

HIDDEN HOUSING

THE CASE FOR A CONVERSION
PROGRAM FOR BASEMENT
APARTMENTS IN NYC



CITIZENS HOUSING & PLANNING COUNCIL

MISSION

CHPC's mission, since 1937, is to develop and advance practical public policies to support the housing stock of the city by better understanding New York's most pressing housing and neighborhood needs.

ABOUT US

Our agenda is practical, not political. Our work always begins with questions, not answers. It is the data, our analysis, and its relevance to the real world, that drive our conclusions. Our goal is to help decision-makers, inside and outside of government. We map out realistic steps that can result in positive change for the housing stock and the neighborhoods of New York City.

Not-for-profit organizations in New York State are no longer able to include the word "Council" in their names. We assume it is because they could be confused with a function of government. Our Council's name is grandfathered in because of its age – and we are proud of its clear connotation as a community of people coming together to share ideas and shape practical solutions to help government and the housing industry ensure that our housing continues to meet the needs of our City's residents.

We are a Council of 90 leading professionals from every industry that shapes housing development and management across the city. CHPC speaks as a trusted and impartial voice to improve housing for all New Yorkers.

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Your three-year financial commitment has allowed us to increase our capacity and maintain and excellence in our work. This fund enables us to embark on multi-year projects and respond nimbly to issues as they arise, maximizing CHPC's impact on New York City's housing stock. Without you this work would not be possible.

Where Experts

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CHPC
NEW YORK CITY

FOREWORD

Dear Reader,

At a time when new housing is urgently needed, this study found that there are between **10,000 and 38,000 potential apartments** that could be brought into safe and legal use in New York City without even changing the Zoning Resolution.

These thousands of apartments are in the basements of existing small homes, making them unusually advantageous. Basement conversions bring rental units to the market without having to acquire land. They add apartments without altering the size or shape of the building. They inherently rent for less than a similar apartment. Homeowners can pay a mortgage, maintain the property, or pay other household expenses with the rent earned on the secondary unit. Basement apartments offer housing options to underserved groups like extended families and new immigrants. A program facilitating safe and legal basement conversions would also address the urgent health and safety concerns connected with illegal occupancy, which occurs far too frequently because the demand for housing is so high.

But we know this is a challenging topic in New York and did not embark on it lightly. State and municipal regulations make it extremely difficult, or prohibitively expensive, for a homeowner to create a legal basement apartment. Many low-density neighborhoods have preemptively come out against any basement conversion initiative that may be employed by the City. Concerns that basement apartments may be more dangerous in a house fire must be overcome.

Before anyone decides that basement conversions are too thorny an issue, we want to make sure that people understand what is at stake. We believe, based on the findings we present here, that a basement conversion program in New York City would be an efficient and exciting way to add residential density and expand housing choices in our expensive and highly constrained urban market. It is also an important tool to eradicate substandard, dangerous, and illegally occupied basements.

With our six recommendations for how a basement conversion program could be implemented, and an accompanying interactive map that shows the distribution of potential basement apartments, the City can help homeowners to unveil this Hidden Housing and make it safe, legal, and wholly suitable for thousands of New York City households. The map, which can be found at hiddenhousingnyc.com, enables policymakers to assess the impact of a conversion program on a neighborhood and to site possible pilot programs. We will also be releasing more studies on this topic throughout this year.

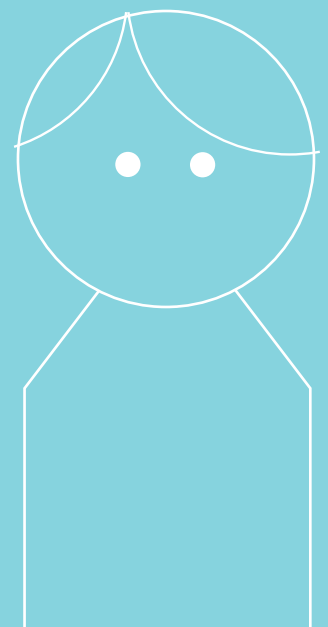
This work is part of CHPC's broader Making Room initiative which explores how alternative housing typologies can better meet the needs of New York's diverse households.

Yours,

Citizens Housing & Planning Council



THE CASE FOR CONVERSIONS



THE CASE FOR CONVERSIONS

New York's chronic housing shortage is well-documented. It results in high housing costs for our households and severely restricts the choices for our newest entrants to the housing market. Despite the incontrovertible need for new housing, the topic of legalizing basement apartments in New York City often faces a resistance rooted in concern about the impact on neighborhoods and the suitability of a basement space as a home.

In 2015, a town hall meeting in Brooklyn on the topic of illegally converted basements attracted a crowd of hundreds wanting to express their anger and frustration.¹ Community preservation activists, block associations, and others argued that conversions threaten the character of their low-density neighborhoods. Former Queens Borough President Helen Marshall told the New York Times in late 2013 that her constituents see these units “as a drain on schools, hospitals, parking lots, and other resources”.² Some neighborhood representatives in Queens formally expressed their disapproval by passing preemptive Community Board resolutions declaring their opposition to any effort intending to legalize basement apartments.

As any planner would attest, increasing density in a neighborhood can add pressure onto community resources, from seats in schools to parking spaces. However, this pressure can occur anyway, for example, with a crowded household or one that owns multiple cars. Creating an accessible path for homeowners to legally create secondary units in their homes helps the government more accurately quantify the neighborhood population, which is crucial information for planning and directing community resources.

Concerns about changing neighborhood character are more difficult to rationalize since “character” can be a proxy for many things. It could be shorthand for the ethnic composition of the neighborhood, an economic class, or aesthetic that have become the perceived “norm” over time. Low-density neighborhoods have been largely spared from up-zoning and other development incentives that lead to visible growth in a relatively narrow window of time. Many other neighborhoods have had to accept, reluctantly or not, increased density to accommodate the growing number of New Yorkers.

As New York City's population climbs to over 9 million by 2040, the city's housing shortage continues to grow.³ Through CHPC's research initiative Making Room we learned that New York's ongoing population growth, coupled with demographic shifts, has led to a significant mismatch between our households and the type of housing stock available to them.⁴ Over a quarter of New York City households are sharing their homes with other adults and families, which only reflects the households that are truthfully reporting their sizes and configurations on official surveys.⁵ The extent of household sharing in New York City, especially in the lowest density stock, means that hundreds of thousands of households are potentially living in unsuitable, unsafe, and

¹ See Silberstein, 2015, and Kurens, 2009

² Navarro, 2013.

³ Salvo, J. J., Lobo, A. P., & Maurer, E. (2013). New York City Population Projections 2010-2040. Department of City Planning, the City of New York. New York: the City of New York.

⁴ CHPC's Making Room initiative has already had an impact on bringing new housing typologies to New York City. It inspired the development of a building containing “micro-apartments” on East 27th St in Manhattan as part of a City pilot testing regulatory reform, and the revision of part of the Zoning Resolution allowing more housing options for single adults to be built.

⁵ 2014 ACS with Making Room household analysis



illegal housing situations as significant housing demand is unmet. A feeling that basement apartments are intrinsically unsuitable and unsafe pervades discussions about basement conversions, but it is this illegal occupancy that is dangerous.

We have found that there are between 10,000 and 38,000 basement spaces that could become new safe and legal rental housing with minimal cost and effort without pursuing amendments to the zoning resolution.

Basement conversions would bring rental units to the market with no investment in land acquisition. This is particularly important in New York City, where nearly 50% of the cost of housing is attributable to land.⁶ More than any other development tool, a program facilitating basement conversions may be the most economical way to generate new housing units and, consequently, the rent charged for these units would be considerably reduced. Ground-floor and basement apartments also tend to rent for less because of perceptions about privacy, security, and street noise.⁷ Basement units provide new below-market choices that are more financially accessible. Homeowners benefit from the added unit through increased property value and rent revenue that could be used to pay a mortgage, maintain the property, or pay other household expenses. In some cases, this rental income could protect a family from foreclosure on their home.

6 The cost contribution or “cost share” of land in New York is well above the one-third of housing costs typical in US metropolitan areas. For more information about the cost share of housing factors, see Housing Productivity and the Social Cost of Land-Use Restrictions (Albouy & Ehrlich, 2012).

7 The price difference between a street-level and a second-floor apartment is typically 15 percent according to oft cited real estate appraiser Jonathan Miller of Miller Samuel. For more, see Cohen Blatter, L. (2013, July 30). 8 ways to get more space for less money in a NYC apartment. The Brick Underground: http://www.brickunderground.com/blog/2013/01/8_ways_to_get_more_space_for_less_money.

Beyond the clear financial advantages, basement apartments offer a simple approach to adding residential density: converting basements would add capacity without altering the size or shape of the building through increased height or bulk. The extra residential density that basement conversions represent wouldn’t change the textural character of New York’s neighborhoods since the structures of the existing homes remain unchanged. Conversions allow the City to take full advantage of its existing housing stock in an environment of ever-increasing demand.

Basement apartments are a typology that can suit the housing needs of singles, the elderly, extended or multi-generational family, and new entrants to the rental market. For example, four of the top-ten neighborhoods in which the most foreign-born New Yorkers reside are in northern areas of Queens⁸ where basement apartments could provide housing for new entrants and financially stabilize homeowners at the same time.

Facilitating basement conversions would help New York City address the pressing health and safety concerns connected with illegal occupancy. In some cases, homeowners are renting basements that are already suitable for occupancy but they lack the appropriate government approvals, leaving both tenant and homeowner without legal recourse to protect their property or their leasehold rights. Other units may need varying degrees of physical improvements in order to become legal and safe. Renting these units without the improvements endangers the occupants and, in the case of fire, firefighters and adjacent homeowners as well. Some basement spaces could never and should never achieve legal occupancy, for example, if the basement cannot provide safe egress. Increasing the overall

8 NYC Department of City Planning. The Newest New Yorkers: Characteristics of the City’s Foreign-born Population. 2013 Ed.

supply of rental options would alleviate the need for informal, illegal housing. A conversion program would help distinguish between those basements that could become safe and legal, with codified fire safety measures that can be enforced, and those that should not.

Faced with extremely low vacancy rates and correspondingly high rents, municipalities like Boston, San Francisco, and Toronto have pursued policies to facilitate basement conversions. Establishing a clear path for homeowners to add safe and legal basement apartments provides an efficient and mutually beneficial way for a city to add new residential stock and address the housing needs of a range of households. The low cost of development should translate into modestly-priced rentals that generate revenue for homeowners. New York City cannot escape its need for new housing options and, as other cities have recognized, enabling basement conversions is a resourceful and widely beneficial way to meet this need.

NEXT STEPS

For this study, we focused on estimating the potential supply and distribution of basement units. We believe this was a crucial first step in understanding the value of a basement legalization program for New York City. The accompanying interactive map, found at hiddenhousingnyc.com, is an essential planning tool that helps to identify areas of the city where a conversion program could have the most impact. At the end of this report, we also set out our six recommendations for how a basement legalization pilot could be structured.

Over the course of the year, we will launch additional studies and features that provide further analysis and detail to these recommendations. We will be releasing a comprehensive review of the laws and codes that pertain to basement apartment conversions, along with our recommendations for which could be revised to facilitate basement conversions. We will host a design challenge for architects and engineers to consider new technologies and methods for improving fire suppression and fire prevention in small homes, while also reducing their cost. And we will study a number of possible financial incentives to help homeowners carry out the work required to create a safe and legal basement apartment.

We hope that our work facilitates productive debate on this topic. As always, we strive to be a useful independent research resource advancing practical ways to improve the housing supply of New York City so that it better meets the needs of its population.

KEY FINDINGS -

how many viable basements?

Recognizing that the reach of a policy is as important to its success as its conceptual merit, we wanted to assess the impact of a conversion program by estimating the potential supply of legal basement units. To determine the number of basements found in small homes that could potentially become rental apartments, CHPC developed a five-step filtering process (Figure 1) using land-use, geographic, and tax data.

The filters confine the universe of potential homes to those that would not invoke the State's Multiple Dwelling Law or require text amendments to the Zoning Resolution. It was also important for the process to eliminate any homes located in or near a floodplain where below-grade occupancy would not be desirable or permitted. In addition, we must differentiate basements, where residential use is legal under certain conditions, from cellars, which are not legal residences under any conditions. Finally, parking requirements establish the minimum number of potential convertible basement units. (For more information, please refer to the Methodology section of this report.)

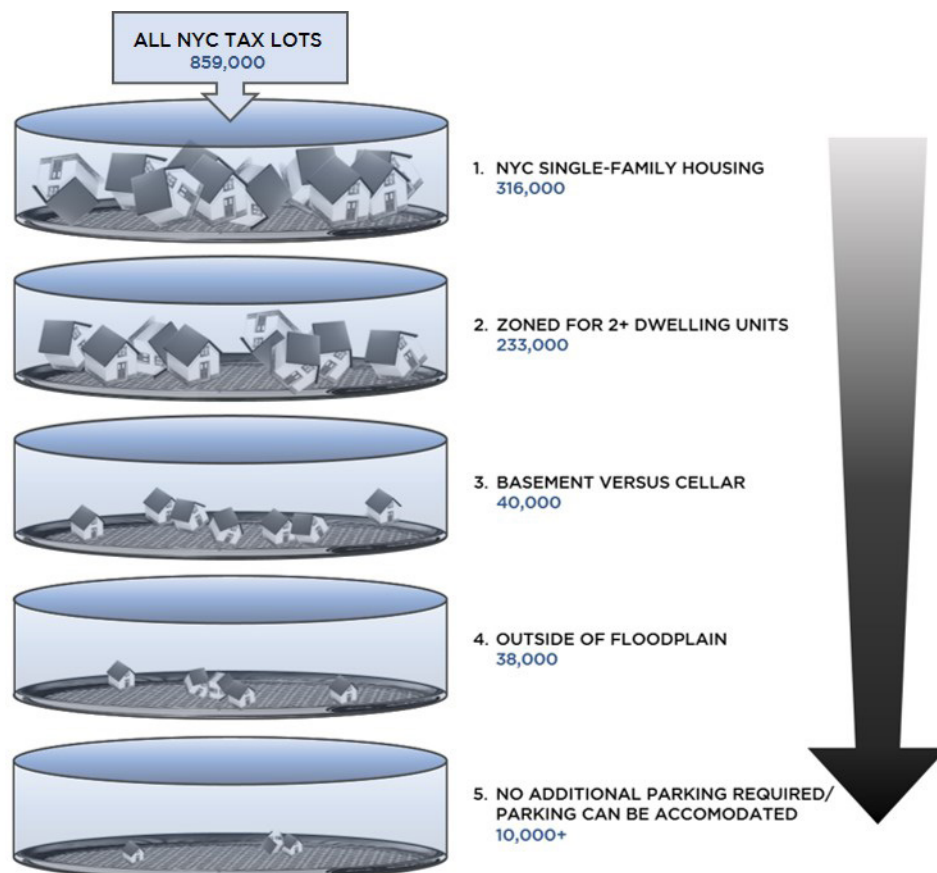


Figure 1. Five Filter Process (data source: PLUTO v16.1)

Applying our “Five Filter” system, we estimate that a program to facilitate basement conversions could generate between 10,000 and 38,000 new apartments across New York City. This range represents basement apartments that can be built as-of-right, meaning that their creation is not contingent on changes to or special waivers from the Zoning Resolution. Mapping these results helps identify potential-rich regions of the city suitable for a pilot program to test code reforms, technology, and incentive programs that support conversions.

The lower boundary of 10,000 units represents basements in single-family homes outside of a floodplain that do not require additional parking (orange regions in Figure 2). This number is likely to be considerably larger given parking exceptions for conditions that could not be calculated on a city-wide scale for this analysis.⁹

⁹ For example, our lower-bound 10,000 units includes homes of a certain age on small lots in R5 districts which grants them a parking exemption. Additional exemptions could add thousands more.

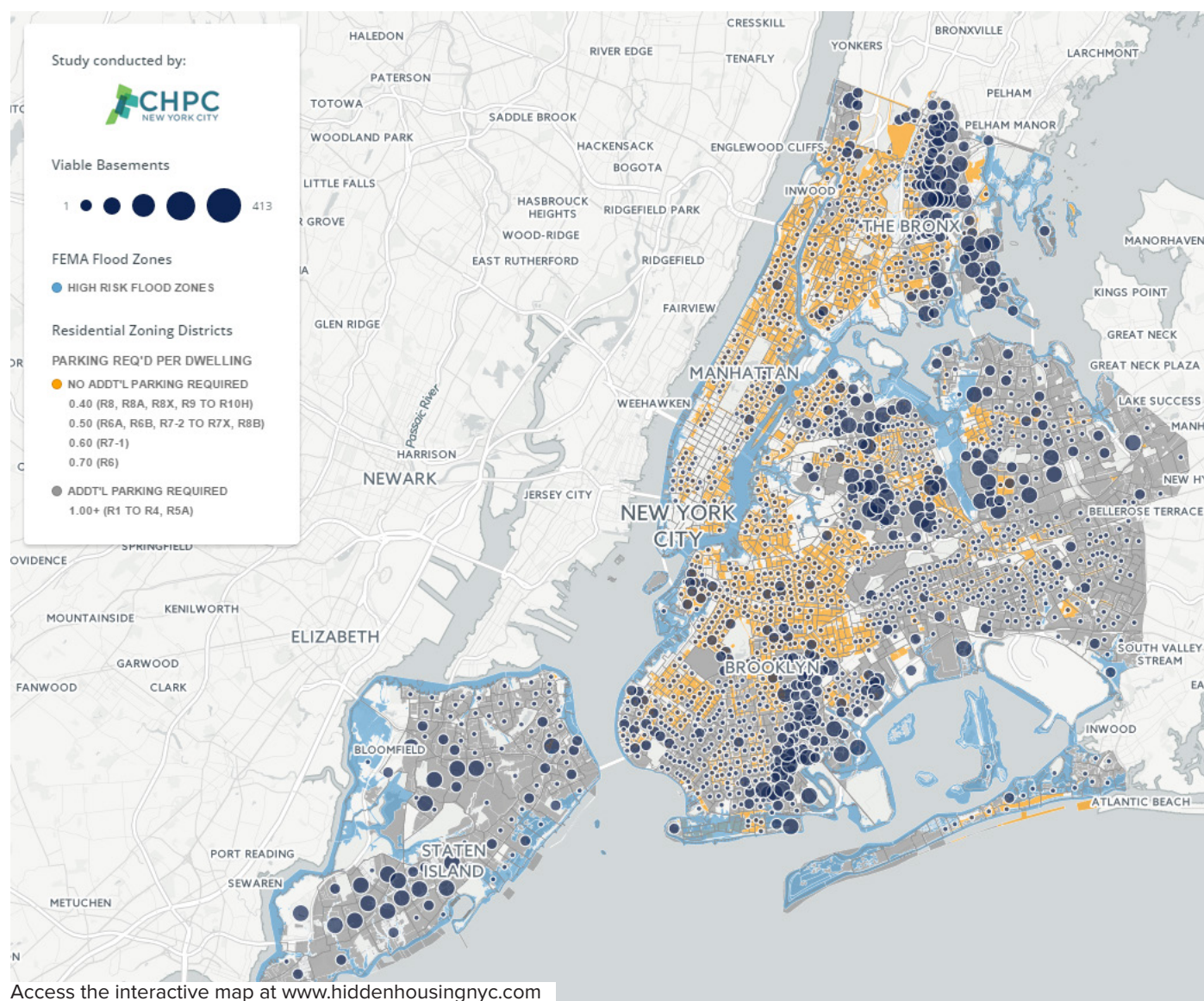


Figure 2. Map illustrating the distribution of potential basement apartments by 2010 census tract. Larger dots show the greatest concentrations of potential basement apartments. The orange areas have the least onerous parking requirements. This map is available interactively on www.hiddenhousingnyc.com

ESTIMATED QUANTITY OF POTENTIAL BASEMENT APARTMENTS

SINGLE-FAMILY HOMES, OUTSIDE OF FLOOD PLAIN, ZONED FOR 2+ DWELLINGS

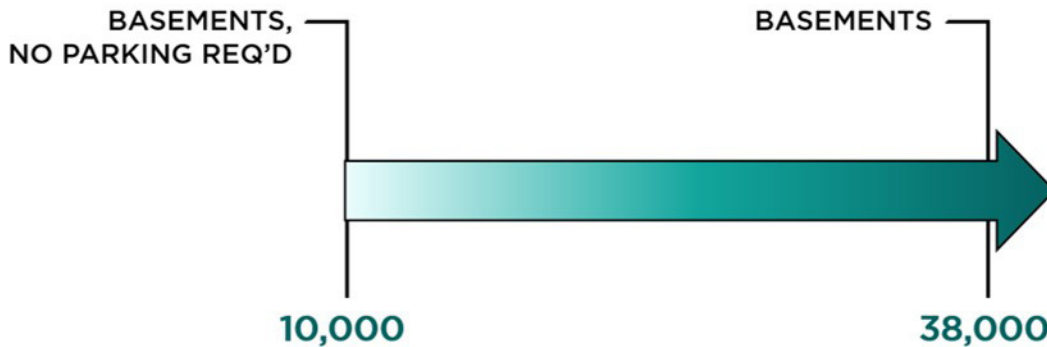


Figure 3. Estimated Quantity of Potential Basement Apartments

The upper boundary of 38,000 units represents the same set of eligible basements plus those that would be eligible absent current parking requirements. In practice, some of these basements may not be convertible if an additional off-street parking space cannot be accommodated. However, field visits to neighborhoods of the city where large numbers of viable basements fall within a required parking zone revealed that many of these lots are either eligible for a parking exemption or can accommodate a second on-site parking space.

In summary, the range of viable conversions we calculate here is conservative. Figure 3 illustrates how parking requirements affect the supply estimate. We can confidently say the following:

- Parking exemptions not included in the study place the actual number significantly higher than 10,000 units.
- Many lots can accommodate an additional parking space placing the actual number closer to 38,000 units.

Beyond calculating the number of potential conversions, this study also maps the distribution of these basements. Understanding their distribution allows us to study the characteristics of potential-rich neighborhoods, to assess the impact on the local housing market, and to identify areas of the city that would be suitable for a pilot conversion program.

The effect of legalizing basement apartments will depend on where the units are located. Adding below-market units to a neighborhood with a high median rent can promote income integration and create housing options in neighborhoods from which lower-income households would otherwise be excluded, improving access to services for some demographic groups. It is also in these areas that existing illegal occupants could be displaced by the legalization of their unit. Existing occupants could be priced out once homeowners are able to ask the market rate for the unit, even if that rate is considerably lower than other neighborhood products. A conversion program aimed at areas of high median contract rent could include provisions

that protect illegal occupants from immediate eviction, for example, by incentivizing a rent cap over a given period of time.

Some neighborhoods will benefit more than others from the stabilizing effect of keeping homeowners in their homes. The revenue earned on a basement apartment can be a lifeline to a homeowner facing foreclosure. Though we cannot go door-to-door to count the number of financially distressed homeowners who have a basement eligible for conversion, we can compare neighborhoods with high rates of foreclosure actions to those with a high density of potential basement conversions.

Each borough, neighborhood, and submarket has different housing priorities and issues. A comparison of viable basements, zoning requirements, median contract rent, and the number of foreclosure actions (all by census tract) reveals location-specific benefits and concerns. We highlight those concerns, borough by borough, below.

Manhattan has few parking requirements, which makes conversions fairly easy, but it also has the lowest density of viable basements out of all five boroughs. The Manhattan neighborhoods with the highest density, the Upper East Side-Carnegie Hill, the Upper West Side, and the West Village, are all known for their brownstones. Given the desirability of Manhattan real estate, evidenced by the pervasive high median contract rent (see Figure 4), these apartments may only be attainable to high-income households even if they are inherently less expensive than the rest of Manhattan's market-rate stock. The potential for collecting high rents for these units may entice Manhattan homeowners to convert their basements; however, additional financial incentives, such as a tax abatement, would be required for homeowners to limit their asking rent.

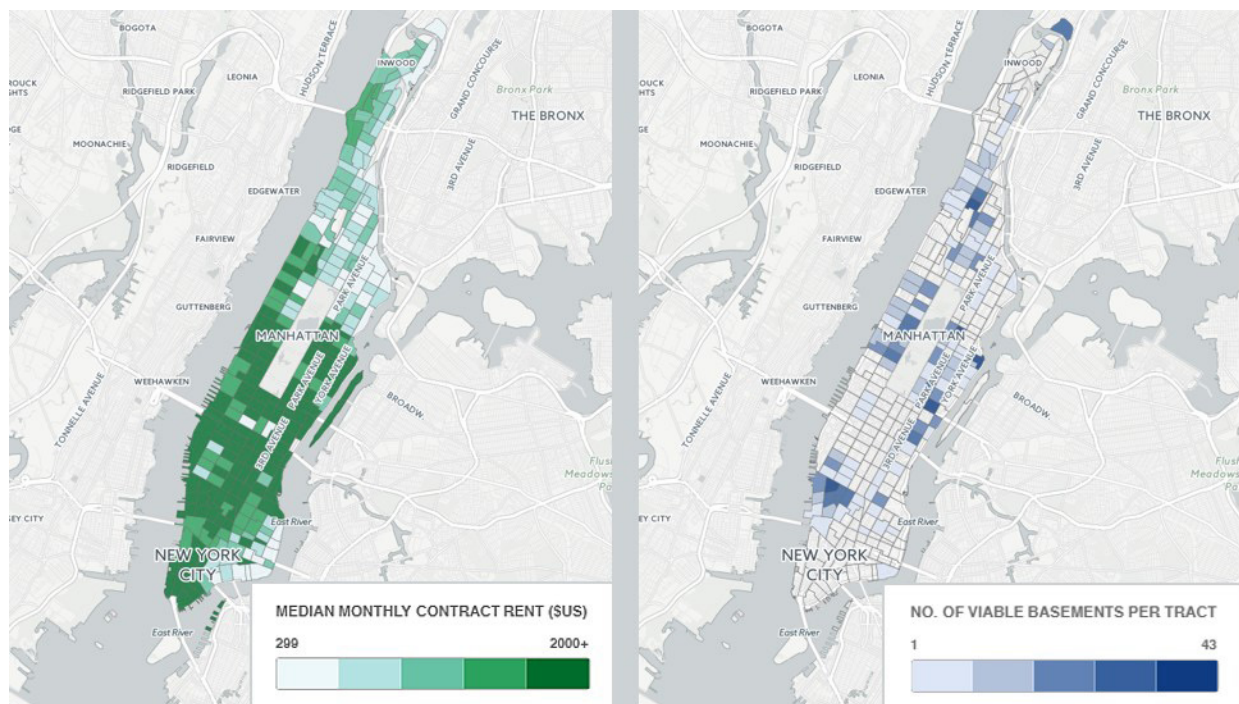
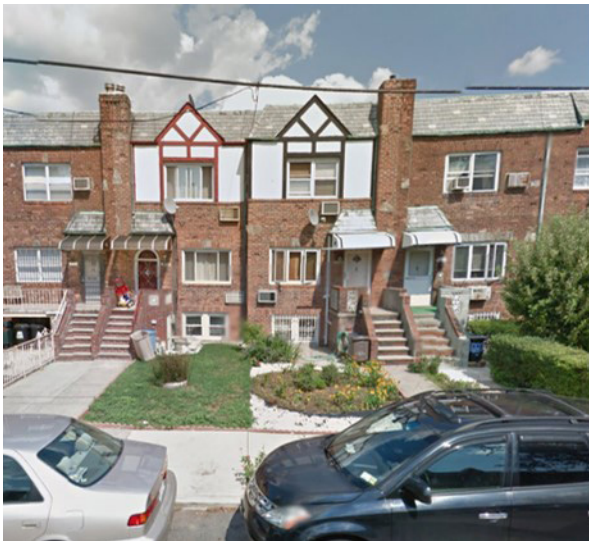


Figure 4. (L) Median contract rent for Manhattan by census tract (R) Number of potential Manhattan basement conversions by census tract

Brooklyn's historic brownstone neighborhoods (see Figure 5), including Cobble Hill and Park Slope, offer a moderate density of convertible basements, none of which require new parking. Like in Manhattan, potential basement apartments in popular neighborhoods like Park Slope will command a higher rent relative to basement apartments in neighborhoods in the borough where rents tend to be lower, like Flatlands. Although a few dozen basement apartments in high-demand neighborhoods will not necessarily provide sweeping relief from high rents, there are areas of Brooklyn, and across the City, where basement apartments could make a meaningful contribution. For

example, the eastern swath of Brooklyn from Sheepshead Bay to East Flatbush offers a significant number of convertible basements that coincide with some neighborhoods where tenants would benefit from an influx of lower-priced rental options (see Figure 6). The large number of potential basement apartments (outside of the floodplain) in Mill Basin, Bergen Beach, and Flatlands could increase local income integration by pairing low- and mid-income tenants with homeowners in areas where median rents are relatively high.¹⁰

¹⁰ For more information about flood zone application, see Study Methodology.



*Figure 5. Examples of Brooklyn housing typologies with convertible basements.
L: row houses in Sheepshead Bay, R: brownstones in Park Slope.
Images courtesy of Google Maps.*

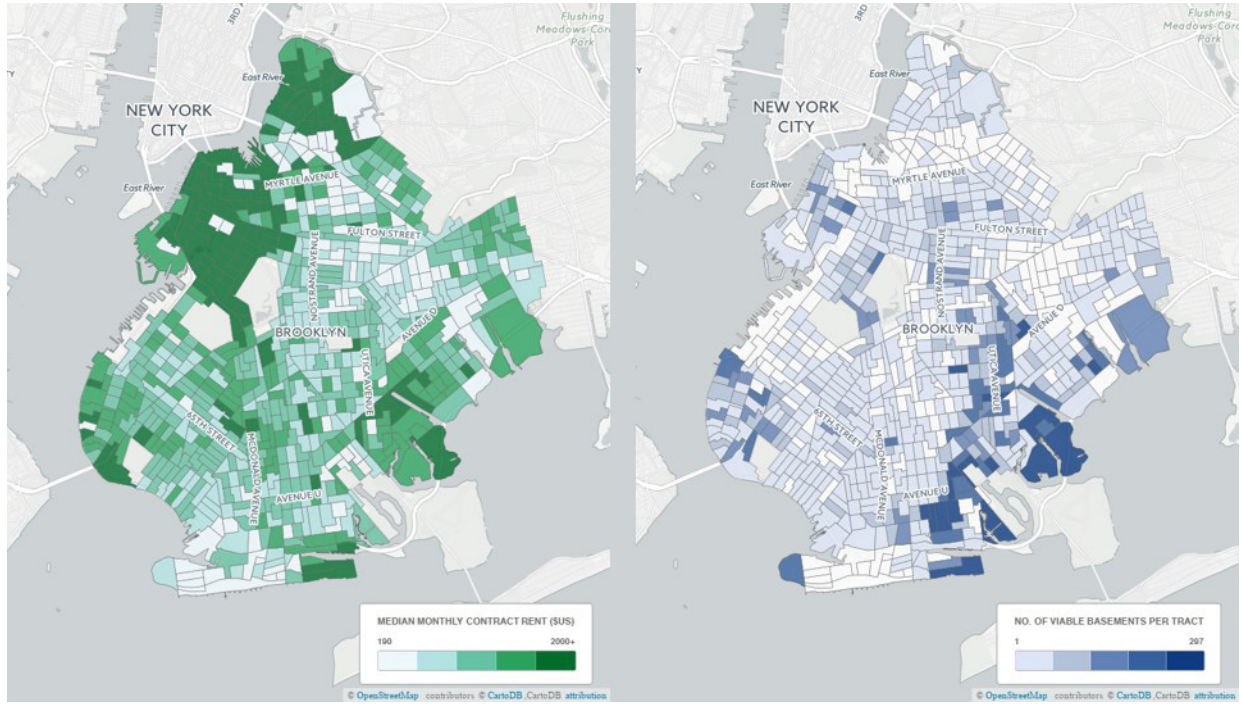


Figure 6.(L) Median contract rent for Brooklyn by census tract
(R) Number of potential Brooklyn basement conversions by census tract

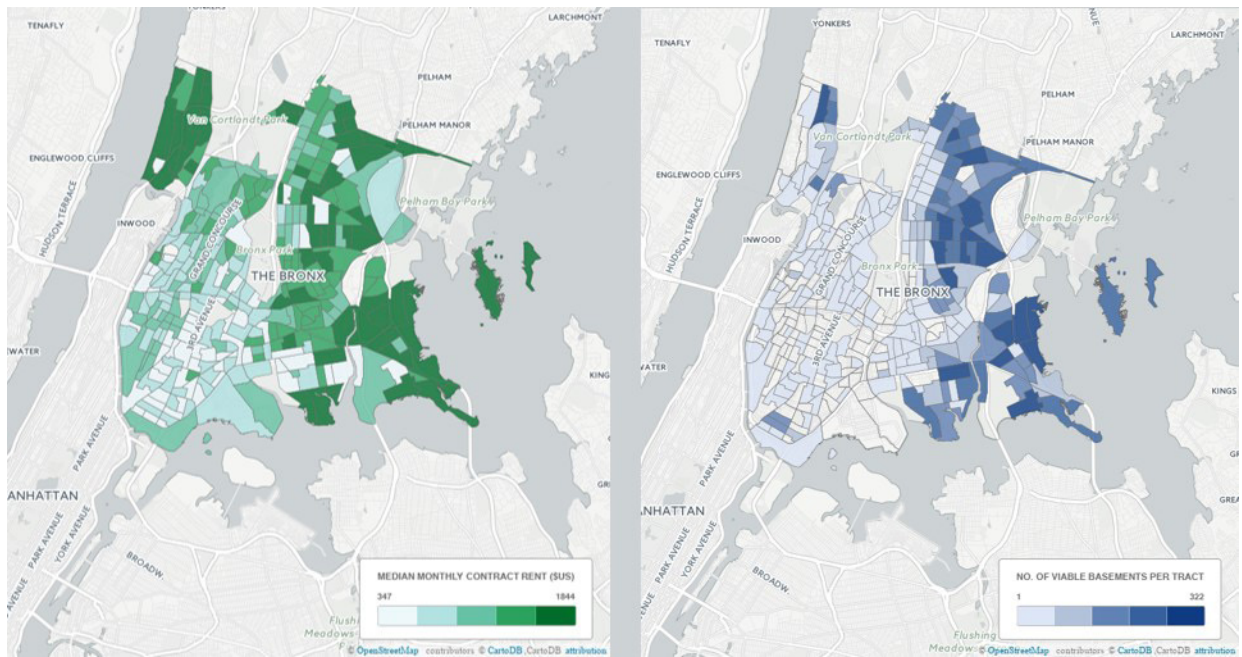


Figure 7.(L) Median contract rent for the Bronx by census tract
(R) Number of potential Bronx basement conversions by census tract

The benefit of adding a significant number of inherently less-expensive rental units is obvious when comparing regions of high median contract rent with regions home to large concentrations of viable basements in the Bronx. The overlap in areas like Allerton-Pelham Gardens, Schuylerville, and Woodlawn-Wakefield, the top three most potential-rich areas in the borough, is clear (see Figure 7). This potential-rich area east of the Bronx River Parkway also contains the Bronx neighborhoods with the highest number of foreclosure actions (see Figure 8). Financially stressed homeowners in this neighborhood could benefit from a new stream of rental income from a basement apartment.

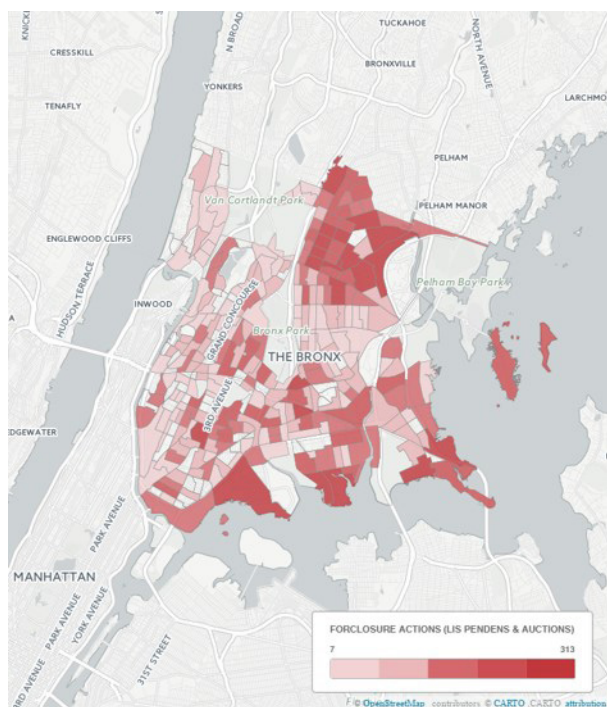


Figure 8. Number of Bronx foreclosure actions (lis pendens and auctions) 2011-2015 by census tract

The drawback is that homeowners adding a basement apartment in these areas of the Bronx would also need to provide an off-street parking space for the secondary unit unless the lot qualifies for an exemption. Notably, Mott Haven has a number of potential conversions and is zoned R6, which does not require the creation of a new parking space. The large majority of lots that do not require parking in the Bronx benefit from the R5 small lot exemption and are concentrated in Williamsbridge, Eastchester, and Woodlawn.

Brooklyn and Queens have the greatest supply of potential basement apartments with approximately 12,000 and 11,400, respectively. A five-by-five block section of Queensboro Hill is home to an estimated 408 potentially convertible basements. This area is near the Flushing terminus of the subway system's 7-line, or what is often referred to as the "International Express" for linking some of the City's neighborhoods with the "heaviest immigrant presence" to Manhattan.¹¹ Mixed-use residential and multi-family buildings border the 7-line (and above the E, F, M, and R lines that follow Broadway and Queens Boulevard), but just outside of these areas are neighborhoods like East Elmhurst, Jackson Heights, and Middle Village that are rich with single-family homes with basements (see Figure 9).

¹¹ Lobo, A. P., & Salvo, J. H. (2013). *The Newest New Yorkers*. Population Division. New York: Department of City Planning, the City of New York, 54.

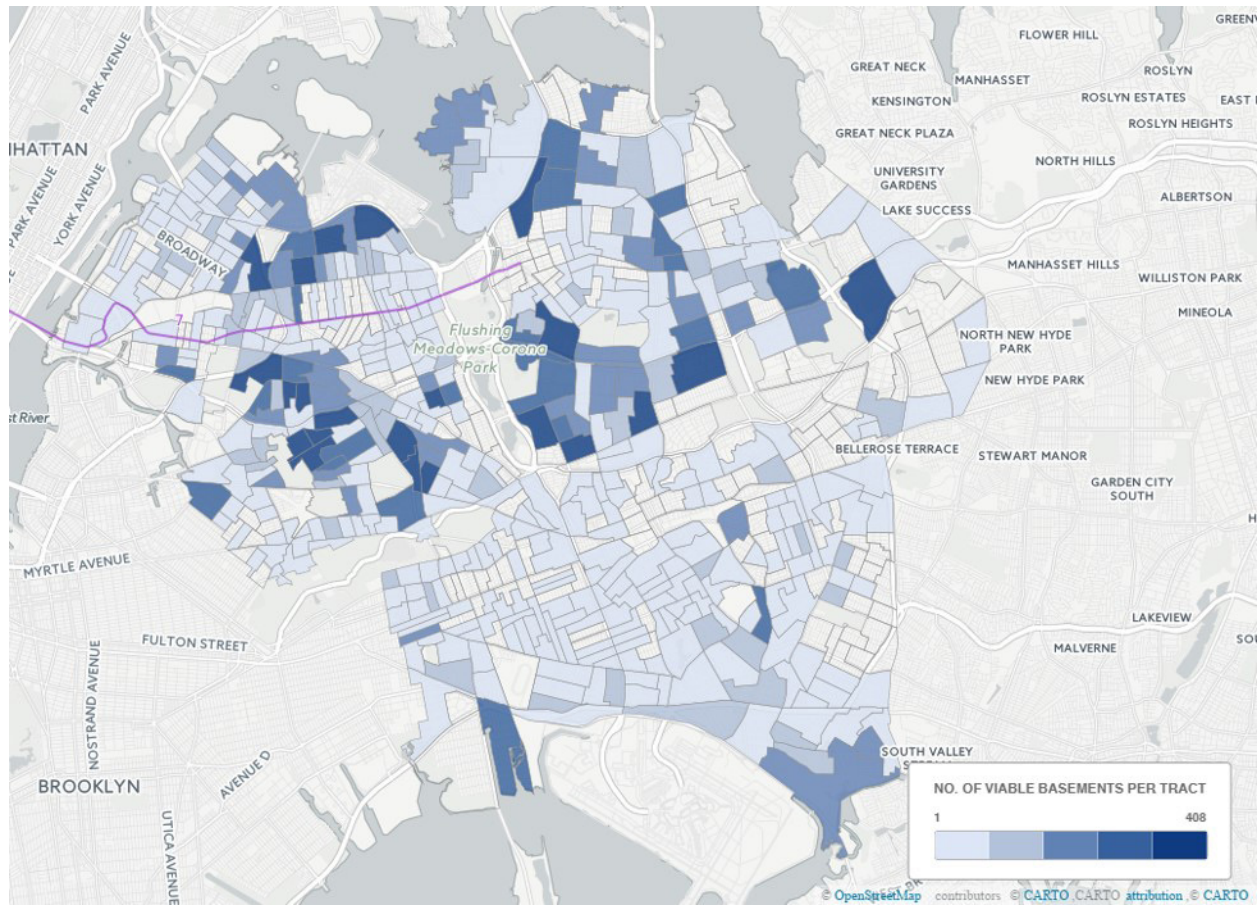


Figure 9. Number of potential Queens basement conversions by census tract overlaid with the 7-line.

There is a tendency for new immigrants to settle in areas where family members or others within their networks are already established, increasing local demand for cost-efficient and flexible living arrangements.^{12, 13} Any time that low-density neighborhoods experience rapid growth, we expect to see an accompanying increase in the number of illegal conversions. Conversations with community organizations and our own field visits to these areas lend anecdotal support to this. Given the limited availability of dwelling units and its established

¹² In a study of how building code and zoning can be used to manufacture neighborhood character, Diana Gordon, notes that cultural norms and economic circumstances typical of recent immigrants can make them a target of housing discrimination. For example, new immigrants often struggle to pay for housing and a convenient solution is to “share space and expenses with friends or extended family members.” (Gordon, 2015)

¹³ Lobo & Salvo, 4-5.

and expanding immigrant population, northern Queens must confront its need for new housing options. Basement conversions can provide safe and legal accommodations for new entrants to the housing market or family members who may want to share housing expenses.

Mortgage-holders in Queens and Staten Island appear to be vulnerable to foreclosure on their homes. The two boroughs have a similar rate of foreclosure actions—the highest in the City—as a percent of their total residential units, or roughly 56 lis pendens filings and auctions per

thousand units. In Staten Island, a large number of homes found in neighborhoods suffering from a high foreclosure rate pass our “filter” profile for a viable basement conversion. This suggests that the Staten Island’s homeowners, perhaps more than most, could benefit from the security of rental income earned on a basement apartment (see Figure 10).

The ability for Staten Island homeowners to realize the economic benefits of a basement conversion largely depends on whether a

property can fit an additional parking space. The borough is almost entirely zoned as low-density residential (R1 to R3), which obligates a homeowner to provide at least one parking space for every residential unit. The prevalence of single-family detached houses with more generously sized yards and driveways (see Figure 11) could make the parking requirement less burdensome because second parking spaces would be easy to accommodate.

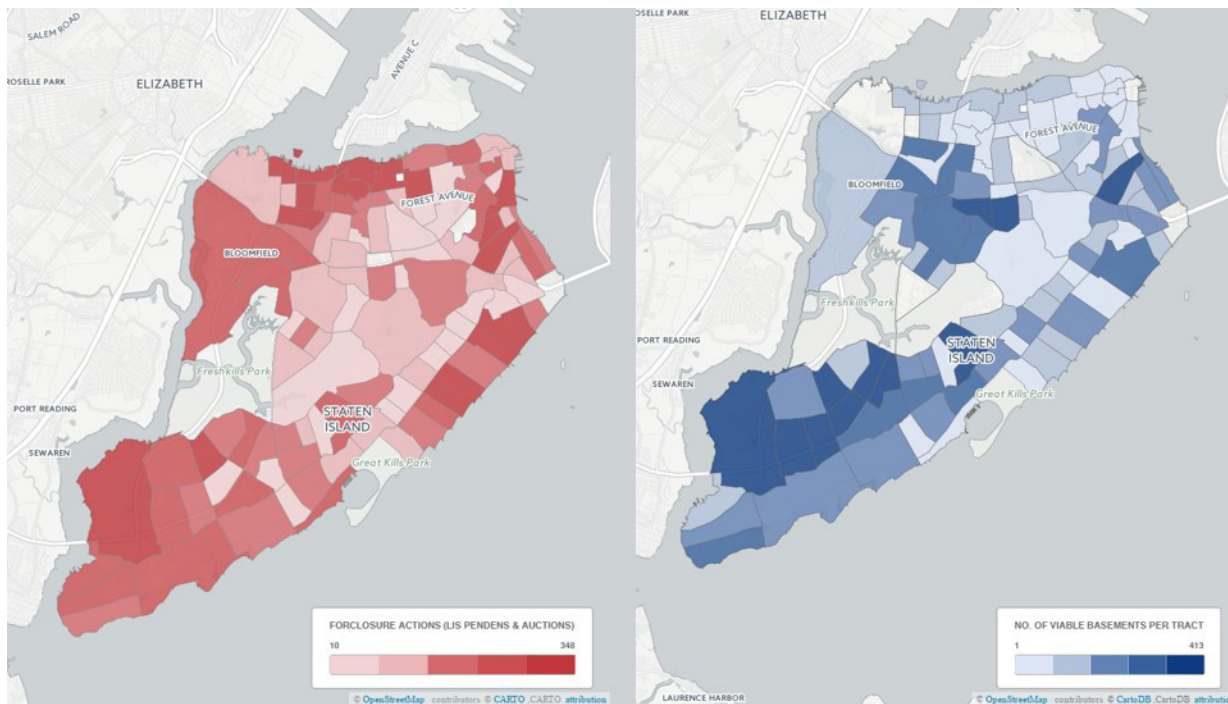
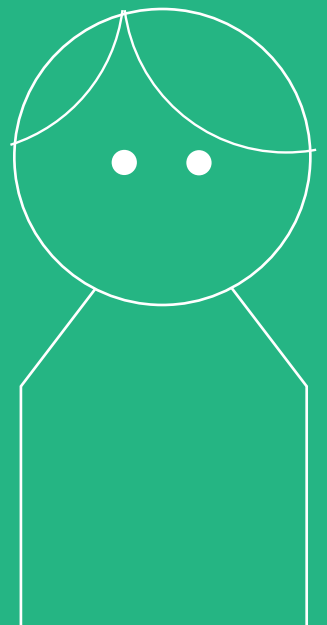


Figure 10. (L) Number of Staten Island foreclosure actions (lis pendens and auctions) 2011-2015 by census tract (R) Number of potential Staten Island basement conversions by census tract



Figure 11. Single family, detached houses typical in Staten Island. Image courtesy of Google Maps

FULL STUDY METHODOLOGY



FULL STUDY METHODOLOGY

Each step of the “five-filter” process, which our “Key Findings” section discusses, reflects a regulatory hurdle that prohibits the legal creation of a sub-grade dwelling unit. The tax lots that successfully pass all of our regulatory filters represent those with the potential to build an as-of-right basement apartment.

Any homeowner interested in creating a legal basement apartment must have their property assessed for site-specific conformance to the applicable codes and standards. For example, a basement apartment is required to have windows of given minimum dimensions, percent operability, and location. From a city-wide perspective, it is impossible to estimate how many homes can comply with detailed technical requirements of the codes, and further, many requirements can be satisfied through varying degrees of renovation work. CHPC’s calculation of viable basement supply instead focuses on fundamental qualifications that are necessary to create a safe and legal rental unit.

THE FIVE FILTER PROCESS

The Five Filters are detailed in the following pages and are as follows:

1. Identifies NYC’s single-family homes
2. Filters out those already zoned for 2+ dwelling units
3. Filters out cellars (which are distinct from basements)
4. Filters out properties inside high-risk floodplains
5. Filters by parking requirements for the additional unit

Our initial results for the whole city show that a program aimed at facilitating basement conversions, under existing zoning rules, could generate between 10,000 to 38,000 safe and legal apartments city-wide. This wide range results from step 5 of the filtering process, which considers the different parking requirements for a lot if a new housing unit is added.

1. SINGLE-FAMILY HOME

We start by culling out all but the 316,000 single-family homes, which represent roughly 9% of the City’s housing stock. Converting the basements in these homes into a secondary rental unit would not affect the building classification. Upon adding a third unit in a two-unit home, however, the building would be classified as a “multiple dwelling,” which subjects it to more onerous regulations in the Building Code, the Housing Maintenance Code, and invokes the State’s Multiple Dwelling Law, a building may only contain a maximum of two residential units. The legal complications and costs associated with becoming a multiple dwelling would likely deter many property owners from adding a third unit to their home. This is discussed in more detail later in the report.

For example, a multiple dwelling is subject to more arduous fire suppression, egress, and accessibility requirements. In addition to codified barriers, an existing mortgage would likely need to be refinanced. While a mortgage for a three-family home is still considered residential, the terms are typically more restrictive—lower loan-to-value requirements and higher rates. Refinancing also obliges a homeowner to pay administrative fees of around 2% of the loan amount and a higher interest rate if the market rate has increased

since the original loan.¹⁴ In practical terms, avoiding triggering the Multiple Dwelling Law limits potential basement conversions to those lots with an existing single-family home.

2. ZONED FOR 2+ DWELLING UNITS

Next, we screen single-family homes for their predominating zoning district. For a lot to be eligible, it must be zoned for residential use and allow structures occupied by two-or-more families. For example, zoning district R2, while residential, is limited to detached single-family

homes so adding a secondary unit in the basement is permitted. Generally speaking, R3 through R10 districts allow for two-family structures, though they occur less often in higher-density districts (see Figure 12).

¹⁴ Levitan, D. (2016, April 5). Private Mortgage Banker, Wells Fargo. (K. Leitch & J. Perine, Interviewers)

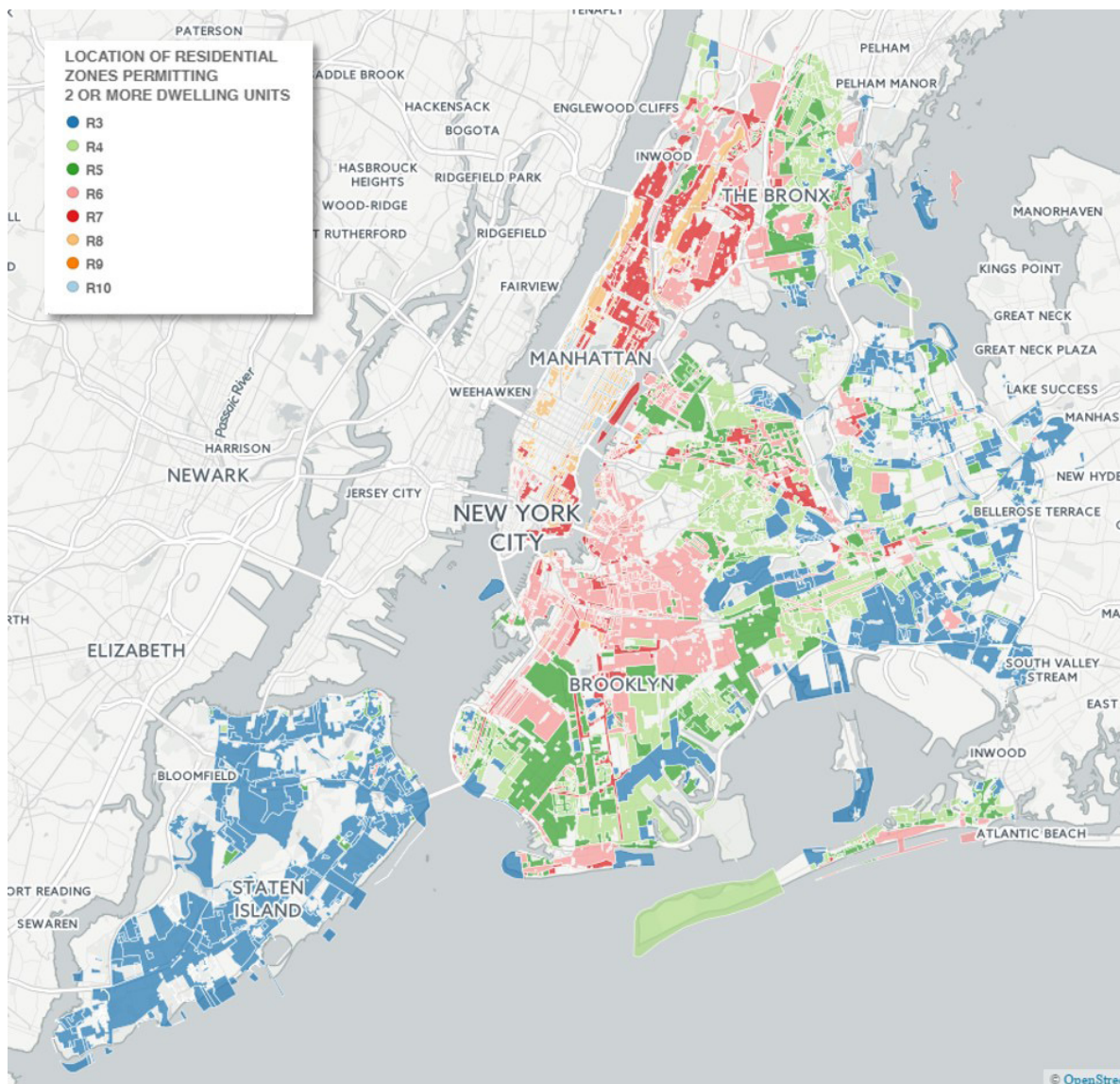


Figure 12. New York City residential zoning districts permitting two-or-more dwelling units per structure

3. BASEMENT VERSUS CELLAR

New York City's Housing Maintenance Code requires that a below-grade story must qualify as a basement rather than a cellar to be habitable; in other words, at least half of the sub-grade story height must be above curb level (Figure 13). Properties that met all other qualifications, but have an "unknown" basement condition, were also included in the estimate since the number is both small—"unknowns" comprise between zero and five percent per borough—and reflects untapped potential.

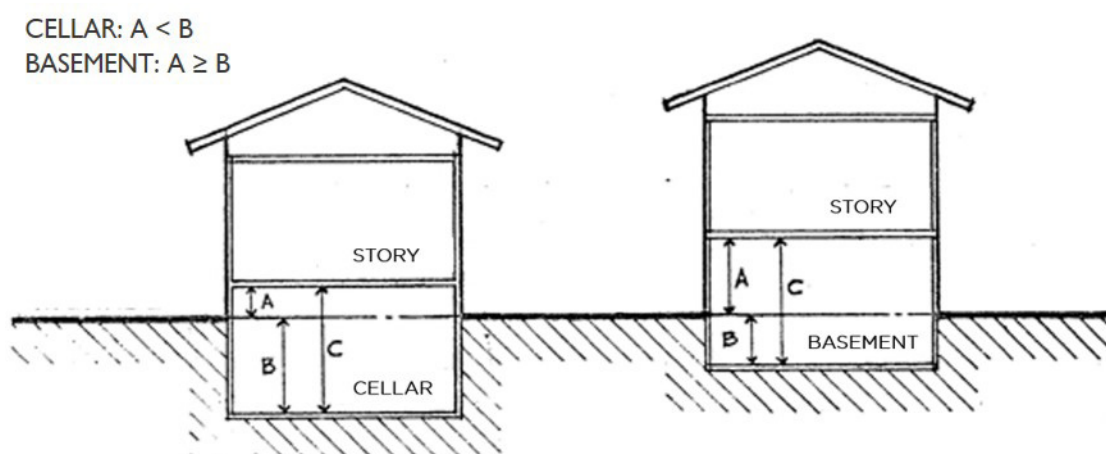


Figure 13. Cellar versus basement

4. FLOOD ZONE

CHPC also vetted possible basement apartments for safety during a flood. In post-Hurricane Sandy New York, the Building Code's minimum structural elevation within a floodplain is understandably important. To approximate whether a home falls within a high-risk flood zone, we overlaid the current FEMA flood map onto lot geometries (see Figure 14). If the centroid of a lot fell within 20 feet in any direction of an 'A', 'AE', 'AO', or 'VE' flood zone, then its basement was considered uninhabitable.

The flood map used for this analysis was generated, according to FEMA, using "statistical analyses of records of river flow, storm tides, and rainfall, hydrologic and hydraulic analyses, topographic surveys, and information obtained through consultation with the community."¹⁵ The effective map is based on a study dated September 5, 2007 and has been amended several times, most recently on August 24, 2015.

¹⁵ Federal Emergency Management Agency. (2011, March 1). Answers to Questions About the NFIP.



Figure 14. Example of lot geometry overlaid with high-risk flood zones

FEMA released “preliminary” updated maps on January 30, 2015 that increase the flood risk to New York City’s coastal regions. The City subsequently filed a technical appeal, stating FEMA made scientific errors that overestimated the region’s risk. The appeal may result in revised flood maps published as early as 2017.¹⁶ We will update our analysis to reflect the most up-to-date information once a resolution is reached.¹⁷

5. PARKING

Aside from the categorical exclusions described above, perhaps the most difficult regulation for a homeowner to meet is the provision of off-street parking as required by the Zoning Resolution. Each residential zone prescribes a ratio of parking spaces to residential units. If a single-family home falls into a district that requires one parking space per dwelling, a new basement apartment would necessitate an additional parking space. If the new off-street space cannot be accommodated, then the basement conversion is prohibited.

Fortunately, the Zoning Resolution provides exemptions based on a combination of features including zone, density, lot size, building age, and the total number of required spaces. Because the available data is limited, we cannot calculate the contribution of all exemptions toward the total number of basements that do not require additional parking. For example, excluded from that count are basements in R4 districts that qualify for a parking exemption because a) the lot is smaller than 5,000 square feet; b) the lot is on a “predominantly built-up block;” c) the house was built prior to April 14, 2010; and d) the house has never been enlarged. We believe

¹⁶ Peterson RA, C. (2016, May 11). Plan Examiner, Department of Buildings, the City of New York. (K. Leitch, Interviewer) On Behalf of Joseph Ackroyd, Floodplain Administrator for New York City.

¹⁷ For more detail, see <http://www1.nyc.gov/site/floodmaps/appeals/overview.page>.

that exemptions related to R4 and R5 districts, as well as a lot's proximity to an intersection, contribute a significant number of basements to the total number of basements that do not require additional parking.

The total number of potentially viable basements reflects an upper bound of potential basement apartments—those lots that satisfy all requirements except that the lots may fall in a zone that requires an additional parking space with the creation of a new unit. A specific building lot may or may not be able to accommodate an additional parking space, but the available data does not allow us to make that determination. To really understand whether a lot could accommodate an additional parking space, field visits are necessary. As part of CHPC's wider study, we have conducted site visits throughout the city to try to hone our 10,000-to-38,000-unit range.

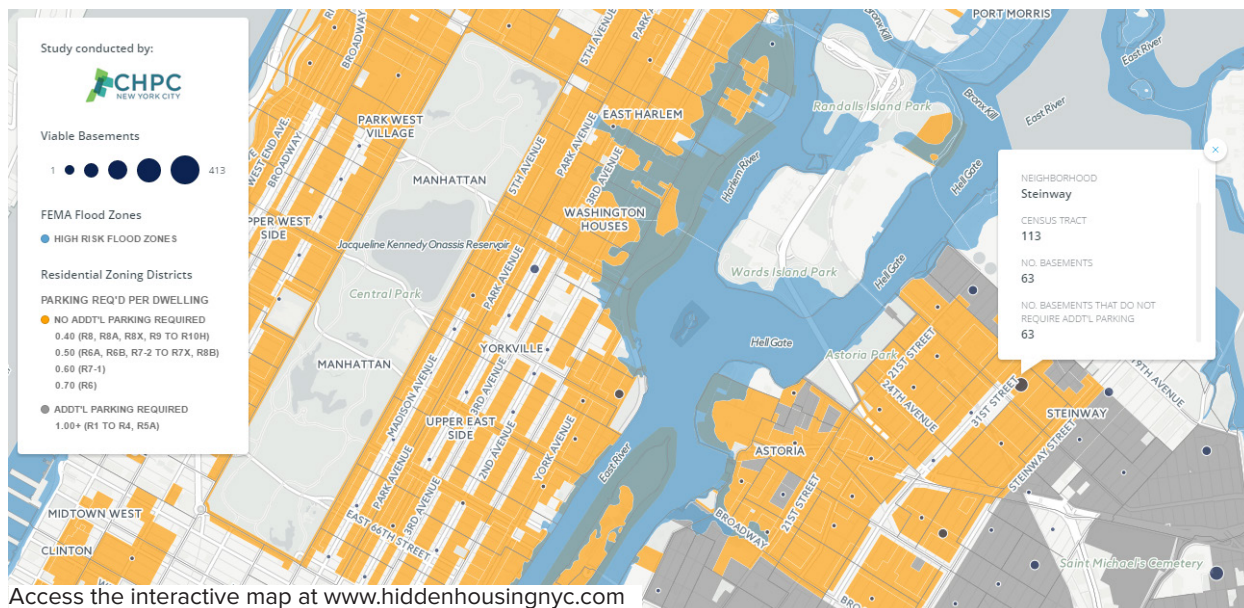
For every filter, we assigned each lot a value based on whether it satisfies the constraint. Using the accumulated scores, we counted the number of viable basements both with and without the parking stipulation.¹⁸ We then tabulated eligible lots by census tract and mapped across the City in order to visualize the distribution of potential conversions.

ACCESSING & INTERPRETING THE MAP

We created a map illustrating the quantity and distribution of potential basement conversions to help identify regions of the City that would benefit most from a conversion program or that would have the capacity to support a pilot. The interactive map is available on CHPC's website (www.hiddenhousingnyc.com) and illustrated in Figure 2 on page 16. The map graphically represents the number of viable basements within a census tract by showing a bubble over each tract with a diameter relative the number of basements. A larger bubble represents a larger concentration of viable basements. Clicking on a bubble opens a pop-up window that describes the location, total number of viable basements, and the subset of viable basements that do not require an additional parking space (see Figure 15).

In order to hone in on areas of the City with more lenient parking requirements, residential zoning districts are divided visually into gray zones, which require additional parking with the creation of a new unit, and orange zones, which do not. A large bubble in an orange zone will have a high concentration of viable apartments without a requirement for new parking—the most favorable circumstances for a conversion program.

¹⁸ It is important to remember that our 10,000-38,000 range is just that, a range. It is not the case that there are either 10,000 or 38,000 viable basements citywide. There are many gray areas that make parking requirements not a simple yes-or-no decision.



FIELD VISITS

CHPC made site visits to parts of the City where we observed both a high density of potential conversions and an obligation to provide a parking space with the creation of a new dwelling unit. The goal of the visits was to give us a broad sense of whether our estimate of supply is conservative. The neighborhoods we visited were Queensboro Hill (QN), Kew Gardens Hills (QN), Sheepshead Bay (BK), Madison (BK), and Rossville-Woodrow (SI). Understanding that the field visits were not intended to provide rigorous scientific evidence, they offer a good sense of whether sites can accommodate a basement apartment through home renovations and parking access.

We approached each location with the following questions in mind:

- Are the window and floor heights consistent with the expected basement versus cellar designation?
- Is there sufficient habitable area in the basement—that is to say, can the basement fit both an apartment and a parking space if necessary?
- Is there sufficient room on-site to accommodate an additional parking space?

Of course, these questions cannot be answered conclusively, but a broad assessment of the housing stock along these lines allows us to organize the potential supply into typologies that are more or less amenable to conversions. One of the prevalent types is the row house with direct access to the rear yard via a common alley (Figure 16). The rear yard is typically used for parking and can accommodate at least one additional vehicle. This type of property is captured in the upper bound estimate of the number of viable basements.



Figure 16. Aerial view of an R4 district illustrating potential for off-street parking. Image courtesy of Google Maps.

Another common type is the row house with an enclosed rear yard. Existing parking is provided by a front driveway or in a basement garage. The basement could be converted into a secondary apartment, but not if an off-street parking space is required for each of the dwelling units. We call this the “competing interest” typology because if an additional parking space is required for the secondary dwelling unit, the lot could either provide parking for two vehicles (one in the driveway and another in the garage) or the lot could provide one parking space and a basement apartment. Even though it seems difficult to meet conversion requirements under these circumstances, there are many exceptions. Corner and side lots on each block often have room for parking or are eligible for a waiver from additional parking because of the lot’s proximity to an intersection. Further, this typology was identified in R4 districts that offer parking exemptions to small lots located in a “predominately built-up area”.

Ranch-style single family homes found in Staten Island usually have room in the driveway to provide another parking space or have a large enough footprint to provide both basement parking and a habitable basement apartment. Together, these observations indicate that there are many circumstances where parking is not a barrier to a conversion.

Again, this field work is not comprehensive, but it does provide important qualitative information that suggests that the supply estimate is nearer 38,000 units than 10,000.

A WORD ABOUT CELLARS

We did not include cellars in our study, which are defined as having less than one-half of its height above curb level. These are not permitted legal residences in New York City under any conditions. However, CHPC looked up deeds and Certificate of Occupancy (CO) for a number of the lots we visited in the field. This spot-checking uncovered that several lots had their sub-grade level reclassified from cellar to basement. For example, amid homes with identical typology, one block contained homes with cellars while all of the neighboring blocks had homes with basements (see Figure 16). On the block with cellars are nine homes with basements. Of these, three homes had been converted from a single-family home with a cellar to a two-family home with a basement. It is possible that these sub-grade levels were either initially misclassified or that the homeowners were able to modify the site so that their home has a qualifying basement.

Further, cellars are not categorically unsuitable for living. Minor concessions in the Building and Housing Maintenance Codes that allow for the substitution of mechanical light and ventilation for a certain percent of natural light and ventilation could liberate an enormous potential housing stock. Provided that all habitable rooms are equipped with qualifying emergency escape and rescue windows for egress and meet minimum lighting and ventilation requirements when supplemented by mechanical means, cellar apartments are perfectly safe for living. Extra precautions including active fire suppression systems could be required for additional protection.

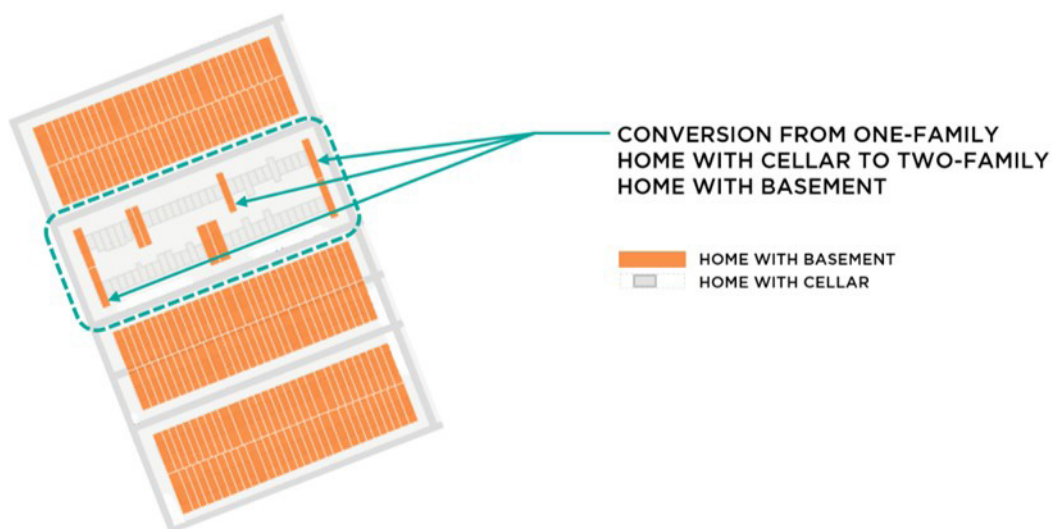


Figure 17. Sample of cellar reclassifications seen in the field

ESTIMATED QUANTITY OF POTENTIAL SUB-GRADE APARTMENTS

SINGLE-FAMILY HOMES, OUTSIDE OF FLOOD PLAIN, ZONED FOR 2+ DWELLINGS

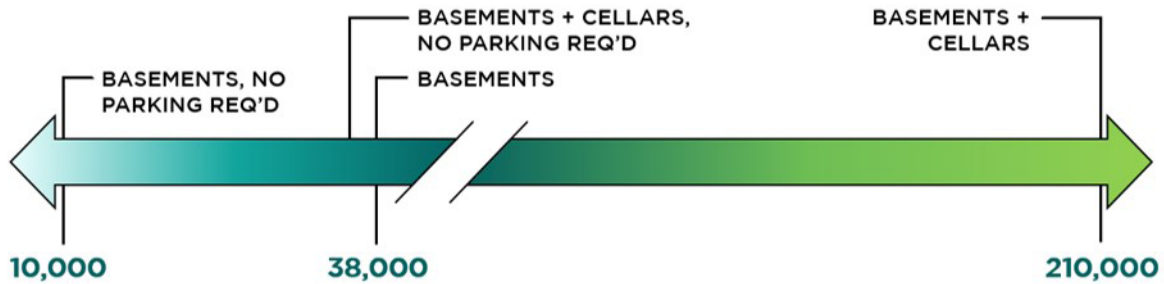


Figure 18. Estimated Quantity of Potential Basement and Cellar Apartments

If cellars were not categorically excluded from legal habitable space, both ends of the supply range—the 10,000 and the 38,000—could shift upward. The range of potential new apartments could reach up to 210,000 units.

From an administrative standpoint, cellar conversions would increase a building's floor area ratio (FAR), or the prescribed limit of floor area to lot area, meaning that the Zoning Resolution may govern whether or not a cellar conversion is permissible. This specific condition could be addressed with

amendments to the zoning text. However, zoning changes require lengthy review periods and can add an additional layer of public opposition.

A WORD ON TWO-FAMILY HOMES

We did not include two-family homes with a basement in this study. While adding a basement apartment to an existing two-family home is not expressly prohibited, it obligates the building to comply with the New York State's Multiple Dwelling Law and more stringent requirements of the building code.¹⁹ The municipal Housing Maintenance Code makes the same distinction, calling one- and two-unit homes "private" and three-or-more-unit homes "multiple" dwellings.

The designation of "private dwelling" invokes the idea of a resident-owner compared to "multiple dwelling" which tends to imply a professionally managed building. Most existing two-unit homes are owner-occupied and are not part of a broader portfolio of properties. According to data from New York City's 2014 Housing and Vacancy Survey, nearly three-quarters of two-unit homes are owner occupied compared to 22% of buildings containing four-or-more units. These homeowners in particular, who are not in the business of real estate, may be daunted by the additional regulatory conditions if they consider adding a secondary unit in their basement. Reclassifying three-unit homes as small private dwellings could motivate homeowners to pursue a basement conversion by alleviating regulatory barriers that are more appropriate for large multi-unit rental buildings.

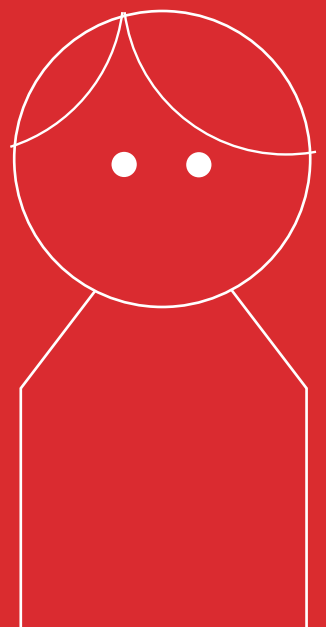
Extending the definition of a private dwelling to include three-family homes could liberate tens of thousands of additional apartments. Using the same filtering procedure that we devised for our supply analysis of existing single-unit homes, but instead filtering for two-unit homes already zoned for 3-or-more units, we estimate that a reclassification could generate:

- 63,000 homes not considering parking requirements
- 41,000 homes that do not require additional parking

Given available data, we cannot determine the number of two-unit homes that currently house one of the existing units in the basement. Even if we conservatively estimate that half of the calculated supply could accommodate a basement conversion, the number of potential new units is significant. Together with the possible conversions in one-unit homes, a change in the definition of 'private' or small homes would bring the potential supply of basement apartments to between roughly 50,000 and 100,000 new units.

¹⁹ The City's building code classifies one- and two-unit homes into residential use group R-3 and buildings that contain three-or-more-units for permanent residential use into group R-2. This distinction impacts fire safety and accessibility requirements, for example.

CHPC'S RECOMMENDATIONS FOR A BASEMENT CONVERSION PROGRAM IN NEW YORK CITY



CHPC'S RECOMMENDATIONS FOR A BASEMENT CONVERSION PROGRAM IN NEW YORK CITY

We worked with numerous housing policy experts and industry practitioners to devise recommendations for how a pilot basement legalization program could be structured and applied. We believe that mitigating technical barriers will encourage the development of these units, with the success of a conversion program relying heavily on the ability to attract homeowner participation. Therefore we recommend the following steps:

STEP 1. CREATE A PILOT PROGRAM FOR BASEMENT APARTMENT CONVERSION.

A pilot program would include a) establishing a new physical standard and approved scope of work for the conversion; b) offering financial incentives to ensure that the mortgage and taxes on the property remain affordable along with the rent of the new unit; and c) establishing an expedited approval process to ensure timely approval.

1. Identify geographic areas that may be appropriate for a pilot program to facilitate legal basement conversions.

Quantifying the number of small homes that might be eligible for conversion without zoning changes is the focus of this study. CHPC's analysis has identified neighborhoods with a high-density of viable homes outside of the floodplain such as Sheepshead Bay, Flatlands, and Canarsie in Brooklyn, and Queensboro Hill, Jackson Heights, and Middle Village in Queens. However, the pilot cannot be sited based on the number of suitable small homes

alone. Additional work is required to ensure collaboration with local organizations and elected officials. For example, East Flatbush has a sufficient number of potential basements and the non-profit infrastructure to support a pilot, while East New York has a limited number of eligible basements, but benefits from expressed government and community interest for such a project. Local support for a pilot and some willingness of homeowners to participate are prerequisite.

2. Revise a number of key building regulations that are the most prohibitive and/or impose an unnecessary financial burden when a homeowner wants to develop an apartment in their basement.

Appropriate code reforms are needed to encourage basement conversions. To better understand which regulations are the most common barriers—and/or the most difficult to comply with—CHPC undertook a rigorous review of all of the codes and laws that pertain to basement apartment conversions, itemized those regulations, and assigned each a status based on compliance difficulty. Our next report will set out this analysis and our recommendations for which codes could be revised to facilitate basement conversions. As we have stated throughout this study, we do not recommend involving Zoning Resolution changes during the pilot process—the focus should be on building code revisions.

For the government, these revisions will require close coordination among agencies, most notably the Department of Buildings, the Department of Housing Preservation

and Development, the Department of City Planning, and the Fire Department. The effort should result in the identification of some key requirements that could be revised or waived for the pilot without sacrificing safety. We believe these could be waived as part of a “demonstration project” by the Commissioner of the Department of Buildings as stated in the City Charter. All homes must conform to nationally accepted standards for fire safety practices including egress, prevention, and suppression.

In addition, the City should implement a new, streamlined process that facilitates the conversion of basement apartments, which may include permit expediting or pre-approved certified contractors, for the pilot project.

3. Cultivate new fire suppression and prevention technologies that may be integrated into the pilot project.

New York City’s construction codes ensure that our housing stock is among the safest in the country. At the same time, it can be challenging and expensive for homeowners to comply with the existing rules. For homeowners with modest or low incomes, it can be impossible.

In 2017, CHPC will be hosting a design challenge for architects and engineers to consider new technologies and methods for improving fire suppression and fire prevention in small homes, while also reducing their cost. The design challenge is intended to be a collaborative effort with city agencies, which we hope will provide feedback and recommendations. New devices and systems for fire suppression and prevention that are deemed viable by government agencies could be incorporated into the pilot at the discretion of the Buildings Commissioner, who is empowered to allow alternative technology that is at least the equivalent to what is prescribed in the Fire Code in quality, strength, effectiveness, fire resistance, durability and safety (2014 NYC FC 104.9).

These recommendations call for both code reform and innovations in fire safety technology. CHPC does not, however, advocate for relaxing any fire safety regulations. All habitable basement units must comply with egress requirements, including exit doors and emergency escape and rescue (EER) openings, as well as fire prevention and suppression systems. We do embrace new technology that would make it both possible, physically and financially, and desirable to retrofit basement spaces and small homes that are not currently required by law to have active fire suppression systems. The changes we recommend would make basement homes safer than current law requires.

4. Commission and fund select community-based organizations to provide outreach and assistance to homeowners participating in the pilot project.

These organizations must be able to contact homeowners, explain eligibility requirements, program rules, and financing, and assist the homeowners through the pilot. These organizations can help the City identify potential participants and report program issues as they arise.

5. Train and accredit design and construction professionals for participation in the pilot project.

The success of a conversion program is contingent on the competency of the renovation work. Architects, contractors, and other design professionals must be familiar with the program and have the capability to carry out the work. Providing professional accreditation for the program reassures homeowners that they have hired a qualified professional who will complete the work successfully. The accreditation would provide a contractor with a pool of potential work.

It would also allow homeowners to get a reliable estimate of the costs involved to bring the basement up to code before they decide to embark on the program.

The City would also benefit from the skilled execution of the program. When New York City implemented a lead abatement program in the early 2000s, landlords were unsure what professional to turn to and the City had a very small pool of EPA-certified lead abaters. Unwilling to accept slow or stalled progress, the City instituted a training and outreach program to increase the number of certified lead abatement specialists. Basement conversion reforms would more likely succeed if the City engaged a sufficient number of familiar and qualified practitioners prior to program rollout.

6. Develop financial incentives to a) ensure that homeowners with limited income can carry out the required work without making their mortgage unaffordable, b) protect these homeowners from an increase in taxes that may result from the improvements, and c) encourage homeowners to maintain lower rents on the new units.

Elements may include:

- Refinance the existing qualifying mortgage. While this would extend the duration of a homeowner's indebtedness by extracting enough equity out of the existing mortgage to pay for the renovations to the basement, the loan could be refinanced at a lower-rate or have the soft-costs associated with the refinancing forgiven through a government grant.
- HUD's community-based HOME program offers financing options for income-eligible homeowners who use the property for their primary residence.
- Involve a bank and/or HPD in the finance of second subordinate mortgages expressly for this program.
- Investigate opportunities for the NYC Residential Mortgage Insurance Company to insure loans.
- Offer an optional tax-abatement akin to J-51 to homeowners who agree to a rent cap ensuring affordability over a given period of time. This will hold harmless a homeowner who increases their property value and, consequently, their tax burden due to program participation.
- Create a municipally-managed fund that homeowners pay into, which pays contractors at completion of construction work ensuring that homeowners do not take on financial risk until the successful completion of the job.

STEP 2. EVALUATE THE PILOT PROGRAM FOR EFFECTIVENESS, PARTICIPATION, PARTNERS' PERFORMANCE, COSTS, AND SUCCESS OF OUTCOMES.

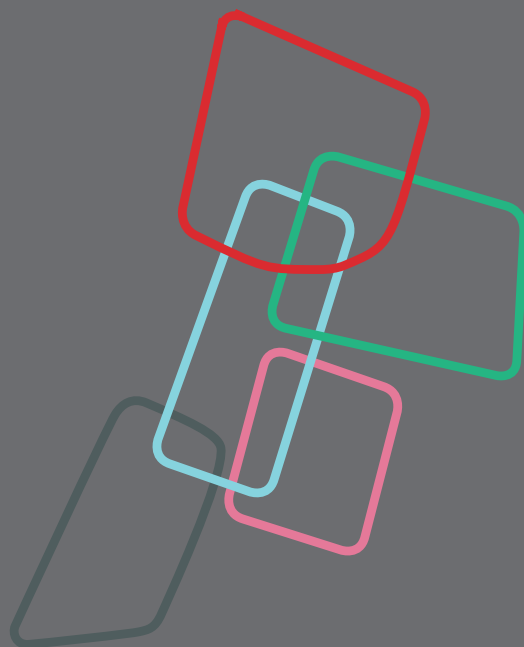
Benchmark and evaluate the pilot to determine the success of the program.

It is necessary to identify components of the pilot that were successful or ineffective, had unintended consequences, or were not executed correctly. Findings from the evaluation should inform changes to future iterations of the program.

STEP 3. EXPAND PROGRAM TO A BROADER GEOGRAPHIC AREA OR PROPOSE CITYWIDE CHANGES.

If the evaluation indicates that the pilot was largely successful, the conversion program—or elements of the program—should be considered for geographic expansion and/or the basis for further city-wide changes to codes and regulations. Evaluation should recur annually to ensure that the program remains relevant and successful.

APPENDIX



APPENDIX A

EXPLANATION OF TERMS

“ACCESSORY DWELLING UNIT” (ADU) OR “ACCESSORY USE”

We did not use the term “accessory dwelling unit” in this report although it is often used to describe basement apartments in other cities. The term is used to suggest that these apartments are smaller, self-contained units, within the confines of an existing home. Units are “accessory” in an economic and development sense in that they supplement homeowner income, add value to a home, and augment the residential capacity of a neighborhood.

However, we believe this term poses significant political, regulatory, and enforcement issues when applied to potential basement units in New York. The term “accessory” is already defined in New York City Zoning Resolution section 12-10, as “a use that is incidental to and customarily found in connection with the principal use.” This is a catch-all for secondary uses on the same lot (and, in some specific cases, off of the lot), whether it’s parking, an apartment above a garage, or a basement conversion.

On face value, the accessory designation appears to give the City the ability to regulate secondary stock apart from primary use housing. The complication arises in cities where zoning is already heavily regulated and single-family detached residences do not make up a large portion of the housing stock. In New York City, a two-family row house can look identical to an abutting single-family row house that is eligible for a basement conversion. What physically distinguishes a single-family home with an accessory basement apartment from a two-family home where one of the

units is in the basement? Why should these two structures, though identical, be subject to different regulations, exemptions, and incentives, and how could they be enforced—especially if they are both owner-occupied?

For political and practical reasons, regulating basement apartments using ADU language in zoning is undesirable. Text amendments to New York’s Zoning Resolution go through a lengthy and often contentious public review process that can stall or kill policy. We believe that policy facilitating basement conversions should disturb existing zoning as little as possible.

CONVERSION

Zoning defines a conversion as the change of a building’s use to another use. The tendency is to think of conversions as a change between manufacturing, residential, commercial, or community uses. However, the Zoning Resolution also includes in its definition of conversion alterations within an existing residential building that increases the number of dwelling units. This study exclusively considers existing single-unit homes that could be altered to accommodate a second unit in the basement, invoking the term “conversion” as the practice of increasing the number of residential units.

APPENDIX B

SOURCES & QUALITY OF DATA

CHPC combined and analyzed information from a number of different data sets to arrive at our supply estimate. The calculations relied on data from the following sources:

- PLUTO (v16.1) shapefile and csv
- Census Tracts 2010 (Clipped to Shoreline) shapefile
- Neighborhood Tabulation Areas (NTAs) shapefile and xlsx
- FEMA Flood Insurance Rate Maps (FIRM) shapefile
- NYC Zoning Districts (nyzd) shapefile

The analysis depends largely on the Primary Land Use Tax Lot Output (PLUTO v16.1) data file developed by the Department of City Planning's Information Technology Division, released in March 2016. It is a rich data set containing over 80 fields describing each lot's tax, building, geographic, and administrative characteristics compiled from a number of City departments.

As with any large data set, we expect that there will be some degree of omitted or incorrect data—the quality of the data set depends on the extent. Aside from a tax lot's identifiers like borough, block, lot, or tract, the PLUTO fields most relevant to CHPC's analysis of basement supply are the building classification and basement code. The quality of these fields would likely have the most impact on our analysis.

The PLUTO fields we used in our analysis were the following:

- | | |
|-------------------------|--------------|
| • Geometry (shape file) | • LandUse |
| • Borough | • LotArea |
| • Block | • UnitsRes |
| • Lot | • BsmtCode |
| • CT2010 | • YearBuilt |
| • AllZoning1 | • YearAlter1 |
| • BldgClass | • BBL |

The first step of our analysis was to identify single-family residential properties from the City's housing stock using a lot's alphanumeric building class code. The occupancy type is captured by the building class prefix, in this case "A" indicating a single-family home, and then further characterized by home type ranging from 0 to 9. While we ran into the infrequent occurrence of a two-family home misclassified as a single-family in the database, it was rare. Surely the opposite scenario—a single-family misclassified as two-family—exists as well, but our analysis was restricted to single-family homes.²⁰ The low occurrence of this misclassification may be due to our subsequent vetting of each lot by its land use designation and the total number of residential units. All of these fields had to be consistent with a single-family home in order to be counted in our analysis.

²⁰ Misclassifications were identified during field visits and Certificate of Occupancy research conducted for a random sampling of basements in two neighborhoods.

According to the PLUTO database, there are roughly 316,000 single-family homes in New York City. This is substantially smaller than the number reported in the US Census Bureau's 2010-2014 American Community Survey (ACS) 5-Year Estimates, which calculates roughly 546,000 single-family homes. Though the ACS relies on a sample in order to project housing and population numbers, the survey's margin of error is far too small to account for such a discrepancy.

After speaking with demographic and database experts in the Department of City Planning, we believe that the difference between PLUTO and ACS can be attributed, in part, to the difference in field observation versus official designations recorded in a database. City Planning also noted issues with how some PLUTO fields are defined. For example, there are instances where single-family homes share a tax lot with a larger residential or commercial structure and are documented using the building class of the larger structure. The building class definitions themselves can also be a bit nebulous. For example the multiple use category that lists: "Primarily One Family with Two Stores or Offices;" "Primarily One Family with Store or Office;" and "Primarily One to Six Families with Stores or Offices." It is difficult to see which of these theoretically mutually exclusive categories could apply. Our analysis only uses lots with a building classification of 'A' to avoid counting units where the basement space is likely used by a non-residential use. It is clear from ACS and our methodology that the estimates produced by CHPC's Five Filter process are likely to be conservative.

The accuracy of the basement code designation varied by neighborhood. Our impression of basement code accuracy was influenced by visiting adjacent lots or blocks of similar structure and arrangement that have different classifications in PLUTO. While the reliability of the basement code does not appear to be as good as building class, it certainly appears to be adequate for our purposes and, we believe, is likely to yield a conservative estimate. Without manually pulling documents and inspecting individual homes, the PLUTO basement code is the best tool for estimating supply and distribution of potential basement conversions across the City as a whole.

APPENDIX C

MAPS

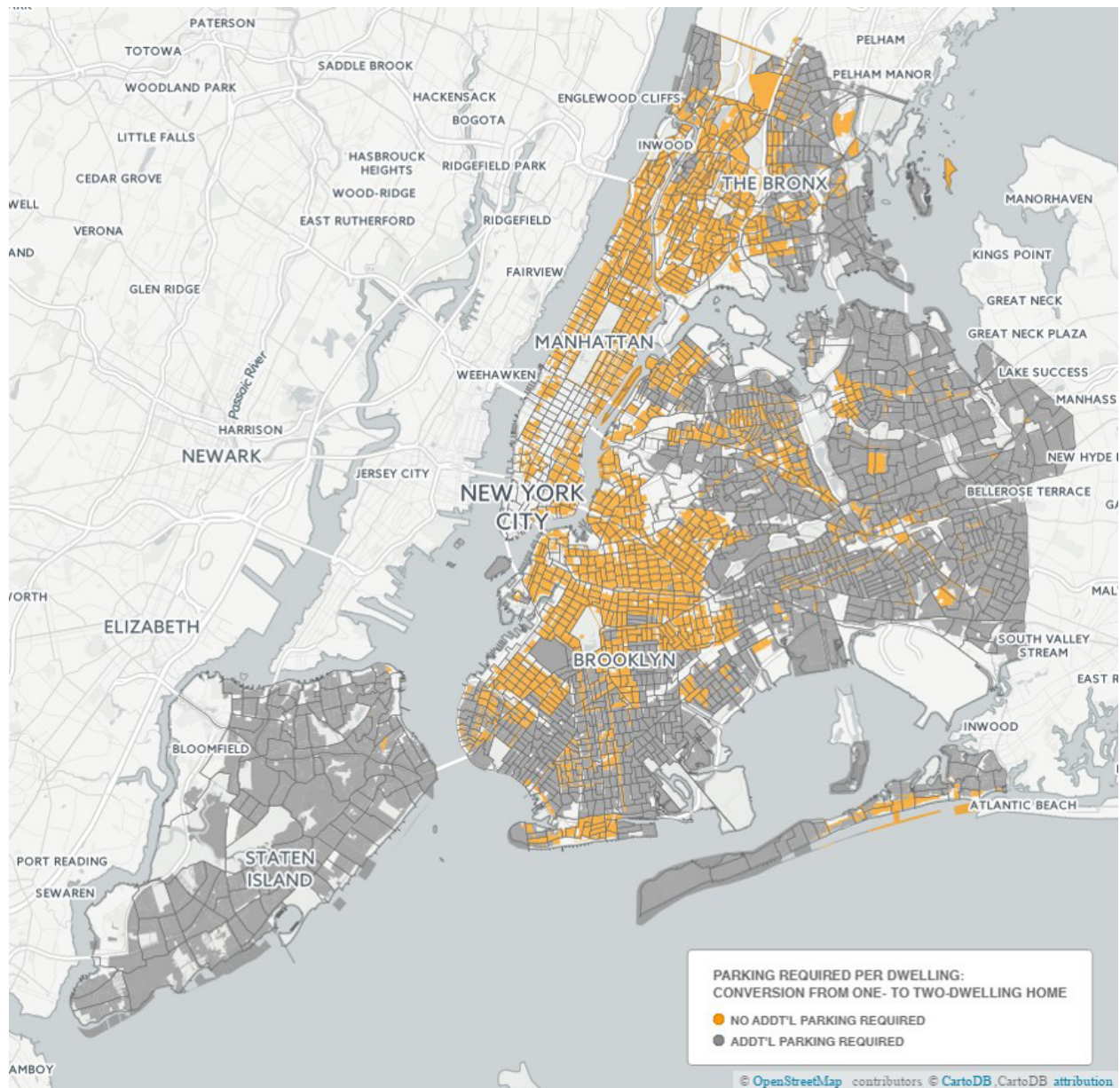
PARKING REQUIREMENTS

DISTRIBUTION OF VIABLE BASEMENTS

MEDIAN CONTRACT RENT

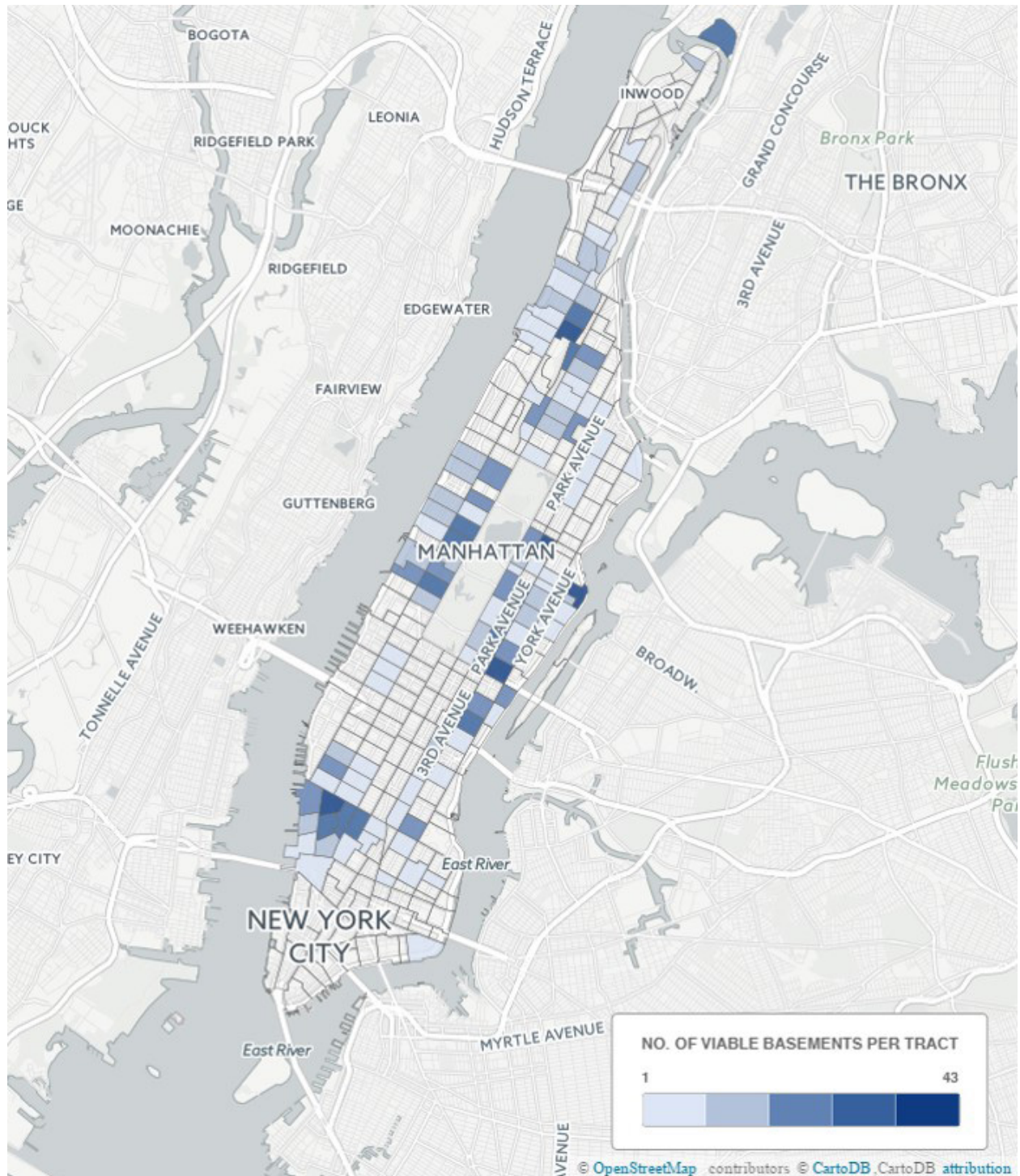
FORECLOSURE ACTIONS (LIS PENDENS & AUCTIONS)





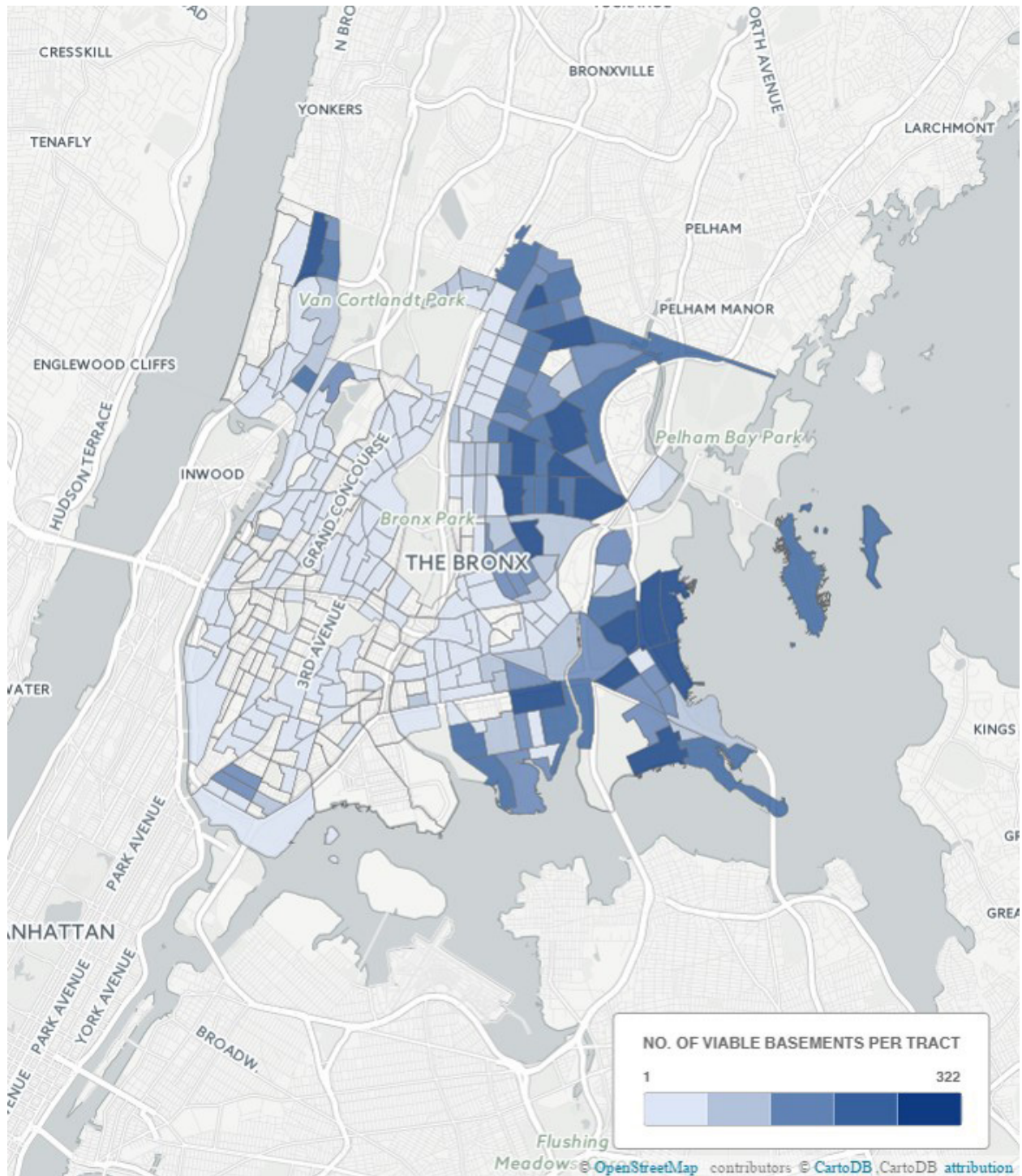
Residential Parking Requirements

Census tracts are overlaid on top of residential zoning districts colored according to their parking requirements. In orange zones, owners of single-family homes do not need to provide a new off-street parking space with the creation of a basement apartment. In grey zones, an additional off-street parking space is required in conjunction with a basement conversion. This map is available interactively on www.hiddenhousingnyc.com.



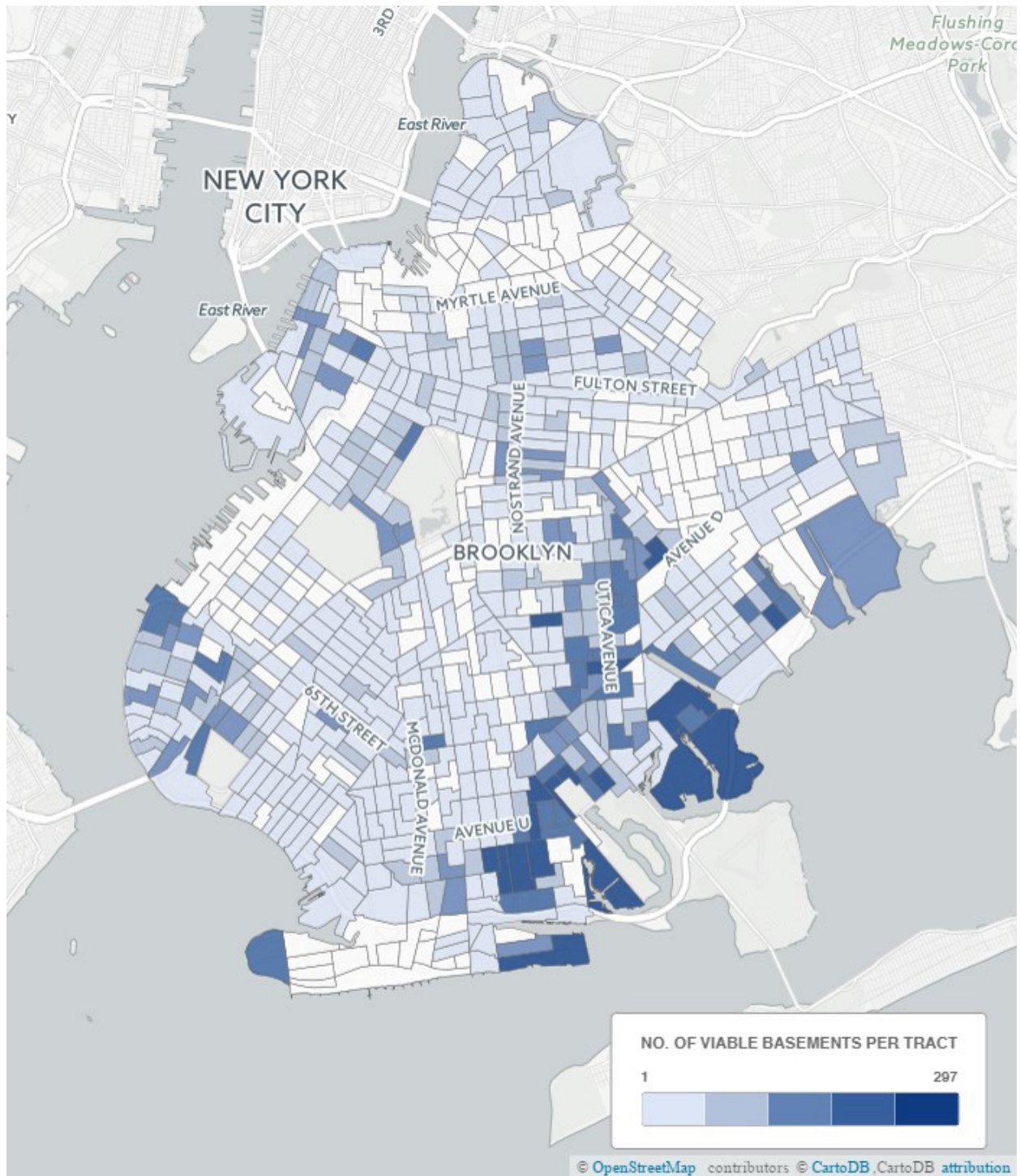
Potential Basement Conversions: Manhattan

The number of potential basement conversions within each 2010 census tract is illustrated by color intensity. The number of potential basement conversions was estimated by applying CHPC's five filter process to the PLUTO v 16.1 database. Depicted by quintile. This map is available interactively on www.hiddenhousingnyc.com.



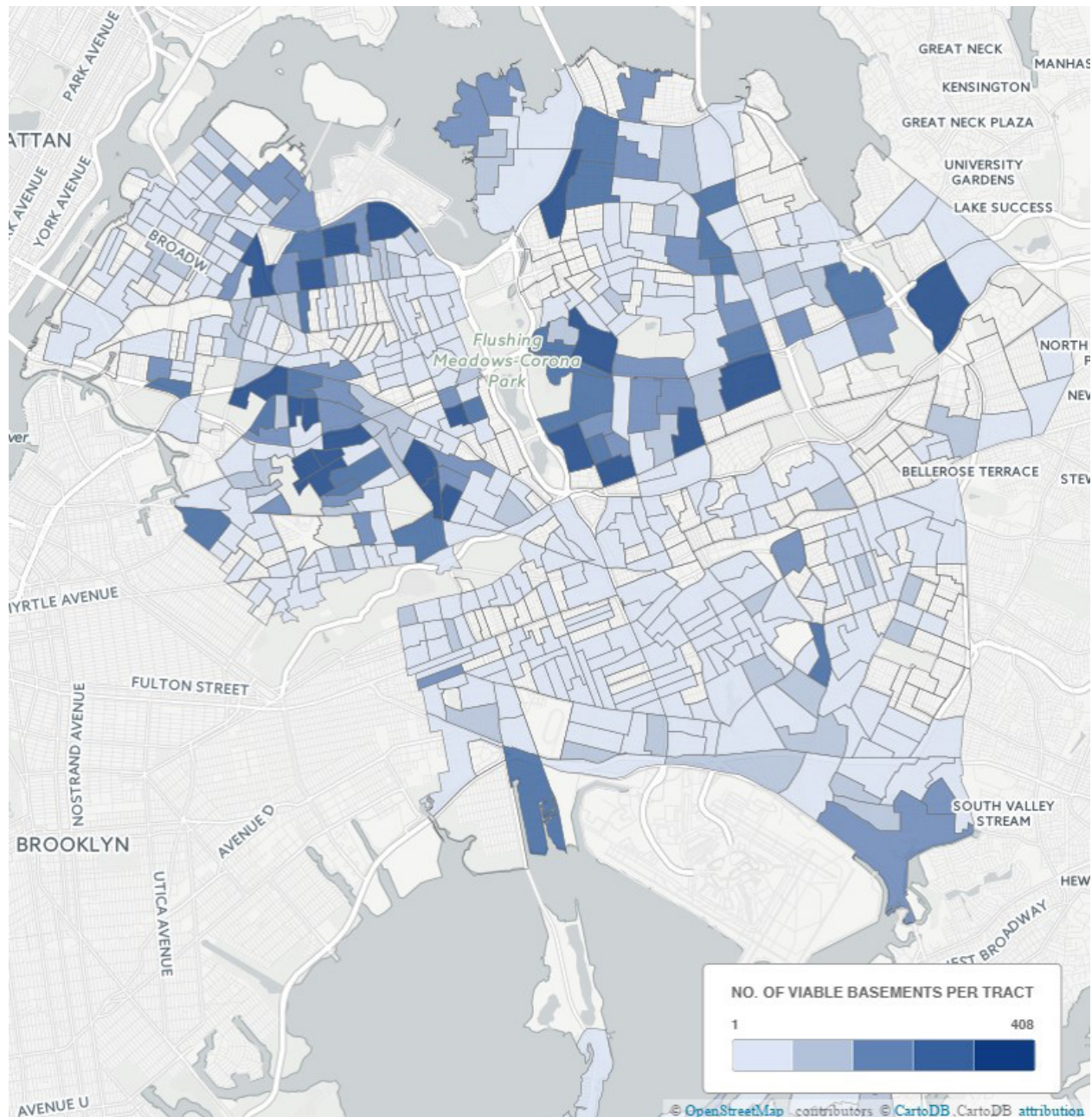
Potential Basement Conversions: Bronx

The number of potential basement conversions within each 2010 census tract is illustrated by color intensity. The number of potential basement conversions was estimated by applying CHPC's five filter process to the PLUTO v 16.1 database. Depicted by quintile. This map is available interactively on www.hiddenhousingnyc.com.



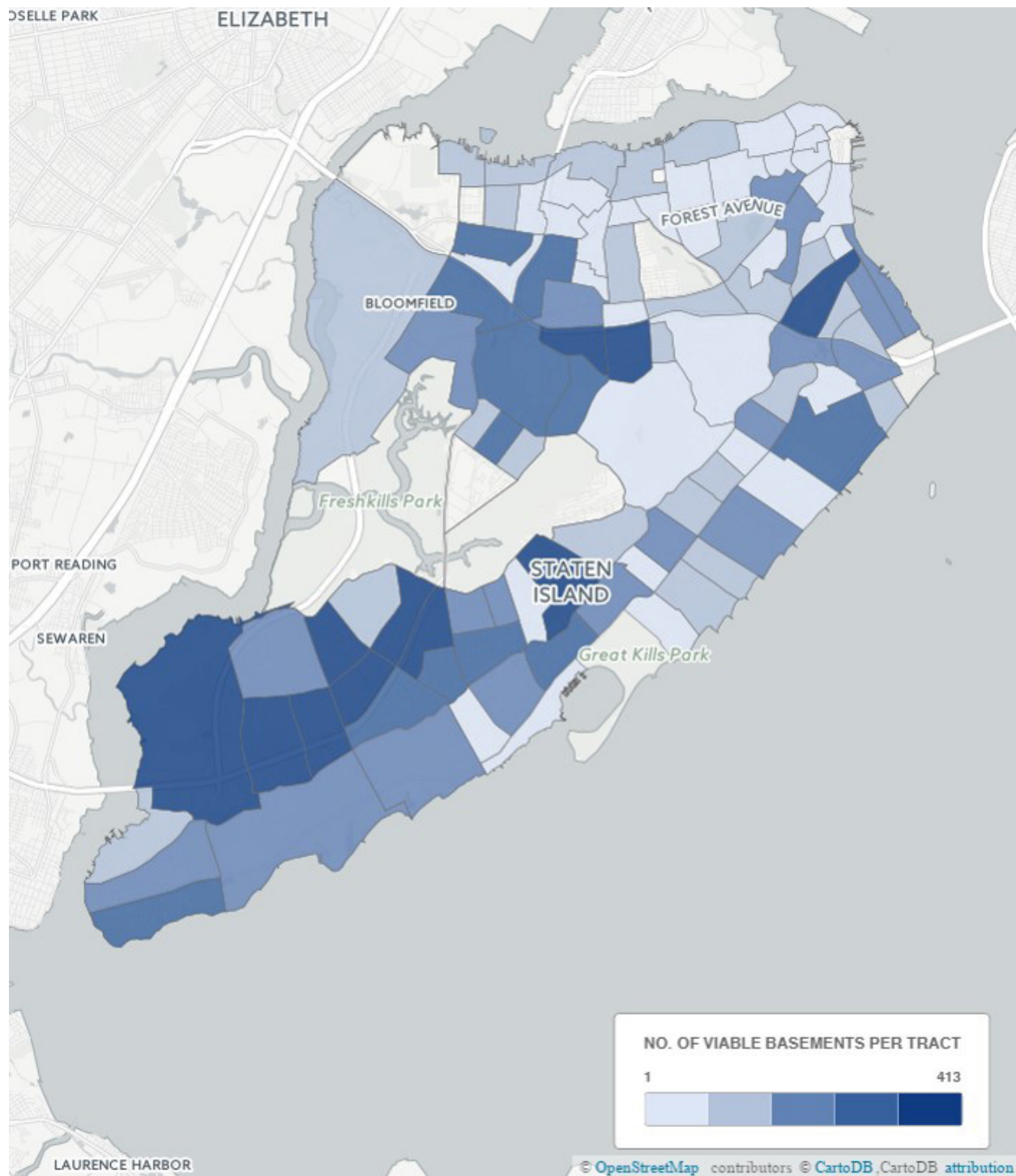
Potential Basement Conversions: Brooklyn

The number of potential basement conversions within each 2010 census tract is illustrated by color intensity. The number of potential basement conversions was estimated by applying CHPC's five filter process to the PLUTO v 16.1 database. Depicted by quintile. This map is available interactively on www.hiddenhousingnyc.com.



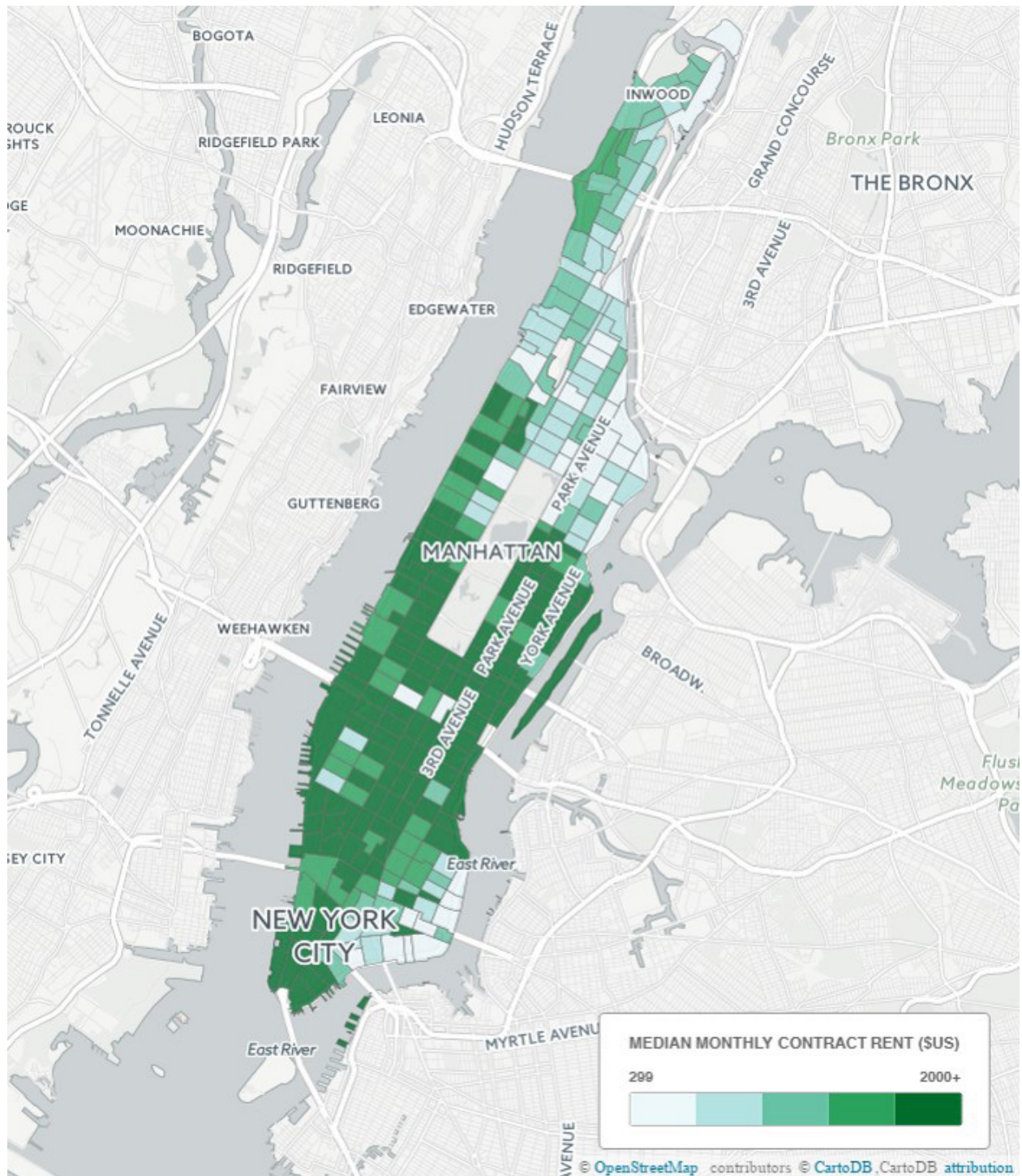
Potential Basement Conversions: Queens

The number of potential basement conversions within each 2010 census tract is illustrated by color intensity. The number of potential basement conversions was estimated by applying CHPC's five filter process to the PLUTO v 16.1 database. Depicted by quintile. This map is available interactively on www.hiddenhousingnyc.com.



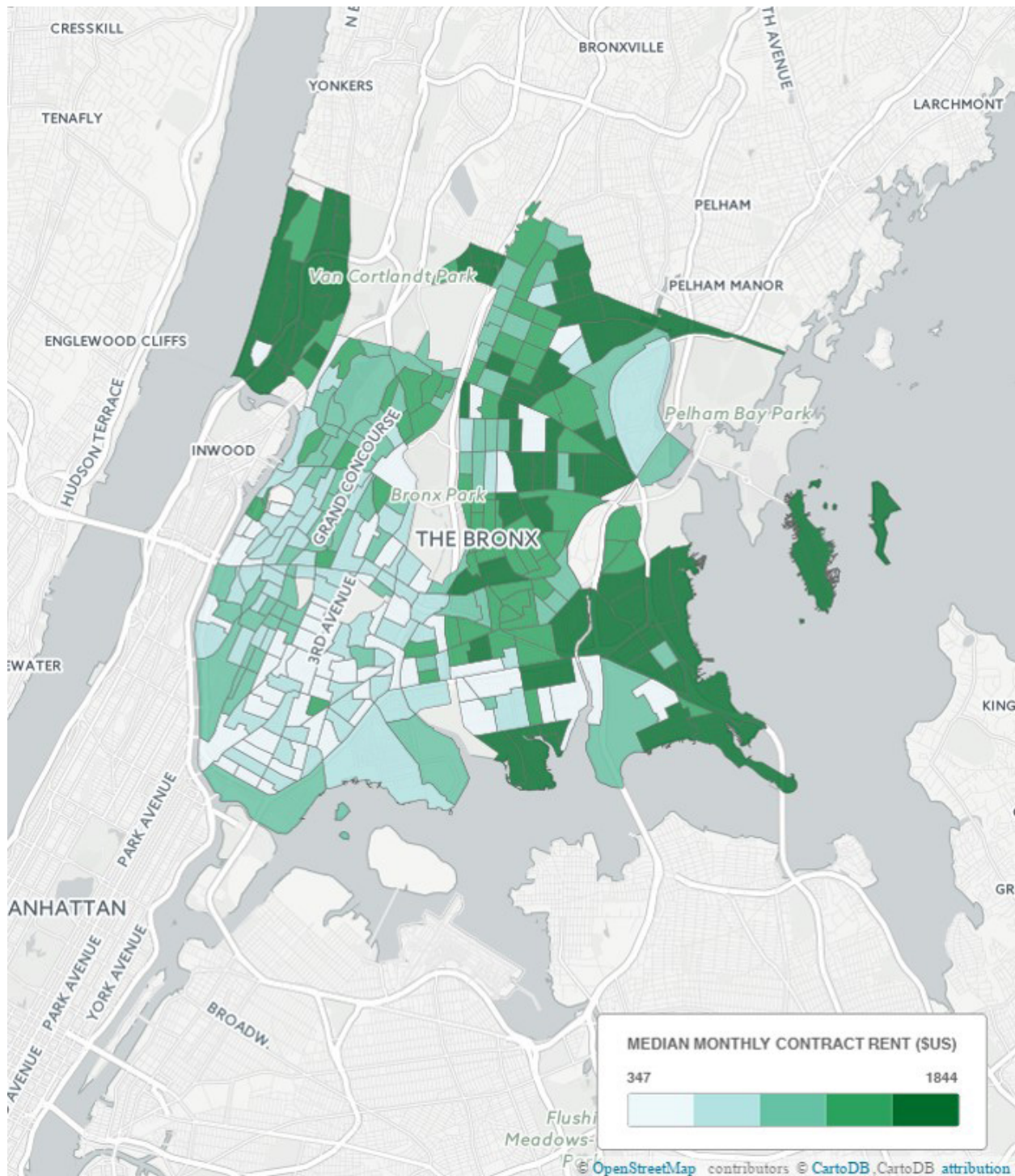
Potential Basement Conversions: Staten Island

The number of potential basement conversions within each 2010 census tract is illustrated by color intensity (displayed by quintile). The number of potential basement conversions was estimated by applying CHPC's five filter process to the PLUTO v 16.1 database. This map is available interactively on www.hiddenhousingnyc.com.



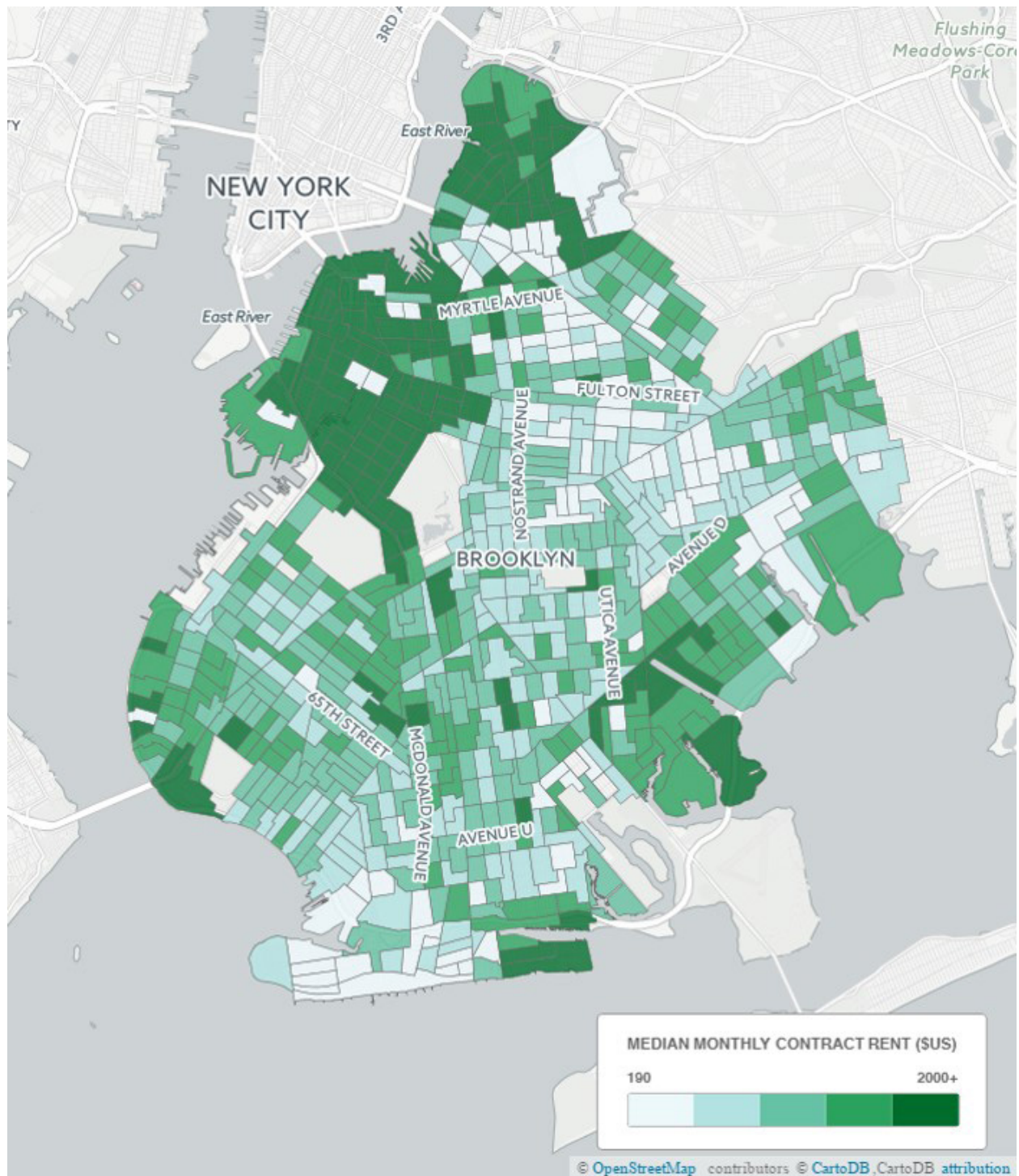
Median Monthly Contract Rent: Manhattan

The median monthly contract rent within each 2010 census tract is illustrated by color intensity (displayed by quintile). Tracts showing a '0' median rent have an insufficient number of observations to report. Tracts with a median contract rent above \$2000 fall in the upper interval of an open-ended distribution. Data source: 2010-2014 American Community Survey 5-Year Estimates. This map is available interactively on www.hiddenhousingnyc.com.



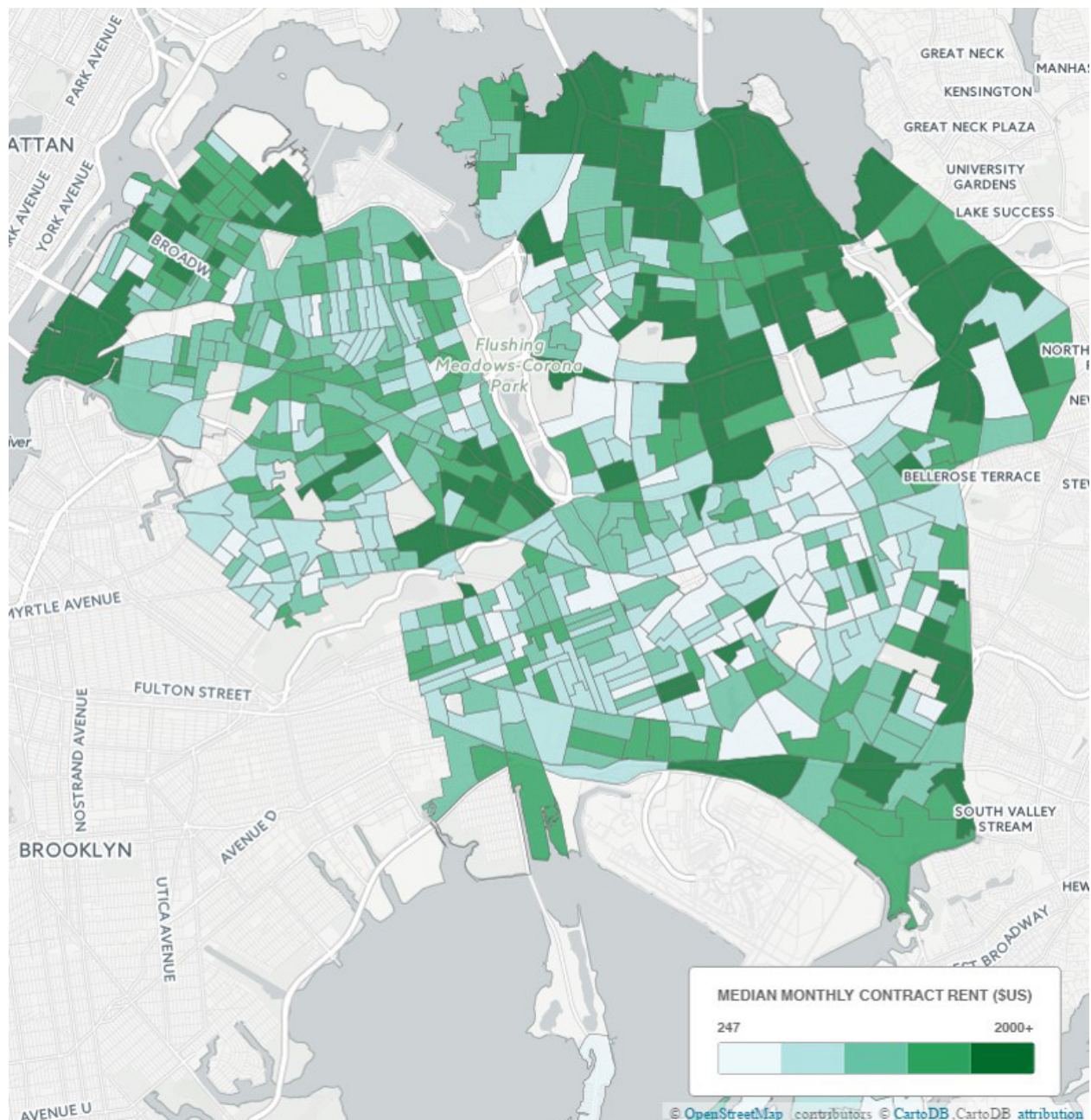
Median Monthly Contract Rent: Bronx

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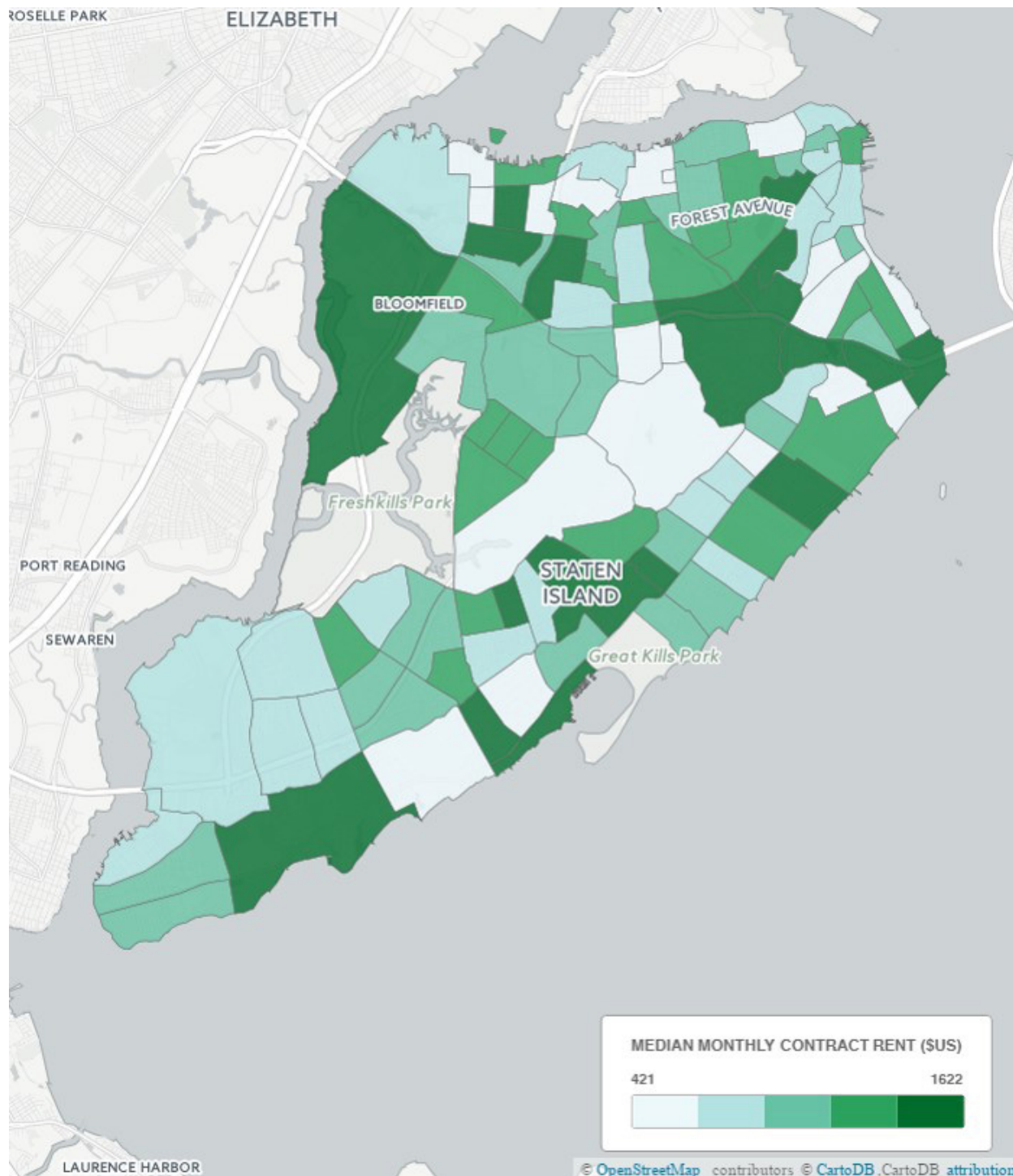
Median Monthly Contract Rent: Brooklyn

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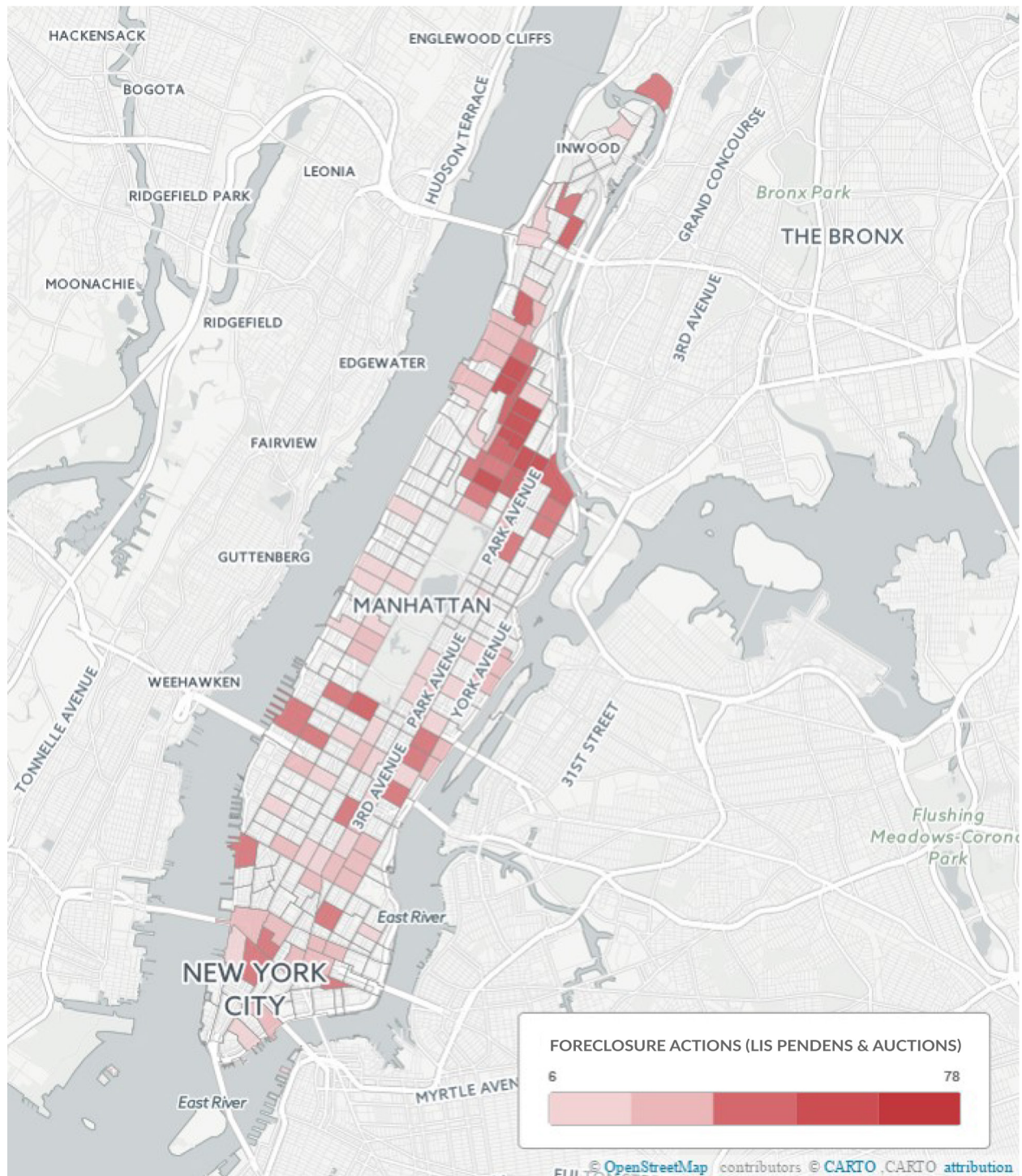
Median Monthly Contract Rent: Queens

The median monthly contract rent within each 2010 census tract is illustrated by color intensity (displayed by quintile). Tracts showing a '0' median rent have an insufficient number of observations to report. Tracts with a median contract rent above \$2000 fall in the upper interval of an open-ended distribution. Data source: 2010-2014 American Community Survey 5-Year Estimates. This map is available interactively on www.hiddenhousingnyc.com.



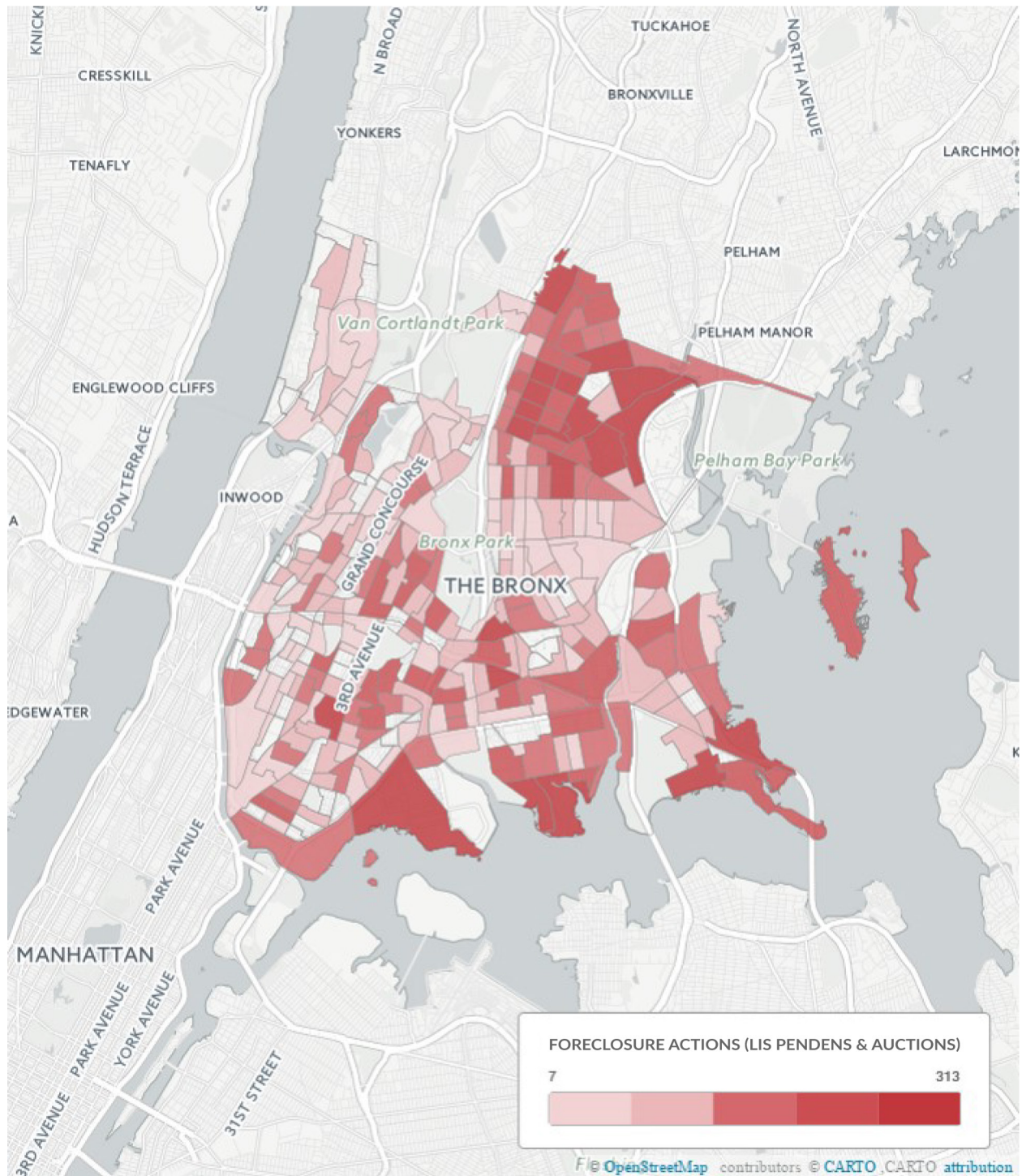
Median Monthly Contract Rent: Staten Island

The median monthly contract rent within each 2010 census tract is illustrated by color intensity (displayed by quintile). Tracts showing a '0' median rent have an insufficient number of observations to report. Tracts with a median contract rent above \$2000 fall in the upper interval of an open-ended distribution. Data source: 2010-2014 American Community Survey 5-Year Estimates. This map is available interactively on www.hiddenhousingnyc.com.



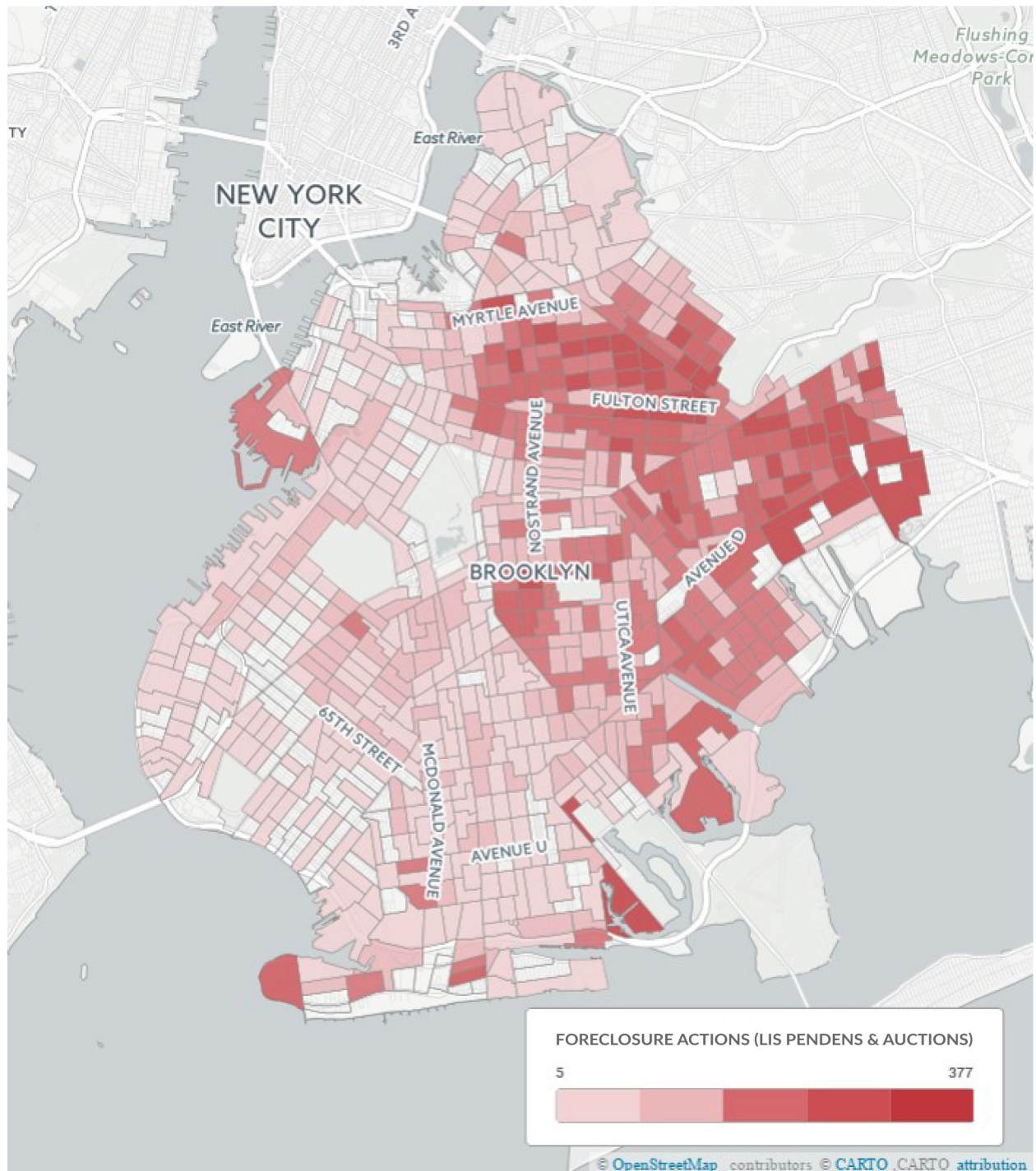
Foreclosure Actions 2011-2015: Manhattan

The aggregate number of foreclosure actions (lis pendens and auctions) within each 2010 census tract over the five-year period from 2011-2015 is illustrated by color intensity (displayed by quintile). Data source: CHPC's 2016 FOIA request of HPD data. This map is available interactively on www.hiddenhousingnyc.com.



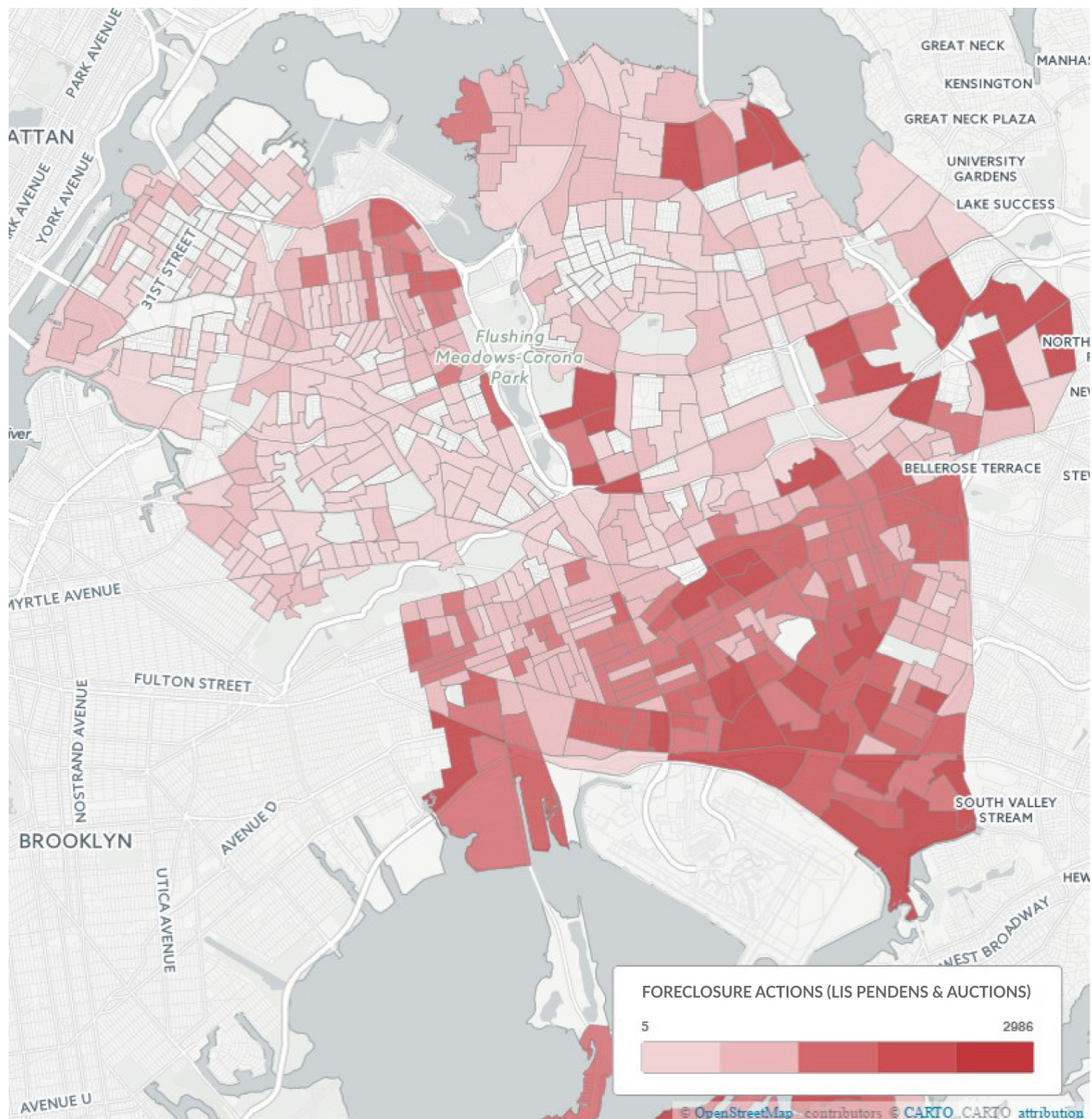
Foreclosure Actions 2011-2015: Bronx

The aggregate number of foreclosure actions (lis pendens and auctions) within each 2010 census tract over the five-year period from 2011-2015 is illustrated by color intensity (displayed by quintile). Data source: CHPC's 2016 FOIA request of HPD data. This map is available interactively on www.hiddenhousingnyc.com.



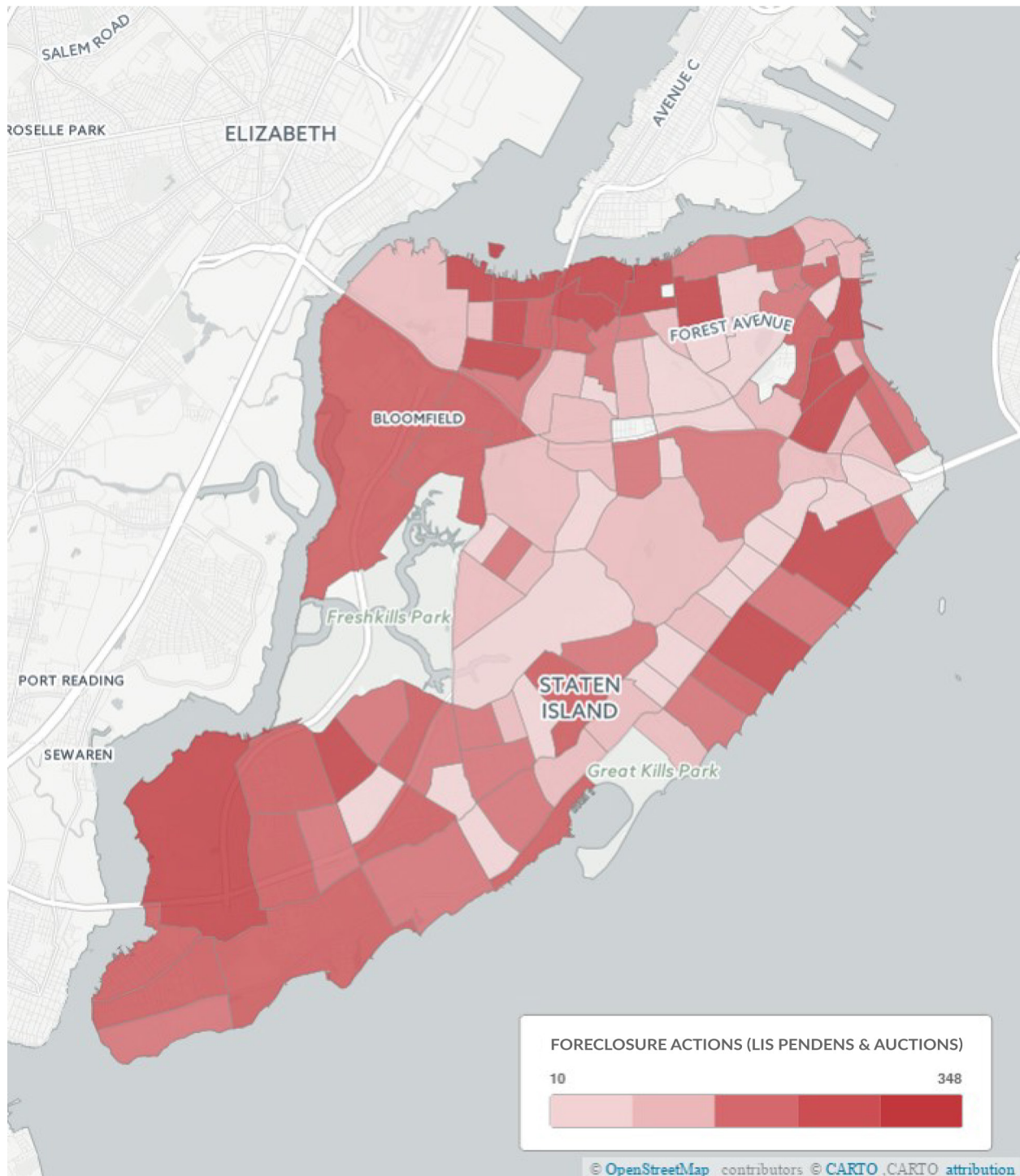
Foreclosure Actions 2011-2015: Brooklyn

The aggregate number of foreclosure actions (lis pendens and auctions) within each 2010 census tract over the five-year period from 2011-2015 is illustrated by color intensity (displayed by quintile). Data source: CHPC's 2016 FOIA request of HPD data. This map is available interactively on www.hiddenhousingnyc.com.



Foreclosure Actions 2011-2015: Queens

The aggregate number of foreclosure actions (lis pendens and auctions) within each 2010 census tract over the five-year period from 2011-2015 is illustrated by color intensity (displayed by quintile). Data source: CHPC's 2016 FOIA request of HPD data. This map is available interactively on www.hiddenhousingnyc.com.



Foreclosure Actions 2011-2015: Staten Island

The aggregate number of foreclosure actions (lis pendens and auctions) within each 2010 census tract over the five-year period from 2011-2015 is illustrated by color intensity (displayed by quintile). Data source: CHPC's 2016 FOIA request of HPD data. This map is available interactively on www.hiddenhousingnyc.com.

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