



New York City Neighborhoods in Transition

Citizens Housing & Planning Council (CHPC) has undertaken an analysis of New York City's people and housing to reveal changes that have occurred between the federal decennial census years of 2000 and 2010.

By focusing our analysis at the census tract level, the work illuminates patterns of change that reflect who we are and where New Yorkers are really living, regardless of traditional neighborhood boundaries. The work complements a 2008 study funded by the U.S. Department of Housing and Urban Development and performed by researchers at the NYC Department of Housing Preservation and Development and Department of City Planning that examined shifts in the decade from 1990 to 2000. This research utilizes updated data from the 2000 and 2010 censuses and revises the methodology of the original study.

Government has many good reasons to create neighborhood boundaries. Such boundaries facilitate the collection of information and analysis. They help inform how government distributes resources and can reveal inequities and areas of need. However, these boundaries can also distort information, as they may not reflect the ever-changing realities of the population on the ground and the new communities that are emerging. Community districts can be so large they obscure important changes occurring in smaller areas. Census tracts alone are too small to reveal wider trends.

The result is that an emerging population may fall through the cracks when viewed only as a small percentage of two community districts, when in fact the group may constitute a new community. An expanding population may be missed when it crosses over into another area where it becomes statistically insignificant. The characteristics of people and how they fit into the housing stock can be obscured when they are lumped into a pre-existing boundary that may have little to do with either their profiles or the housing stock that they occupy.

The federal decennial census, which is compiled at a census tract level, provides an opportunity to look at people and housing without regard to predetermined neighborhood, community board, or sub-borough area boundaries. Where have people that share certain characteristics expanded into housing and where have others moved away? Which populations have experienced significant demographic changes and where have these changes occurred? Where have populations changed places that may share some similar characteristics but have very different household income? What can these shifts tell policymakers about the need for rethinking resources and housing strategies? What new areas of research and study could be explored to help policymakers,

researchers, and communities themselves better understand the sometimes seismic shifts that are occurring in plain sight?

This work does not supply the explanations to all of the changes that are occurring in our city, as census data limit the depth of our analysis. Rather we hope that it will challenge researchers and policymakers to look beyond the traditional neighborhood boundaries and acknowledge residents as creators of their own communities.

What can we learn from *cluster analysis*?

CHPC's study relied on cluster analysis, which is an analytical methodology that parses out data sets based on shared characteristics of the data. It allows patterns and trends to be revealed that would typically be obscured. When applied in tandem with GIS mapping it has the added advantage of translating similar characteristics to their physical location, shedding new light on the built environment and how certain clusters that share characteristics are distributed throughout the city.

Our analysis began with 16 variables that reflect core demographic characteristics from the federal decennial census. As defined by the U.S. Census the variables capture information regarding race, household income and composition, educational attainment, age, and presence of foreign born household members. The combinations of characteristics shared by NYC residents resulted in the identification of each census tract in the city as belonging to one of 14 clusters, with race being the most significant driver of cluster identity. Comparing the clusters in 2000 and 2010 illuminated where changes had taken place. Those changes revealed increases in population for some clusters, decreases in others, and where clusters were transitioning from one set of shared characteristics to another. These trends are summarized below.

It is important to wrap the findings of this study in a useful context. To do this, we are layering data that reflects housing type on top of the demographic shifts. We use location, building size, tenure, and room counts to see what kinds of housing stock are involved in the demographic turnover our results show. We then look at housing code violations and foreclosures data citywide to discern any patterns that may have a correlative or causal relationship with the cluster shifts.

Changing Places

Our analysis uncovered five major trends that encapsulate the cluster shifts from 2000 to 2010. Each of the following synthesizes the changes that multiple clusters experienced in that period:

- Despite an overall decline by 3% of the city’s white population, four majority-white clusters increased in population. The decade saw increasing concentrations of predominantly white, upper-middle income homeowner areas—located in places like Kew Gardens Hills in Queens, Midwood and Windsor Terrace in Brooklyn, and Pelham Bay in the Bronx;
- The city’s black population citywide fell by 5%, including the transition of traditionally middle-income black areas to a greater racial mix, as well as wealthier black clusters shading poorer at their borders such as in East Flatbush, Brooklyn, Hollis and Jamaica, Queens, and Woodlawn in the Bronx;
- The largest numerical increases occurred among population clusters that are largely white and mid- or high-income, as in Astoria, Queens, Lower Manhattan, and Clinton Hill and Williamsburg in Brooklyn;
- Two predominantly white clusters made a subtle transition to being more mixed communities of white and Asian households that are similar in non-racial aspects, such as North Riverdale in the Bronx, Middle Village, Queens, Yorkville in Manhattan, and Bensonhurst, Brooklyn; and
- A divergence occurred among predominantly Hispanic clusters: an increase of poor Hispanic clusters, which in 2010 were the largest in number (exceeding 1 million people) such as in East Harlem in Manhattan, East New York in Brooklyn, and Ridgewood, Queens—at the same time as Hispanic working class tracts changed to a higher-income cluster, such as in Washington Heights in Manhattan, Elmhurst in Queens, and Sunset Park, Brooklyn.

Behind those more sweeping transitions were the gains and losses of population by the individual clusters in our study. The following chart displays the rates at which the population clusters grew or declined from 2000 to 2010:

Population cluster	Population 2010	% change in population
White&racial mix/high-income/singles&non-families	464,950	+44.1%
White/high-income/families	885,575	+29.1%
Hispanic/low-income/household mix	1,089,335	+18.4%
White&racial mix/middle-income/household mix	710,399	+16.6%
White&Asian/high-income/household mix	558,479	+12.2%
Black/low-income/household mix	928,372	+6.3%
Black&Hispanic/very-low-income/household mix	548,493	+4.7%
Hispanic/low-middle-income/families	494,791	+1.3%
White/high-income/singles	577,435	-7.0%
Asian&racial mix/low-middle-income/household mix	380,760	-9.0%
White/high-income/household mix	343,114	-14.8%
Black/high-income/families	506,577	-18.9%
White&Hispanic/middle-income/household mix	293,027	-33.5%
Racial mix/middle-income/families	323,742	-37.3%

Taken together, the insights this study unearths can change the way New Yorkers see their city. It can help residents, civic groups, and policymakers see through the lens of residents rather than government boundaries created long ago.

The study's findings should also be tempered. One must remember that it compares just two sets of census information, measuring the change between them by comparing figures at two points in time. It is, in a sense, a snapshot of neighborhood conditions. Though the numbers capture ongoing change in a neighborhood between 2000 and 2010, they are silent after 2010. Residents within clusters today may already be experiencing change that is not captured in the period of study. The extent of this effect is impossible to know without replicating the study with subsequent census data. CHPC hopes to replicate this innovative cluster methodology of this study for subsequent decennial census years and to explore the application of American Community Survey data, which may be able to provide some information between the federal census years.

Rollout and Next Steps

Because of the complexity of this approach and the variety of information that it presents, it is imperative that we use multiple communication formats in addition to traditional report writing to explain what this work does and why it is important.

CHPC is working to create informative, clear, and memorable data visualizations that can communicate the information to spur debate and discussion. This will produce both web-based, interactive graphics and maps and a written version for distribution.

In addition CHPC is considering a public exhibition to further broaden our audience, as was done with the successful Making Room exhibition at the Museum of the City of New York.

With the combination of the detailed research paper, powerful data visualization, and effective outreach, CHPC will be able to provide policymakers a new foundation for analyzing New York City's neighborhoods and "seeing" communities change. The cluster approach to analyzing urban demographics should also provide a template for researchers elsewhere to replicate.

We expect the full research report and data visualization component to be complete in Spring 2014.