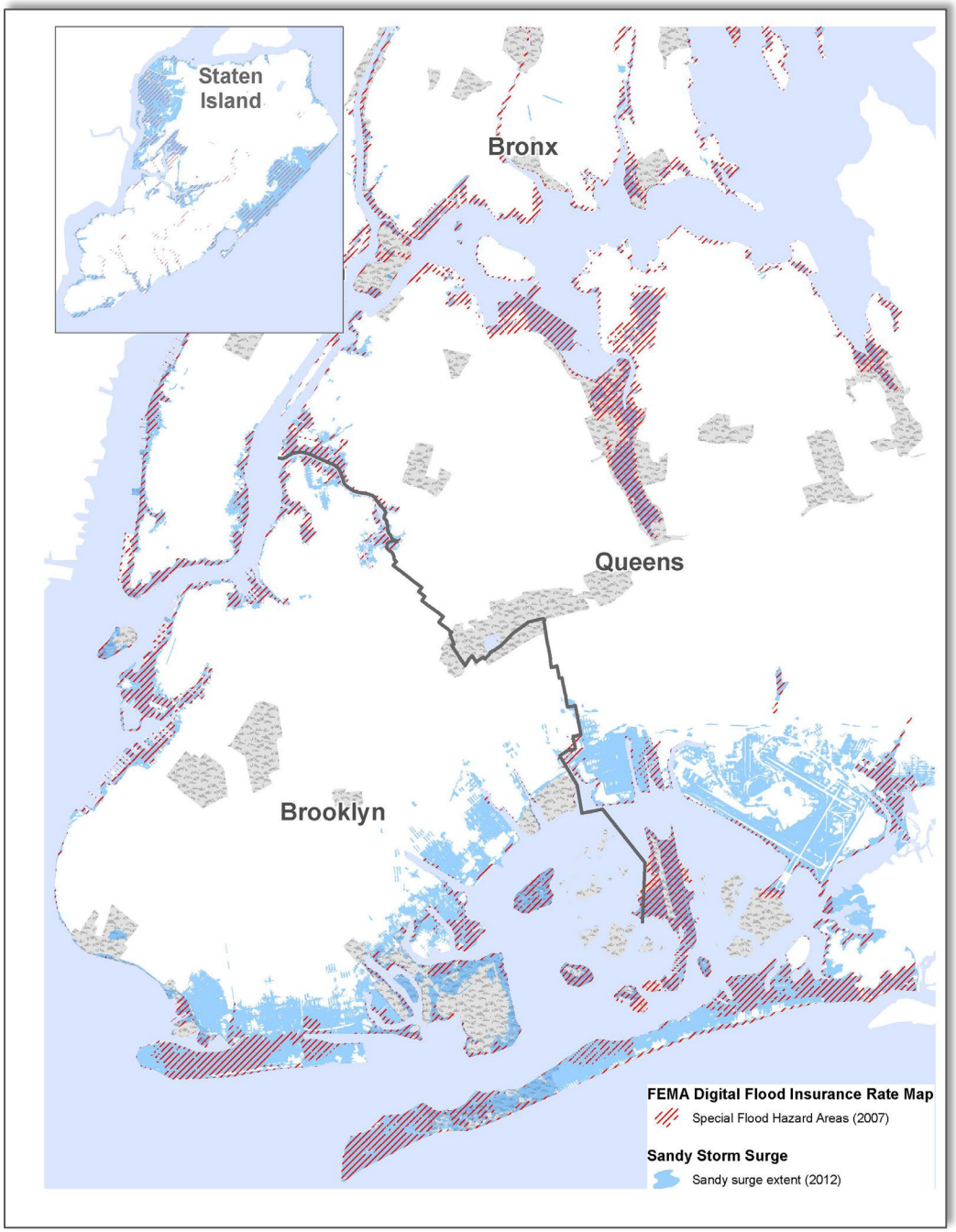
Patterns of Attrition and Retention in the Build It Back Program



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EXECUTIVE SUMMARY

In the aftermath of Hurricane Sandy in October 2012, New York City established the Build It Back Program (the "Program") in 2013 to assist the recovery of affected New Yorkers. Funded by the Housing and Urban Development (HUD) Community Development Block Grant - Disaster Recovery (CDBG-DR), the Program assists homeowners overcome storm damage to their homes. It does so through three sometimes overlapping options: repair/rebuild; property acquisition; and reimbursement for repairs already completed. The Program elicited considerable interest from New York City homeowners, but it also encountered many difficulties in working with homeowners when taking them through the complicated process of eligibility determination, documentation of damage, choice of an allowed pathway toward repair or reconstruction, and actually carrying out the repairs. During this process, many of those who indicated initial interest did not go on to file an application and many of those who did were frustrated by the Program rules, leading to attrition from the Program. To increase our understanding of who left the Program before receiving a Program benefit, Build It Back partnered with the Center for Urban Research (CUR) at the Graduate Center, CUNY to study patterns of attrition. Our goal was to determine the stages of the Program process at which initial applicants became inactive and the reasons why they did so, despite their having initially indicated that they needed to mitigate storm damage to their property.

Our primary conclusion is that the federal regulations defining the basic structure of the Program created many difficulties that were compounded by the fact that the City of New York had to create a brand new, purpose-built administrative procedure for carrying it out. On the federal side, it took some time to clarify how much money would be provided, who would be eligible to receive it, and how it could be disbursed. It was not clear to potential applicants, for example, that federal assistance was only allowed for certain forms of repair or reconstruction, that federal funds could only be used after all other sources of financial support (e.g. insurance, SBA loans) had been exhausted, and that if the total sum of those other sources of benefits exceeded the amount spent on allowable activities, the homeowner would have to pay back the difference. On the City side, it took a long time to develop a sufficiently well-trained staff who understood all the rules, to develop effective means of outreach and support to the applicants, and to learn how to bring them through the administrative process smoothly. The interaction of these two

factors led to considerable discontent with the Program. City officials acknowledge these difficulties and made significant efforts to overcome them, including a major Program overhaul in 2014. At the same time, our study finds that early dissatisfaction with Program operations, though widespread, was not itself a major cause of attrition from the Program, given that those who received benefits were also dissatisfied. Instead, the basic design structure, stemming from Federal duplication of benefits requirements, caused most of the attrition.

As a result, it is vital to learn from this experience so that both the federal government and New York City – and myriad other local governments that will have to deal with similar challenges – learn from this process and improve the way they provide this kind of assistance following a disaster. The federal government should be prepared to fund required local assistance in a prompt manner and recognize that the intersection of different kinds of disaster-related benefits creates a complicated procedure which currently places administrative burdens on homeowners who do not want to wait months for assistance. Homeowners need to have a clear idea of what options will be offered to them early on and they expect reimbursement for repairs completed on their own. City government must design future disaster recovery programs knowing that the process will be complicated, that those seeking help will need considerable assistance understanding and negotiating the process, and that many of those who are initially interested will not be able to complete their engagement with it – owing to not being eligible or not finding an allowed benefit package that meets their needs or wants. Accordingly, when creating future recovery programs, city government should be prepared at the outset of a disaster to conduct outreach and educate homeowners on the different disaster benefits and how they interact with each other. A reimbursement component should also be set up as soon as funds are available. Program options should also be designed in a way that, when possible, give homeowners the greatest amount of choice. At the same time, the City should not spend too much time and effort reaching to people who express interest but do not follow up. This delays the processing of applicants who most need the assistance. This requires a future program to develop better ways to serve two distinct groups, potentially with two different programs: (1) homeowners who have already completed some repairs on their own and/or have only moderate repairs remaining, and (2) those that have much more damage, who live in areas with high risk of flooding, and/or are located in areas with land use issues.

These conclusions were made after CUR and HRO staff analyzed Build It Back administrative data and CUR conducted an on-line survey of Build It Back registrants (only CUR had access to the survey data, which were collected on a confidential basis). The study investigated various possible reasons for attrition by asking registrants such questions as: Did homeowners secure other sources of funding? Were the Program's documentation requirements, or the efforts to ensure that benefits were not duplicated, excessively burdensome? And, were homeowners satisfied with the Program offerings presented to them? This attrition study seeks to illuminate the main factors leading to attrition in the Build It Back Program and to determine ways to improve the process for similar future recovery programs in New York City and elsewhere.

SUMMARY OF ADMINSTRATIVE DATA FINDINGS

Due to the low threshold required to register for the Build It Back Program, namely calling the toll-free government services 311 line, our analysis divides Build It Back Program registrants into three groups:

- **Persisters** include registrants who submitted and completed a Build It Back application and are actively being served by the Program to receive a benefit (or already received a benefit[s] at the time of our analysis).
- **Attriters** include registrants who submitted a Build It Back application, but may not have completed the application process and are no longer actively being served by the Program.
- **Registrants only** include registrants who never submitted a Build It Back application. *Registrants only* had minimal engagement with the Program subsequent to the initial registration call.

The administrative data set used for this analysis is based on the disposition of the entire Build It Back registrant population as of October 2016, showing a total registered population of **20,275** for the Build It Back Program. Of these, **2,009** registrants were excluded from the analysis primarily because they were ineligible (not homeowners or did not meet certain eligibility criteria), opted for the State Buyout Program, or in a few cases had missing or inconsistent data. The adjusted total of **18,266** registrants provide the base population studied, including **4,721** ***registrants only***. Overall, **13,545** registrants engaged in the application process, including **5,505** ***attriters*** of whom **4,856** submitted but did not complete their application and **649** completed their application but left the Program. Finally, **8,040** ***persisters*** submitted an application and are being served by the Program.

Among our major findings is that most attrition occurred early in the program. Many of those in the overall study population (26 percent) were *registrants only*. These registrants never submitted an application and left the Program early, either immediately after the 311 registration call or shortly after an intake meeting with Build It Back staff. Analysis of administrative data suggests that few of these 4,721 *registrants only* attended an initial intake meeting at one of the Build It Back Centers. The second group, *attriters* (5,505), constituted 30 percent of all registrants. *Attriters* differ from *registrants only* in that they participated in the intake process and submitted an application. Among the *attriters*, 88 percent began the Intake phase but dropped out before selecting a program pathway (benefit). A smaller number of *attriters* (649 or 12 percent) selected a program pathway (benefit) but dropped out at some point before receiving a Program benefit.

IDENTIFYING FACTORS RELATED TO PROGRAM ATTRITION AND RETENTION

1) Remaining Disaster Benefits and Value of Non-Program Storm Related Benefits

Analysis of the administrative data identified two prominent factors related to Program attrition, having *remaining disaster benefits* and the *value of non-Program storm related benefits*.

Because Federal regulations prevent the Build It Back Program from duplicating a benefit already provided by another source, it must collect from the applicant any *remaining disaster benefits* received outside the Program, termed the *transfer amount*. In a final accounting of benefits received, Build It Back reviewed all outside benefits received from other relief sources, and applicants that received benefits in excess of the allowable activities were required to pay the excess financial benefits to the Program. Applicants could have received recovery assistance from the Federal Emergency Management Agency (FEMA), the Small Business Administration (SBA), private insurance, or other philanthropic sources. To reduce the *transfer amount*, the Program allowed applicants to submit receipts showing that they spent excess funds on allowable activities. Applicants were referred to trained counselors, hired by Build It Back, to help them provide the required documentation.

Program-wide, 25 percent of the applicants had *remaining disaster benefits* owed to the Program (a *transfer amount*). The administrative data indicated that a greater proportion of *attriters* had a *transfer amount* (66 percent) compared to *persisters* (34 percent). It is important to note that

applicants owing remaining disaster benefits to the Program were not eligible to receive reimbursement. Furthermore, the predicted probability of attrition among applicants with 'no *transfer amount'* was 18 percent. The predicted probability of attrition for applicants with a *transfer amount* was significantly higher at 68 percent, a 50 percentage point difference. This appears to be the single largest disparity in the analysis.

Looking at the value of non-Program storm related benefits across applicants in the top thirteen neighborhoods, *attriters* on average received more in non-program storm related benefits when compared to *persisters* – $68,004 for *attriters* compared to $57,668 for *persisters*. Furthermore, in looking at the substantially damaged population, substantially damaged *attriters* received on average 51 percent more in SBA benefits and 56 percent more in insurance funds compared to substantially damaged *persisters*.

Given that the Federal intent for CDBG-DR programs is to cover the unmet need after all other benefits have been accounted for, this finding demonstrates that the Program is currently serving the applicants most in need. On one hand, the Program is serving those who had moderate damage that was not fully met by insurance or other sources. On the other hand, the Program is also serving those with the most damage whose needs were not met elsewhere.

2) Eligibility for Reimbursement and Program Retention

The majority of applicants who are found eligible for reimbursement remain with the Program. Of the 5,962 applicants who are eligible for reimbursement, almost all (97 percent) continued through the process to receive reimbursement for repairs completed after the storm. Furthermore, those who received reimbursement make up 72 percent of the active population and only three percent of the population that decided to leave the Program.

Pathways including reimbursement, *Reimbursement Only* and *Moderate Rehabilitation & Reimbursement*, have statistically significant lower attrition probabilities compared to *Moderate Rehabilitation* pathway. Compared to the 71 percent probability of attrition predicted for the *Moderate Rehabilitation* pathway, the predicted probability of attrition is significantly lower for *Reimbursement Only*, at 16 percent, and *Moderate Rehabilitation & Reimbursement* at 3 percent.

3) Level of Substantial Storm Damage and Program Retention

The Program is currently serving the majority of those who sustained the most damage as a result of Hurricane Sandy. In looking at *persisters* and *attriters* by the "Substantial Damage" (SD) calculation, a ratio of the repair value of damage sustained versus the structure's pre-storm value, *persisters* represent a larger percentage of all applicants across nearly all levels of substantial damage. Additionally, in focusing on the non-reimbursed population, the Program is currently serving those who sustained the most damage – the average Substantial Damage" (SD) calculation was 23 percent higher for *persisters* who were not reimbursed compared to *attriters*.

Pathways indicating a higher level of storm damage, *Buyout/Acquisition*, *Major Rehabilitation (Elevation)*, and *Reconstruction*, also have significantly lower attrition probabilities. Compared to the 71 percent probability of attrition predicted for the *Moderate Rehabilitation* pathway, the predicted attrition rate for applicants in the *Buyout/Acquisition* pathway was predicted to be 11 percent, *Reconstruction* pathway was predicted to be 33 percent, and the *Major Rehabilitation (Elevation)* pathway was predicted to be 47 percent.

4) Provision of Legal and Financial Counseling and Program Retention

Applicants who received legal and financial counseling (including assistance with coordination of benefits, transfer amounts, mortgage, SBA loan(s), and flood insurance) experienced a Program attrition rate of 28 percent – 13 percentage points lower than the attrition rate for the total population studied. Additionally, applicants with "no counseling services" had a predicted attrition rate of 31 percent. The predicted attrition probability for applicants who availed themselves of counseling and financial services was significantly lower than applicants without counseling services (27 percent versus 31 percent), but the substantive difference is modest (4 percentage points). Nevertheless, this demonstrates the utility of counseling services at keeping applicants in the Program.

5) Program Attrition Not Significantly Related to Applicant Demographics

An analysis of the Program's administrative data highlights that *persisters* and *attriters* do not significantly differ in terms of a range of demographic factors, including Low- to moderate-income (LMI) status, borough of residence, and neighborhood of residence. Importantly,

predicted attrition among applicants who are not Low- to moderate-income was no different from applicants determined to be Low- to moderate-income. Based on multi-variate modelling, the probability of attrition for those who are Low- to moderate-income and those not Low- to moderate-income was the same, at 26 percent.

FINDINGS FROM THE ONLINE SURVEY

The results of the online survey support the findings of the administrative data analysis and shed additional light on how homeowners felt about the application process.

1) Relationship of Remaining Disaster Benefits to Program Attrition

The survey was administered to all registrants and highlights their dissatisfaction with the way the Program determined any ***remaining disaster benefits*** (*transfer amount*) owed to the Program. One half (51 percent) of the *attriters* were generally dissatisfied with how funds they received were accounted for compared to 36 percent of *persisters*. Substantial majorities of *attriters* (85 percent) and *persisters* (75 percent) were dissatisfied with the inclusion of SBA loans as a storm-related benefit. Applicants were also dissatisfied with their ability to pay the transfer amount owed to the program. These survey responses confirm the findings of the analysis of administrative data that owing *remaining disaster benefits*, and more specifically how the Program's accounting of funds received and expensed by the applicant related to Hurricane Sandy, contributed to Program *attrition*.

2) Reimbursement and Program Retention

Analysis of administrative data shows that ***reimbursement*** benefits was a factor related to Program *retention* – survey findings reinforced this point. The Survey asked whether *reimbursement* benefits was a factor in their decision to leave the Program, and if cash benefit options (reimbursement) would have persuaded applicants to remain with the Build It Back Program. Nearly one-quarter (24 percent) of *attriters* indicated that they left the Program because they were not offered reimbursement. Moreover, 45 percent of *attriters* and 31 percent of *registrants only* indicated the cash benefit (reimbursement) option, as an alternative to construction, would have persuaded them to remain in the Program.

3) Legal and Financial Counseling and Program Retention

The administrative data analyses found that the provision of ***legal and financial counseling*** services was a factor related to Program *retention* – this finding is also evident in the results of the online survey. The Survey asked if additional services to help with complicated financial and legal issues would have persuaded them to remain with the Program. The impact is more modest, but still notable, at 16 percent of *attriters* and 16 percent of *registrants only* indicating that additional financial and legal services would have persuaded them to stay with the Program.

4) Voluntary Program Attrition

About half (49 percent) of *attriters* surveyed said they left the Program voluntarily compared to 53 percent of *registrants only*, showing an even split between registrants that left the Program voluntarily, versus being administratively withdrawn by the Program. Additionally, one-third (33 percent) of registrants surveyed indicated that they left the Program because they decided to make repairs on their own, likely leading to their decision to voluntarily leave the Program. Forty percent of *registrants only* left the Program to make their own repairs compared to 29 percent of *attriters*. Furthermore, over one-third (35 percent) of *registrants only* surveyed indicated that they left the Program because they did not think they would be eligible to receive benefits.

5) Program Assessment of Property Damage and Program Attrition

Attriters were more dissatisfied with the accuracy of the Program's assessment of property damage sustained by Hurricane Sandy. Overall, 72 percent of *attriters* disagreed or strongly disagreed with the accuracy of the property damage assessment, compared to 54 percent of *persisters*. This is especially relevant because the Program's assessment of damage sustained by Hurricane Sandy figures prominently in the benefits (Pathway) offered to applicants.

6) Program Benefit Options and Program Attrition

One-third (33 percent) of registrants surveyed left the Program because they were dissatisfied with the Program options presented to them. More than one-third (38 percent) of *attriters* indicated dissatisfaction with Program options, compared to 25 percent of *registrants only*.

7) Program Administration and Attrition

Both *attriters* and *persisters* had difficulty with administrative paperwork, but *attriters* had more difficulty providing supporting documents required by the Program. Seventy four percent of *attriters* disagreed or strongly disagreed that paperwork was reasonable, compared to 57

percent of *persisters*. Respondents also felt that processing times were too long. Nearly half (47 percent) of *attriters* and *registrants only* responded that they left the Program because the process took too long. Moreover, another 43 percent of *attriters* and *registrants only* indicated that quicker processing and delivery of Program benefits would have persuaded them to remain in the Build It Back Program. Finally, nearly half (45 percent) of *attriters* and *registrants only* indicated that more knowledgeable staff to guide them through the process would have persuaded them to remain with the Program.

ADDRESSING PROGRAMMATIC CHALLENGES

Many of the survey responses reflect the programmatic challenges that accompany establishing a disaster recovery program so quickly – many of which the Build It Back Program has acknowledged and has taken steps to mitigate, such as cumbersome administrative processes, application processing timelines, and staffing/communication issues. The Program has indicated that the intake contractor brought staff on quickly in 2013 and only trained them on the job after the Program began. By 2015, Build It Back replaced contracted staff with City staff and assigned a dedicated Program representative to each applicant as a single point of contact. Build It Back management also acknowledged that a large number of forms and supporting documents were required to prove federal eligibility. Only after the Program was up and running were they able to identify bottlenecks and make mid-course corrections to streamline paperwork, application processing, and benefit delivery. As the Program acknowledged these issues and their impact on attrition, it launched the 2015 outreach campaign further described in *Section 1* to re-engage registrants.

LESSONS LEARNED FROM NEW YORK CITY

The research reported holds some clear and strong implications about how to improve, and consequently reduce attrition, from future storm recovery programs like the Build It Back program. The report highlights, among other things, problems with the underlying structure of federal disaster assistance and the challenges faced by local jurisdictions tasked with rapidly establishing a new, large scale storm recovery program. This study highlights three important lessons from New York City's experience administering a $2.2 billion housing recovery program implemented 6 months after Hurricane Sandy October 2012 caused

widespread damage across the five boroughs in New York City. The structural challenges in the CDBG-DR program must be addressed at the federal level. At the same time, the design of local programs must also be improved.

1) Any recovery Program should be designed with the understanding that attrition is likely to occur. The study underscores the fact that CDBG-DR program funding is not meant to fund a universal disaster recovery program, but is rather limited to homeowners who have financial needs remaining after they have received any other immediate storm related benefits. CDBG-DR funded programs are the *last* resort, made available after property owners have exhausted all other forms of disaster assistance. This was not always understood by those who registered their interest in participating in the Program. High program attrition is inevitable as applicants themselves select themselves out because they may not qualify for benefits.

As noted in the findings, over half of all Program registrants stopped participating in the very first phase of Build It Back application process (Intake through Option Selection). A full one quarter of initial registrants did not even engage in the application process. Given that many more people will register than will ultimately participate, it is incumbent on program administrators to identify ways to speed the process of sorting potential *attriters* from *persisters*. Waiting 18+ months to find out who qualifies to remain in the program and who does not wastes the precious resources and time of the eventual *attriters*, as well as time that program officials could better spend on accelerating benefits for potential *persisters*.

The study findings also validate that the sorting process, although too long and too cumbersome, actually produced the expected results. The applicants who remained with the Program were largely in two groups. The first group completed most of their repairs and were eligible for a check to cover uncompensated expenses. The other group of *persisters* incurred the most uncompensated property damage and were eligible for construction aid. Insurance or SBA loans covered less of their post-storm repair costs for this group.

2) Recovery programs should be built on a strong foundation of stable funding, quality service, and community supports. The study helps us to understand how some of the early challenges in delivering the Program influenced the patterns of attrition. The Program's first major challenge was that it received funding in tranches, or installments, leading to initial uncertainty about

what the Program could offer and to whom. The City created a complex prioritization system based on household income and damage to property, leaving half of affected homeowners ineligible for program benefits until one year after program launch and six months after registration closed. Initially, no homeowner earning more than 80% of Area Median Income whose homes were not completely destroyed were eligible for the program. In an ideal situation, the Federal government should ensure that all funding is made available at the onset of a new program. Recognizing the need to preserve and strengthen these affordable, long-standing, single family homeownership communities, the City pushed for and was able to secure additional funds in June 2014 from the third tranche of the Federal allocation. This funding enabled the City to commit to serve all eligible applicants. Securing funding quickly is essential to designing disaster recovery programs.

Moreover, without an existing organizational infrastructure or experienced staff in place to manage a housing recovery effort of this magnitude, the City relied heavily on consultants to create and deliver the Program at the beginning of Build It Back. The service delivery centers, out of necessity, were hastily opened in June 2013 with consultants hiring temporary staff and building a data management system that had not been fully tested. Hurricane victims, overwhelmed by the recovery process, were confused about how to navigate the complex Build It Back Program and what it had to offer them. Recognizing the need for direct management of the centers led by experienced City managers, City officials began replacing the staff with experienced City employees in 2014. The Program also engaged local community groups to help guide and support homeowners. It hired community field representatives and set up satellite offices in the communities in partnership with local elected officials. Recognizing that some homeowners needed more intensive assistance, the Program partnered with Catholic Charities to link vulnerable homeowners to disaster caseworkers. The Build It Back Program implemented this strategy in year 2 and 3 of the Program and was thus able to reengage a large number of homeowners who needed additional assistance through the registration and application process.

The Program also better leveraged contracts with its non-profit partner, The Center for NYC Neighborhoods (CNYCN), to provide housing counseling and legal services directly to applicants. Agencies working with CNCYN had experience assisting clients with obtaining insurance benefits, FEMA benefits, SBA loans, and philanthropic benefits. Initially in 2013, housing counseling and

legal services were limited and viewed primarily as a referral source for foreclosure issues and a few ownership-related issues. In 2014, the Program quickly arrived at better integration of housing counseling and legal services and counselors began to provide more help with numerous issues (including assistance with coordination of benefits, transfer amounts, mortgage issues, SBA loans, and flood insurance). Counseling Help Desks (staffed by dedicated counselors) were established and co-located in the Build It Back Centers. Co-location allowed counselors to work hand-in-hand with other city staff and applicants directly. Additionally, in 2014, the housing counseling and legal services role was framed as an advocacy function and served as an additional tool to keep applicants engaged by resolving their issues through the help of a qualified and dedicated counselor.

The key to lowering attrition and ensuring that homeowners make it through the process and receive program benefits is having qualified staff to offer case management services.

3) Program should maximize customer choice. The Build It Back Program initially relied heavily on formulas to sort applicants, resulting in homeowners having little choice and being frustrated by the options offered. After the overhaul, the Program's first priority was getting homeowners through the option selection process. Virtually no homeowners selected an option in 2013, despite the Program having been active for over six months. Homeowners repeatedly heard "no" when trying to move through the process and find the right option for their unique situation. By expanding flexibility and providing more options for homeowners beginning in 2014, Build It Back helped get more homeowners to "yes". Understanding at the outset what homeowners seek from the Program can ensure that homeowners receive those benefits and help lower attrition. It can also better target resources required for environmental review, damage assessments, and design.

Hurricane Sandy was the first HUD Disaster Recovery allocation that included the benefit of reimbursement, but the City could only offer reimbursement after applicants explored other options. In December 2013, the City could offer the popular reimbursement as an option only to low-income homeowners, but later partnered with HUD to expand it to all homeowners in April 2014. Despite early challenges and a delayed launch, this benefit was widely distributed and the Build It Back team even expanded it to provide reimbursement for homeowners that elevated or rebuilt their homes on their own. By the end of 2014, City officials had streamlined processing,

increasing check production by 400 percent and resulting in 2,050 payments by end of 2014 and 5,482 by end of 2015. All this suggests that local governments must plan now to have sufficient resources to respond to the next environmental disaster to avoid start-up missteps.

Overall, the study highlights several key programmatic and policy changes that could improve program retention in the future. Planning should happen now to avoid the start-up missteps in the face of the next disaster.

Following is a summary of the Program Enrollment, Service Delivery and Policy Recommendations. Readers may turn to the Recommendations outlined in Section 6 of the report to read more detailed recommendations for improving future disaster recovery programs.

PROGRAM ENROLLMENT

For *Registrants*:

- Cast a wide net
- Target at-risk populations
- Ensure language access
- Publish clear guidelines for all registrants
- Develop an on-line registration system and robust document management system

For *Applicants*:

- Group applicants based on their current housing situation
- Give applicants the choice to apply for specific benefits
- Communicate clear timeframes for completing applications

SERVICE DELIVERY

- Ensure that case management services are provided by qualified staff
- Hire local staff with experience in the communities
- Fully integrate not-for-profit service providers in disaster assistance planning
- Fully engage the community
- Develop a reliable and straightforward communication strategy

POLICY

- Rationalize SBA loans and other disaster benefits
- Create a model that reduces the need to turnover unspent benefits to the program
- Design a flexible benefit package that can disburse benefits quickly to homeowners who complete needed repairs, including elevation and rebuilding of their homes
- Develop on-going housing resiliency programs that can be expanded in the event of a disaster

Introduction to the Study

In the aftermath of Hurricane Sandy in October 2012, New York City established the Build It Back Program (the "Program") in 2013 to assist the recovery of affected New Yorkers within a resiliency framework. Funded by the Housing and Urban Development (HUD) Community Development Block Grant - Disaster Recovery (CDBG-DR) – the Program assists homeowners in reconstructing their houses – either repairing or rebuilding their homes or acquiring their property – and reimburses them for repairs already completed. As of March 2018, Build It Back, housed in the Mayor's Office of Housing Recovery Operations (HRO) had served over 8,250 of the approximately 8,300 active applicants by starting construction, providing a reimbursement check, or acquiring their property.

To provide an empirically based understanding of who left the Program before receiving one of these Program benefits, Build It Back partnered with the Center for Urban Research (CUR) at the Graduate Center, CUNY. Our goal was to establish the stage of the process when initial applicants later became inactive and the reasons why they did so, despite their having initially indicated that they needed to mitigate storm damage to their property.

To this end, CUR and HRO staff analyzed Build It Back administrative data and then CUR conducted a survey of Build It Back registrants. (Only CUR had access to the survey data, which were collected on a confidential basis.) The study investigated various possible reasons for attrition by asking such questions as: Did homeowners secure other sources of funding? Were the documentation requirements, or the efforts to ensure that benefits were not duplicated, excessively burdensome? And, were homeowners dissatisfied with the Program offerings presented to them?

Using a rigorous, mixed-methods approach to seeking answers to these and similar questions, we illuminate the main factors leading to attrition and retention in the Build It Back Program and identify ways to improve the process for similar future recovery programs in New York City and elsewhere. The first part of the analysis draws on administrative data from the Program as well as census data on the 13 neighborhoods in which most of the damaged homes were located. The second part of the analysis draws on the online survey which sampled not only applicants at all stages of the process, but also those who only initially registered an interest in the Program but did not submit applications.

Program Funding Background

This study examines various aspects of the New York City Build It Back Program, the housing recovery program created to repair and reconstruct owner and renter occupied homes damaged by Hurricane Sandy in October 2013. The Program is funded by the Federal Community Development Block Grant – Disaster Recovery (CDBG-DR) program. Administered by the U.S. Department of Housing and Urban Development (HUD), CDBG-DR provides flexible grants to help cities, counties, and states recover from presidentially declared disasters, subject to a supplemental appropriation. CDBG-DR is intended to serve communities with recovery needs that have not been met by other disaster assistance resources. For Sandy, there is an overall requirement that 50 percent of the benefits go to low- and moderate-income households.

On January 29, 2013, President Obama signed the "Disaster Relief Appropriations Act of 2013" (Public Law 113-2), which provided what was originally $16 billion in Community Development Block Grant-Disaster Recovery (CDBG-DR) funds to repair and restore areas affected by Hurricane Sandy. The intended scope of CDBG-DR spending for this appropriation was earmarked "…for necessary expenses related to disaster relief, long-term recovery, and restoration of infrastructure, housing, and economic revitalization...".[1] On May 10, 2013, HUD approved New York City's Initial Action Plan, which detailed the City's proposed use of its $1,772,820,000 CDBG-DR funding allocation. On November 18, 2013, HUD published details on a second round of funding and the City of New York was awarded an additional $1,447,000,000. A third allocation totaling $994,056,000 was specified on October 16, 2014, bringing the city's total CDBG-DR funding to $4,213,876,000. Of the $4.2 billion, the City allocated $2.213 billion towards assisting single-family homeowners, with additional allocations for other assistance programs operating under the Build It Back umbrella.

Table 1 below shows the various funding allocations for the Build It Back, Single Family Program, including the date of each funding allocation that occurred from 2013 through 2016.

[1] Disaster Relief Appropriations Act of 2013 Pub. L. No. 113-2 (Jan. 29, 2013).

Table 1: Build It Back – Single Family Program Funding Allocations		
Funding Allocations	**Date of Funding Allocation**	**Funds Allocated**
Allocation 1	5/10/2013	$ 306,000,000
Allocation 2	6/13/2014	$ 716,000,000
City Reallocation 1	2/13/2015	$ 197,000,000
Allocation 3	2/13/2015	$ 494,056,000
City Reallocation 3	12/30/2016	$ 500,000,000
Total		**$ 2,213,056,000**

Note: *These funds do not include Planning and Administrative activities. These funds are reflected in the approved Action Plan incorporating amendments 1-15, and do not reflect proposed changes included in any future amendments.*

The $2.2 billion in housing recovery funds were used for the following eligible activities:

- Reimbursing homeowners for post-storm repair expenses
- Constructing new homes in the floodplain
- Buying damaged properties in the floodplain
- The Rehabilitation and elevation of homes damaged by the storm

Until the funding was fully secured in 2014, homeowners earning more than 80 percent of Area Median Income (AMI) were not eligible to receive construction repairs or home elevation.

It is important to note that under federal law, this funding, allocated by Congress after presidentially declared disasters, can only be used as funding of *last* resort, made available after property owners have exhausted all other forms of disaster assistance. The grantee may only provide assistance to beneficiaries when it assures that their disaster recovery needs have not been fully met through insurance proceeds, other federal grants or loans, or state, local or charitable funds.

HUD and other federal agencies assist state and local governments with their response and recovery responsibilities following major disasters and emergencies under a provision of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (1988). The HUD CDBG-DR program was first implemented in a presidentially declared disaster in FY 1993.[2] Overall, Congress has authorized twenty supplemental appropriations, ranging from recovery following

[2] https://www.fema.gov/pdf/about/stafford_act.pdf, p. 71.

the Oklahoma City bombing, to the upper Midwest floods in FY 2008, and multiple natural disasters occurring in 2011. Only in 2006 did HUD establish its Disaster Recovery and Special Issues Division to administer CDBG-DR funds. In recent years, there has been an annual average of 63 presidentially declared disasters. There are currently 32 active CDBG-DR grantees, including 27 states and 5 local governments receiving a combined total of $29.8 billion.[3] With the recent floods in Louisiana, South Carolina, Texas, Florida and Puerto Rico where thousands of homes were damaged or destroyed, additional grants will be forthcoming.

HOUSING RECOVERY IN NEW YORK CITY: EXTENT OF HOUSING DAMAGE IN NEW YORK CITY

Approximately ten percent of New York City's population resided in the area that was flooded by Hurricane Sandy. The storm completely destroyed and damaged homes across Brooklyn, Queens, and Staten Island, affecting a broad cross-section of New Yorkers living in the city's waterfront communities. According to a preliminary analysis released in early 2013:[4]

- More than 800 buildings were destroyed or became structurally unsound. More than 95 percent of these buildings are one- or two-family homes.
- Approximately 1,700 buildings suffered major damage, of which approximately 1,400 are one- or two-family homes. Major damage typically corresponds to flooding of basements and ground floor living spaces.
- Approximately 16,000 buildings suffered moderate damage, of which approximately 15,000 are one- or two-family homes. Moderate damage typically corresponds to basement flooding with little or no impact to ground floor living spaces.

Beginning in 2013, homeowners initially registered a total of 20,725 properties to participate in the Program. After taking into account duplicate registrations, registrants who were ineligible because they could not meet Program eligibility requirements, and others who opted for state buyouts/acquisitions or who did not provide sufficient contact data, owners of the remaining 18,266 registered properties (termed registrants in our study) could take the next step of applying. Of those, 13,545 began the process of filing applications for assistance (termed

[3] 2016 Overview of CDBG-DR Webinar, March 15, 2016, https://www.hudexchange.info/resources/documents/CDBG-Disaster-Recovery-Overview.pdf.
[4] http://www.nyc.gov/html/cdbg/html/approved/action_plan.shtml

applicants). In the end, 8,300 completed their applications, but the owners of almost 5,000 properties left the Program before this point and never started an application for the Program after registration. Further information on defining these categories may be found in Section 3 of this report. This study seeks to determine the stage at which applicants left the Program as well as the reasons why they did so.

We begin our analysis by describing the severity of damage sustained from Hurricane Sandy in communities across New York City and comparing and contrasting the most heavily damaged neighborhoods in terms of their socio-demographic, income, and neighborhood characteristics.

SECTION 1: PROFILES OF COMMUNITIES AFFECTED BY STORM

This section reports on the neighborhoods containing most of the homeowners who submitted a Build It Back application after Hurricane Sandy. This profile section analyzes those who filed applications (applicants) and *excludes* homeowners who only registered with the Program but did *not* then submit a Build It Back application (registrants).

Homeowners who submitted a Build It Back application were distributed across 136 of New York City's 189 residential neighborhoods (neighborhood tabulation areas, or NTAs, as defined by the New York City Department of City Planning). Although Build It Back applicants were widely distributed across the City, the vast majority were concentrated in thirteen neighborhoods; the 12,130 applicants in these neighborhoods account for 90 percent of the 13,545 applicants studied.

Table 2 below lists the top thirteen neighborhoods, ranked in order of the number of Build It Back applications submitted by owners residing in the neighborhoods. The table shows:

- **Four neighborhoods located in Queens account for 42 percent** of all applications
- **Five neighborhoods located in Brooklyn account for 29 percent** of all applications
- **Four neighborhoods in Staten Island account for 19 percent** of all applications

Table 2: Number and Percent of Applicants in Thirteen Study Neighborhoods
(Excludes Registrants Only who did not submit a Build It Back application)

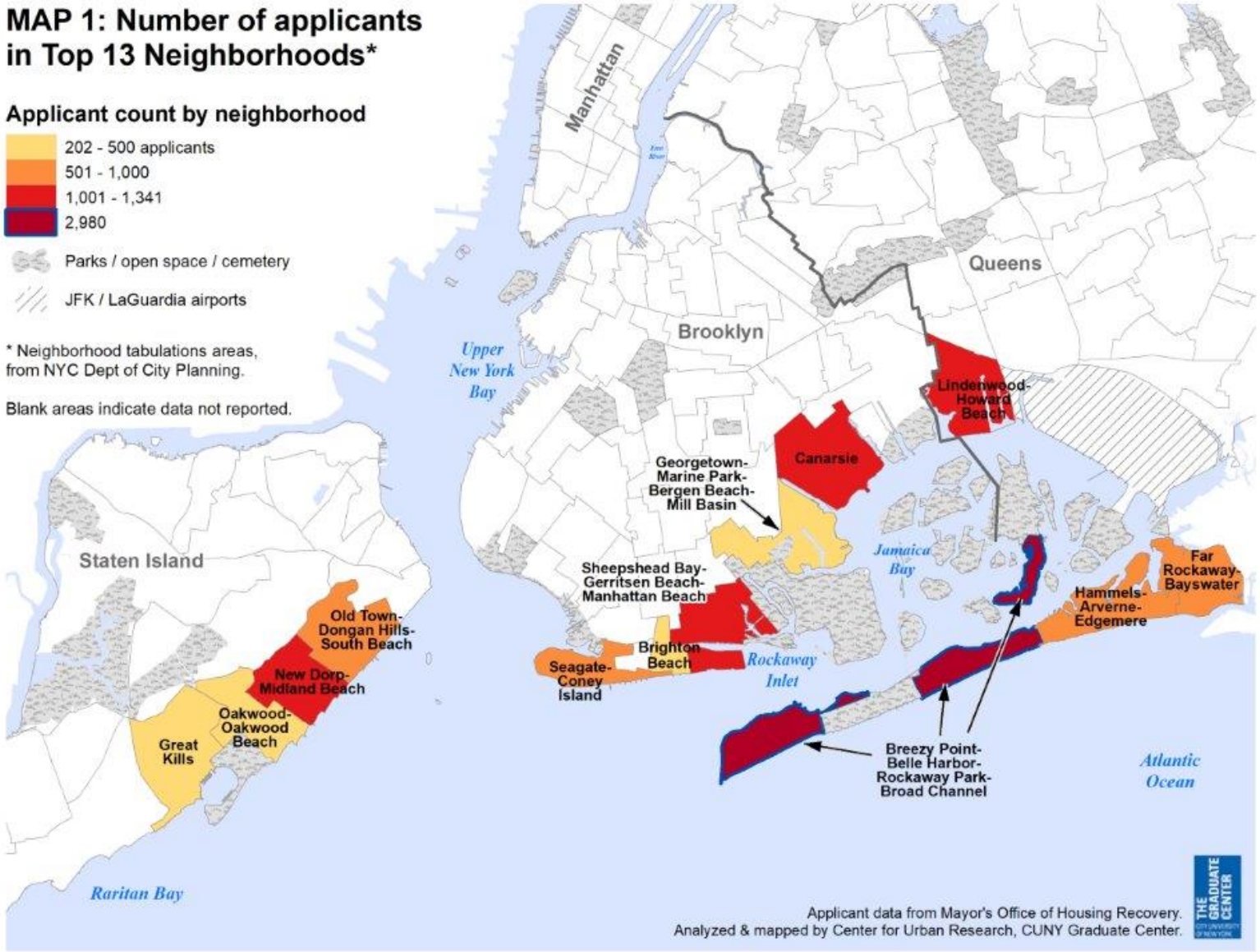
Rank	Neighborhood	Borough	Number of Applicants	Percent of Applicants
1	Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	Queens	2,980	22%
2	Sheepshead Bay, Gerritsen Beach, Manhattan Beach	Brooklyn	1,341	10%
3	Canarsie	Brooklyn	1,327	10%
4	Lindenwood, Howard Beach	Queens	1,239	9%
5	New Dorp, Midland Beach	Staten Island	1,182	9%
6	Hammels, Arverne, Edgemere	Queens	867	6%
7	Old Town, Dongan Hills, South Beach	Staten Island	725	5%
8	Seagate, Coney Island	Brooklyn	654	5%
9	Far Rockaway, Bayswater	Queens	557	4%
10	Oakwood, Oakwood Beach	Staten Island	474	4%
11	Georgetown, Marine Park, Bergen Beach, Mill Basin	Brooklyn	332	3%
12	Brighton Beach	Brooklyn	250	2%
13	Great Kills	Staten Island	202	2%
	Total Top 13 Neighborhoods		**12,130**	**90%**
	Total Applicants		**13,545**	

Indeed, the top six neighborhoods listed in Table 2 account for two-thirds (8,936) of all the applications in the thirteen neighborhoods. Furthermore, Map 1 below shows the geographic distribution of the applications across the thirteen neighborhoods. It is clear from the map that the neighborhoods bordering the ocean suffered the most damage from hurricane winds, water surges, and flooding. As can be readily seen, the neighborhoods with the most homeowners experiencing storm damage, as measured by the number of applications submitted, were in Queens, Brooklyn, and Staten Island. The Rockaway Peninsula in Queens was hardest hit by the storm as evidenced by the large number of residents who engaged in the application process. The Rockaway Peninsula in Queens includes three contiguous NTAs: Breezy Point, Belle Harbor, Rockaway Park, Broad Channel and Hammels, Averne, Edgemere and Far Rockaway, Bayswater. The only other Queens neighborhood with a sizeable number of applications was Lindenwood, Howard Beach located on the southern shore of Queens county.

The Breezy Point, Belle Harbor, Rockaway Park, Broad Channel NTA in Queens had the largest number of applicants (2,980), followed by the Sheepshead Bay, Gerritsen Beach, Manhattan Beach and Canarsie NTAs in Brooklyn, with 1,341 and 1,327 applications, respectively. The Lindenwood, Howard Beach and Hammels, Arverne, Edgemere NTAs in Queens had an additional 1,239 and 867 applications, respectively. Finally, New Dorp, Midland Beach, Staten Island also had a large number of applications with 1,182.

In Brooklyn, the storm damaged five neighborhoods bordering the ocean in South Brooklyn; however, the different numbers of applications submitted showed that they were not equally affected. For example, Canarsie and Sheepshead Bay, Gerritsen Beach, Manhattan Beach NTAs had the largest number of applications of the five Brooklyn neighborhoods. Seagate, Coney Island followed the two aforementioned neighborhoods in number of applications. Brighton Beach and Georgetown, Marine Park, Bergen Beach, Mill Basin had substantially fewer applications than the other three Brooklyn neighborhoods.

On Staten Island, four neighborhoods generated sizeable numbers of applications. New Dorp, Midland Beach had the most applications followed by Old Town, Dongan Hills, South Beach. To the south, two other neighborhoods had substantially fewer applications including Great Kills and Oakwood, Oakwood Beach.


MAP 1: Number of applicants in Top 13 Neighborhoods*
Applicant count by neighborhood
202 - 500 applicants
501 - 1,000
1,001 - 1,341
2,980
Parks / open space / cemetery
JFK / LaGuardia airports
* Neighborhood tabulations areas, from NYC Dept of City Planning.
Blank areas indicate data not reported.
Manhattan
Queens
Brooklyn
Upper New York Bay
Lindenwood-Howard Beach
Canarsie
Georgetown-Marine Park-Bergen Beach-Mill Basin
Jamaica Bay
Far Rockaway-Bayswater
Hammels-Arverne-Edgemere
Sheepshead Bay-Gerritsen Beach-Manhattan Beach
Brighton Beach
Seagate-Coney Island
Rockaway Inlet
Breezy Point-Belle Harbor-Rockaway Park-Broad Channel
Atlantic Ocean
Staten Island
Old Town-Dongan Hills-South Beach
New Dorp-Midland Beach
Oakwood-Oakwood Beach
Great Kills
Raritan Bay
Applicant data from Mayor's Office of Housing Recovery.
Analyzed & mapped by Center for Urban Research, CUNY Graduate Center.
THE GRADUATE CENTER

SEVERITY OF DAMAGE INFLICTED BY HURRICANE SANDY

One indicator of severity of damage is the percent of applicants whose property the Build It Back Program determined to be *substantially damaged* by Hurricane Sandy. Table 3 below provides a summary of the number and percent of applicants whose property was determined to be *substantially damaged* based on the Program's on-site evaluation of the level of damage sustained as a result of Hurricane Sandy[5]. Note that Table 3 *excludes* registrants who did not engage in the Build It Back application process and also excludes applicants that left the Program before completing the Program's on-site evaluation of the level of damage sustained.

Table 3: Study Neighborhoods Ranked by Applicant Percent Substantially Damaged
(Excludes Registrants Only who did not submit a Build It Back application)

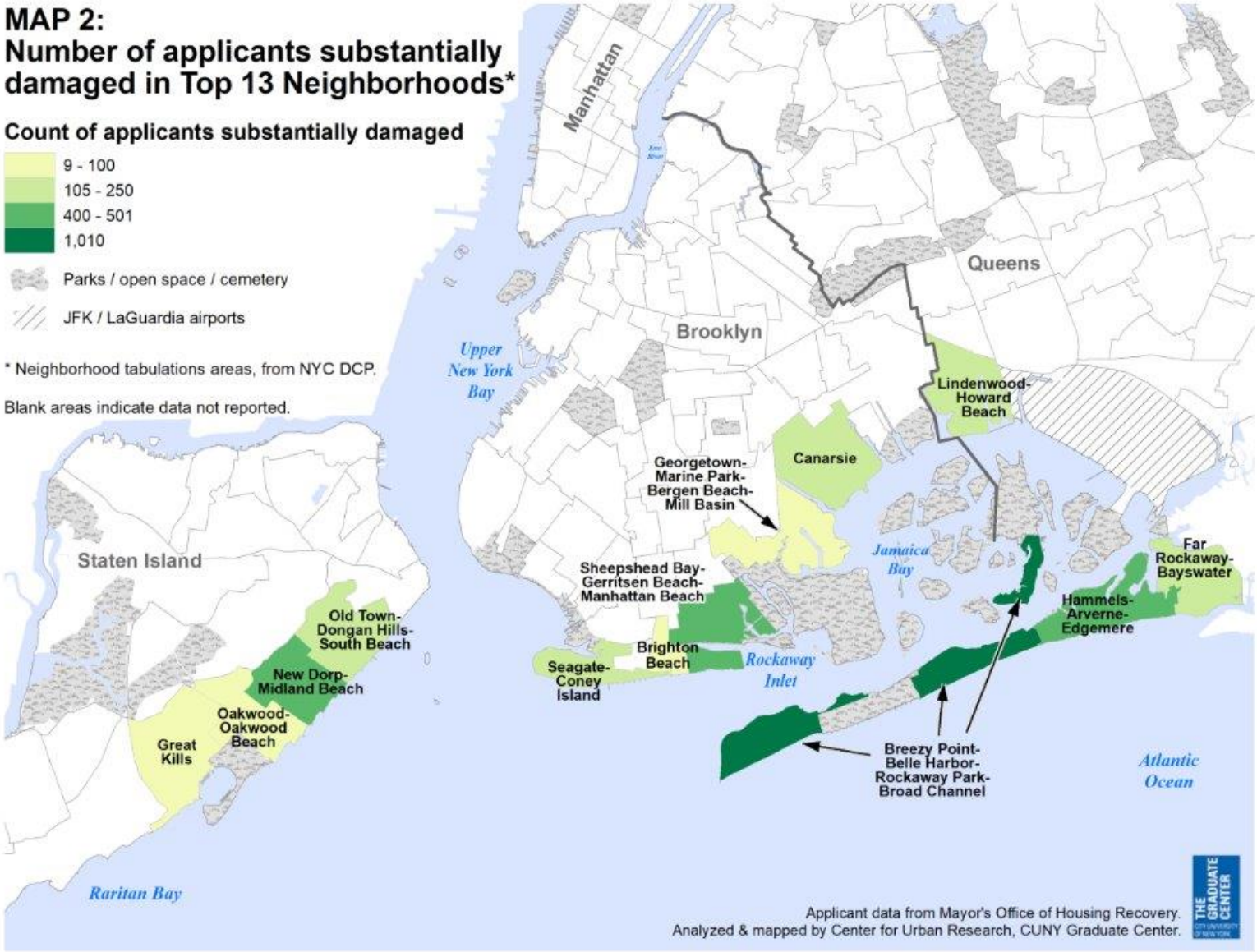
Neighborhood	Borough	Applicants with Level of Damage Determined	Substantially Damaged Applicants*	Percent of Neighborhood Applicants Substantially Damaged	Percent of All Applicants Substantially Damaged
1. Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	Queens	2,509	1,010	40%	30%
2. New Dorp, Midland Beach	Staten Island	1,023	501	49%	15%
3. Hammels, Arverne, Edgemere	Queens	740	436	59%	13%
4. Sheepshead Bay, Gerritsen Beach, Manhattan Beach	Brooklyn	1,125	400	36%	12%
5. Old Town, Dongan Hills, South Beach	Staten Island	610	227	37%	7%
6. Lindenwood, Howard Beach	Queens	1,042	204	20%	6%
7. Seagate, Coney Island	Brooklyn	564	129	23%	4%
8. Far Rockaway, Bayswater	Queens	464	116	25%	4%
9. Canarsie	Brooklyn	1,152	105	9%	3%
10. Oakwood, Oakwood Beach	Staten Island	409	68	17%	2%
11. Great Kills	Staten Island	177	66	37%	2%
12. Brighton Beach	Brooklyn	199	43	22%	1%
13. Georgetown, Marine Park, Bergen Beach, Mill Basin	Brooklyn	278	9	3%	0%
Total Applicants		**10,292**	**3,314**	**32%**	**100%**

**Based on Build It Back's Damage Assessment, with a Preliminary Pathway requiring either Elevation or Reconstruction.*

[5] Note that *substantially damaged* homes include approximately 2,600 properties considered *substantially damaged*, having sustained more than 50 percent of its structure value in storm damage. *Substantially damaged* homes also include approximately 700 properties considered *substantially improved*, where the total dollar value of storm related repairs is more than 50 percent of its structure value.

Applicants with substantially damaged property typically pursued a Program pathway of "*Major Rehabilitation (Elevation)*" or "*Reconstruction.*" It is clear from Table 3 above that the severity of damage sustained by Hurricane Sandy varies considerably across the thirteen neighborhoods, ranging from a low of 3 percent of all applicants in Georgetown, Marine Park, Bergen Beach, Mill Basin being substantially damaged to a high of 59 percent in the Hammels, Arverne, Edgemere, Queens NTA.

Table 3 above lists the thirteen neighborhoods in order of the number of applicants with *substantially damaged* property. The first eight neighborhoods listed account for 91 percent of all *substantially damaged* property in the city. Neighborhoods in Queens accounted for 53 percent of all substantially damaged properties, Staten Island neighborhoods accounted for 26 percent of substantially damaged properties and Brooklyn accounted for 21 percent of substantially damaged properties among the top thirteen neighborhoods. See Map 2 below for the number of applicants in the top 13 neighborhoods whose homes needed to be elevated or reconstructed.


MAP 2:
Number of applicants substantially damaged in Top 13 Neighborhoods*
Count of applicants substantially damaged
9 - 100
105 - 250
400 - 501
1,010
Parks / open space / cemetery
JFK / LaGuardia airports
* Neighborhood tabulations areas, from NYC DCP.
Blank areas indicate data not reported.
Manhattan
Queens
Brooklyn
Staten Island
Upper New York Bay
Jamaica Bay
Rockaway Inlet
Atlantic Ocean
Raritan Bay
Lindenwood-Howard Beach
Canarsie
Georgetown-Marine Park-Bergen Beach-Mill Basin
Sheepshead Bay-Gerritsen Beach-Manhattan Beach
Brighton Beach
Seagate-Coney Island
Far Rockaway-Bayswater
Hammels-Arverne-Edgemere
Breezy Point-Belle Harbor-Rockaway Park-Broad Channel
Old Town-Dongan Hills-South Beach
New Dorp-Midland Beach
Oakwood-Oakwood Beach
Great Kills
Applicant data from Mayor's Office of Housing Recovery.
Analyzed & mapped by Center for Urban Research, CUNY Graduate Center.
THE GRADUATE CENTER

Next, we compare and contrast the thirteen neighborhoods most affected by the storm in terms of their socio-demographic, income, and other neighborhood characteristics.

NEIGHBORHOOD CHARACTERISTICS

Population characteristics of the thirteen neighborhoods at the time of the storm in 2012, as well as characteristics of owner-occupied housing units, are based on data from the *Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File*. The Census collects these data at a relatively small level of geography (a census tract) which we then aggregated to the neighborhood level using the NYC Department of City Planning's neighborhood tabulation areas (NTAs). Using the census data enables us to estimate some demographic variables that the Build It Back registrant information system attempted to record, but have high rates of missing data due to registrants leaving the Program before providing the information or refusing to provide it. The census data also enables us to present an overall picture of neighborhood characteristics at the time of Hurricane Sandy as well as the characteristics of the homeowners living in them.

Our analysis of the census data shows that the thirteen study neighborhoods vary markedly in terms of their socio-economic characteristics. A broad variety of these data are summarized in Table 4, which lists and ranks characteristics concerning:

- **Household Income** *(Median Household Income of Owner and Renter Occupied Housing Units)*
- **Poverty Level** *(Percent with Income Below the Poverty Level)*
- **Home Value** *(Median Value of Owner-Occupied Housing Units)*
- **Renter Units as Percent of All Occupied Housing Units**
- **Educational Attainment** *(Percent with Bachelor's Degree or Higher)*
- **Racial/Ethnic Composition of Homeowners**

As shown in Table 4, neighborhoods differ in terms of how many of their residents are homeowners (who are primarily owners of 1-4 family homes) compared to renters. In some neighborhoods, renter occupied units comprised a rather larger percent of all occupied units. For example, renter occupied units made up the overwhelming majority of occupied units in the Hammels, Arverne, Edgemere (68 percent) and Far Rockaway (74 percent) NTAs in Queens and Canarsie (84 percent) and Brighten Beach (71 percent) NTAs in Brooklyn. These four neighborhoods also had the smallest number of owner-occupied units.

In terms of owner-occupied units, the neighborhoods with the lowest median household incomes (less than $75,000 per year) include Lindenwood, Howard Beach and Hammels, Arverne, Edgemere in Queens and Seagate, Coney Island in Brooklyn. Neighborhoods with the highest median household income were Breezy Point, Belle Harbor, Rockaway Park, Broad Channel, Queens and three neighborhoods in Staten Island including New Dorp, Midland Beach, Oakwood, Oakwood Beach and Great Kills (where median incomes were greater than $86,000 per year). Besides the lowest and highest income, the other neighborhoods were intermediate with total household income of owner-occupied units clustered between $75,000 and $80,000 per year.

What about the median values of owner-occupied units? Curiously, the neighborhoods with the highest median values were not necessarily the same neighborhoods that had the highest household incomes. In terms of highest median home values, Breezy Point, Belle Harbor, Rockaway Park, Broad Channel, in Queens, among the most heavily damaged neighborhoods, had the highest median home value at $591,000, followed by Georgetown, Marine Park, Bergen Beach, Mills Basin ($555,047) and Brighton Beach ($521,641) in Brooklyn and Lindenwood, Howard Beach ($501,271) in Queens.

The thirteen neighborhoods also vary with respect to the racial/ethnic composition of the owners of occupied units. In nine of the thirteen neighborhoods, White non-Hispanics comprised at least 80 percent of the homeowner population. (The predominant racial/ethnic groups are identified when one or more race/ethnicity accounts for 80 percent or more of the neighborhood's population. See ***Appendix 6*** for the census and Program dataset used to create the profile of the thirteen neighborhoods reported on here.)

The nine neighborhoods where 80 percent of owners of occupied units are ***White, non-Hispanic*** include:

- Great Kills – Staten Island (92 percent)
- Oakwood, Oakwood Beach – Staten Island (90 percent)
- Breezy Point, Belle Harbor, Rockaway Park, Broad Channel – Queens (89 percent)
- New Dorp, Midland Beach – Staten Island (86 percent)
- Old Town, Dongan Hills, South Beach – Staten Island (83 percent)
- Lindenwood, Howard Beach – Queens (81 percent)
- Seagate, Coney Island – Brooklyn (80 percent)
- Georgetown, Marine Park, Bergen Beach, Mill Basin – Brooklyn (80 percent)
- Brighton Beach – Brooklyn (80 percent)

Some neighborhoods are primarily Minority-majority neighborhoods where White non-Hispanic owners comprise less than 40 percent of the owner population. The four predominantly Minority/majority neighborhoods include:

- Canarsie – Brooklyn, 61 percent of homeowners are comprised of either Asians (28 percent), Latinos (16 percent), Blacks (11 percent), or Other (7 percent)
- Far Rockaway, Bayswater – Queens, the largest subgroup of homeowners is Black (48 percent), followed by Hispanics (11 percent), and Asian/others (8 percent)
- Hammels, Arverne, Edgemere – Queens, the largest group of homeowners is also Black alone (50 percent), followed by Hispanics (16 percent), and Asian/Others (10 percent)
- Sheepshead Bay, Gerritsen Beach, Manhattan Beach – Brooklyn, 80 percent of all owners are Black, followed by Hispanics (5 percent), and Asian/others (6 percent). White, non-Hispanic comprise only 9 percent of homeowners.

Table 4 below summarizes the characteristics across the thirteen neighborhoods. *Appendix 6* provides the full census and Program dataset used to profile the thirteen neighborhoods.

Table 4: Profile of 13 New York City Neighborhoods with Largest Number of Build It Back Applicants (*Excludes Registrants Only who did not submit a Build It Back application)*

Categorizations Based on data from Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File

	Number of Applicants	Percent of All Applicants Studied: 13,545	Median Household Income *(Total Occupied Housing Units)*	Percent with Income Below Poverty Level	Median Value of Owner-Occupied Housing Units	Renter Units as Percent of All Housing Units	% Owners having attained Bachelor's degree or higher	Predominant Races/ Ethnicities**
Top 13 Neighborhoods	**12,130**	**90%**	--	--	--	--	--	--
Queens								
Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	2,980	22%	Highest ($92,000)	Lowest (6%)	Highest ($591,000)	Intermediate (36%)	Highest (42%)	White *(not Hispanic)* Hispanic/Latino
Lindenwood, Howard Beach	1,239	9%	Lowest ($72,000)	Intermediate (9%)	Highest ($501,000)	Lowest (27%)	Lowest (25%)	White (*not Hispanic*), Hispanic/Latino
Hammels, Arverne, Edgemere	867	6%	Lowest ($74,000)	Highest (30%)	Lowest ($349,000)	Highest (68%)	Lowest (26%)	Minority-majority
Far Rockaway, Bayswater	557	4%	Intermediate ($80,000)	Highest (24%)	Intermediate ($472,000)	Highest (74%)	Highest (43%)	Minority-majority
Brooklyn								
Sheepshead Bay, Gerritsen Beach, Manhattan Beach	1,341	10%	Intermediate ($75,000)	Intermediate (15%)	Intermediate ($494,000)	Intermediate (51%)	Intermediate (33%)	Minority-majority
Canarsie	1,327	10%	Intermediate ($78,000)	Highest (33%)	Intermediate ($487,000)	Highest (84%)	Lowest (27%)	Minority-majority
Seagate, Coney Island	654	5%	Lowest ($66,000)	Intermediate (8%)	Lowest ($413,000)	Lowest (26%)	Highest (44%)	White (*not Hispanic*), Black alone
Georgetown, Marine Park, Bergen Beach, Mill Basin	332	3%	Intermediate ($79,000)	Intermediate (16%)	Highest ($555,000)	Intermediate (49%)	Highest (43%)	White *(not Hispanic),* Asian Alone
Brighton Beach	250	2%	Intermediate ($82,000)	Highest (27%)	Highest ($521,000)	Highest (71%)	Highest (58%)	White *(not Hispanic),* Asian Alone
Staten Island								
New Dorp, Midland Beach	1,182	9%	Highest ($87,000)	Intermediate (7%)	Lowest ($447,000)	Lowest (25%)	Lowest (29%)	White *(not Hispanic),* Hispanic/Latino
Old Town, Dongan Hills, South Beach	725	5%	Intermediate ($77,000)	Intermediate (9%)	Intermediate ($461,000)	Intermediate (34%)	Intermediate (33%)	White *(not Hispanic),* Hispanic/Latino
Oakwood, Oakwood Beach	474	4%	Highest ($95,000)	Lowest (5%)	Intermediate ($466,000)	Intermediate (31%)	Intermediate (32%)	White *(not Hispanic),* Hispanic/Latino
Great Kills	202	2%	Highest ($97,000)	Lowest (5%)	Lowest ($458,000)	Lowest (15%)	Intermediate (32%)	White *(not Hispanic)*

Definitions of Categories for Neighborhood Characteristics	**Median Household Income**	**% Income Below Poverty Level**	**Median Value of Owner-Occupied Housing Units**	**Renter Occupied as % of All Occupied Units**	**% Owners having attained Bachelor's degree or higher**
Lowest	<$75,000	<7%	<$460,000	<30%	<30%
Intermediate	$75,000 to $80,000	7% to 20%	$460,000 to $500,000	30% to 60%	30% to 40%
Highest	>$80,000	>20%	>$500,000	>60%	>40%

**Predominant Races/ Ethnicities account for 80% or more of neighborhood population. Minority-majority indicates 3 or more Races/Ethnicities account for 80% or more of neighborhood population.

HURRICANE SANDY: AN ACROSS-THE-BOARD NATURAL DISASTER

The data presented from the *Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File* for the thirteen neighborhoods with the largest number of Build It Back applicants make it abundantly clear that Hurricane Sandy had negative impacts on a broad range of neighborhood types. It hit high- and low-income areas with renters as well as homeowners, and minority as well as predominantly white residents.

The thirteen neighborhoods also varied in terms of the level of damage sustained from Hurricane Sandy. However, it is also clear that the hurricane's storm surge disproportionately affected homes on the Rockaway peninsula, neighborhoods on the southern shore of Brooklyn and Queens, and neighborhoods on the eastern coast of Staten Island.

We will now discuss how the Build It Back Program was implemented and the benefits it made available to those affected by Hurricane Sandy.

SECTION 2: PROGRAM IMPLEMENTATION

The Build It Back Program began in June 2013, eight months after Hurricane Sandy hit and four months after the first appropriation of CDBG-DR funding. The Bloomberg Administration established a single program management entity, the Mayor's Office of Housing Recovery Operations (HRO), to oversee the Program. HRO hired contractors to set up customer service centers, determine and verify eligibility, inspect homes to assess damage, provide financial/legal counseling, design scopes of work, and complete construction activity. Program administrators designed a multi-step intake process to certify eligible applicants. Benefit delivery to eligible participants follows codified procedures which have evolved over the life of the Program. We start our discussion of the Build It Back Program by reporting on its four major phases.

PHASE 1: INTAKE, ELIGIBILITY DETERMINATION, PROPERTY INSPECTION, OPTION SELECTION

The first phase of the Program involves completing the following steps:

- Registering with the Program
- Providing required documents after intake
- Assessing eligibility
- Inspecting the property damage and feasibility of reconstruction
- Evaluating benefits received from all sources
- Selecting a program pathway (option)

Official Build It Back Program registration took place between June 3, 2013 and October 31, 2013. Homeowners were instructed to call the City's 311 Customer Call Center to register for the Program and any New York City homeowner could register for the Program. Program registration closed on October 31, 2013, by which time 20,275 households had registered for the Program.

On July 8, 2013, one month after the initial Program registration calls were started, the Program established *Build It Back Centers* located within the affected communities, opening their doors to all registrants. Program counselors began conducting interviews with registered homeowners and collecting documents for intake – ***registrants*** submitted an application

along with all required documentation to officially become an ***applicant*** in the Program. The intake documents for applicants were then sent to an off-site vendor for eligibility assessment.

Once the applicants were found eligible, the Build It Back Program dispatched an inspector to assess property damage (in some cases, the damage assessment was completed prior to an eligibility determination to expedite processing). The inspector's report determined whether the home would need to be repaired, elevated, or rebuilt. This analysis factored in the cost of the repair and the value of the home.[6] According to federal rules, if the assessed damage is 50 percent or more of the home's value, the home is substantially damaged and must be elevated or rebuilt to make it safe and more resilient in future storms.

Program staff also conducted an assessment of all storm-related benefits the applicant was receiving from insurance and other sources to repair their home in order to determine any remaining financial gap. Applicants may have received recovery assistance from the Federal Emergency Management Agency (FEMA), the federal Small Business Administration (SBA), private insurance, or philanthropic sources.[7] Under federal law, *the Program cannot duplicate a benefit already provided and must collect from the applicant any unused funds* or ***remaining disaster benefits***; this amount is termed the ***transfer amount***. The Program contracted with legal and financial counselors to help applicants prove that they spent these funds on the approved repairs, so they would not be considered a duplication of benefit and would not need to be collected by the Program. The financial calculation ("Coordination of Benefits calculation") on any given property were revised multiple times as applicants continued to bring in receipts. The final step in this phase of the Program was to call the applicant in for a meeting to sign their Option Selection Agreement and the final financial contribution calculation.

In the summer of 2015, when application processing was nearing completion, Build It Back identified 6,300 unresponsive registrants who had not submitted an application or were found eligible but had not signed an Option Selection Agreement. As part of the 2015 outreach

[6] The value of the structure on the property but not the land itself was provided by the New York City Department of Finance, which collects and maintains detailed records of housing values, tax assessments, and other characteristics of parcels and buildings in New York City.

[7] https://www.hudexchange.info/resources/documents/CDBG-DR-Duplication-of-Benefits-Slides.pdf

campaign, the Program targeted senior citizens, disabled, and Low- to moderate-income households for special outreach. Build It Back commissioned local community groups, case managers, and volunteers to engage in a door-to-door effort to encourage homeowners to complete the intake and option selection phase of the Program. Build It Back publicized the outreach campaign through social media, announcements at meetings, and advertisements in local newspapers in multiple languages. As a result, the Program was able to re-engage 700 registrants who were not actively engaged in the Program, 11 percent of those who had been unresponsive. As of October 2017, the Program will serve nearly 600 registrants that were part of the 2015 outreach campaign with construction, a reimbursement check, or acquisition of their property.

PHASE 2: REIMBURSEMENT FOR POST-STORM REPAIRS

Once the applicant approved the Program benefit offered, signified by signing an option selection agreement, the Program could award the benefit. The first benefits to be awarded were reimbursement payments for eligible post-storm repairs made by the homeowners that were not substantially damaged. By the second year of Build It Back, the Program had processed reimbursements for a total of 5,789 Program participants, totaling $122.1 million in benefits.

PHASE 3: DESIGN AND CONSTRUCTION

The Build It Back Program model includes the option to provide City-managed or homeowner-managed construction. Under the City-managed model, the City hired contractors to design and rehabilitate homes. The model was designed to incorporate lessons learned from New Orleans and the Gulf Coast following Hurricane Katrina. In those programs, participants managed construction directly and then had to prove that the repairs were done according to federal standards. This resulted in the recapture of some disbursed funds because of poor construction, fraud and waste. The majority of construction assistance is through the City-managed model; however, the Program also offered homeowners the option of the aptly named choose-your-own-contractor (CYOC) model, and, for Moderate Rehabilitations, the Direct Grant pathway. Both of these options allow homeowners more control over contractor selection and management, construction schedule, and the design of their homes.

Several City agencies have partnered with HRO to manage the delivery of construction benefits through the Build It Back Program, including the Department of Housing Preservation and Development (HPD), which, like HRO, was involved in construction planning at the outset, and the Department of Design and Construction (DDC). In 2014, the City brought on DDC to oversee a significant portion of major construction projects focused on more complex projects, including attached homes. These measures quadrupled the new contract capacity for design and construction.

The construction benefit offered is informed by the level of storm damage sustained, as determined by the damage assessment conducted by the Program. Federal rules require the elevation of any home that sustained more than 50 percent of its structure value. Homeowners in this category were offered Major Rehabilitation (elevation) or Acquisition/Buyout. In instances where the damage warranted it, or an elevation was not feasible, the homeowners were offered Reconstruction (rebuild) or Acquisition/Buyout.

For applicants with homes that sustained less than 50 percent of its structure value in damage, alternative pathways include Moderate Rehabilitation (repairs), Moderate Rehabilitation with Reimbursement (if the value of previously performed repairs exceeds the benefits received by the homeowner) or Reimbursement-only (those receiving only reimbursements and no construction).

Once the applicant selects a construction pathway and the Program assigns a contractor, the design phase begins. Design plans are drawn up by the architect. Once completed, the applicant is given the opportunity to review the plans. This was often followed by a back and forth between the applicant and the architect. Some scope of work items can be negotiated but most cannot because the architect must follow a set of minimum standards established by the Program. For example, these standards do not allow the City to provide additional living space when a home is elevated, and the basement space is lost. Once the architect and the applicant agree to a scope of work, the applicant signs a contract (Grant Agreement) with the City and the contractor completes the construction.

We now discuss the study design for the analyses conducted to increase our understanding of the patterns of attrition and retention in the Build It Back Program.

SECTION 3: STUDY DESIGN – ANALYSIS OF ADMINISTRATIVE AND SURVEY DATA

The analyses reported rely on two main sources of data: (1) **administrative data** maintained as part of the Build It Back Program's Management Information System, as augmented by Census data; and (2) **survey data** obtained via an online, self-administered questionnaire emailed to all Build It Back registrants.

The first source of data is the administrative program data stored in Build It Back's internal system of registrant records and represents point-in-time outcomes as of **October 2016**. Demographic data and program-specific outcomes for each registrant are tied to a unique program identifier, termed an "*Application ID"*, which form the basic unit of analysis. In the Build It Back record system, each "*Application ID"* represents one property. Neighborhood characteristics were drawn from the *Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File* tract level data. Data were drawn from the NYC Department of Finance for each property to provide further context. As mentioned above, this analysis was carried out jointly by HRO and CUR staff.

An online survey of a large sample of registrants with valid email addresses was carried out by CUR to provide the second source of data. To preserve confidentiality, only CUR staff had access to this data. The survey allowed registrants to report their assessments of each phase of the Build It Back Program, including the degree of difficulty they experienced completing each phase and their satisfaction with the service provided. Registrants who left the Program were asked to indicate the key factors that lead to that decision. Surveying all registrants, regardless of their ultimate participation in the Program, allows us to determine similarities and differences across the entire registrant population. The survey data set also linked administrative data to each survey response for all those who completed the survey. These two distinct datasets – administrative outcomes and survey responses – were analyzed to better understand patterns of attrition and retention in the Build It Back Program.

The analysis uses a multivariate statistical technique called *logistic regression* to determine the statistical relationship between specific variables and the probability of attrition from the Build It Back Program. Logistic regression is typically used to predict a yes or no outcome, like whether or not one voted. In this case, we predict *completing* or *leaving* the Program. Multivariate analysis allows us to examine the statistical importance of many variables at the same time, or

what is referred to as looking at the impact of any given variable while statistically controlling for the effect of other variables in the equation. This approach allows us to determine which factors are statistically significant predictors of attrition within the Build It Back Program.

Before discussing the findings from both the administrative and survey data, it is important to provide background on (1) definitions of three subgroups of registrants explored in these analyses, (2) a general overview of the registrant population studied, and (3) some limitations of the administrative data.

DEFINING THREE SUBGROUPS OF REGISTRANTS: PERSISTERS, ATTRITERS, AND REGISTRANTS ONLY

Due to the low threshold required to register for the Build It Back Program, namely calling the toll-free government services 311 line, the subsequent analysis divides Build It Back Program registrants into three groups: (1) **Persisters**, (2) **Attriters**, and (3) **Registrants Only**. These three subgroups are referenced throughout the administrative and survey data analyses and are defined as follows:

1. **Persisters** include registrants who submitted and completed a Build It Back application and are actively being served by the Program to receive a benefit (or already received a benefit[s] at the time of our analysis.
2. **Attriters** include registrants who submitted a Build It Back application but may or may not have fully completed the application process and are no longer actively being served by the Program.
3. **Registrants Only** include registrants who never submitted a Build It Back application. *Registrants Only* had no or only minimal engagement with the Program subsequent to the initial registration call.

The main indicator of interest in Build It Back's internal system of registrant records, *Status Reason*, reflects the registrant's status within the Program and is used to distinguish between Program registrants actively pursuing benefits (*Persisters*) and those who are no longer active in the Program (*Registrants Only and Attriters*).

OVERVIEW OF REGISTRANT POPULATION STUDIED

It is important to note that the analysis of the administrative data excludes some registrants. Program regulations require the exclusion of registrants who identified as renters, who are ineligible for Program benefits. (New York City extended benefits to this population through other resources, including the Temporary Disaster Assistance Program.) The analysis also eliminates duplicate registrants for the same property. This happened when two or more family members called the 311 hotline in order to register the same property for the Build It Back Program. Unbeknownst to a registrant who phoned the 311 line, another family member, usually a spouse, had also previously called to register for the Program. A small group of applicants opted to pursue benefits under New York State's Buyout/Acquisition Program were excluded. The data set also excludes test registrants submitted by HRO Department of Management Information to assess the functionality of the management information system. Finally, some applications within the management information system presented data inconsistencies that precluded accurate analysis so were excluded from the population studied.

Table 5 below outlines the disposition of the entire Build It Back Registrant Population as of October 2016 for the resulting administrative data set. The data in Table 5 shows:

- **20,275** Total Registered for the Build It Back Program
- **2,009** Registrants were excluded from the population studied *(Ineligible, Opted for State Buyout Program, Data Missing/Inconsistent)*
- **18,266 Registrants provide the base population studied**
    - **4,721 Registrants Only** never submitted an application
    - **13,545** Registrants engaged in application process
        - **5,505 Attriters** submitted an application and are not now being served by the Program
            - **4,856 Attriters** did not complete their application
            - **649 Attriters** completed their application but left the Program
        - **8,040 Persisters** submitted an application and are being served by the Program

Table 5: Disposition of All Build It Back Registrants *(As of 10/2016)*
(Excludes Duplicate Registrants and Registrants Identified as Renters)

	Registrant Population Studied	Submitted Application	% of All Submitted Applications	Completed Application	% of All Completed Applications
Registrants Only	4,721	--	--	--	--
Attriters	5,505	5,505	41%	--	--
Didn't select Program Option	*4,856*	*4,856*	*36%*	--	--
Selected Program Option	*649*	*649*	*5%*	*649*	*7%*
Persisters	8,040	8,040	59%	8,040	93%
Total Population Studied	**18,266**	**13,545**	**100%**	**8,689**	**100%**

2,009 Registrants Excluded from Population Studied	
Ineligible	1,079
Opted for State Buyout Program	113
Data Missing/Inconsistent	817
Total Program Registrants	**20,275**

Table 6 below summarizes the approximate disposition of the entire Build It Back Registrant Population one year later, as of **September 2017,** based on the Program's testimony before the *New York City Council Committee on Recovery and Resiliency* (held on September 26, 2017). This table shows consistency with the Registrant Population Studied.

Table 6: Approximate Disposition of All Build It Back Registrants One Year Later (*As of 9/2017)*

	Registrant Population	Submitted Application	% Submitted Applications	Completed Application	% Completed Applications
Ineligible for Program	1,100	--	--	--	--
Registrants Only	4,900	--	--	--	--
Attriters	6,000	6,000	42%	--	--
Didn't select Program Option	*5,000*	*5,000*	*35%*	--	--
Selected Program Option	*1,000*	*1,000*	*7%*	*1,000*	*11%*
Persisters	8,300	8,300	58%	8,300	89%
Grand Total	**20,300**	**14,300**	***100%***	**9,300**	***100%***

LIMITATIONS OF THE ADMINISTRATIVE DATA

The administrative data have some important limitations. The *attriter* population may contain

ineligible registrants who never completed an application and chose not to move forward with the Program because they could not provide certain documentation to be deemed eligible for the Program. Because of this uncertainty, the Program coded them as "withdrawn" instead of "ineligible," thus counting them as *attriters*.

The Build It Back Program altered and improved its policies and procedures as challenges and administrative questions arose during the course of the Program operation. This also presents challenges for this analysis. While the data system accumulates these changes, it does not always clearly isolate the original and modified values in separate data fields. Furthermore, the chronology of policy implementation means that all data is not available for all the registrants. For example, the analysis uses the system's record of phone calls to assess the level of engagement and outreach during the intake and eligibility phase. The Program changed how it recorded the activities associated with outreach over time, leading to missing phone call activities for both a portion of *attriters* and *persisters*. Another consideration is the repurposing of data fields and changing meanings of terms used for various Program characteristics and outcomes, again due to the Program's evolving nature.

Where faced with incomplete data or an otherwise imperfect indicator, the analysis sought to identify the best data points available to track outcomes of interest. If a single data point could not be used, the analysis aggregated information from different fields and data sources to confirm, according to standardized logic, the final status of each applicant for a given outcome. In the end, the limitations of the data required the analysis to focus on the most significant and obvious results. More consistent data would have allowed for a more nuanced analysis of the administrative data on the margins.

SECTION 4: FINDINGS FROM THE ADMINISTRATIVE DATA

Prior to our analysis of the administrative data, Build It Back and CUR analysts met with Program staff in a semi-structured focus group setting to gather information about when, why, and how Build It Back staff believed registrants chose not to participate in the Program. The sections below highlight, among other things, the experiences that informed the Build It Back staff's conclusions. We start by reporting on the timing of registrant attrition (when registrants leave the Build It Back process). We then describe the key findings from the administrative data highlighting factors that are related to Program *attrition* and Program *retention*.

ATTRITION OCCURRED EARLY ON IN THE PROGRAM

As noted, many of those in the overall study population (26 percent) were **registrants only**. These registrants never submitted an application and left the Program early, either immediately after the 311 registration call or shortly after an intake meeting with Build It Back staff. Analysis of administrative data suggests that few of these 4,721 registrants attended an initial intake meeting at one of the Build It Back Centers.

Table 7: Overview of Registrant Population Studied		
	Total Registrants Studied	**% of Total Registrants Studied**
Registrants Only	4,721	26%
Attriters	5,505	30%
Persisters	8,040	44%
Total	**18,266**	**100%**

The second group, **attriters** (5,505), constituted 30 percent of all registrants. As noted earlier, *attriters* differ from *registrants only* in that they started the Build It Back Program by participating in the intake process and submitting an application. Among the *attriters*, 88 percent began the Intake and Eligibility phase but dropped out before selecting a program pathway. A smaller number of *attriters* (649 or 12 percent) selected a program pathway but dropped out at some point before receiving a Program benefit (see Table 8 below).

Table 8: Last Program Phase Reached by Attriters		
	Total Attriters	**% of Attriters**
1. Intake/Eligibility to Pathway Selection	*4,856*	***88%***
2. After Pathway Selection	*649*	***12%***
Total	**5,505**	**100%**

Program data also highlights that Build It Back's recording system marked over 6,100 registrants as Withdrawn or Unresponsive as of July 2014. To be in these states, these registrants either had asked to leave the Program or would have not responded to multiple Program requests. This data further highlights that the majority of the registrants left the Program within the first year.

The **persisters** became applicants by submitting *and* completing an application. They received a

benefit (reimbursement, construction or acquisition) or were still active in the Program when the administrative data analysis began in October 2017. They constitute 44 percent of the 18,266 registrants in the study population.

THE PROGRAM MADE MANY EFFORTS TO ENGAGE APPLICANTS

A question raised in focus groups with Build It Back Program staff is whether the Program made sufficient effort toward engaging registrants in the Program. That is, did registrants drop out simply because the Program failed to engage with them?

Administrative data indicates that Program staff made over 70,000 phone calls to registrants regarding intake appointments. Many of these calls (31,300) were to *registrants only*. On average, the Program called *registrants only* 7 times, versus 4 times for *attriters* and 3.5 times for *persisters*, demonstrating that Program staff undertook a substantial effort to reach those who left the Program immediately after the registration call (see Table 9 below). Furthermore, these phone calls revealed that many in the *registrants only* group did not want to continue with the Program: 1,369 of 4,673[8] *registrants only* had a recorded call outcome of "Answered – does not want to participate," compared to only a handful of *persisters* and *attriters* (142 and 215, respectively). Finally, the number of incoming calls from *persisters* regarding scheduling an intake appointment was higher than for either *registrants only* or *attriters*, at just over 4,000 (versus 2,800 from *attriters* and 1,400 from r*egistrants only*).

Table 9 below provides a summary of the phone calls related to scheduling intake appointments.

[8] The data system is missing phone call activities associated with 47 applications. While staff was trained to log phone calls and document other outreach activities and meetings, this process evolved along with the program. While an imperfect indicator, it is the best data point available to track meetings and phone calls.

Table 9: Initial Appointment Scheduling Phone Calls				
	Persisters	**Attriters**	**Registrants Only**	**Total**
Total Unique Applicants*	**7,583**	**5,207**	**4,673**	**17,463**
Total Phone Calls	26,766	20,631	32,765	80,162
Incoming from Registrant	*4,080*	*2,751*	*1,413*	*8,244*
Outgoing from Program	*22,686*	*17,880*	*31,352*	*71,918*
Average Number of calls	**3.5**	**4**	**7**	**4.6**
**Note that some applicants walked in for appointments, so phone calls were not placed for scheduling.*				

The large number of attempts to reach *registrants only* to schedule intake appointments, as well as the lower number of call backs received from the *registrant only* group, suggests a much lower level of initial engagement compared to *persisters* and *attriters*, who demonstrated a clearer interest in proceeding with the Program at this stage. Furthermore, a larger proportion of *registrants only* indicated their outright desire not to continue with the Program. This suggests that the *registrants only* did not leave the Program due to lack of outreach, but instead highlights a self-selection process where these *registrants* took themselves out of the Program. In the aftermath of an unprecedented disaster, hearing about a Program that had never before been implemented in these communities, many affected residents called and registered but ultimately did not continue with submitting an application after initial registration. This indicates that *registrants only* should not be considered Program applicants, given the steep drop off that occurs after the initial registration process.

Subsequent administrative data analysis will *not* include *registrants only* because they had so little engagement with the Build It Back Program. Moreover, they did not provide much data about their socio-demographic characteristics or the extent of storm damage to their property. Thus, analysis going forward will be based on the 13,545 *applicants* who were either *persisters* or *attriters*. *Persisters* comprise 59 percent of the applicant population and *attriters* 41 percent.

IDENTIFYING FACTORS RELATED TO PROGRAM ATTRITION

Analysis of the administrative data indicates that two factors are related to Program attrition, specifically, *remaining Disaster Benefits* and *value of non-Program Storm Related Benefits*. We

discuss each of these factors below.

1) REMAINING DISASTER BENEFITS AND PROGRAM ATTRITION

Program staff conducted an assessment to determine what, if any, financial contribution a homeowner would have to make toward their project, taking into consideration all storm-related benefits the applicant was receiving from insurance and other sources to repair their home. As mentioned, applicants could have received recovery assistance from the Federal Emergency Management Agency (FEMA), the Small Business Administration (SBA), private insurance, or other philanthropic sources.[9] Because Federal regulations prevent the Build It Back Program from duplicating a benefit already provided by another source, it must collect from the applicant any ***remaining disaster benefits***, termed the ***transfer amount***, in a final accounting of benefits received. To reduce the *transfer* amount, the Program allowed applicants to submit receipts showing that they spent excess funds on allowable activities. Applicants were referred to trained counselors, hired by Build It Back, to help them provide the required documentation.

Program applicants with *remaining disaster benefits* must contribute those unspent funds toward the cost of remaining construction work that will be completed by the Program and are not eligible for reimbursement benefits. Program-wide, 25 percent of the applicants had remaining disaster benefits owed to the Program (a transfer amount).[10] After removing the applicant population that received reimbursement, the administrative data in Table 10 below highlights that a greater proportion of *attriters* had a transfer amount (66 percent) compared to *persisters* (34 percent).

Table 10: Remaining Disaster Benefits (Transfer Amount) Owed

	Persisters *(Not Reimbursed)*	**Attriters**
Number of Applicants	**2,501**	**2,672**
Transfer Amount due	34%	66%
No Transfer Amount due	66%	34%

[9] https://www.hudexchange.info/resources/documents/CDBG-DR-Duplication-of-Benefits-Slides.pdf

[10] This is among applicants who had accounted for other benefits and had moved on to prepare for the Option Selection Meeting. The Option Selection Meeting is the first time that the applicant receives the Coordination of Benefits worksheet that includes the final transfer amount that he/she must pay before moving on to the benefits stage.

Table 11 shows that *attriters* and *persisters* had about the same mean *remaining disaster benefits* owed to the Program at $30,534 versus $30,906. However, the median dollar value for non-zero-dollar values for the non-reimbursed *persisters* is $7,269, versus $14,792 for *attriters*. This highlights that a greater proportion of *attriters* had a substantially higher dollar value of remaining disaster benefits owed to the Program compared to *persisters*.

Table 11: Mean and Median Remaining Disaster Benefits Owed to the Program
(Among those with Remaining Disaster Benefits Owed to Program)

	Persisters *(Not Reimbursed)*	**Attriters**
Number of Applicants	**860**	**1,768**
Mean Transfer Amount	$30,534	$30,906
Median Transfer Amount	$7,269	$14,792

While there did not appear to be a difference between the average values of remaining disaster benefits owed to the Program, the 32 percentage point difference between *persisters* and *attriters* in the non-zero-dollar values suggest a strong relationship between attrition and the remaining disaster benefits owed to the Program. The fact that over one half of the *attriters* owed an amount of $14,792 or more suggests that for many applicants having to contribute these funds was a deciding factor.

2) VALUE OF NON-PROGRAM STORM RELATED BENEFITS AND PROGRAM ATTRITION

Table 12A below shows for applicants in the top thirteen neighborhoods, *attriters* on average received more in non-program storm related benefits[11] when compared to *persisters* – $68,004 for attriters compared to $57,668 for *persisters*.

[11] Non-Program storm related benefits includes FEMA Individual Assistance benefits, National Flood Insurance Program (NFIP) benefits, Rapid Repair benefits, SBA loans and Private Insurance benefits.

Table 12A: Non-Program Storm Related Benefits Received for Applicants in Top Thirteen Neighborhoods *(Excludes Registrants Only that did not submit a Build It Back application)*

		Persisters		Attriters		Total			
Neighborhood	**Borough**	**Received *Other Storm Related Benefits***	**Average Value *Other Storm Related Benefits***	**Received *Other Storm Related Benefits***	**Average Value *Other Storm Related Benefits***	**All Applicants**	**Received *Other Storm Related Benefits***	**Percent Received *Other Storm Related Benefits***	**Average Value *Other Storm Related Benefits***
Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	Queens	1,692	$89,706	1,174	$101,365	2,980	2,866	96%	$94,482
Brighton Beach	Brooklyn	132	$42,812	96	$59,680	250	228	91%	$49,915
Canarsie	Brooklyn	796	$31,009	422	$34,573	1,327	1,218	92%	$32,244
Far Rockaway, Bayswater	Queens	276	$44,649	220	$47,981	557	496	89%	$46,127
Georgetown, Marine Park, Bergen Beach, Mill Basin	Brooklyn	199	$29,369	109	$34,921	332	308	93%	$31,334
Great Kills	Staten Island	125	$61,722	51	$91,681	202	176	87%	$70,403
Hammels, Arverne, Edgemere	Queens	435	$60,699	382	$67,256	867	817	94%	$63,765
Lindenwood, Howard Beach	Queens	803	$40,322	390	$49,771	1,239	1,193	96%	$43,411
New Dorp, Midland Beach	Staten Island	671	$63,518	450	$68,394	1,182	1,121	95%	$65,476
Oakwood, Oakwood Beach	Staten Island	270	$35,855	188	$52,833	474	458	97%	$42,824
Old Town, Dongan Hills, South Beach	Staten Island	413	$52,795	280	$69,984	725	693	96%	$59,740
Seagate, Coney Island	Brooklyn	398	$53,292	219	$58,983	654	617	94%	$55,312
Sheepshead Bay, Gerritsen Beach, Manhattan Beach	Brooklyn	765	$52,466	508	$56,270	1,341	1,273	95%	$53,984
Grand Total		**6,975**	**$57,668**	**4,489**	**$68,004**	**12,130**	**11,464**	**95%**	**$61,715**

Note that across all thirteen neighborhoods, *attriters* received more in non-Program storm related benefits than *persisters*. Ninety five percent of all applicants received one or more non-Program storm related benefits, with an average value $61,715. Additional research could help highlight if differences in outside benefits received are related to level damage sustained, or even socio-demographic characteristics like median household income, race/ethnicity, or educational attainment.

Furthermore, Table 12B below shows that in looking at the substantially damaged population, substantially damaged *attriters* received on average 51 percent more in SBA benefits and 56 percent more in private insurance funds compared to substantially damaged *persisters*.

Table 12B: Mean SBA and Private Insurance Benefits Received for Substantially Damaged Applicants

Average Other Benefits Received	**Persisters**	**Attriters**	**Percent Difference:** Persisters vs. Attriters
SBA	$35,357	$53,527	**51%**
Private Insurance	$13,261	$20,699	**56%**

Given that the Federal intent for CDBG-DR program is to cover the unmet need after all other benefits have been accounted for, this finding demonstrates that the Program is currently serving the applicants most in need. On one hand, the Program is serving those who had moderate damage that was not fully met by insurance or other sources. On the other hand, the Program is also serving those with the most damage whose needs were not met elsewhere.

Having established major administrative factors associated with *attrition*, we will now turn to factors associated with Program *retention*.

IDENTIFYING FACTORS RELATED TO PROGRAM RETENTION

Analysis of the administrative data indicates that three factors are associated with Program retention are *eligibility for reimbursement*, *level of substantial storm damage*, and *provision of legal and financial counseling*. We discuss each of these factors below.

1) ELIGIBILITY FOR REIMBURSEMENT AND PROGRAM RETENTION

The majority of applicants who are found eligible for a reimbursement benefit remain with the Program. Of the 5,962 applicant who are eligible for reimbursement, almost all (97 percent) continued through the process to receive reimbursement for repairs completed after the storm. Furthermore, those who received reimbursement make up 72 percent of the active population and only three percent of the population that decided to leave the Program (see Table 13 below).

Table 13: Reimbursement Comparison – Persister vs. Attriters

	Persisters	% of Persisters	Attriters	% of Attriters	Total
Reimbursement Eligible	5,808	**72%**	155	**3%**	5,962
Total Population Studied	***8,040***	**100%**	**5,505**	**100%**	**13,545**

2) LEVEL OF SUBSTANTIAL STORM DAMAGE AND PROGRAM RETENTION

The Program is currently serving the majority of those who sustained the most damage as a result of Hurricane Sandy. Table 14A below summarizes *persisters* and *attriters* by the "Substantial Damage" (SD) calculation, a ratio of damage sustained to structure value. This calculation is only completed for those located in the floodplain and where the Program completed an on-site assessment of damage. *Persisters* represent a larger percentage of all applicants across nearly all levels of substantial damage, however, properties with a substantial damage calculation between 50 percent and 75 percent showed a more equal split between *persisters* and *attriters*.

Table 14A: Substantial Damage (SD) Comparison - Persisters vs. Attriters
Excludes properties classified as a Condo or Co-op

	Applicants			*Percent of Total*	
Substantial Damage Calculation	**Persisters**	**Attriters**	**Total *Persisters & Attriters***	**Persisters**	**Attriters**
25% or Less	2,748	1,140	3,888	71%	29%
Between 25% and 50%	3,041	768	3,809	80%	20%
Between 50% and 75%	500	531	1,031	48%	52%
Between 75% and 100%	308	234	542	57%	43%
Between 100% and 200%	336	240	576	58%	42%
Over 200%	97	76	173	56%	44%
Total	**7,030**	**2,989**	**10,019**	**70%**	**30%**

Additionally, in focusing on the non-reimbursed population, the Program is currently serving those who sustained the most damage as indicated in Table 14B below showing that the average Substantial Damage" (SD) calculation was 23 percent higher for *persisters* (not reimbursed) compared to *attriters*.

Table 14B: Substantial Damage (SD) Comparison for Non-Reimbursed – Persisters vs. Attriters		
	Persisters *(Not Reimbursed)*	**Attriters**
Number of Applicants	1,952	2,688
Average Substantial Damage %	**79%**	**56%***
** Note for Attriters, the Substantial Damage calculation only includes those applicants that completed an on-site Program Damage Assessment to determine the level of damage sustained by Hurricane Sandy and were located in the Floodplain.*		

3) PROVISION OF LEGAL AND FINANCIAL COUNSELING AND PROGRAM RETENTION

Under contract with the Program, The Center for NYC Neighborhoods (CNYCN) partnered with local community-based organizations to provide housing counseling and legal services to applicants at the Build It Back Centers. To date, this has facilitated over 6,000 counseling cases for almost 4,000 applicants. Applicants who received financial counseling (including assistance with coordination of benefits, transfer amounts, mortgage, SBA loans, and flood insurance) experienced a Program attrition rate of 28 percent – 13 percentage points lower than the attrition rate for total population studied (see Table 15 below).

Table 15: Legal and Financial Counseling Comparison – Persisters vs. Attriters				
	Engaged with Counseling	**% of Total Engaged with Counseling**	**Total Population Studied**	**Total Population Studied %**
Persisters	1,713	72%	8,040	59%
Attriters	675	**28%**	5,505	**41%**
Total	**2,388**	100%	**13,545**	100%
Note: Total Population Studied data excludes Registrants Only				

We will now discuss how administrative data does not indicate that applicant demographics were related to Program *attrition*.

PROGRAM ATTRITION NOT SIGNFICANTLY RELATED TO APPLICANT DEMOGRAPHICS

An analysis of the Program's administrative data highlights that *persisters* and *attriters* do not significantly differ in terms of a range of demographic factors, including Low- to moderate-income (LMI) status, borough of residence, and neighborhood of residence.

In terms of LMI status, Table 16 below shows that while data is not available for all applicants, the Program is currently serving 69 percent of the known Low- to moderate-income (LMI) applicant population.

Table 16: Percent Within LMI – Persisters vs. Attriters

	Persisters	Attriters
% within LMI	**69%**	30%
% within Urgent Need	67%	32%

Furthermore, Table 17 below shows the distribution of LMI applicants between *persisters* and *attriters* is not notably different (44 percent and 42 percent, respectively).

Table 17: Low- to moderate-income (LMI) Comparison – Persisters vs. Attriters

	% within Persisters	% within Attriters	% within Total
LMI	**44%**	**42%**	43%
Urgent Need	56%	58%	57%
Total	**100%**	**100%**	**100%**

While there is no difference between percentage within the *persisters* and *attriters* categories based on LMI status, the Program is serving a larger portion of the known Low- to moderate-income applicants, when compared to *attriters*.

In terms of borough of residence, Table 18 below shows that while 41 percent of applicants left the Program after submitting an application, this number does not vary much across the boroughs. This is particularly true of the three boroughs making up 99 percent of the population studied:

- 39 percent of attriters in Brooklyn
- 42 percent of attriters in Queens
- 40 percent of attriters in Staten Island

While Bronx/Manhattan appears to have a higher percent of attriters at 46 percent; the applicant population in these boroughs makes up less than 1 percent of the entire application population studied.

Table 18: Borough Comparison - Percent of Attriters

	Persisters	**Attriters**	**Total** *Persisters & Attriters*	**Percent of Attriters**
Bronx/Manhattan	64	55	119	46%
Brooklyn	2,595	1,659	4,254	39%
Queens	3,533	2,558	6,091	42%
Staten Island	1,849	1,232	3,081	40%
Total Applicants	**8,041**	**5,504**	**13,545**	**41%**

In terms of neighborhood of residence, Table 19 provides data for the thirteen neighborhoods that account for 90 percent of all applicants. Table 19 shows that 40 percent of applicants from these neighborhoods left the Program after submitting an application. The rate of attrition ranges from 32 percent to 47 percent. **Appendix 2** provides additional data at the neighborhood level, including breakouts of the *persister*, *attriter* and *registrant only* populations across the entire 18,266 registrants studied.

Table 19: Top 13 Neighborhood Comparison - Percent of Attriters				
	Persisters	**Attriters**	**Total** *Persisters & Attriters*	**Percent of Attriters**
Queens				
Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	1,719	1,261	2,980	42%
Far Rockaway, Bayswater	305	252	557	45%
Hammels, Arverne, Edgemere	460	407	867	47%
Lindenwood, Howard Beach	824	415	1,239	33%
Brooklyn				
Brighton Beach	140	110	250	44%
Canarsie	865	462	1,327	35%
Georgetown, Marine Park, Bergen Beach, Mill Basin	213	119	332	36%
Seagate, Coney Island	419	235	654	36%
Sheepshead Bay, Gerritsen Beach, Manhattan Beach	805	536	1,341	40%
Staten Island				
Great Kills	138	64	202	32%
New Dorp, Midland Beach	702	480	1,182	41%
Oakwood, Oakwood Beach	277	197	474	42%
Old Town, Dongan Hills, South Beach	432	293	725	40%
Total Applicants - Top 13 Neighborhoods	**7,299**	**4,831**	**12,130**	**40%**

Logistic regression of the administrative data enables us to elaborate on these broad findings.

MULTIVARIATE ANALYSIS OF THE DETERMINANTS OF ATTRITION

The previous section examined differences between *persisters* and *attriters* in the probability of dropping out of the Program with respect to numerous administrative factors examined one at a time. That analysis allowed us to ask whether selected variables appeared to be related to attrition or withdrawal from the Program. However, this approach does not take into account the way ***variables may interact with one another*** or how one variable may mask the effect of another variable. For example, persons with Low- to moderate-income (LMI) status may live in areas with low home values and communities with relatively low home values may have been hardest hit by Hurricane Sandy. Thus, we may attribute high rates of attrition from the Program to being a Low- to moderate-income applicant when, in fact, it may be related to a program pathway that requires elevating a building or reconstruction to homes in areas with low structure

values that sustained higher levels of damage.

Logistic regression enables us to take a more comprehensive look at how many variables affect the probability of attrition from the Program. The technique examines the statistical relationship of a set of "independent" variables on an outcome variable that takes a value of '1' when the applicant attrited from the Program and a value of '0' for applicants that persisted in the Program (see variables in Table 20 below). Some variables were found to be statistically significant predictors of attrition and other variables were not significant predictors. In some cases, a variable was a statistically significant predictor of attrition as evidenced by a higher or lower probability of attrition, but the substantive effect was small.

Table 20: Logistic Regression of Attrition Status on Selected Variables

Attrition Status: 0 = Persisters and 1 = Attriters. Registrants Only are excluded.

Selected Variables	Significance	Standard Predicted Value
(1) BOROUGH OF RESIDENCE Reference = Queens		31%
Bronx/Manhattan	ns	34%
Brooklyn	ns	27%
Staten Island	ns	31%
(2) FINAL PATHWAY SELECTED *(Benefits Offered by Program)* **Reference = Moderate Rehabilitation**		71%
No final pathway determined	ns	87%
Buyout/Acquisition	***	11%
Major Rehabilitation (Elevation)	***	47%
Reconstruction	***	33%
Reimbursement Only	***	16%
Moderate Rehabilitation & Reimbursement	***	3%
(3) LOW- TO MODERATE-INCOME (LMI) STATUS Reference = Urgent Need		26%
Yes is low to middle income (LMI)	ns	26%
LMI not determined	***	93%
(4) REMAINING DISASTER BENEFITS OWED *(Transfer Amount: Yes/No)* **Reference = No transfer payment**		18%
Yes, owes Remaining Disaster Benefits to Program	***	68%
(5) LEGAL & FINANCIAL COUNSELING SERVICES Reference = No counseling services		31%
Yes, had counseling services	***	27%
(6) CONSTRUCTION CONTRACTOR Reference = Public Contractor		12%
No contractor selected	***	54%
CYOC (Choose Your Own Contractor) – Homeowner Choice	***	6%
Direct Grant – Homeowner Choice	***	3%
(7) CONFIRMED STRUCTURE VALUE *(in $10,000 increments)*	***	-0.002
(8) VALUE OF REMAINING DISASTER BENEFITS OWED *(Transfer Amount: in $1,000 increments)*	ns	0.004
(9) TOTAL STRUCTURE DAMAGE AMOUNT *(in $10,000 increments)*	ns	0
(10) CENSUS TRACT CHARACTERISTICS†		
A) % White, not Hispanic-Owner occupied	***	-0.041
B) % Income below poverty level	ns	0.001
C) % Owner-Less than high school graduate	***	-0.002
D) Mean Total Household Income for Owner-occupied units *(in $1,000 increments)*	ns	0
E) Median Value of Property *(in $10,000 increments)*	*	-0.002

P = *** < .001 | P = ** < .01 | P = * < 0.5 | ns = not statistically significant

† *Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File*

The logistic regression analysis predicts the percentage increase (or decrease) in the probability of attrition from the Program associated with each independent variable in relationship to all the other independent variables. The "*Significance*" column in Table 20 indicates whether the variable is statistically significant in predicting the percent of attriters, when controlling for all other variables. The "*Predicted Probability*" column in Table 20 indicates the percent of attrition predicted from holding the stated condition while statistically holding constant all other variables in the equation.

PREDICTORS OF ATTRITION

We will now discuss the detailed findings from of the regression analysis. We start by looking at variables 1 to 6 in Table 20. These variables are comprised of various categories.

1) BOROUGH OF RESIDENCE

Borough of residence was not a milestone in the Program, but it is relevant to ask whether program outcomes varied depending on residence across the five boroughs at the time of the storm. Borough of residence, like variables 2 through 6, are categorical variables that are not arrayed along some numerical measure. Comparisons are made in relation to the attrition level in Queens (the borough with the largest number of applicants) as the reference category. The table shows the probability of attrition for each borough and whether that probability is significantly different from the probability for Queens. For example, the predicted probability of attrition for Queens is 31 percent while it is 27 percent for Brooklyn and 34 percent for Bronx/Manhattan, but these differences are not statistically significant (in other words, they may have happened by chance).

2) FINAL PATHWAY SELECTED BY APPLICANT

The probability of each type of pathway (variable 2) is compared to the 71 percent probability of attrition predicted for the Moderate Rehabilitation pathway, the reference category. Pathways including reimbursement, Reimbursement Only and Moderate Rehabilitation & Reimbursement, have statistically significant lower attrition probabilities. Likewise, pathways indicating a higher level of storm damage, Buyout/Acquisition, Major Rehabilitation (Elevation), and Reconstruction, also have statistically significant lower attrition probabilities. Again, compared to Moderate Rehabilitation, the lowest attrition probabilities are for the Buyout/Acquisition (11 percent),

Reimbursement Only (16 percent), and Moderate Rehabilitation & Reimbursement (3 percent) pathways. The predicted attrition rate for applicants in the Reconstruction pathways was 33 percent, while the Major Rehabilitation (Elevation) pathway was predicted to be 47 percent, again, holding all other factors constant.

3) LOW- TO MODERATE-INCOME (LMI) STATUS

Variable 3 in Table 20 shows that the predicted attrition rate for the reference category 'Not low- to moderate-income' is 26 percent. The probability of attrition for those in the category of 'low- to moderate-income' was also 26 percent, and, not surprisingly, it is not significantly different from the 'Not LMI group'. The lack of statistical significance in this case is a positive outcome, because it indicates that less well-off applicants fared as well as their better off (Not LMI) counterparts in terms of attrition from the Program. Note the category "LMI not determined" has a higher predicted attrition rate, as expected, given that 88 percent of applicants left the Program before fully completing an application, and therefore would not have provided income and household size information to determine their LMI status.

4) REMAINING DISASTER BENEFITS OWNED (TRANSFER AMOUNT)

The reference group here is applicants with 'no transfer amount' whose probability of attrition was 18%. The probability of attrition for applicants with a transfer amount was significantly higher at 68%, a large 50 percentage point difference.

5) LEGAL AND FINANCIAL COUNSELING

Applicants with "no counseling services" had a predicted attrition rate of 31 percent. The predicted attrition probability for applicants who availed themselves of counseling and financial services was significantly lower than applicants without counseling services (27 percent versus 31 percent), but the substantive difference is modest (4 percentage points). Nevertheless, this demonstrates the utility of counseling for keeping applicants in the Program.

6) CONSTRUCTION CONTRACTOR

The construction contractor variable has several categories. Other categories are compared to Public Contractor, the reference category, which has a predicted percent of attrition of 12 percent. Homeowner chosen contractors have slightly lower predicted probability of attrition at

6 percent ("Choose Your Own Contractor") and 3 percent ("Direct Grant"). These differences are highly statistically significant as well as substantively different. This variable was not part of the administrative dataset analysis, which was focused on how processing steps leading to construction and selecting a contractor relate to Program attrition or retention. Pending further analysis, this finding suggests that maximizing customer choice related to contractor selections could lead to lower attrition. Also note that "No contractor selected" has a higher predicted percent attrition, as expected, given that 88 percent of applicants left the Program before selecting a pathway option, and therefore would also not have selected a contractor.

We next report on variables 7 to 10 that describe how structural and neighborhood characteristics relate to predicted attrition rates. Unlike the categorical variables 1 to 6, variables 7 to 10 are interval level variables in measurable scales such as the value of the structure, the amount of damage in dollars, transfer amount owned, and the incidence of neighborhood characteristics at the time of the storm; for example such as mean household income for owner occupied units, median property value, percent of White, non-Hispanic home owners. Since most of the variables in 7 through 10 are not significant predictors of attrition, we discuss only those that are significant.

7) STRUCTURE VALUE

The confirmed value of the structure (not the land) of the applicant's building in $10,000 increments was a significant predictor. We cannot compare a variety of categorically different outcomes as in variables 1 through 6. The predicted value of -.002 for Structure Value means that as the value of the structure increases by an increment of $10,000, the probability of attrition from the Program decreases by .002 percent. For example, if the value of the structure is $200,000, then the predicted probability of attrition declines by 4 percent (($200,000/$10,000) = 20) x (-.002) = -4 percent) and a home with a structure value of $450,000 has a 9 percent lower predicted probability of attrition (($450,000/$10,000 = 45) x (-.002) = -9). The base predicted probability of -.002 is statistically significant, indicating that the value of the structure does cause a change (decrease) in the probability of attrition.

8) and 9) VALUE OF REMAINING DISASTER BENEFITS OWED AND TOTAL STRUCTURE DAMAGE

Interestingly, the value of remaining disaster benefits owed (or the transfer amount) was *not* a

significant predictor of program attrition even though the analysis of administrative data suggested that it might be. In sum, the amount that is owed is not as important as whether the applicant owed money. Similarly, the total dollar amount of structure damage was not a significant predictor of attrition. As the amount of damage in dollars increases or decrease, the probability of attrition does not change in a statistically significant way.

10) SELECTED CENSUS TRACT CHARACTERISITCS

Variables A through E provide estimates of how particular neighborhood characteristics might change the probability of attrition. Three variables had an impact on predicted attrition rates: percent of owners who are non-Hispanic Whites, percent of owners with less than a high school diploma, and the median value of property in the census tract. As the percent of White, non-Hispanic owner-occupied units increases by 1 percentage point, the estimated probability of dropping out of the Program decreases by -.041 percent. In a neighborhood where 80 percent of the owners are non-Hispanic Whites, the probability of dropping out is predicted to declines by 3.3 percent (80 percent X -0.041). Similarly, for each percent increase in home owners with less than a high school education, the probability of dropping out decreases by -.002. This is statistically significant but substantively small.

Finally, the median value of the property in the neighborhood is also a significant predictor of attrition, but barely so with a p=< .05. As the median value of the property in the census tract increases by $10,000, the probability of attrition decreases by -0.002. We estimate that the probability of attrition for a census tract with a median property value of $400,000 will decrease by 8 percent from the overall average probability of attrition compared to a decrease of 11 percent in a tract with a median value of $551,000.

In sum, owing remaining disaster benefits (*transfer amount*) is a significant predictor of higher attrition. Final Program pathways related to reimbursement and higher levels of storm damage are significant predictors of lower attrition. Using legal and financial counseling services and homeowner chosen construction contractors are also significant predictors of lower attrition.

By contrast, the predicted probability of attrition from the Program did not vary in a statistically significant way in terms of the borough where the applicant resided or total damage to the structure. Multivariate logistic regression analysis also shows that the following variables are

either not statistically significant predictors of program attrition or the impact was not substantial in absolute terms (less than 1 percent change in predicted probability of attrition):

- **Value of remaining disaster benefits owed** *(Transfer Amount: in $1,000 increments)*
- **Total structure damage amount** *(in $10,000 increments)*
- **Poverty level** *(% Income below poverty level)*
- **Mean total household income for owner-occupied units** *(in $1,000 increments)*

We now turn to findings from the online survey administered and analyzed by CUR to understand better patterns of attrition and retention in the Build It Back Program identified through administrative data analysis.

SECTION 5: FINDINGS FROM THE ONLINE SURVEY

A request to participate in a self-administered, online survey was emailed to all Program registrants with valid email addresses on file in Build It Back's system of record. Three different versions of the online survey were tailored to the three subgroups of registrants identified in the administrative analysis:

1. ***Registrants Only*** – this version asked respondents why they registered but then chose not to participate in the Program and what might have persuaded them to remain in the Program.
2. ***Attriters*** – this version asked respondents to rate their experiences and level of effort to complete various stages of the Program. Respondents were also asked what factors lead them to leave the Program and what could have persuaded them to remain.
3. ***Persisters*** – this version also asked applicants to rate their experiences and level of difficulty in completing various stages of the Program, in order to receive benefits from the Program.

Distributing the online survey to all Program registrants, regardless of their ultimate participation in the Program, allows us to compare and contrast survey responses between *registrants only*, *persisters* and *attriters,* and to see both similarities and differences amongst the subgroups.

Over 15,100 requests to participate in the survey were emailed to the three sample groups in late 2016 and early 2017. This included 6,800 emails to *persisters*, over 4,500 to *attriters*, and over 3,800 to *registrants only*. Just over 800 requests were returned as undeliverable, resulting in over 14,300 survey requests. In total, sampled groups completed **1,387 surveys**, representing a 10 percent response rate, which is typical for this sort of survey effort. Completion rates were as follows:

- **841 Persister completed surveys** *(13 percent of persister surveys successfully emailed)*
- **350 Attriters completed surveys** *(8 percent of attriters surveys successfully emailed)*
- **196 Registrant only completed surveys** *(5 percent of registrant only surveys successfully emailed)*

Table 21 below provides a summary of surveys emailed and completed, by the three versions.

Table 21: Surveys Emailed & Completed *(Includes only applicants who provided an email address to the Program)*				
	Version of Survey			
	Persisters	**Attriters**	**Registrants Only**	**Total**
First Sample: Total Surveys Emailed	1,726	1,047	948	3,721
Second Sample: Total Surveys Emailed	1,679	1,069	957	3,705
Third Sample: Total Surveys Emailed	3,400	2,386	1,931	7,717
Total Surveys Emailed	6,805	4,502	3,836	15,143
Total emails returned as undeliverable	303	281	247	831
Total Surveys successfully emailed	6,502	4,221	3,589	14,312
Total Completed Questionnaires	**841**	**350**	**196**	**1,387**
Percent Completed Questionnaires	**13%**	**8%**	**5%**	**10%**

We will now provide an overview of the characteristics of the survey respondents and discuss results of the logistic regression analysis related to predicting the odds of completing the survey, showing that the survey respondents are representative of the Program's overall registrant population.

SURVEY RESPONDENTS ARE REPRESENTATIVE OF THE PROGRAM'S REGISTRANT POPULATION

Appendix 5 provides a summary of the registrants who responded to the online survey compared to all 18,266 registrants studied, to assess the makeup of the survey respondent population. The data in Appendix 5 shows the survey respondents were generally representative of the registrant population studied. 'Not LMI' registrants had a slightly higher completion rate (11 percent) compared to LMI registrants (7 percent). Additionally, registrants using the Program's legal and financial counseling services had a higher completion rate (12 percent), compared to registrants that did not use the services (6 percent).

Table 22 outlines our multivariate logistic regression analysis of the probability that survey respondents would complete the online survey; it shows that survey respondents are similar to the overall registrant population. The dependent variable is *Completed Status* that takes on a value of '1' if the applicant completed the survey and '0' if they did not complete the survey. The regression analysis identifies factors that help in predicting who completed the survey.

Table 22: Predicted Probability of Completing Online Survey

(Dependent variable: 0 = Survey not completed, 1 = Survey is completed)

Selected Variables	Significance	Standard Predicted Value
(1) BOROUGH OF RESIDENCE **Reference = Queens**		11%
Bronx/Manhattan	**	17%
Brooklyn	ns	9%
Staten Island	***	8%
(2) PRELIMINARY PATHWAY *(Benefits Offered by Program)* **Reference = Moderate Rehabilitation**		9%
Buyout/Acquisition	ns	5%
Major Rehabilitation (Elevation)	ns	12%
Reconstruction	ns	14%
Reimbursement Only	ns	7%
No Pathway determined	*	38%
(3) PERSISTER/ATTRITER STATUS **Reference = Persister with Reimbursement**		9%
Attriter: Eligibility to Option Review Meeting	ns	14%
Attriter: Option Review Meeting to Application Completion	ns	7%
Attriter: Post Application Completion (Benefit stages)	ns	7%
Persister No reimbursement	***	10%
Registrants only	ns	0%
(4) REMAINING DISASTER BENEFITS OWED *(Transfer Amount: Yes/No)* **Reference = No, transfer amount owed**		10%
Yes, has Remaining Disaster Benefits to Program	ns	9%
(5) LOW- TO MODERATE-INCOME (LMI) **Reference = Not Low- to moderate-income**		12%
Yes, low to middle income	***	7%
LMI status not determined	**	6%
(6) LEGAL & FINANCIAL COUNSELING SERVICES **Reference= No counseling services**		8%
Yes, counseling services	***	13%
(7) CONFIRMED STRUCTURE VALUE	ns	-0.00004
(8) DOLLAR VALUE OF REMAINING DISASTER BENEFITS OWED	ns	0.0001
(9) TOTAL STRUCTURE DAMAGE AMOUNT	ns	0.001
(10) CENSUS TRACT CHARACTERISTICS†		
A) % White, not Hispanic-Owner occupied	*	0.028
B) % Income below poverty level	ns	-0.0005
C) % Owner occupied -Less than high school graduate	ns	-0.0004
D) Total Household income (in 2000) of owner-occupied units *(in $1,000 increments)*	ns	0.0002
E) Housing Value of owner-occupied units *(in $10,000 increments)*	ns	0.0003

*P= *** < .001* | P=** < .01 | *P= * < 0.5* | ns = not statistically significant

† *Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File*

As in Table 20, the "***Significance***" column in Table 22 indicates whether the variable is a statistically significant predictor of the probability of completing the survey. The "***Standard***

Predicted Value" indicates the predicted percent of surveys completed, while statistically holding constant all other variables included in the analysis.

The logistic regression shows only a few statistically significant differences in the probability of completing the online survey:

- Registrants that were determined not to be Low- to moderate-income (LMI) are slightly more likely to complete the survey (12 percent) than the Low- to moderate-income applicants (7 percent completion probability).
- Registrants who used the Program's legal and financial counseling services have a slightly higher predicted completion rate (13 percent) than applicants who did not use the Legal and Financial services (8 percent).
- Registrants living in the Bronx and Manhattan (less affected boroughs) had slightly higher predicted rates of completion than in Queens or Brooklyn, while those in Staten Island had lower predicted rates of completion.

These results lead us to believe that the survey responses are generally reflective of the characteristics of the overall registrant population.

We will now outline the key findings from the online survey of Program registrants, focusing first, on how the survey responses support the findings from the administrative data and logistic regression analysis. Our analysis of the survey data highlights key differences seen in comparing responses amongst *registrants only*, *attriters* and *persisters*. **Appendix 3** and **Appendix 4** give fuller reports on the data related to the online survey responses outlined below.

RELATIONSHIP OF REMAINING DISASTER BENEFITS TO PROGRAM ATTRITION

The administrative data and logistic regression analysis found that having ***remaining disaster benefits*** owed to the Program was a factor related to program *attrition*. Table 23 shows responses to survey questions about how the Program accounted for funds received and expensed by the applicant to determine whether they owed any remaining disaster benefits to the Program. *Attriters* surveyed were more dissatisfied than *persisters* regarding the following:

1. **How the Program accounted for funds they received from other hurricane relief sources**
   - 51 percent attriter dissatisfaction vs. 36 percent persister dissatisfaction
2. **How the Program accounted for funds spent due to the hurricane** *(e.g. living expenses, repairs completed prior to joining the Program)*
   - 71 percent attriter dissatisfaction vs. 49 percent persister dissatisfaction
3. **The inclusion of the SBA (Small Business Administration) loan as a storm-related benefit**
   - 85 percent attriter dissatisfaction vs. 74 percent persister dissatisfaction
4. **Their ability to pay the remaining disaster benefits owed to the Program**
   - 85 percent attriter dissatisfaction vs. 59 percent persister dissatisfaction

Table 23: Online Survey Responses - Program Phases - Persisters vs. Attriters
Excludes Respondents that answered "Not Applicable"

		Total Responses	Persisters	Attriters	Total Percent
Financial Contribution					
1)	**Program's accounting for the funds I received from other hurricane relief sources**	**569**	**466**	**103**	
	Very Dissatisfied/Dissatisfied	220	36%	51%	39%
	Very Satisfied/Satisfied	349	64%	49%	61%
2)	**Program's accounting for the funds I spent due to the hurricane**	**618**	**507**	**111**	
	Very Dissatisfied/Dissatisfied	325	49%	71%	53%
	Very Satisfied/Satisfied	293	51%	29%	47%
3)	**The inclusion of the SBA (Small Business Administration) loan in calculating my benefits**	**322**	**256**	**66**	
	Very Dissatisfied/Dissatisfied	246	74%	85%	76%
	Very Satisfied/Satisfied	76	26%	15%	24%
4)	**Paying the transfer amount** *(the difference between benefits received from other sources and the funds spent due to the hurricane)*	**400**	**328**	**72**	
	Very Difficult/Difficult	253	59%	85%	63%
	Very Easy/Easy	147	41%	15%	37%
5)	**Submitting all necessary documents to fully reflect my hurricane-related expenses** *(e.g. living expenses, repairs completed prior to joining the program)*	**614**	**505**	**109**	
	Very Difficult/Difficult	372	60%	61%	61%
	Very Easy/Easy	242	40%	39%	39%

Additionally, Table 24 shows that over one-quarter (28 percent) of responding *attriters* indicated that they left the Program because they disagreed with how the Program accounted for their expenses versus benefits received from other relief sources.

Table 24: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters
Excludes Respondents that answered "Not Applicable"

		Total Responses	Attriters	Registrants Only	Total Percent
Program Options & Financial Contribution - Why did you leave the Program?					
5)	**Disagreed with how the program accounted for my expenses versus benefits received from other relief sources**	**548**	**352**	**196**	
	Yes	121	28%	11%	22%
	No	427	72%	89%	78%

These survey responses reinforce the administrative data and logistic regression findings that owing *remaining disaster benefits*, and more specifically how the Program's accounting of funds received and expensed by the applicant as related to Hurricane Sandy, contributed to Program *attrition*.

REIMBURSEMENT AND PROGRAM RETENTION

The administrative data and logistic regression analysis found that ***reimbursement*** benefits was a factor related to Program *retention* – this finding is also reinforced in the survey findings.

Table 25 shows responses to two questions related to whether *reimbursement* benefits was a factor in their decision to leave the Program, and also if cash benefit options (reimbursement) would have persuaded them to remain with the Build It Back Program. Nearly one-quarter (24 percent) of *attriters* indicated that they left the Program because they were not offered reimbursement. Moreover, 45 percent of *attriters* and 31 percent of *registrants only* indicated the cash benefit (reimbursement) option, as an alternative to construction, would have persuaded them to remain in the Program.

Table 25: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters *Excludes Respondents that answered "Not Applicable"*		Total Responses	Attriters	Registrants Only	Total Percent
Program Options & Financial Contribution - Why did you leave the Program?					
1)	**Interested only in receiving a cash benefit (reimbursement), but it was not offered to me**	**548**	**352**	**196**	
	Yes	103	24%	10%	19%
	No	445	76%	90%	81%
Which of the following options would have persuaded you to remain in the Build It Back Program?					
4)	**Additional options to receive a cash benefit, as an alternative to receiving construction assistance**	**548**	**352**	**196**	
	Yes	218	45%	31%	40%
	No	330	55%	69%	60%

The survey responses thus reinforce the finding from the administrative data that ***reimbursement*** benefits are a factor leading to Program *retention*.

LEGAL AND FINANCIAL COUNSELING AND PROGRAM RETENTION

The administrative data analyses found that ***legal and financial counseling*** services was a factor related to Program *retention* – this finding is also evident in the results of the online survey. Table 26 shows responses to a question asking respondents if additional services to help with complicated financial and legal issues would have persuaded them to remain with the Program. The impact is more modest, but still notable, at 16 percent of *attriters* and 16 percent of *registrants only* indicating that additional financial and legal services would have persuaded them to stay with the Program.

Table 26: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters *Excludes Respondents that answered "Not Applicable"*		Total Responses	Attriters	Registrants Only	Total Percent
Panel F - Which of the following options would have persuaded you to remain in the Build It Back Program?					
7)	**Additional legal and counseling services to help with complicated financial and legal issues**	**548**	**352**	**196**	
	Yes	90	16%	16%	16%
	No	458	84%	84%	84%

We will now discuss additional findings that the survey data analysis reveals about patterns of attrition in the Build It Back Program.

VOLUNTARY PROGRAM ATTRITION

Table 27 shows an even split between registrants that left the Program voluntarily, versus being administratively withdrawn by the Program. About half (49 percent) of *attriters* said they left the Program voluntarily compared to 53 percent of *registrants only*.

Table 27: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Attriters	Registrants Only	Total Percent
Leaving the Build It Back Program					
1)	**Did you voluntarily withdraw from the Build It Back program?**	**513**	**328**	**185**	
	Yes	257	49%	53%	50%
	No	256	52%	47%	50%

Additionally, Table 28 shows that one-third (33 percent) of registrants surveyed indicated that they left the Program because they decided to make repairs on their own, likely leading to their decision to voluntarily leave the Program. Forty percent of *registrants only* left the Program to make their own repairs compared to 29 percent of *attriters*. Furthermore, over one-third (35 percent) of *registrants only* surveyed indicated that they left the Program because they did not think they would be eligible to receive benefits. Again, as registrants learned more about the Program, they likely voluntarily chose not to move forward because they could not meet a specific eligibility requirement.

Table 28: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Attriters	Registrants Only	Total Percent
Personal Issues - Why did you leave the Program?					
2)	**Decided to make repairs on my own**	**548**	**352**	**196**	
	Yes	179	29%	40%	33%
	No	369	71%	60%	67%
Program Processes & Eligibility - Why did you leave the Program?					
8)	**Did not think I would be eligible for the program**	**548**	**352**	**196**	
	Yes	100	9%	35%	18%
	No	448	91%	65%	82%

ADMINISTRATIVE PAPERWORK AND PROGRAM ATTRITION

The survey responses show that *attriters* had more difficulty with the administrative paperwork and providing supporting documents required by the Program. Table 29 shows whether *persister* and *attriter* respondents agreed that the number of meetings and phone calls required to complete the Program forms/documentation was *reasonable*. Seventy four percent of *attriters* disagreed or strongly disagreed, compared to 57 percent of *persisters*.

Table 29: Online Survey Responses - Program Phases - Persisters vs. Attriters
Excludes Respondents that answered "Not Applicable"

		Total Responses	Persisters	Attriters	Total Percent
Initial Meetings & Documentation Collection					
1)	**The number of meetings and phone calls required to complete forms and collect documents was reasonable.**	**872**	**672**	**200**	
	Strongly Disagree/Disagree	532	57%	74%	61%
	Strongly Agree/Agree	340	43%	26%	39%

Table 30 further underscores that over one-third (36 percent) of *attriters* and *registrants only* indicated they left the Program because of difficulty completing administrative paperwork and providing supporting documents. Furthermore, 29 percent of *attriters* and *registrants only* indicated that more hands-on assistance completing documentation and collecting documents required by the Program would have persuaded them to remain in the Program.

Table 30: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters
Excludes Respondents that answered "Not Applicable"

		Total Responses	Attriters	Registrants Only	Total Percent
Program Processes & Eligibility - Why did you leave the Program?					
3)	**Difficulty completing administrative paperwork and providing supporting documents**	**548**	**352**	**196**	
	Yes	196	34%	39%	36%
	No	352	66%	61%	64%
Which of the following options would have persuaded you to remain in the Build It Back Program?					
5)	**More hands-on assistance completing documentation and collecting documents required by the program**	**548**	**352**	**196**	
	Yes	157	25%	36%	29%
	No	391	75%	64%	71%

PROGRAM'S ASSESSMENT OF PROPERTY DAMAGE AND PROGRAM ATTRITION

Attriters were more dissatisfied with the accuracy of the Program's assessment of property damage sustained by Hurricane Sandy. Table 31 shows 72 percent of *attriters* disagreed or strongly disagreed with the accuracy of the property damage assessment, compared to 54 percent of *persisters*. This is especially relevant because the Program's assessment of damage sustained by Hurricane Sandy figures prominently in the benefits (Pathway) offered.

Table 31: Online Survey Responses - Program Phases - Persisters vs. Attriters
Excludes Respondents that answered "Not Applicable"

	Total Responses	Persisters	Attriters	Total Percent
Initial Meetings & Documentation Collection				
7) The property damage assessment was accurate.	**838**	**672**	**166**	
Strongly Disagree/Disagree	484	54%	72%	58%
Strongly Agree/Agree	354	46%	28%	42%

PROGRAM BENEFIT OPTIONS AND PROGRAM ATTRITION

Table 32 shows that one-third (33 percent) of registrants surveyed left the Program because they were dissatisfied with the Program options presented to them. More than one-third (38 percent) of *attriters* surveyed indicated dissatisfaction with Program options, compared to 25 percent of *registrants only*.

Table 32: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters
Excludes Respondents that answered "Not Applicable"

	Total Responses	Attriters	Registrants Only	Total Percent
Program Options & Financial Contribution - Why did you leave the Program?				
4) Dissatisfied with program options presented to me	**548**	**352**	**196**	
Yes	183	38%	25%	33%
No	365	62%	75%	67%

APPLICATION PROCESSING TIMELINES AND PROGRAM ATTRITION

Respondents also felt that processing times were too long. Table 33 shows that nearly half (47 percent) of *attriters* and *registrants only* responded that they left the Program because the process took too long. Moreover, another 43 percent of *attriters* and *registrants only* indicated that quicker processing and delivery of Program benefits would have persuaded them to remain in the Build It Back Program.

Table 33: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Attriters	Registrants Only	Total Percent
Program Processes & Eligibility - Why did you leave the Program?					
2)	**Process took too long**	**548**	**352**	**196**	
	Yes	256	48%	44%	47%
	No	292	52%	56%	53%
Which of the following options would have persuaded you to remain in the Build It Back Program?					
8)	**Quicker processing and delivery of program benefits**	**548**	**352**	**196**	
	Yes	237	46%	38%	43%
	No	311	54%	62%	57%

PROGRAM STAFFING AND COMMUNICATIONS AND PROGRAM ATTRITION

Regarding interactions with Program staff, Table 34 shows that *attriters* surveyed were more dissatisfied than *persisters*, regarding the following:

1. **Applicants knowing who to contact with issues or questions about the Program**
   - 72 percent attriter dissatisfaction vs. 49 percent persister dissatisfaction
2. **Program staff's responsiveness to applicant questions/concerns**
   - 72 percent attriter dissatisfaction vs. 47 percent persister dissatisfaction
3. **Clear communication regarding program steps**
   - 80 percent attriter dissatisfaction vs. 57 percent persister dissatisfaction

Table 34: Online Survey Responses - Program Phases - Persisters vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Persisters	Attriters	Total Percent
Interactions with Program Staff					
1)	**I knew whom to contact if I had an issue or question about the Build It Back program.**	**883**	**656**	**227**	
	Strongly Disagree/Disagree	483	49%	72%	55%
	Strongly Agree/Agree	400	51%	28%	45%
2)	**The program staff were responsive to my questions and concerns.**	**885**	**656**	**229**	
	Strongly Disagree/Disagree	471	47%	72%	53%
	Strongly Agree/Agree	414	53%	28%	47%
3)	**The program steps were laid out and communicated to me clearly.**	**879**	**650**	**229**	
	Strongly Disagree/Disagree	555	57%	80%	63%
	Strongly Agree/Agree	324	43%	20%	37%

Similarly, nearly half (45 percent) of *attriters* and *registrants only* indicated that more knowledgeable staff to guide them through the process would have persuaded them to remain with the Program (Table 35).

Table 35: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters
Excludes Respondents that answered "Not Applicable"

		Total Responses	Attriters	Registrants Only	Total Percent
Which of the following options would have persuaded you to remain in the Build It Back Program?					
6)	**More knowledgeable staff to guide me through the process**	**548**	**352**	**196**	
	Yes	244	46%	42%	45%
	No	304	54%	58%	55%

Survey respondents also commented that they had to interact with too many different people and some staff seemed "inexperienced and confused, or they did not seem competent." As several said, there was "always a different person that we spoke with, or that they had 5 different counselors handling their case."

ADDRESSING PROGRAMMATIC CHALLENGES

Many of the additional survey responses reflect the programmatic challenges that accompany establishing a disaster recovery program so quickly – many of which the Build It Back Program has acknowledged publicly and has taken steps to mitigate the cumbersome administrative processes, application processing timelines, and staffing/communication issues. The Program has indicated that the Intake contractor brought staff on quickly in 2013 and trained them on the job after the Program began. By 2015, Build It Back replaced contracted staff with City staff and assigned each applicant a dedicated Program representative as a single point of contact. Build It Back management also acknowledged that a large number of forms and supporting documents were required to prove federal eligibility. Only after the Program was up and running were they able to identify bottlenecks and make mid-course corrections to streamline paperwork, application processing, and benefit delivery. As the Program acknowledged these issues and their impact on attrition, it launched the 2015 outreach campaign described in *Section 2* to re-engage registrants.

SECTION 6: LESSONS LEARNED FROM NEW YORK CITY AND RECOMMENDATIONS FOR FUTURE STORM RECOVERY PROGRAMS

This study highlights three important lessons from New York City's experience administering a $2.2 billion housing recovery program.

LESSON 1: PROGRAMS SHOULD BE DESIGNED WITH THE UNDERSTANDING THAT ATTRITION IS LIKELY TO OCCUR

The study underscores the fact that CDBG-DR program funding is not meant to fund a universal disaster recovery program, but instead is designed to limit the population served to those with financial needs remaining after any other immediate storm related benefits are received. CDBG-DR funded programs are the *last* resort, made available after property owners have exhausted all other forms of disaster assistance. This was not always understood by those who registered their interest in the Program. High program attrition is inevitable as applicants themselves select out because they may not qualify for benefits.

As noted in the findings, over half of all NYC registrants stopped participating in the first phase of Build It Back (Intake through Option Selection). A full one quarter of initial registrants did not even file an application.

Given that many more people will register than will ultimately participate, it is incumbent on program administrators to identify ways to speed the process of sorting attriters from persisters. Waiting 18+ months to find out who qualifies to remain in the program and who is out wastes the precious resources and time of the eventual attriters, as well as time that program officials could better spend on accelerating benefits for persisters.

The study findings also validate that the sorting process, although too long and too cumbersome, actually produced the expected results. The applicants who remained with the Program were largely in two groups. The first group completed most of their repairs and were eligible for a check to cover uncompensated expenses. The other group of persisters incurred the most uncompensated property damage and are eligible for construction aid. Insurance or SBA loans covered less of their post-storm repair costs for this group.

LESSON 2: PROGRAMS SHOULD BE BUILT ON A STRONG FOUNDATION OF STABLE FUNDING, QUALITY CUSTOMER SERVICE, AND COMMUNITY SUPPORTS

The study helps us to understand how some of the early challenges in delivering the Program influenced the patterns of attrition.

The Program's first major challenge was that it received funding in tranches, leading to initial uncertainty about what could be offered and to whom when the Program launched. The City created a complex prioritization system based on household income and damage to property, leaving half of affected homeowners[12] ineligible for program benefits until one year after program launch and six months after registration closed. No homeowner earning more than 80 percent of Area Median Income whose homes were not completely destroyed were eligible for the program at the onset. In an ideal situation, the Federal government should ensure that all funding is made available at the onset of a new program.[13] Recognizing the need to preserve and strengthen these affordable, long-standing, single-family homeownership communities, the City pushed for and was able to secure additional funds in June 2014 from the third tranche of the Federal allocation. This funding enabled the City to commit to serve all eligible applicants. Securing funding quickly is essential to designing disaster recovery programs.

Moreover, without the organizational infrastructure or staff experience in place to manage a housing recovery effort of this magnitude, the City relied heavily on consultants to create and deliver the Program at the beginning of Build It Back. The service delivery centers were hastily opened in June 2013 with consultants hiring temporary staff and building a data management system that had not been fully tested. Hurricane victims, overwhelmed by the recovery process, were confused about how to navigate the complex Build It Back Program and what it had to offer them. Recognizing the need for direct management of the centers led by experienced City managers, City officials began replacing the staff with experienced City employees in 2014. The

[12] Per *One City, Rebuilding Together,* April 2014, (http://www.nyc.gov/html/recovery/downloads/pdf/sandy_041714.pdf), page 11, Project Pathway and Priority Levels as of January 2014

[13] See *Rebuild the Plane Now: Recommendations for Improving Government's Approach to Disaster Recovery and Preparedness*, Holly Leicht, July 2017, page 49, "HUD should announce total grantee allocations as soon as possible after a CDBG-DR supplemental appropriation is passed, so that grantees know their total funding before they size and launch their recovery programs."

Program also engaged local community groups to help guide and support homeowners. It hired community field representatives and set up satellite offices in the communities in partnership with local elected officials. Recognizing that some homeowners needed more intensive assistance, the Program partnered with Catholic Charities to link vulnerable homeowners to disaster caseworkers. The Build It Back Program implemented this strategy in year 2 and 3 of the Program and was thus able to reengage homeowners who needed additional assistance through the registration and application process.

Key to lowering attrition and ensuring that homeowners make it through the process and receive program benefits is having qualified staff to offer case management services, and support from elected officials, community organizations and other city agencies. **Appendix 7** outlines the 2,205 outreach and community events coordinated by the Build It Back Program through partnerships with local elected officials, community groups and other city agencies.

LESSON 3: PROGRAMS SHOULD MAXIMIZE CUSTOMER CHOICE

The Build It Back Program initially relied heavily on formulas to sort applicants resulting in homeowners having little choice and being frustrated by the options offered. After the overhaul, the Program's first priority was getting homeowners through the option selection process. Virtually no homeowners selected an option in 2013, despite the Program having been active for over six months. Homeowners repeatedly heard "no" when trying to move through the process and find the right option for their unique situation. By expanding flexibility and providing more options for homeowners beginning in 2014, Build It Back helped get more homeowners to "yes." Understanding at the outset what homeowners seek from the Program can ensure that homeowners receive those benefits and help lower attrition. It can also better target resources required for environmental review, damage assessments, and design.

Hurricane Sandy was the first HUD Disaster Recovery allocation that included a reimbursement benefit, but initially the City only offered reimbursement after other options. In December 2013, the City could only offer the popular reimbursement option to low-income homeowners, but later partnered with HUD to expand it to all homeowners in April 2014. Despite early challenges and a delayed launch, this benefit was widely distributed, and the Program even expanded further to provide this option to homeowners that elevated or rebuilt their homes on their own.

By the end of 2014, City officials streamlined check processing, increased production by 400 percent, resulting in 2,050 payments by end of 2014 and 5,482 by end of 2015.

Overall, the study highlights several key programmatic and policy changes that could improve program retention in the future. Planning should happen now to avoid the start-up missteps in the face of the next disaster.

RECOMMENDATIONS

➢ PROGRAM ENROLLMENT

Programs should be prepared to handle a large number of potential participants and have a strategy for processing their cases. Our findings suggest that best way to do that is to separate registrants from applicants.

To serve ***registrants*** better, programs could:

- **Cast a wide net** to ensure owners register all potentially eligible homes.
- **Target at-risk populations** including seniors, low-income populations, registrants for any post-hurricane emergency sheltering programs, and other community-identified populations for registration.
- **Ensure language access** during outreach, development of materials, hiring of staff, connection with community groups, and opening of offices.
- **Publish clear guidelines for all registrants** outlining the potential impact that receiving other benefits, including SBA loans, and completing work on their own may have on future benefits provided through HUD funding. Provide realistic expectations for registrants related to funding for CDBG-DR programs, including both availability and timing.
- **Develop an on-line registration system and robust document management system** to be available immediately following any disaster. Ideally, this system would be created and tested in partnership with a future federal benefit registration system, eliminating the need to do this multiple times for multiple programs.[14] The Build It Back program

[14] See *Rebuild the Plane Now: Recommendations for Improving Government's Approach to Disaster Recovery and Preparedness*, Holly Leicht, July 2017, page 48, "FEMA, in partnership with SBA and HUD, should develop a single

currently stores over 1.1 million documents – future programs must have robust document intake software and procedures in place to retrieve and store registrant documentation. Paperless systems and secure sites (termed *virtual wallets*) for citizens to upload digitally important personal documents prior to a hurricane or similar event could also be developed, as many registrants lost vital documents stored in their homes due to the impact of Hurricane Sandy.

To serve ***applicants*** *better*, the Program should:

- **Group applicants based on their current housing situation** to prioritize displaced and at-risk homeowners. Determine the best way to track whether applicants reoccupied their home after repairs or if they are still displaced, and the condition of their home if they have reoccupied.
- **Give applicants the choice to apply for specific benefits.** Allow applicants to apply for reimbursement, acquisition, or elevation or mitigation assistance in lieu of a general application.
- **Communicate clear timeframes for completing applications.** Applicants must adhere to strict deadlines to complete their applications. When needed, applicants should be paired with a disaster case manager that can help them submit documents, select contractors, and ensure they have access to all available resources to complete the application process and receive eligible benefits.

➢ **SERVICE DELIVERY**

Programs must have qualified and well-trained staff and strong partnerships to deliver services efficiently and effectively. Future programs should:

- **Ensure that qualified staff are available to provide case management services,** who are experienced at processing applications and knowledgeable about construction options. The City should staff service delivery centers with experienced City employees.[15] City

"Disaster Relief" website with a common application…… This portal would lead to a seamless interagency data system…"

[15] See *Rebuild the Plane Now: Recommendations for Improving Government's Approach to Disaster Recovery and Preparedness*, Holly Leicht, July 2017, page 50, "It is critical to hire sufficient full-time staff to run a recovery office, including some with both disaster funding and program expertise, rather than relying solely on existing CDBG staff and/or outside consultants."

government should consider creating civil service title series for recovery workers that enable accelerated hiring of qualified public servants within the constraints of a grant-funded program.

- **Hire local staff with experience in the communities.** The City should consider ways to enhance the local hiring program it developed with the successful Sandy Recovery Workforce1 program.
- **Fully integrate not-for-profit service providers in disaster assistance planning.** Nonprofit legal and financial counseling services should be a mandatory component of future programs – ideally in an advocacy role, with qualified and dedicated counselors working directly with Program staff and applicants. Future CDBG-DR programs should be required to have partnership agreements with the local FEMA-funded Disaster Case Management Program, voluntary rebuild organizations, and other charitable assistance providers.
- **Fully engage the community** through its local elected officials, community groups, and civic associations. This includes conducting joint outreach, setting up satellite offices or office hours in their offices, and opening applicant service centers in the community.
- **Develop a reliable and straightforward communication strategy**. Communications and outreach strategies should continue throughout the life of the program, manage expectations, and provide clear and regularly updated information.

➢ **POLICY DESIGN**

The City should work with HUD, FEMA, SBA and other governmental partners to improve coordination, communication, and revise rules as needed, including:

- **Rationalize SBA loans and other disaster benefits** to ensure that funds not disbursed through the loans are not counted as a duplication of benefit, which could result in unspent disaster recovery funds (transfer amount). Advocate for the option to use CDBG-DR funds to repay SBA loans.[16] Incentivize homeowners to secure funds, such as SBA loans, on their own to begin repairs and elevation work on their homes

[16] See *Rebuild the Plane Now: Recommendations for Improving Government's Approach to Disaster Recovery and Preparedness*, Holly Leicht, July 2017, page 46, "If an income cap is placed on CDBG-DR housing funds, Congress and HUD should reconsider the current prohibition against using CDBG-DR grants to repay SBA loans, which can result in inequitable outcomes among similarly situated homeowners."

without risk of a penalty when future programs are announced.

- **Create a model that reduces the need to have a transfer amount, or turnover of unspent benefits to the program.** Ensure the wide dissemination of guidelines about appropriate uses of disaster recovery benefits and the need to retain records of expenses among disaster-affected communities. Work with Federal partners to expand permissible uses of disaster recovery funding and increase flexibility in accounting for the sources and uses of disaster recovery funding so that homeowners who made reasonable choices after a disaster are not negatively impacted because the their use of funding was not among the narrowly defined uses currently covered by that funding.
- **Design a flexible benefit package that can disburse benefits quickly to homeowners who complete needed repairs, including elevation and rebuilding of their homes.** The City should work with its Federal partners to design a robust reimbursement program that will be ready to implement and announce at the start of the recovery phase. Ensure that future CDBG-DR allocations and HUD funding notices include reimbursement. Work with HUD to simplify environmental requirements that would apply to homeowner-completed work, with the understanding that this work is completed without immediate programmatic oversight.[17] After future disasters, guidelines and requirements for potential homeowner reimbursement should be disseminated widely among disaster-affected communities[18].
- **Develop on-going, standby housing resiliency programs that can be expanded rapidly in the event of a disaster.** *Programs to be explored for development include:* home acquisition; flood insurance counseling, elevation certificate assistance, and home resiliency audits and plans; and mitigation and elevation assistance loan and grant programs.

[17] See *Rebuild the Plane Now: Recommendations for Improving Government's Approach to Disaster Recovery and Preparedness*, Holly Leicht, July 2017, page 45, "Congress and the White House should consider standardizing in future disaster supplemental appropriations a narrow exemption from the National Environmental Policy Act (NEPA) and related environmental laws for eligible in-kind repair or replacement of homes and buildings that are not historically or otherwise environmentally significant."

[18] See *Rebuild the Plane Now: Recommendations for Improving Government's Approach to Disaster Recovery and Preparedness*, Holly Leicht, July 2017, page 46, "Federal agencies must communicate to impacted home, building and small business owners immediately after a disaster that federal environmental laws like the National Environmental Policy Act (NEPA) may apply to them."

CONCLUSION

Communities across the country are experiencing more and more natural disasters, yet we are not taking advantage of the opportunity to learn for the next disaster. In the words of former HUD Regional Administrator, Holly M. Leicht, “we cannot afford to wait until the plane is in flight again to do the necessary rebuilding” when future disasters occur.

The City of New York should be ready to roll out quickly a working disaster recovery program. It is important to preserve the hard-earned lessons learned by the City and build on the many improvements that were made over the course of the Program.

We hope the City will continue to engage researchers, to build a body of evidence on what works in storm recovery and take steps to develop a framework that allows local storm recovery managers to share research and best practices.

APPENDICES

Appendix 1: Overview of Applicants Studied *(excludes Registrants Only)*		
PANEL A	**Applicants Studied**	**Percent of Attrition**
Total Applicants	**13,545**	**41%**
Borough of Residence	**N**	**Mean**
1 Bronx/Manhattan	119	46%
2 Brooklyn	4,254	39%
4 Queens	6,091	42%
5 Staten Island	3,081	40%
Preliminary Pathway Determination *(Benefits Offered by Program)*	**N**	**Mean**
1 No Pathway determined	2,124	99%
2 Buyout/Acquisition	19	37%
3 Major Rehabilitation (Elevation)	2,959	42%
4 Moderate Rehabilitation	6,650	24%
5 Reconstruction	455	33%
6 Reimbursement Only	1,338	28%
Final Pathway Selected *(Benefits Offered by Program)*	**N**	**Mean**
1 No Pathway	2,112	100%
2 Buyout-Acquisition	304	12%
3 Major Rehabilitation (Elevation)	2,495	47%
4 Moderate Rehabilitation	2,143	71%
5 Reconstruction	325	36%
6 Reimbursement Only	2,484	16%
7 Moderate Rehabilitation with Reimbursement	3,682	4%
Low- to moderate-income (LMI) Status	**N**	**Mean**
Urgent need, not LMI	6,635	32%
Yes is Low to middle income (LMI)	5,047	30%
LMI not determined	1,863	97%
Remaining Disaster Benefits (Transfer Amount)	**N**	**Mean**
No Remaining Disaster Benefits (Transfer Amount) Owed	10,806	34%
Yes, Owes Remaining Disaster Benefits (Transfer Amount)	2,739	68%
Financial and Legal Counseling Services	**N**	**Mean**
No counseling services	9,826	45%
Yes, had counseling	3,719	28%
Contractor Status	**N**	**Mean**
1 No Contractor used	7,211	67%
2 CYOC (choose your own contract)	524	6%
3 Direct Grant	497	3%
4 Public Contractor	5,313	12%
PANEL B	**Persisters**	**Attriters**
Total Applicants	**8,040**	**5,505**
Confirmed Structure Value	$236,754	$222,446
Mean Remaining Disaster Benefits (Transfer Amount) – Includes $0 Values	$3,379	$10,672
Mean Remaining Disaster Benefits (Transfer Amount) – Excludes $0 Values	$30,838	$31,619
Substantial Damage Value (Mean)	$72,414	$73,651
% White, not Hispanic-Owner occupied*	68%	65%
% Income below poverty level*	10%	11%
% of Owners -Less than high school graduate*	10%	10%
Mean Total Household income for Owner Occupied Units*	$70,453	$68,660
Median Value of owner-occupied housing units*	$513,054	$501,909
** Source: Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File*		

Appendix 2: Borough and Neighborhood Population Analysis - QUEENS											
Borough/Neighborhood	**PERSISTERS**	**% of Total**	**ATTRITERS:** *Did Not Select Program Option*	**% of Total**	**ATTRITERS:** *Selected Program Option*	**% of Total**	**ATTRITERS TOTAL**	**% of Total**	**REGISTRANTS ONLY**	**% of Total**	**GRAND TOTAL**
Queens Total	**3,519**	**43%**	**2,262**	**28%**	**310**	**4%**	**2,572**	**31%**	**2,081**	**25%**	**8,172**
Baisley Park	12	43%	6	21%	0	0%	6	21%	10	36%	28
Breezy Point-Belle Harbor-Rockaway Park-Broad Channel	1,719	45%	1,119	29%	142	4%	1,261	33%	851	22%	3,831
Cambria Heights	4	22%	8	44%	0	0%	8	44%	6	33%	18
Douglas Manor-Douglaston-Little Neck	1	9%	4	36%	1	9%	5	45%	5	45%	11
Far Rockaway-Bayswater	305	41%	214	29%	38	5%	252	34%	193	26%	750
Hammels-Arverne-Edgemere	460	39%	345	29%	62	5%	407	34%	321	27%	1,188
Hollis	4	27%	7	47%	0	0%	7	47%	4	27%	15
Jamaica	5	38%	5	38%	0	0%	5	38%	3	23%	13
Jamaica Estates-Holliswood	6	46%	3	23%	0	0%	3	23%	4	31%	13
Laurelton	8	23%	10	29%	3	9%	13	37%	14	40%	35
Lindenwood-Howard Beach	824	50%	370	22%	45	3%	415	25%	425	26%	1,664
Ozone Park	7	50%	4	29%	0	0%	4	29%	3	21%	14
Queens Village	14	30%	14	30%	2	4%	16	34%	17	36%	47
Richmond Hill	4	18%	9	41%	2	9%	11	50%	7	32%	22
Rosedale	41	31%	39	29%	5	4%	44	33%	49	37%	134
South Jamaica	14	40%	8	23%	0	0%	8	23%	13	37%	35
South Ozone Park	9	20%	18	41%	1	2%	19	43%	16	36%	44
Springfield Gardens North	5	33%	1	7%	0	0%	1	7%	9	60%	15
Springfield Gardens South-Brookville	19	24%	22	28%	4	5%	26	33%	33	42%	78
St. Albans	11	18%	21	35%	0	0%	21	35%	28	47%	60
Woodhaven	6	40%	2	13%	0	0%	2	13%	7	47%	15
Total for all neighborhoods with 10 or less Registrants	41	29%	33	23%	5	4%	38	27%	63	44%	142

Appendix 2: Borough and Neighborhood Population Analysis - BROOKLYN											
Borough/Neighborhood	**PERSISTERS**	**% of Total**	**ATTRITERS:** *Did Not Select Program Option*	**% of Total**	**ATTRITERS:** *Selected Program Option*	**% of Total**	**ATTRITERS TOTAL**	**% of Total**	**REGISTRANTS ONLY**	**% of Total**	**GRAND TOTAL**
Brooklyn Total	**2,611**	**45%**	**1,446**	**25%**	**197**	**3%**	**1,643**	**28%**	**1,567**	**27%**	**5,821**
Bensonhurst East	14	31%	14	31%	0	0%	14	31%	17	38%	45
Brighton Beach	140	40%	90	26%	20	6%	110	31%	102	29%	352
Canarsie	865	49%	407	23%	55	3%	462	26%	450	25%	1,777
Carroll Gardens-Columbia Street-Red Hook	26	25%	31	30%	2	2%	33	31%	46	44%	105
Crown Heights North	0	0%	5	42%	0	0%	5	42%	7	58%	12
Cypress Hills-City Line	1	9%	3	27%	0	0%	3	27%	7	64%	11
East Flatbush-Farragut	8	28%	6	21%	3	10%	9	31%	12	41%	29
East New York	4	15%	11	41%	1	4%	12	44%	11	41%	27
Flatbush	4	29%	4	29%	0	0%	4	29%	6	43%	14
Flatlands	25	46%	16	30%	2	4%	18	33%	11	20%	54
Georgetown-Marine Park-Bergen Beach-Mill Basin	213	45%	109	23%	10	2%	119	25%	142	30%	474
Gravesend	42	44%	23	24%	4	4%	27	28%	27	28%	96
Homecrest	8	40%	3	15%	1	5%	4	20%	8	40%	20
Madison	6	55%	2	18%	0	0%	2	18%	3	27%	11
Rugby-Remsen Village	5	24%	13	62%	0	0%	13	62%	3	14%	21
Seagate-Coney Island	419	50%	213	25%	22	3%	235	28%	188	22%	842
Sheepshead Bay-Gerritsen Beach-Manhattan Beach	805	44%	462	26%	74	4%	536	30%	469	26%	1,810
Total for all neighborhoods with 10 or less Registrants	26	21%	34	28%	3	2%	37	31%	58	48%	121

Appendix 2: Borough and Neighborhood Population Analysis – STATEN ISLAND											
Borough/Neighborhood	**PERSISTERS**	**% of Total**	**ATTRITERS:** *Did Not Select Program Option*	**% of Total**	**ATTRITERS:** *Selected Program Option*	**% of Total**	**ATTRITERS TOTAL**	**% of Total**	**REGISTRANTS ONLY**	**% of Total**	**GRAND TOTAL**
Staten Island Total	**1,846**	**45%**	**1,097**	**27%**	**138**	**3%**	**1,235**	**30%**	**982**	**24%**	**4,063**
Annadale-Huguenot-Prince's Bay-Eltingville	21	40%	17	32%	0	0%	17	32%	15	28%	53
Arden Heights	2	17%	1	8%	0	0%	1	8%	9	75%	12
Charleston-Richmond Valley-Tottenville	52	42%	39	31%	4	3%	43	35%	29	23%	124
Grasmere-Arrochar-Ft. Wadsworth	99	53%	37	20%	9	5%	46	25%	42	22%	187
Great Kills	138	48%	57	20%	7	2%	64	22%	86	30%	288
Grymes Hill-Clifton-Fox Hills	8	36%	6	27%	0	0%	6	27%	8	36%	22
Mariner's Harbor-Arlington-Port Ivory-Graniteville	34	41%	18	22%	2	2%	20	24%	28	34%	82
New Brighton-Silver Lake	5	42%	3	25%	1	8%	4	33%	3	25%	12
New Dorp-Midland Beach	702	47%	420	28%	60	4%	480	32%	319	21%	1,501
New Springville-Bloomfield-Travis	14	33%	14	33%	1	2%	15	35%	14	33%	43
Oakwood-Oakwood Beach	277	44%	175	28%	22	4%	197	31%	153	24%	627
Old Town-Dongan Hills-South Beach	432	46%	263	28%	30	3%	293	31%	212	23%	937
Port Richmond	11	39%	4	14%	1	4%	5	18%	12	43%	28
Rossville-Woodrow	2	20%	2	20%	0	0%	2	20%	6	60%	10
Stapleton-Rosebank	17	33%	16	31%	0	0%	16	31%	19	37%	52
Todt Hill-Emerson Hill-Heartland Village-Lighthouse Hill	6	32%	6	32%	0	0%	6	32%	7	37%	19
West New Brighton-New Brighton-St. George	22	42%	17	33%	1	2%	18	35%	12	23%	52
Westerleigh	4	33%	1	8%	0	0%	1	8%	7	58%	12
Neighborhood not reported	0	0%	1	50%	0	0%	1	50%	1	50%	2

Appendix 2: Borough and Neighborhood Population Analysis – BRONX & MANHATTAN											
Borough/Neighborhood	**PERSISTERS**	**% of Total**	**ATTRITERS:** *Did Not Select Program Option*	**% of Total**	**ATTRITERS:** *Selected Program Option*	**% of Total**	**ATTRITERS TOTAL**	**% of Total**	**REGISTRANTS ONLY**	**% of Total**	**GRAND TOTAL**
Bronx Total	**57**	**31%**	**47**	**26%**	**3**	**2%**	**50**	**27%**	**77**	**42%**	**184**
Eastchester-Edenwald-Baychester	4	25%	5	31%	0	0%	5	31%	7	44%	16
Pelham Bay-Country Club-City Island	4	29%	4	29%	0	0%	4	29%	6	43%	14
Schuylerville-Throgs Neck-Edgewater Park	25	38%	15	23%	1	2%	16	25%	24	37%	65
Soundview-Castle Hill-Clason Point-Harding Park	3	20%	7	47%	0	0%	7	47%	5	33%	15
Williamsbridge-Olinville	3	20%	6	40%	2	13%	8	53%	4	27%	15
Woodlawn-Wakefield	7	54%	2	15%	0	0%	2	15%	4	31%	13
Total for all neighborhoods with 10 or less Registrants	11	24%	8	17%	0	0%	8	17%	27	59%	46
Manhattan Total	**7**	**27%**	**4**	**15%**	**1**	**4%**	**5**	**19%**	**14**	**54%**	**26**
Battery Park City-Lower Manhattan	2	50%	0	0%	0	0%	0	0%	2	50%	4
Central Harlem South	0	0%	0	0%	0	0%	0	0%	2	100%	2
East Village	0	0%	0	0%	1	50%	1	50%	1	50%	2
Hudson Yards-Chelsea-Flatiron-Union Square	2	67%	0	0%	0	0%	0	0%	1	33%	3
Lower East Side	2	29%	1	14%	0	0%	1	14%	4	57%	7
Marble Hill-Inwood	0	0%	1	50%	0	0%	1	50%	1	50%	2
SoHo-TriBeCa-Civic Center-Little Italy	1	20%	2	40%	0	0%	2	40%	2	40%	5
West Village	0	0%	0	0%	0	0%	0	0%	1	100%	1

Appendix 3: Online Survey Responses – Program Phases – Persisters vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Persisters	Attriters	Total Percent
Panel A - Initial Meetings & Documentation Collection					
1)	**The number of meetings and phone calls required to complete forms and collect documents was reasonable.**	**872**	**672**	**200**	
	Strongly Disagree/Disagree	532	57%	74%	61%
	Strongly Agree/Agree	340	43%	26%	39%
2)	**I was comfortable sharing personal and sensitive information required by the program.**	**851**	**651**	**200**	
	Strongly Disagree/Disagree	282	31%	39%	33%
	Strongly Agree/Agree	569	69%	61%	67%
3)	**Documenting level of personal income**	**867**	**663**	**204**	
	Very Difficult/Difficult	195	22%	24%	23%
	Very Easy/Easy	672	78%	76%	77%
4)	**Providing documentation required by the program**	**869**	**664**	**205**	
	Very Difficult/Difficult	436	48%	56%	50%
	Very Easy/Easy	433	52%	44%	50%
5)	**Proving U.S. citizenship**	**861**	**658**	**203**	
	Very Difficult/Difficult	24	3%	3%	3%
	Very Easy/Easy	837	97%	97%	97%
6)	**Proving property ownership**	**858**	**657**	**201**	
	Very Difficult/Difficult	60	8%	4%	7%
	Very Easy/Easy	798	92%	96%	93%
7)	**The property damage assessment was accurate.**	**838**	**672**	**166**	
	Strongly Disagree/Disagree	484	54%	72%	58%
	Strongly Agree/Agree	354	46%	28%	42%
8)	**I was comfortable with the requirement to test for lead and/or asbestos.**	**826**	**666**	**160**	
	Strongly Disagree/Disagree	161	19%	20%	19%
	Strongly Agree/Agree	665	81%	80%	81%
9)	**The length of time to complete the property damage assessment was reasonable.**	**829**	**666**	**163**	
	Strongly Disagree/Disagree	495	59%	61%	60%
	Strongly Agree/Agree	334	41%	39%	40%
Panel B - Financial Contribution					
1)	**Program's accounting for the funds I received from other hurricane relief sources**	**569**	**466**	**103**	
	Very Dissatisfied/Dissatisfied	220	36%	51%	39%
	Very Satisfied/Satisfied	349	64%	49%	61%
2)	**Program's accounting for the funds I spent due to the hurricane**	**618**	**507**	**111**	
	Very Dissatisfied/Dissatisfied	325	49%	71%	53%
	Very Satisfied/Satisfied	293	51%	29%	47%
3)	**The inclusion of the SBA (Small Business Administration) loan in calculating my benefits**	**322**	**256**	**66**	
	Very Dissatisfied/Dissatisfied	246	74%	85%	76%
	Very Satisfied/Satisfied	76	26%	15%	24%

Appendix 3: Online Survey Responses – Program Phases – Persisters vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Persisters	Attriters	Total Percent
4)	**Paying the transfer amount** *(the difference between benefits received from other sources and the funds spent due to the hurricane)*	**400**	**328**	**72**	
	Very Difficult/Difficult	253	59%	85%	63%
	Very Easy/Easy	147	41%	15%	37%
5)	**Submitting all necessary documents to fully reflect my hurricane-related expenses** *(e.g. living expenses, repairs completed prior to joining the program)*	**614**	**505**	**109**	
	Very Difficult/Difficult	372	60%	61%	61%
	Very Easy/Easy	242	40%	39%	39%
Panel C - Program Benefits					
1)	**Construction benefits offered**	**505**	**443**	**62**	
	Very Dissatisfied/Dissatisfied	308	57%	89%	61%
	Very Satisfied/Satisfied	197	43%	11%	39%
2)	**Reimbursement benefits offered**	**520**	**458**	**62**	
	Very Dissatisfied/Dissatisfied	305	54%	94%	59%
	Very Satisfied/Satisfied	215	46%	6%	41%
3)	**Acquisition or Buyout benefits offered**	**170**	**144**	**26**	
	Very Dissatisfied/Dissatisfied	124	69%	92%	73%
	Very Satisfied/Satisfied	46	31%	8%	27%
Panel D - Design & Scope of Work					
1)	**The number of meetings/calls with the contractor/designer to finalize the scope and design was reasonable.**	**434**	**401**	**33**	
	Strongly Disagree/Disagree	250	56%	76%	58%
	Strongly Agree/Agree	184	44%	24%	42%
2)	**Choice of construction contractors offered by the program**	**393**	**364**	**29**	
	Very Dissatisfied/Dissatisfied	222	55%	76%	56%
	Very Satisfied/Satisfied	171	45%	24%	44%
3)	**Scope of work presented to me**	**423**	**394**	**29**	
	Very Dissatisfied/Dissatisfied	242	55%	86%	57%
	Very Satisfied/Satisfied	181	45%	14%	43%
4)	**Designs presented to me**	**349**	**324**	**25**	
	Very Dissatisfied/Dissatisfied	198	54%	88%	57%
	Very Satisfied/Satisfied	151	46%	12%	43%
5)	**Design options offered by the program** *(e.g., finishes, countertops, cabinets, etc.)*	**281**	**257**	**24**	
	Very Dissatisfied/Dissatisfied	177	61%	83%	63%
	Very Satisfied/Satisfied	104	39%	17%	37%
6)	**Program policy to prohibit unpermitted spaces** *(i.e. basement/cellar, unattached garage, unpermitted rental unit)*	**270**	**245**	**25**	
	Very Dissatisfied/Dissatisfied	190	69%	84%	70%
	Very Satisfied/Satisfied	80	31%	16%	30%

Appendix 3: Online Survey Responses – Program Phases – Persisters vs. Attriters

Excludes Respondents that answered "Not Applicable"

		Total Responses	Persisters	Attriters	Total Percent
Panel E - Temporary Relocation					
1)	**I received adequate notification of move-out requirements.**	**147**	**142**	**5**	
	Strongly Disagree/Disagree	72	48%	80%	49%
	Strongly Agree/Agree	75	52%	20%	51%
2)	**Resources and support offered by the program to help with relocation.**	**134**	**129**	**5**	
	Very Dissatisfied/Dissatisfied	77	56%	100%	57%
	Very Satisfied/Satisfied	57	44%	0%	43%
3)	**Relocating myself and my family/roommates in order for construction to start**	**140**	**135**	**5**	
	Very Difficult/Difficult	103	73%	100%	74%
	Very Easy/Easy	37	27%	0%	26%
4)	**Relocating tenants in order for construction to start**	**31**	**29**	**2**	
	Very Difficult/Difficult	23	72%	100%	74%
	Very Easy/Easy	8	28%	0%	26%
Panel F - Construction Assistance					
1)	**The number of meetings/phone calls to discuss construction was reasonable.**	**269**	**267**	**2**	
	Strongly Disagree/Disagree	154	57%	-	57%
	Strongly Agree/Agree	115	43%	-	43%
2)	**Quality of the construction work completed**	**212**	**212**	**0**	
	Very Dissatisfied/Dissatisfied	104	49%	-	49%
	Very Satisfied/Satisfied	108	51%	-	51%
Panel G - Interactions with Program Staff					
1)	**I knew whom to contact if I had an issue or question about the Build It Back program.**	**883**	**656**	**227**	
	Strongly Disagree/Disagree	483	49%	72%	55%
	Strongly Agree/Agree	400	51%	28%	45%
2)	**The program staff were responsive to my questions and concerns.**	**885**	**656**	**229**	
	Strongly Disagree/Disagree	471	47%	72%	53%
	Strongly Agree/Agree	414	53%	28%	47%
3)	**The program steps were laid out and communicated to me clearly.**	**879**	**650**	**229**	
	Strongly Disagree/Disagree	555	57%	80%	63%
	Strongly Agree/Agree	324	43%	20%	37%
4)	**Build It Back staff were committed to ensuring that I received program benefits.**	**881**	**652**	**229**	
	Strongly Disagree/Disagree	501	48%	82%	57%
	Strongly Agree/Agree	380	52%	18%	43%
5)	**As they were explained, I clearly understood the benefit options offered to me.**	**872**	**644**	**228**	
	Strongly Disagree/Disagree	439	42%	74%	50%
	Strongly Agree/Agree	433	58%	26%	50%

Appendix 4: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters					
Excludes Respondents that answered "Not Applicable"					
		Total Responses	**Attriters**	**Registrants Only**	**Total Percent**
Panel A - Leaving the Build It Back Program					
1)	**Did you voluntarily withdraw from the Build It Back program?**	**513**	**328**	**185**	
	Yes	257	49%	53%	50%
	No	256	52%	47%	50%
2)	**Did you notify the Build It Back program *(in writing, on the phone, or in person)* that you wanted to withdraw?**	**346**	**215**	**131**	
	Yes	66	21%	15%	19%
	No	280	79%	85%	81%
3)	**Were you unable to continue due to program deadlines?**	**505**	**321**	**184**	
	Yes	127	22%	30%	25%
	No	378	78%	70%	75%
Panel B - Personal Issues - Why did you leave the Program?					
1)	**Realized after registering through 311 that I did not want to participate in the program**	**548**	**352**	**196**	
	Yes	45	5%	13%	8%
	No	503	95%	87%	92%
2)	**Decided to make repairs on my own**	**548**	**352**	**196**	
	Yes	179	29%	40%	33%
	No	369	71%	60%	67%
3)	**Planned or decided to sell my property**	**548**	**352**	**196**	
	Yes	14	3%	3%	3%
	No	534	97%	97%	97%
4)	**Foreclosure on my property**	**548**	**352**	**196**	
	Yes	1	0%	0%	0%
	No	547	100%	100%	100%
5)	**Health Concerns *(i.e. illness of you or family members)***	**548**	**352**	**196**	
	Yes	30	6%	4%	5%
	No	518	94%	96%	95%
6)	**Inability to afford flood insurance required by program**	**548**	**352**	**196**	
	Yes	24	4%	6%	4%
	No	524	96%	94%	96%
7)	**Litigation related to my property**	**548**	**352**	**196**	
	Yes	12	2%	3%	2%
	No	536	98%	97%	98%
8)	**My neighbors/peers influenced by decision**	**548**	**352**	**196**	
	Yes	21	2%	7%	4%
	No	527	98%	93%	96%
9)	**Personal/life situation *(i.e. loss of employment, divorce)***	**196**	**N/A**	**196**	
	Yes	12	N/A	6%	6%
	No	184	N/A	94%	94%

Appendix 4: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters					
Excludes Respondents that answered "Not Applicable"					
		Total Responses	**Attriters**	**Registrants Only**	**Total Percent**
Panel C - Program Processes & Eligibility - Why did you leave the Program?					
1)	**Received assistance from other sources/programs and did not need additional assistance**	**548**	**352**	**196**	
	Yes	27	3%	8%	5%
	No	521	97%	92%	95%
2)	**Process took too long**	**548**	**352**	**196**	
	Yes	256	48%	44%	47%
	No	292	52%	56%	53%
3)	**Difficulty completing administrative paperwork and providing supporting documents**	**548**	**352**	**196**	
	Yes	196	34%	39%	36%
	No	352	66%	61%	64%
4)	**One or more members of my family were reluctant to sign program forms or other documents required to move forward**	**548**	**352**	**196**	
	Yes	21	3%	6%	4%
	No	527	97%	94%	96%
5)	**Did not agree with program prioritization policy**	**548**	**352**	**196**	
	Yes	96	18%	16%	18%
	No	452	82%	84%	82%
6)	**Did not agree with program deadlines**	**548**	**352**	**196**	
	Yes	68	13%	12%	12%
	No	480	87%	88%	88%
7)	**Program requirement to obtain flood insurance**	**548**	**352**	**196**	
	Yes	23	3%	6%	4%
	No	525	97%	94%	96%
8)	**Did not think I would be eligible for the program**	**548**	**352**	**196**	
	Yes	100	9%	35%	18%
	No	448	91%	65%	82%
Panel D - Program Options & Financial Contribution - Why did you leave the Program?					
1)	**Interested only in receiving a cash benefit (reimbursement), but it was not offered to me**	**548**	**352**	**196**	
	Yes	103	24%	10%	19%
	No	445	76%	90%	81%
2)	**Did not want to elevate my home**	**548**	**352**	**196**	
	Yes	52	12%	5%	9%
	No	496	88%	95%	91%
3)	**Did not want to lose my basement**	**548**	**352**	**196**	
	Yes	38	8%	5%	7%
	No	510	92%	95%	93%
4)	**Dissatisfied with program options presented to me**	**548**	**352**	**196**	
	Yes	183	38%	25%	33%
	No	365	62%	75%	67%
5)	**Disagreed with how the program accounted for my expenses versus benefits received from other relief sources**	**548**	**352**	**196**	
	Yes	121	28%	11%	22%
	No	427	72%	89%	78%

Appendix 4: Online Survey Responses - Leaving the Program - Registrants Only vs. Attriters					
Excludes Respondents that answered "Not Applicable"					
		Total Responses	**Attriters**	**Registrants Only**	**Total Percent**
Panel E - Attached-Property & Relocation - Why did you leave the Program?					
1)	**My property is attached, and my neighbor would not participate in the program**	**548**	**352**	**196**	
	Yes	39	7%	8%	7%
	No	509	93%	92%	93%
2)	**Did not want to relocate for construction**	**548**	**352**	**196**	
	Yes	58	11%	10%	11%
	No	490	89%	90%	89%
3)	**Unable or unwilling to relocate tenants**	**548**	**352**	**196**	
	Yes	26	5%	5%	5%
	No	522	95%	95%	95%
Panel F - Which of the following options would have persuaded you to remain in the Build It Back Program?					
1)	**Greater control over the design and construction process**	**548**	**352**	**196**	
	Yes	65	13%	10%	12%
	No	483	87%	90%	88%
2)	**Alternative payment options or payment plans to pay my Transfer Amount**	**548**	**352**	**196**	
	Yes	37	7%	6%	7%
	No	511	93%	94%	93%
3)	**Additional resources or hands-on help dealing with tenants/relocation**	**548**	**352**	**196**	
	Yes	26	5%	5%	5%
	No	522	95%	95%	95%
4)	**Additional options to receive a cash benefit, as an alternative to receiving construction assistance**	**548**	**352**	**196**	
	Yes	218	45%	31%	40%
	No	330	55%	69%	60%
5)	**More hands-on assistance completing documentation and collecting documents required by the program**	**548**	**352**	**196**	
	Yes	157	25%	36%	29%
	No	391	75%	64%	71%
6)	**More knowledgeable staff to guide me through the process**	**548**	**352**	**196**	
	Yes	244	46%	42%	45%
	No	304	54%	58%	55%
7)	**Additional legal and counseling services to help with complicated financial and legal issues**	**548**	**352**	**196**	
	Yes	90	16%	16%	16%
	No	458	84%	84%	84%
8)	**Quicker processing and delivery of program benefits**	**548**	**352**	**196**	
	Yes	237	46%	38%	43%
	No	311	54%	62%	57%

Appendix 5: Overview of Registrants that Completed Online Survey

PANEL A	All Registrants Studied	Percent Completed Surveys
Total Applicants	**18,266**	**8%**
Three Registrant Subgroups	**N**	**Mean**
1 Persisters	8,040	10%
2 Attriters	5,505	6%
3 Registrants Only	4,721	4%
Borough of Residence		
1 Bronx/Manhattan	210	11%
2 Brooklyn	5,821	7%
4 Queens	8,172	9%
5 Staten Island	4,063	6%
Preliminary Pathway Determination *(Benefits Offered by Program)*		
1 No Pathway determined	6,840	4%
2 Buyout/Acquisition	19	5%
3 Major Rehab (Elevation)	2,962	12%
4 Moderate Rehabilitation	6,650	9%
5 Reconstruction	457	13%
6 Reimbursement Only	1,338	8%
Detailed Registrant Subgroups		
1 Registrants Only	4,721	4%
2 Persisters - Not Reimbursed	2,540	14%
3 Persisters - Reimbursed	5,500	9%
4 Attriters - Didn't select Program Option	4,856	13%
5 Attriters - Selected Program Option	649	10%
Low to Middle Moderate Income (LMI) Status		
1 Urgent need, not LMI	6,645	11%
2 Yes, Low- to moderate-income (LMI)	5,053	7%
3 LMI not determined	6,568	4%
Remaining Disaster Benefits (Transfer Amount)		
No Transfer Amount	15,527	7%
Yes, has a transfer amount	2,739	9%
Legal and Financial Counseling Services		
No counseling services	14,523	6%
Yes, counseling services	3,743	12%

PANEL B	Survey Not Completed	Survey Completed	All Registrants Studied
Confirmed Structure Value	$233,567	$221,704	$232,433
Assessment Summary Total: Substantial Damage	$72,182	$79,581	$72,889
Remaining Disaster Benefits (Transfer Amount) - Includes $0 Values	$7,868	$8,631	$7,944
Remaining Disaster Benefits (Transfer Amount) - Excludes $0 Values	$30,847	$36,510	$31,368
% White, not Hispanic-Owner occupied*	66%	71%	66%
% Income below poverty level*	11%	10%	11%
% Owners -Less than high school graduate*	10%	10%	10%
Mean Household Income (in 2012) for Owner Occupied Units*	$68,978	$71,189	$69,147
Median value owner-occupied housing units	$507,986	$513,615	$508,413

** Source: Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File*

Appendix 6: Profile of Thirteen Neighborhoods with the Largest Number of Build It Back Applications *(Excludes Registrants Only)*

Source: Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File

	Characteristics	Total	Queens				Brooklyn					Staten Island			
			Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	Lindenwood, Howard Beach	Hammels, Arverne, Edgemere	Far Rockaway, Bayswater	Sheepshead Bay, Gerritsen Beach, Manhattan Beach	Canarsie	Seagate, Coney Island	Georgetown, Marine Park, Bergen Beach, Mill Basin	Brighton Beach	New Dorp, Midland Beach	Old Town, Dongan Hills, South Beach	Oakwood, Oakwood Beach	Great Kills
Build It Back Application Characteristics															
1	Number of Applications	12,130	2,980	1,239	867	557	1,341	1,327	654	332	250	1,182	725	474	202
2	Rank: Total Applications	--	1	4	6	9	2	3	8	11	12	5	7	10	13
3	Percent of All Applications	90.0%	22.0%	9.1%	6.4%	4.1%	9.9%	9.8%	4.8%	2.5%	1.8%	8.7%	5.4%	3.5%	1.5%
4	Initial Pathway Determined	10,292	2,509	1,042	740	464	1,125	1,152	564	278	199	1,023	610	409	177
5	Number Substantially Damaged*	3,314	1,010	204	436	116	400	105	129	9	43	501	227	68	66
6	Percent Substantially Damaged*	32%	40%	20%	59%	25%	36%	9%	23%	3%	22%	49%	37%	17%	37%
7	Rank: Substantially Damaged *	--	1	6	3	8	4	9	7	13	12	2	5	10	11
Housing Units and Tenure															
8	Total Occupied Housing Units	185,063	11,319	11,261	12,157	16,060	27,669	11,215	16,432	25,070	13,764	7,881	8,752	8,194	15,289
9	Total Renter occupied units	86,934	4,069	3,029	8,286	11,949	14,114	9,359	4,288	12,387	9,717	1,946	2,935	2,520	2,335
10	Renter-occupied as % of all occupied units	47.0%	35.9%	26.9%	68.2%	74.4%	51.0%	83.5%	26.1%	49.4%	70.6%	24.7%	33.5%	30.8%	15.3%
11	Total Owner-occupied units	98,129	7,250	8,232	3,871	4,111	13,555	1,856	12,144	12,683	4,047	5,935	5,817	5,674	12,954
12	Owner-Occupied as % of all occupied units	53.0%	64.1%	73.1%	31.8%	25.6%	49.0%	16.5%	73.9%	50.6%	29.4%	75.3%	66.5%	69.2%	84.7%
13	Subtotal 1-4 Owner-occupied units	86,437	6,306	6,453	2,517	3,995	13,301	1,703	11,943	8,908	1,701	5,784	5,608	5,580	12,638
14	1-4 family owner-occupied as % of all housing units	46.7%	55.7%	57.3%	20.7%	24.9%	48.1%	15.2%	72.7%	35.5%	12.4%	73.4%	64.1%	68.1%	82.7%
15	Subtotal 1-4 Family as % of all owner-occupied units	88.1%	87.0%	78.4%	65.0%	97.2%	98.1%	91.8%	98.3%	70.2%	42.0%	97.5%	96.4%	98.3%	97.6%
Median Home Value (owner-occupied units)															
16	Median Home Value	$480,924	$591,201	$501,271	$349,484	$473,462	$494,217	$487,758	$413,720	$555,047	$521,641	$447,060	$460,850	$466,926	$458,505

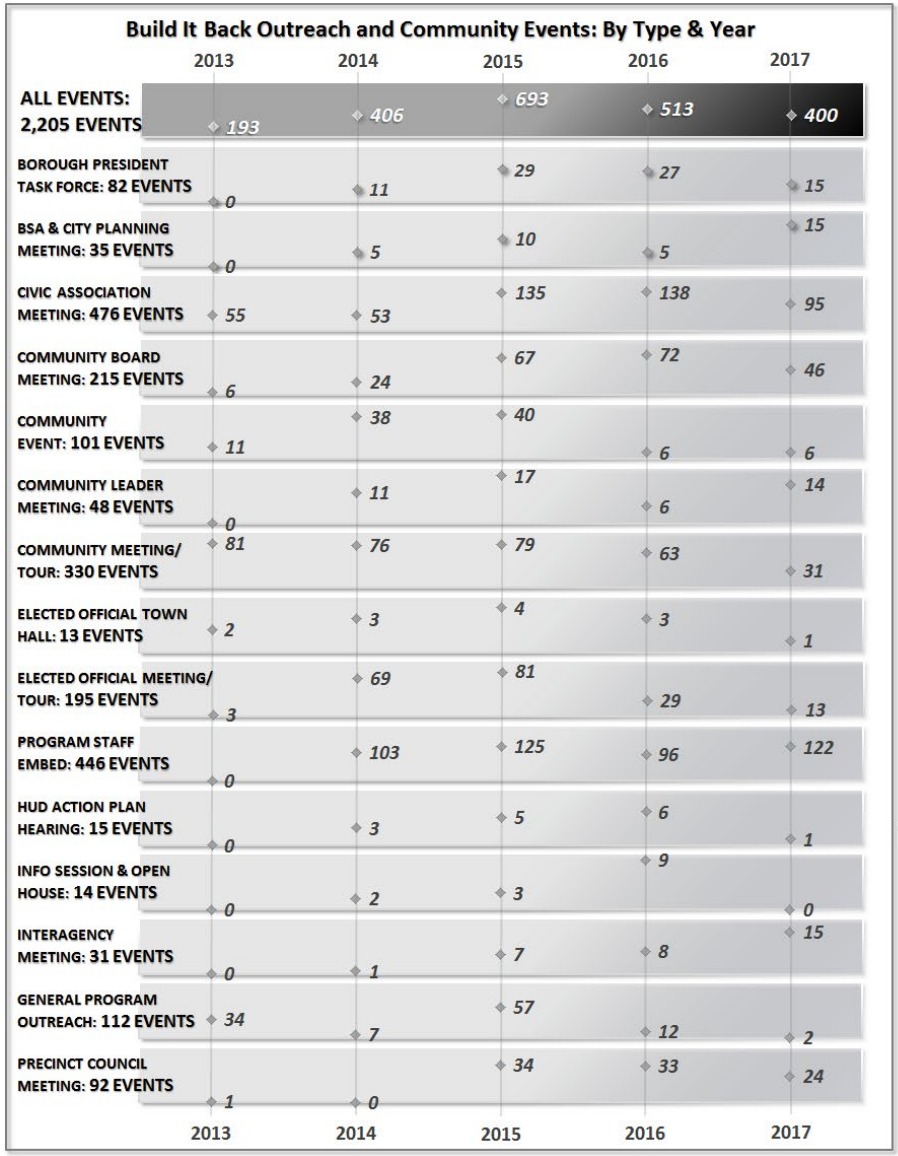
Appendix 6: Profile of Thirteen Neighborhoods with the Largest Number of Build It Back Applications *(Excludes Registrants Only)*

Source: Census Bureau's American Community Survey (ACS) 2008-2012 5-Year Summary File

	Characteristics	Total	Queens				Brooklyn					Staten Island			
			Breezy Point, Belle Harbor, Rockaway Park, Broad Channel	Lindenwood, Howard Beach	Hammels, Arverne, Edgemere	Far Rockaway, Bayswater	Sheepshead Bay, Gerritsen Beach, Manhattan Beach	Canarsie	Seagate, Coney Island	Georgetown, Marine Park, Bergen Beach, Mill Basin	Brighton Beach	New Dorp, Midland Beach	Old Town, Dongan Hills, South Beach	Oakwood, Oakwood Beach	Great Kills
Poverty Status															
17	% Below 100 percent of the poverty level	15.3%	6.4%	8.9%	30.0%	24.3%	14.7%	32.5%	7.9%	16.1%	26.9%	6.9%	8.8%	4.5%	5.2%
18	% Above 100 percent of poverty level	84.7%	93.6%	91.1%	70.0%	75.7%	85.3%	67.5%	92.1%	83.9%	73.1%	93.1%	91.2%	95.5%	94.8%
Race/Ethnicity															
19	% White, not Hispanic-owner occupied	68.3%	88.8%	81.0%	23.7%	33.2%	9.3%	38.2%	80.1%	79.8%	79.7%	86.0%	83.3%	90.3%	92.4%
20	% Black, alone-owner occupied	17.2%	2.5%	1.7%	50.1%	47.8%	79.6%	11.2%	7.6%	2.1%	1.5%	0.0%	0.0%	0.3%	0.1%
21	% Hispanic/Latino-owner occupied	6.6%	6.9%	10.0%	16.1%	10.6%	5.0%	16.1%	5.3%	3.2%	3.6%	8.4%	7.7%	7.3%	3.9%
22	% Asian, alone-owner occupied	5.3%	0.8%	1.6%	3.1%	0.8%	2.8%	27.9%	4.8%	13.9%	11.6%	4.6%	6.5%	1.4%	3.0%
23	% Other Race/Ethnic-owner occupied	2.7%	1.0%	5.7%	6.9%	7.6%	3.3%	6.6%	2.2%	1.1%	3.4%	1.0%	2.5%	0.7%	0.6%
Education Attainment (owner-occupied units)															
24	% Less than high school graduate	9.4%	6.2%	15.9%	11.0%	8.2%	12.3%	22.2%	8.6%	8.9%	8.3%	7.2%	9.4%	8.2%	5.0%
25	% High school graduate (including equivalency)	27.9%	22.0%	38.4%	27.0%	20.9%	26.1%	29.8%	24.1%	25.5%	12.4%	34.0%	33.1%	31.8%	32.6%
26	% Some college or associate's degree	26.6%	30.0%	20.7%	35.5%	27.9%	29.3%	21.4%	23.2%	22.8%	21.9%	29.5%	24.6%	28.5%	30.3%
27	% Bachelor's degree or higher	36.1%	41.8%	25.0%	26.4%	43.0%	32.3%	26.6%	44.0%	42.8%	57.5%	29.2%	33.0%	31.5%	32.1%
Median Household Income by Tenure															
28	Median Total Household Income- Renter Occupied	$33,391	$45,593	$51,967	$28,861	$28,077	$30,535	$42,390	$23,412	$29,139	$22,951	$45,026	$35,460	$49,503	$55,884
29	Median Total Household Income-Owner Occupied	$85,014	$92,311	$72,317	$74,165	$79,673	$74,849	$78,164	$66,071	$79,052	$82,404	$86,891	$76,816	$95,163	$96,729
30	Income Difference	$51,624	$46,717	$20,350	$45,304	$51,596	$44,314	$35,775	$42,659	$49,913	$59,454	$41,865	$41,356	$45,661	$40,844

** Substantially Damaged Applications: Initial Pathway Offering is either Major Rehabilitation (Elevation) or Reconstruction, indicating property was substantially damaged*

Appendix 7: Build It Back Outreach and Community Events



2,205 Outreach & Community Events coordinated through the Build It Back Program

from 2013 through 2017


THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK


NYC
Housing Recovery