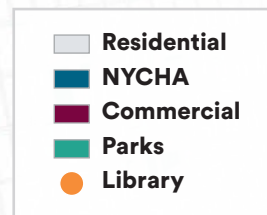
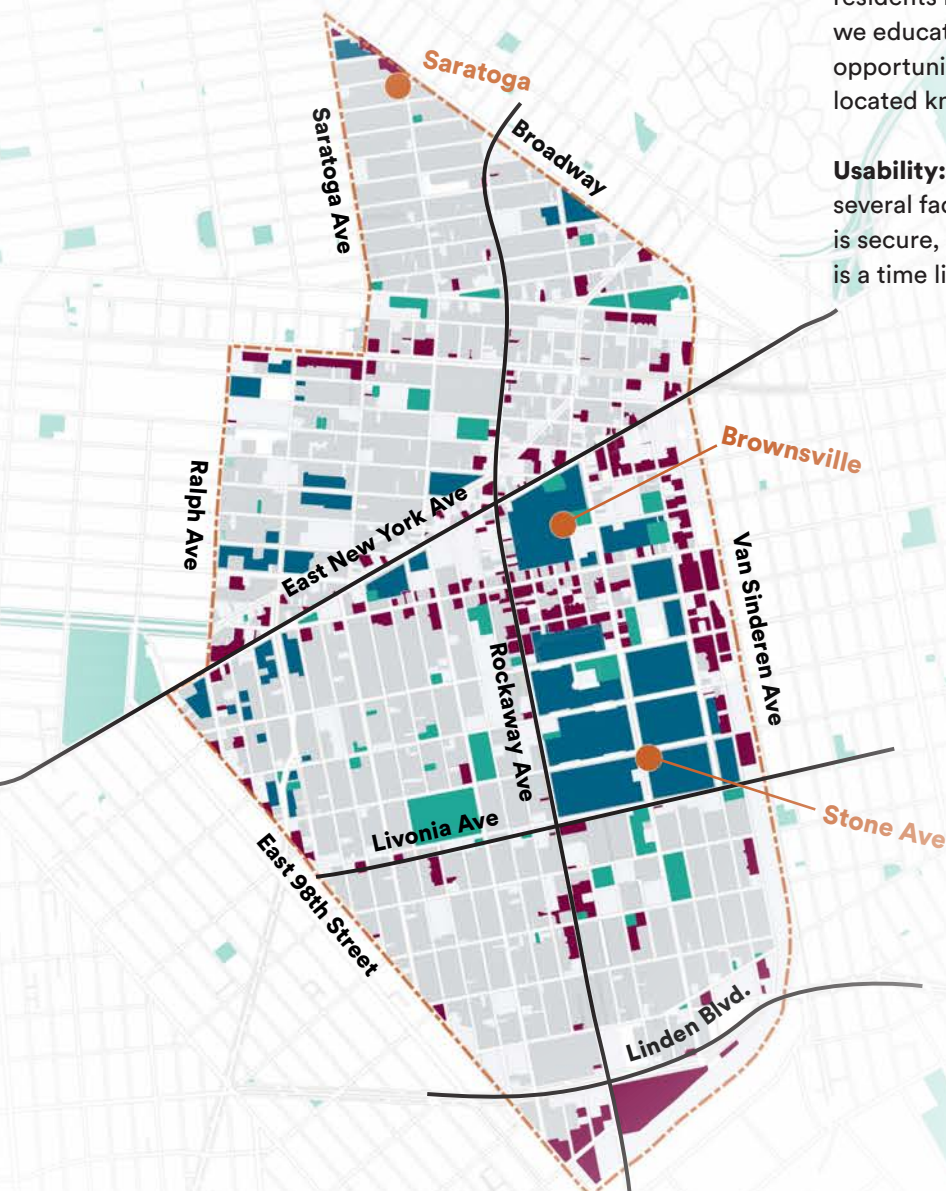
Technology: When considering the type of Wi-Fi, are there benefits of a service that doesn't penetrate walls? How large of a footprint is impactful? What is the benefit of the addition of free Wi-Fi when someone doesn't own the devices?

Safety and Security: The additional high priced devices out in public and the addition of individuals outside loitering and later in the evening sparked concerns about safety, security and the need for increased police patrol.

Physical Environment: If the aim is to support individuals working on laptops, such as students, be conscious if the location chosen has the appropriate seating or tables and/or is appropriately covered to support any weather conditions.

Digital Literacy and Educational Support: Not all residents might know how to use the service. How can we educate the community on how to use it? Is this an opportunity to educate and support individuals with co-located knowledge training in a surrounding space?

Usability: People choose to connect to Wi-Fi based on several factors. It is important to consider if the connection is secure, what the speed of the connection is and if there is a time limit to using it, this will widely affect its usability.



Land Use in Brownsville

This map represents land use in Brownsville. The map aims to provide context to the different scenarios (parks, residential, commercial corridor etc.) and therefore only shows parks, residential areas, commercial spaces and NYCHA buildings.

Source: Pluto 2016, NYC Department of City Planning, Information Technology Division

ACKNOWLEDGMENTS

Our work on this project was only possible because of the thoughtful participation of dozens of Brooklyn Public Library staff members, front-line services providers, community based organizations and neighborhood residents. To respect neighborhood residents participants' privacy, we include their contributions anonymously.

Brooklyn Public Library Staff

Brownsville Library
Central Library
Cypress Hill Library
East Flatbush Library
East New York Library
New Lots Library and Learning Center
Macon Library
Saratoga Library
Stone Avenue Library

Neighborhood Participants

All For One: Empowering Neighbors
Advanced Technology Training and Information
Networking (ATTAIN) at SUNY
Bangladeshi American Community Development
& Youth Service
Bedford Stuyvesant Family Health Center
Bed-Stuy Community Connections Partners
Bed-Stuy Restoration Center
Brooklyn Fathership Partnership
Brownsville Partnership /Community Solutions
Camba - Flagstone Family Center
Community Board 03
Community Board 05
Community Board 16
Community Education Council 19
Community Healthcare Network
ConnectNYC
DIVAS for social justice

BklynConnect Fellows

Arvin Azam
Karelyn Phillips
Jonathan Acevedo
Nia Brown
Pelham Van Cooten
Reeba Toby

Exalt
Brownsville Heritage House
Hope Computer Training
Made in Brownsville
M.S. 267 Math Science & Technology Institute
Navigate the Maze
NY Psychotherapy and Counseling Center
NYC Department of Social Services
NYC Mayor's Office of Tech and Innovation
Office of Council Member Inez Barron
Office of Council Member Robert E Cornegy Jr
Power of Two
Rose McCarthy Shelter
SCO Family of Service s/ Family dynamics
Services for the Underserved
United Community Center (UCC)
Warwick St - Unified Block Association
Women In Need



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