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Inclusionary Housing in San Francisco: Mapping Racial Integration, Neighborhood Change, and Affordability

Ayse Pamuk and Jeremy Hill
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The Center for Applied Housing Research (CAHR) seeks to expand faculty research on housing to make PACE a central hub where students, policy makers, practitioners, and other housing leaders can come together to examine and understand housing policy issues in the Bay Area and beyond. CAHR provides a platform for introducing innovative solutions to affordable housing problems through activities such as supporting faculty and student research, offering a practitioner (co)-taught course on housing, and hosting an annual Distinguished Speaker Lecture. Seed funding from Merritt Community Capital Corporation for CAHR is greatly appreciated.

Abstract

In the United States, residential segregation – restrictions on location of housing for certain groups in certain places – historically had negative consequences for racial minorities who were unable to access jobs, education, and public services. Partially in response, more than 500 municipalities nationwide have adopted inclusionary zoning (IZ) programs to address affordable housing and segregation problems. Inclusionary housing has two main objectives, which are sometimes linked and sometime in opposition: 1) to increase the supply of affordable housing; and 2) to promote racial and economic inclusion and integration. IZ programs use income levels to target inclusion but the overlap between racial segregation and economic segregation means IZ programs are quite likely to also promote racial inclusion. Past research has assessed the effectiveness of IZ programs across the United States, using local jurisdiction (city or county) as the unit of analysis and generally focusing on the productivity of the programs or design attributes of the projects. Few have analyzed the racial integration effects at the neighborhood level. This paper focuses on San Francisco's inclusionary housing program and its effectiveness in terms of its contribution to racial and ethnic integration at the census tract level between 1990 and 2010. Using a proximity analysis to measure racial and ethnic integration in census tracts in close proximity to new developments with below-market-rate (BMR) units, the paper finds that the statistically significant increases in Asian, Hispanic, and Non-White population percentages occurred outside of census tracts with BMR developments. This research suggests that the sheer volume of new market rate units dwarfed the racial and ethnic integration effects of the IZ program's BMR units in tracts with new development between 1990 and 2010.

Inclusionary Housing in San Francisco: Mapping Racial Integration, Neighborhood Change, and Affordability

Ayse Pamuk[1] and Jeremy Hill[2]

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INTRODUCTION

In the United States, residential segregation – restrictions on location of housing for certain groups in certain places – historically had negative consequences for racial minorities who were unable to access jobs, education, and public services. As Richard Rothstein (2017) shows in "The Color of Law," the history of residential segregation can be traced back to exclusionary zoning laws and color-coded federal mortgage lending maps and underwriting guidelines developed by the Home Owners Loan Corporation (HOLC) in the 1930s. Randy Shaw (2018) agrees and argues in "Generation Priced Out" that today's restrictions on multi-family housing and increased density, although based on class rather than race, have the same effect (p. 192-3). In response to concerns about social isolation, reduced employment options, and access to equal education opportunities, more than 500 municipalities nationwide have adopted inclusionary zoning (IZ) programs to address affordable housing and segregation problems. A significant majority of inclusionary housing programs are located in New Jersey, California, and Massachusetts (Hickey et.al., 2014). Seventy-two percent of cities in the nine-county Bay Area had inclusionary housing programs as of 2014 (Urban Displacement Project, Feb. 2016).[4]

Inclusionary housing has two main goals: 1) to increase the supply of affordable housing; and 2) to promote racial and economic inclusion and integration. IZ programs use income levels to target inclusion but the overlap between racial segregation and economic segregation means IZ programs are quite likely to also promote racial inclusion. Past research have assessed the effectiveness of IZ programs across the United States using local jurisdiction (city or county) as the unit of analysis. These studies have focused on the productivity of the programs (e.g., units

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[3] An earlier version of this paper was presented at a PACE Brown Bag Paper Series at San Francisco State University (March 20, 2019). Helpful comments by attendees as well as Charles McNulty, Ed Goetz, Kristy Wang, and Peter Cohen are greatly appreciated. All of the above are, of course, absolved from responsibilities for any remaining errors.

[4] Also see Grounded Solutions Network's interactive Inclusionary Housing Database Maps https://inclusionaryhousing.org/map/

produced) and design attributes of the developments (e.g., visual appeal, mixed-use, compact, and high-density). Few have analyzed the racial integration effects at the neighborhood level.

This paper focuses on San Francisco's inclusionary affordable housing program and its effectiveness in terms of its contribution to racial and ethnic integration at the census tract level. Following a description of our research approach and an overview of past research on inclusionary housing, the paper provides a brief history and description of San Francisco's inclusionary housing efforts. The rest of the paper reports our findings in three main sections. First, the spatial distribution of Below Market Rate (BMR) projects are discussed. Second, the demographic characteristics of program beneficiaries are presented. Third, the extent to which BMR units have contributed to racial and ethnic integration is examined with statistical significance testing. The paper concludes with our conclusions and policy significance of our findings.

RESEARCH APPROACH

The investigation focuses on the extent to which the Inclusionary Housing program in San Francisco contributed to racial and ethnic integration between 1990 and 2010. To answer our research question we used thematic mapping and buffer analysis with ArcGIS. In addition, we created descriptive statistics tables and carried out difference of means testing in SPSS.

The project level inclusionary housing data (1992-2017) comes from the San Francisco Mayor's Office of Housing and Community Development (MOHCD). We geocoded the addresses for all developments subject to the requirements of the Inclusionary Housing Program and analyzed the spatial distribution of Below Market Rate (BMR) units over time. MOHCD also provided race and ethnicity of program beneficiaries (for the first applicant when the new development was built) between 1992 and 2017 at the census tract level (using 2010 census tract boundaries), which we summarized in a table and mapped.

Decennial census data (100 % count) for 1990, 2000, and 2010 were used to analyze neighborhood level change in racial and ethnic composition. Census data was downloaded from Social Explorer.[5] Census tract boundaries for 1990 come from the National Historical GIS (NHGIS)[6] and the 2010 census tract boundaries (TIGER line shape files) were downloaded from the U.S. Census Bureau web site.[7]

OVERVIEW OF INCLUSIONARY ZONING IN THE UNITED STATES

The set of policies known as inclusionary zoning (IZ) has two main policy goals: increasing the supply of affordable housing units and increasing integration along the lines of race, ethnicity, and income. Much of the literature on inclusionary zoning has focused on the program's capacity for increasing the overall supply of affordable housing. Most studies demonstrate that inclusionary zoning, to varying degrees, does increase the overall supply of affordable housing, although the trade-offs may include increased prices for market rate housing or decreased rates of production. It is also possible that the two goals of IZ, increased supply and increased integration, are at odds with each other to a degree, as it is more economically feasible to produce more affordable units when they are clustered together rather than dispersed throughout a set of market-rate developments (Mukhija et al. 2015). A common criticism posed

[5] https://www.socialexplorer.com/
[6] https://www.nhgis.org/
[7] https://www.census.gov/geo/maps-data/data/tiger-line.html

by opponents of IZ is that forced inclusion of BMR units negatively impacts project feasibility and further constrains market production (Bento et al. 2009; Ellickson 2010; Mukhija et al. 2015). Ellickson in particular has questioned the social benefits of mixed-income housing and argued that using vouchers to subsidize low-income renters in the private market is a more economically efficient method.

There have been some studies that have shown an adverse effect on the overall housing supply as a result of inclusionary zoning, but these studies have also been criticized for their methodological or ideological flaws (Sturtevant 2016). It is difficult to make causal claims about the effects of inclusionary zoning because it is impossible to create experimental conditions – it is impossible to know what would have happened in a particular jurisdiction if IZ had not been implemented. The best that researchers can hope for is to compare two similar jurisdictions, one of which had IZ and one of which did not (Sturtevant 2016). In this vein, a study of Southern California municipalities with IZ versus those without found no statistically significant effect on the creation of new housing (Mukhija et al. 2010). Another study however, comparing IZ in the Boston area and the San Francisco Bay Area, did find a potential effect on the number of housing starts and increase in housing prices in Boston but not in the Bay Area. In Boston, the study found that IZ policies contributed to increased housing prices and decreased levels of production (across all market rate and affordable housing) during periods when housing prices overall were increasing. In San Francisco, there was no statistically significant connection between IZ and a change in the overall number of housing starts, and while IZ was found to increase housing prices during high-growth times, it tended to decrease housing prices during down market periods. The study's authors suggested that this difference could be attributed to the longer history of IZ programs in the Bay Area, the greater flexibility of Bay Area programs and the presence of more developer incentives such as density bonuses, and the fluctuations in the overall housing market (Schuetz et al. 2011).

A crucial thing to keep in mind is that not all inclusionary zoning programs are alike and that the simple presence of IZ is not sufficient to ensure a significant increase in the affordable housing supply. One key finding from this research is that the presence of certain structural elements in municipalities' IZ programs effects the ability of the program to increase overall supply. The different variables include: mandatory or voluntary program participation, in-lieu impact fees, regional zoning, and income targets (NPH 2007; Schuetz et al. 2009; Sturtevant 2016). It is not surprising that one of the strongest predictors of an IZ program's success is whether or not the program is mandatory or voluntary (NPH 2007). Other relevant variables include income-targeting of the BMR units using Area Median Income (AMI) levels, "onsite" allocation of BMR units versus "offsite" affordable housing built independent of the principal market-rate project, and the minimum number of affordable units (Wiener and Barton 2014).

These findings show that, in general, making participation mandatory leads to greater effectiveness. Program flexibility is one of the most significant variables to take into account when analyzing the programs of different cities, counties, and states. One study conducted on 17 cities in Los Angeles and Orange Counties supports the notion that mandatory program policies produce more IZ units than that of voluntary programs (Mukhija et al. 2010). The study found that Lake Forest, Long Beach, and Monrovia were the three least productive cities in the region in terms of how many IZ units were produced and all three had voluntary IZ programs.

Furthermore, Newport Beach, which previously had a voluntary program, became much more productive after adopting a mandatory participation policy. This study indicated that program participation is a determining variable linked to program efficiency, and that cost offsets alone were not considered successful variables for cities that did not also incorporate mandatory participation.

Another study however, has suggested that voluntary programs can be nearly as effective as mandatory programs (while being less politically toxic and vulnerable to legal challenge) as long as sufficient incentives are offered (Jacobus 2015). The most common and successful incentive is the density bonus, where developers are allowed to build more units on a given plot of land than would normally be allowed by planning or zoning regulations. It is important to note though that incentives must be tailored to locality and the moment in time – it might not make economic sense for developers or political sense for a community to build at a higher level of density and therefore the incentive would not be effective in inducing developers to include the IZ units (Jacobus 2015).

When attempting to measure the impact of IZ programs on housing supply, it is also important to state that many researchers have expressed difficulty with determining precise numbers for how many units have been created through IZ programs (Freeman & Schuetz 2017; Kontokosta 2014; Mukhija et al. 2010; Sturtevant 2016). In part this is because of the limits on municipalities' ability or will to collect precise data, and in part because a key feature of many IZ programs, the in-lieu fees developers can choose to pay instead of producing BMR units, are rarely tracked and analyzed to determine how many additional units of housing may have been created with these dollars. For instance, many cities put the in-lieu fees into a fund that is used to provide gap financing for non-profit affordable housing developments. Extra work must be done to try and track these funds and convert them into a total number of affordable units produced.

Finally, research shows that the private housing market must be fairly robust for inclusionary zoning to work (Jacobus 2015; Sturtevant 2016; Wiener & Barton 2014). While the involvement of private for-profit developers is often seen as a positive aspect of IZ, in times of recession or slow growth this can be a significant limitation on the program's effectiveness. It is also imperative to note that overall effects on the supply of affordable housing, while positive, are also generally understood to be fairly limited (Diagne et al. 2018; Freeman & Schuetz 2017; Metcalf 2018). The regulations, whether voluntary or mandatory, only apply to a small percentage of new units produced, which still constitutes only a small fraction of the overall housing stock in most locations. In the current landscape, civic leaders looking to increase the supply of affordable housing and promote integration should think of inclusionary zoning as one component or a larger comprehensive strategy with multiple options or tools, particularly in down market or slow growth periods.

INCLUSIONARY ZONING AND INTEGRATION EFFECTS

Despite a rapidly growing body of literature on inclusionary zoning and its effects on the supply of affordable housing units, for the most part existing research has not addressed the second intended goal of inclusionary zoning, which is the integration of neighborhoods along racial, ethnic, and socio-economic lines. Constantine Kontokosta has used robust databases encompassing 12,000 IZ housing units in Montgomery County, Maryland, and Suffolk County,

New York, to provide a unique contribution to this research. Kontokosta looked at the effects of IZ on integration by race, ethnicity, and income on the census tract level between 1980 and 2000. He used two methods to analyze the production and spatial distribution of low income housing; the first was a logistical regression analysis to estimate the likelihood of a neighborhood to receive IZ units, and the second was a fractional logit model analyzing the factors affecting the proportion of BMR units built in relation to total housing units built. Housing production was tracked by decade to coordinate building trends with effective policy at the time of development. Census tract characteristics were also grouped by race, average household income, median gross rent, and average number of IZ units in adjacent census tracts.

Kontokosta found that the initial placement of IZ units is central to understanding the integration effects of the program (Kontokosta 2014). In both counties, the study found that more racially diverse neighborhoods were more likely to receive IZ units in the first place (Kontokosta 2015). As well, neighborhoods more likely to receive IZ units also tended to have a greater diversity of housing stock and a higher proportion of rental and multi-family housing. This was somewhat expected, as mixed-income housing production is more feasible, on a per unit basis, in multi-family housing rather than single-family housing. Integration effects therefore have to be understood in light of the knowledge that neighborhoods with IZ units were already more integrated than those without. Overall, tracts with IZ units had larger relative increases in both racial and income integration, and tracts that were considered most likely to receive IZ units showed a statistically significant degree of decline in white population relative to tracts without IZ units.

Kontokosta found that in Montgomery County, neighborhoods with IZ units did become more racially diverse, while income diversity did not show significant change. Kontokosta futher argues that the decrease in non-Hispanic white population in IZ tracts in Montgomery County was greater than could simply be accounted for by the numbers of residents living in IZ units, suggesting a secondary indirect effect. In Suffolk County, the decrease in non-Hispanic white population coupled with the fact that IZ tracts initially had higher concentrations of black and Hispanic residents and higher concentrations of poverty, suggests that segregation and concentrated poverty were actually increased through the siting of the IZ units. This contradicts one of the main stated goals of inclusionary zoning, increasing integration and providing low-income and minority populations' access to high-opportunity neighborhoods.

Both counties had adopted a form of IZ, but the overall differences in functionality between them were highly varied at the time of the study. Suffolk County maintained a laissez-faire position with land use regulation, leaving most authority to the local level, whereas Montgomery County maintained regional control over IZ policies, land use, and zoning decision making. Kontokosta concludes that potential variables influencing the existence of ineffective distributions of IZ unit integration in Suffolk County can be attributed to the lack of regional authority and oversight over locally implemented programs. As revealed in Montgomery County, housing stock production increased as a dependent variable where more regional control over land use and IZ is allocated. IZ unit proportions were also shown to increase where the total number of housing units increased (Kontokosta, 2014).

One other observation made by Kontokosta was that the Montgomery County data in particular suggested that there could be fewer minorities finding units through the IZ program relative to their proportion of the population. Kontokosta suggested that this could reflect the importance of social and community networks in sharing relevant information, but also there could be a flaw in the allocation process, something which all IZ programs must monitor. A more recent study grapples with the question of whether Montgomery County's IZ program was discriminatory toward African-American applicants for homeownership and whether the geographical placement of African-American homeowners in the program perpetuated or mitigated segregation (Diagne et al. 2018). Except for the period between 1995 and 2000, the authors found that, at least for the homeownership portion of the program there was no measurable difference in access to IZ units for African-Americans versus other racial groups. The study also found that on the larger neighborhood level there was some segregation, mostly attributed to self-sorting, but on a smaller block and street address level the program did disperse African-American IZ recipients throughout the larger developments. These authors reiterated a couple of important findings from other IZ scholars that are worth mentioning. First, they suggested that the size and design of IZ units, compared with market-rate units, might lead to clustering within a subdivision or larger development. Second, they also point out that the share of the overall housing stock represented by IZ units is very small, even in Montgomery County, which has one of the nation's oldest and largest IZ programs.

SAN FRANCISCO'S INCLUSIONARY AFFORDABLE HOUSING PROGRAM

San Francisco's *mandatory* Inclusionary Affordable Housing Program ("Inclusionary Housing") is governed by Section 415 of the San Francisco Planning Code. That "affordable housing is a paramount statewide concern" was declared in California Government Code Section 65580 in 1980 (SF Planning Code § 415.1(a)). San Francisco's Inclusionary Housing Program, which was created in 1992[8], mandates "the cooperative participation of government and the private sector in an effort to expand housing opportunities and accommodate the housing needs of Californians of all economic levels" (SF Planning Code § 415.1(a)(2)).

Under current requirements, any market-rate housing project that consists of 10 or more units must choose one of three options: 1) build Below Market Rate (BMR) units on-site (12-20% of the number of units[9]); 2) build BMR units off-site within one mile of the principal project (25-30% of the number of units[10]); or 3) pay in-lieu fee (20-33% of the dwelling units in the principal housing project)[11] (SF Planning Code § 415.3 and 415.5). Planning Code 415 also specifies affordable housing requirements in Special Use Districts (e.g., Eastern Neighborhoods).

[8] The original less restrictive version of the inclusionary housing policy (first adopted in 1992) "applied only to Planned Unit Developments (PUDs) and developments seeking conditional use permits" (Hickey et.al., 2014 p. 52). In 2002 the Inclusionary Housing Program became mandatory covering all residential developments and added off-site and in-lieu fee compliance options.

[9] San Francisco Board of Supervisors increased the minimum percentage for on-site BMR housing to 18% -- lower than what voters approved (25%) with Proposition C in 2016 (Nagraj 2018).

[10] San Francisco Board of Supervisors increased the minimum percentage for off-site BMR housing to 30% -- what voters approved with Proposition C in 2016 (Nagraj 2018).

[11] As of January 1, 2019, in-lieu fee is based on the Gross Floor Area of residential use, rather than the number of dwelling units, applied to the applicable percentage of the project. For example, for large (25 or more units) ownership projects, the fee will be 33% of the project's Gross Floor Area of residential use.

The majority of developers still choose the on-site option but the trend has been for an increasing number to choose the fee payment option while only a small handful choose the off-site option. Before 2000, all of the developments subject to section 415[12] chose the on-site option for their affordable housing obligation. From 2000 through 2009, 87.3% of developments chose the on-site option, 11% chose the fee payment, and 1.7% chose the off-site unit option. From 2010 through 2017, 59.3% of developments had on-site units, 35.7% chose the fee payment option, and 5% chose to build affordable units off-site.

San Francisco's Inclusionary Housing Policy was first adopted in 1992 though it was very narrowly applied to certain types of developments and was at the discretion of the Planning Commission—in other words, it was not mandatory or universal. In 2002, the City adopted a fully updated policy that made inclusionary housing a mandatory standard and set consistent requirements across all developments.[13] San Francisco's Inclusionary Housing Program has produced 2,238 Below Market Rate (BMR) units (Table 1) – the program produces both owner-occupied (53.8%) and renter-occupied (46.2%) units. Table 1 shows that 1,186 BMR units have been added to the city's housing stock between 2010 and 2017. This is 52.9% of the total BMR units built since the inception of the program in 1992. In other words, over half of the BMR units have been built in just seven years (2010-2017). The table also shows that 951 units, or 43% of the total production, were added during the years 2000-2009 since the policy was revised as a mandatory requirement. In contrast, only 5% of the total BMR units produced over the life of San Francisco's Inclusionary Housing program came during the time period between 1992 and 2000. This clearly indicates the effectiveness of the policy once it became mandatory rather than its early inception as a narrow and discretionary policy.

Table 1: San Francisco's Inclusionary Housing Program Production

	Pre-2000	2000-2009	2010-2017	Since inception
Total developments	22	103	62	187
Rental	2	31	26	59
Ownership	20	72	36	128
Total BMR units	101	951	1,186	2,238
Rental	4	235	795	1,034
Ownership	97	716	391	1,204

Data Source: San Francisco MOHCD (Jan. 15, 2019)

Table 2 shows the racial and ethnic breakdown of the program's beneficiaries since the program's inception, and Table 3 shows the share of the income-eligible population (30-50% AMI) in San Francisco by race and ethnicity. The Asian population makes up 42.8% of the

[12] Based on Section 415 Declaration data extracted from the SF Open Data site on March 16, 2019.
[13] Thanks to Peter Cohen for summarizing this history.

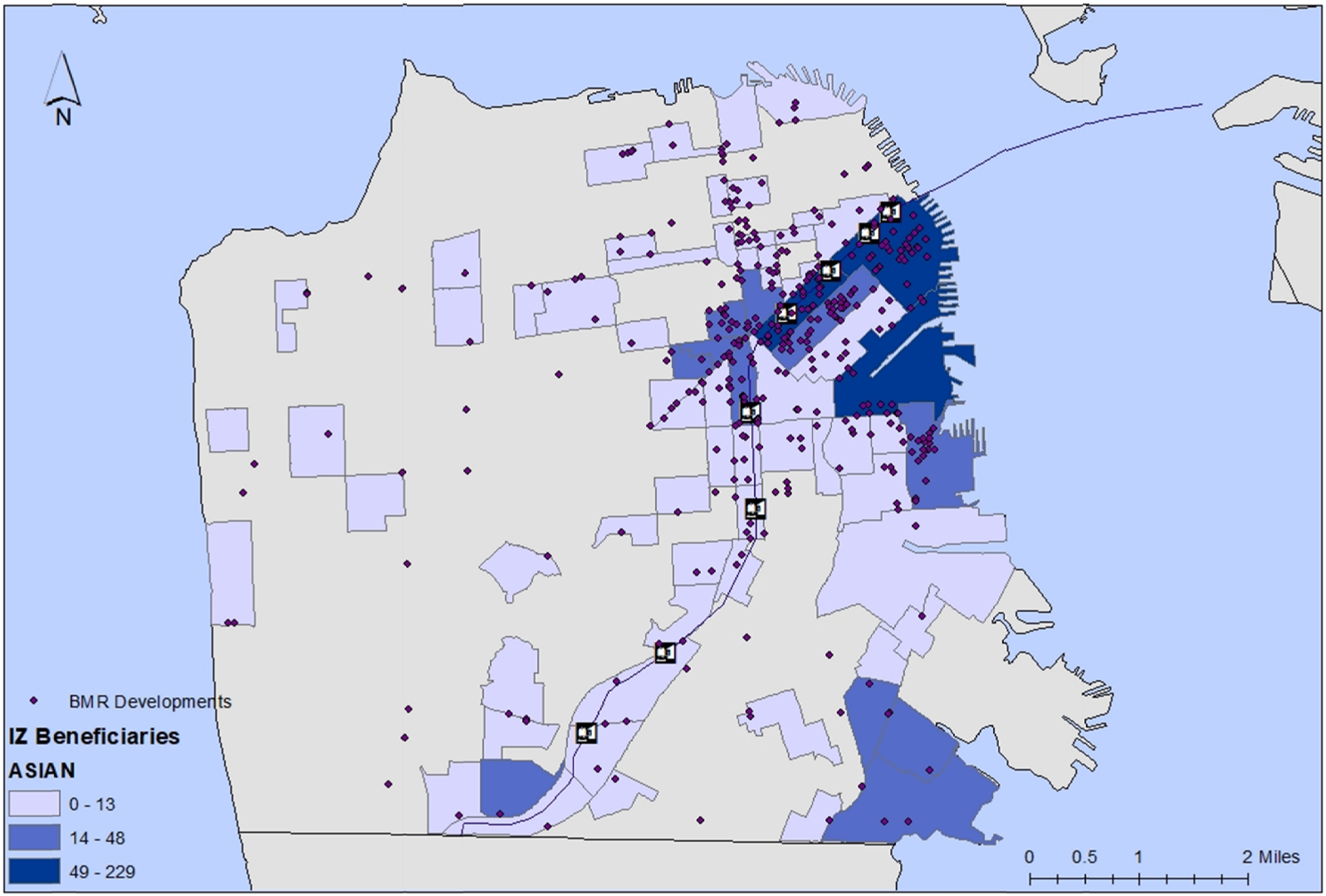
program beneficiaries but only 29.1% of the eligible population in the city. Map 1 shows the spatial distribution of Asian beneficiaries between 1992 and 2017. White beneficiaries are 15.1% of the program participants, representing a lower share than that of low-income White households in the city (37.7%). Black households have obtained 4.1% of BMR units, again lower than their share of all low-income households in the city (6.1%). Hispanic households have obtained 8.8% of BMR units, which is lower than the Hispanic population's overall percentage of low income households in the city (16.1%). However, some of these numbers are lower because race and ethnicity information is unknown for 25% of the BMR recipients. For a large share of the beneficiaries (76.2%) before 2000, race and ethnicity is unknown. Record keeping related to race and ethnicity of program participants at the Mayor's Office of Housing and Community Development has significantly improved in recent years.

The data also show that Asian and White beneficiaries have been predominantly homeowners, while Black and Hispanic beneficiaries have been predominantly renters,. This contrasts with the findings of Diagne et al., who for the most part did not find racial discrepancies in access to IZ homeownership opportunities. Further research into the IZ program in San Francisco would be required to elucidate the potential reasons for these stark discrepancies.

Table 2: San Francisco's Inclusionary Housing Program Beneficiary Demographics				
	Pre-2000	2000-2009	2010-2017	Since inception
Total developments	22	103	62	187
Rental	2	31	26	59
Ownership	20	72	36	128
Total BMR units	101	951	1,186	2,238
Beneficiaries				
Asian	14.9%	45.4%	42.9%	**42.8%**
Rental	1	34	275	310
Ownership	14	398	235	647
Black	0.0%	1.7%	6.6%	**4.1%**
Rental	0	10	66	76
Ownership	0	6	9	15
Hispanic	0.0%	4.1%	13.2%	**8.8%**
Rental	0	16	127	143
Ownership	0	23	31	54
Other	1.0%	2.7%	5.7%	4.2%
Rental	0	8	55	63
Ownership	1	18	13	32
White	7.9%	15.9%	15.2%	**15.1%**
Rental	0	18	89	107
Ownership	8	133	91	232
Unknown	76.2%	30.2%	16.4%	**25.0%**
Rental	3	149	183	335
Ownership	74	138	12	224
Total	100.0%	100.0%	100.0%	100.0%
Data source: SF MOHCD (January 15, 2019).				

Table 3: Low Income Households (30-50% AMI in 2016) in San Francisco by Race and ethnicity, 2016										
Total Households	White	% White	Black	% Black	Asian	% Asian	Other	% Other	Hispanic	% Hispanic
41,583	15,670	**37.68%**	2,536	**6.10%**	12,095	**29.09%**	4,581	11.02%	6,701	**16.12%**
Data Source: MOHCD, April 5, 2019.										

Map 1: Inclusionary Housing Beneficiaries (Asian) 1992-2017



Data Sources: MOHCD SF Open Data download March 16, 2019; Census 2010 TIGER/line data down to the census tract level.
Map excludes fee payment developments.

Any BMR unit addition to San Francisco's housing stock, of course, completely depends on the volume of market-rate production. Mayor Ed Lee's term (2011-2017) coupled with the post-2011 tech boom in San Francisco resulted in increased production of market-rate housing. San Francisco Planning Department reports a total of 18,563 units completed[14] from new construction between 2011 and 2017 (San Francisco Planning Dept., 2018). Recent productivity in BMR housing production, however, has come too late to prevent the current affordability crisis for low and moderate income households in San Francisco.

San Francisco's most recent General Plan Housing Element (adopted by the SF Board of Supervisors and certified by the state of California in 2015) states that "San Francisco's share of the regional housing need for years 2015 through 2022 includes 10,873 housing units for very-low and low-income households and 5,460 units for moderate/middle-income households, and a total production of 28,870 net new units, with almost 60% to be affordable for very-low, low, and moderate/middle-income San Franciscans (SF Planning Code § 415.1(d)).

As the analysis below will show, Inclusionary Housing Program is poised to increase affordable housing production in the next decade, barring an economic recession slowing market-rate housing production, but on its own and in the face of rapid gentrification in San Francisco over the past twenty years, has not been able to meaningfully reverse historical residential segregation patterns.

SPATIAL DISTRIBUTION OF BMR DEVELOPMENTS

San Francisco's BMR developments are predominantly clustered in the South of Market (SOMA) and along the Mission corridor, following the BART transit line. Map 2 shows BMR developments approved between 2000 and 2010. The yellow shaded areas indicate census tracts with a total of 8-35 BMR units.

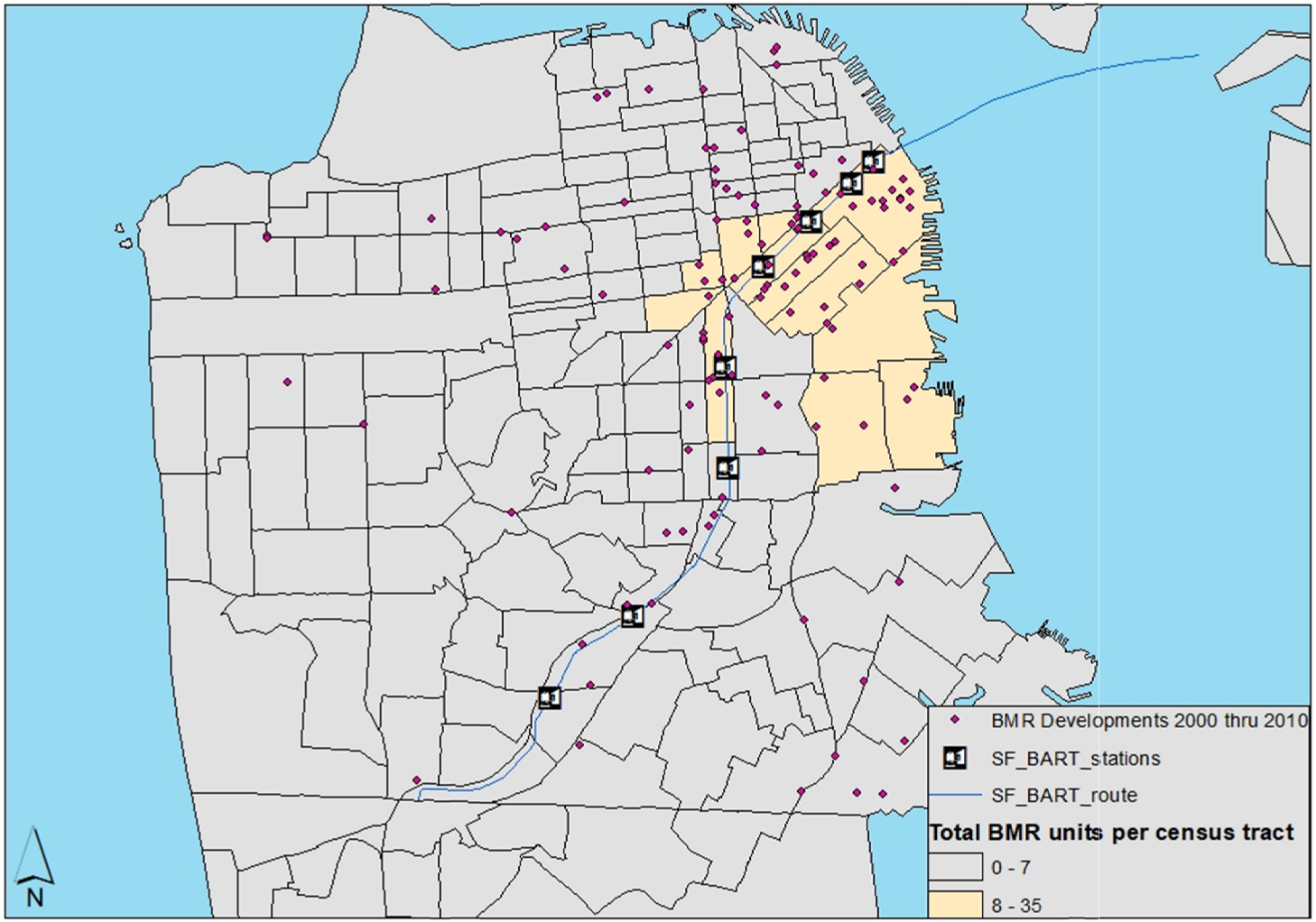
Map 3 shows BMR developments approved between 2010 and 2017 – just in the last seven years. The clustering in SOMA and the Mission, along the BART transit line, has continued. The yellow shaded areas indicate census tracts with a total of 8-35 BMR units. Only a few BMR developments have been built in Western San Francisco, mainly due to neighborhood residents' strong opposition to increasing height limits and densification since the 1970s.

RACIAL/ETHNIC INTEGRATION

Demographic composition of cities change for a variety of reasons over time. San Francisco's total population grew by 11.2 percent between 1990 and 2010. During this time period, Asian and Hispanic populations grew faster than the overall population -- by 27.0 and 20.9 percent respectively (Table 4). In contrast, the Black population saw a whopping 38.2 % drop between 1990 and 2010. The Non-Hispanic White population remained nearly constant, only increasing by 0.1 %.

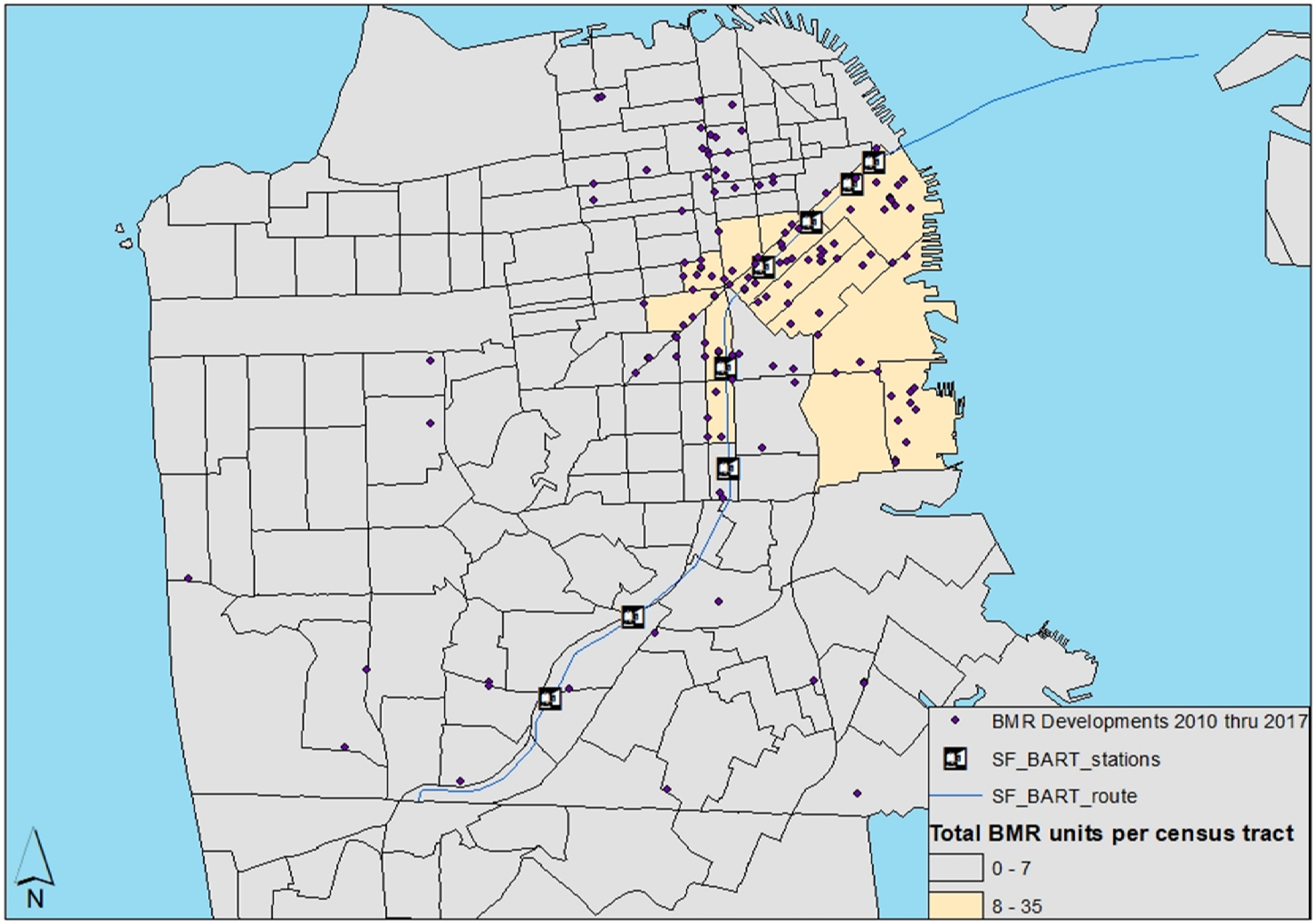
[14] During the same period (2011-2017) units authorized for construction stood at 26,695. In other words, only 69.5 % of units authorized for construction have been completed.

Map 2: Spatial Distribution of BMR Developments (2000 thru 2010)



Data source: SF MOHCD (March 16, 2019 SF Open Data download); Map created using ArcMap 10.4.1.
Map excludes fee payment developments.

Map 3: Spatial Distribution of BMR Developments (2010 thru 2017)



Data source: SF MOHCD (March 16, 2019 SF Open Data download); Map created using ArcMap 10.4.1.
Map excludes fee payment developments.

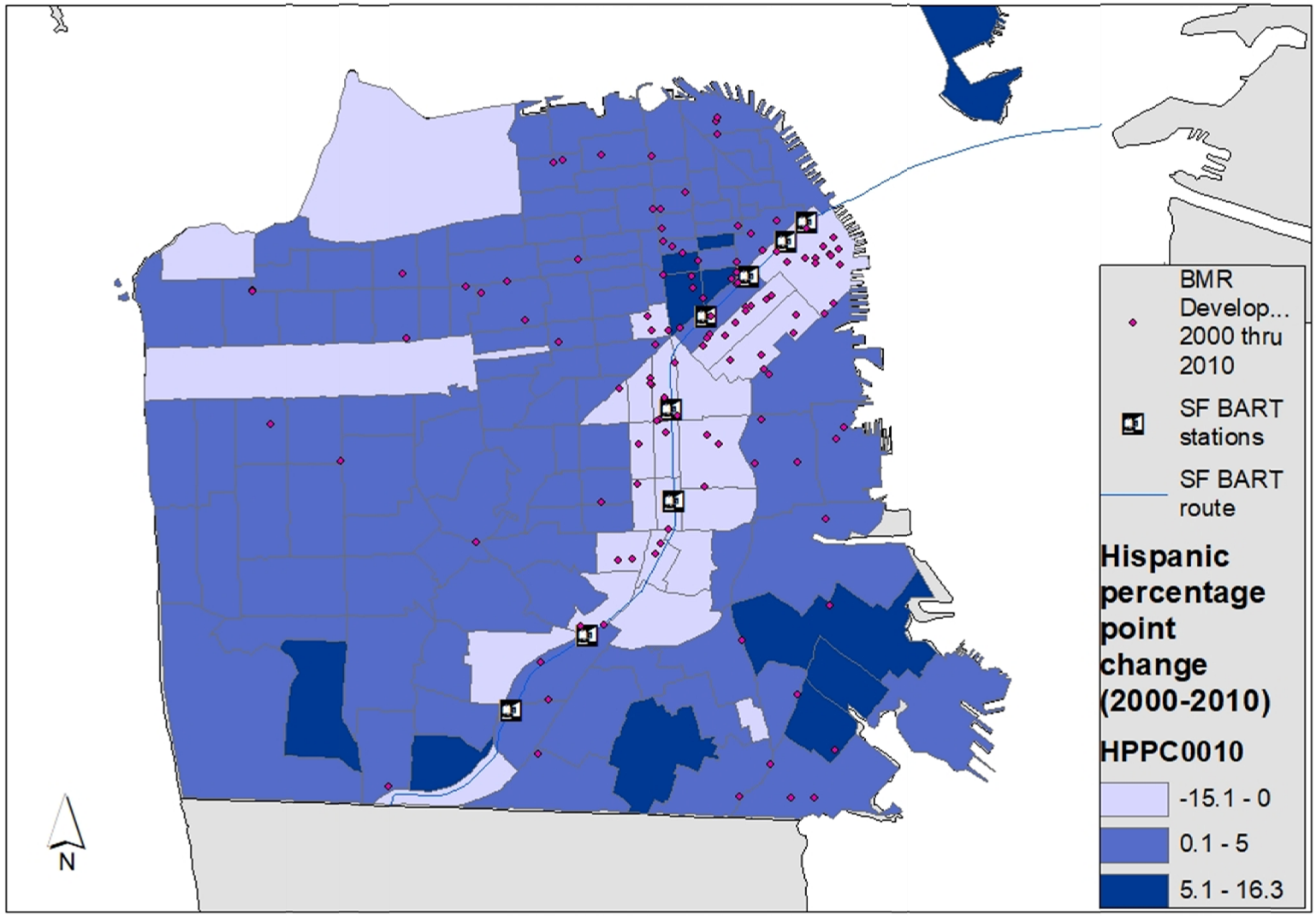
Table 4: Demographic Change in San Francisco, 1990-2010								
	1990	2000	2010	Absolute Change (2000-2010)	Percent Change (2000-2010)	Absolute Change (1990-2010)	Percent Change (1990-2010)	Percentage Point Change (1990-2010)
Total	723,896	776,730	805,235	28,505	3.7	81,339	11.2	
Non-Hispanic White	337,065	338,909	337,451	-1,458	-0.4	386	0.1	-4.7
Non-White*	386,831	437,821	467,784	29,963	6.8	80,953	20.9	4.7
*Non-White here is total population minus "Non-Hispanic White"								
Total	723,896	776,730	805,235	28,505	3.7	81,339	11.2	
White	387,729	385,728	390,387	4,659	1.2	2,658	0.7	-5.1
Asian	210,876	239,565	267,915	28,350	11.8	57,039	27.0	4.2
Black	79,034	60,515	48,870	-11,645	-19.2	-30,164	-38.2	-4.8
Other	46,257	90,922	98,063	7,141	7.9	51,806	112.0	5.8
Total	723,896	776,730	805,235	28,505	3.7	81,339	11.2	
Hispanic Origin	100,713	109,501	121,774	12,273	11.2	21,061	20.9	1.2
Non-Hispanic Origin	623,183	667,229	683,461	16,232	2.4	60,278	9.7	-1.2
Data Source: Decennial census 1990, 2000, and 2010.								

To assess the extent to which BMR units have made a difference in the racial and ethnic composition of neighborhoods where the BMR developments are located, we used U.S. census data on race and Hispanic origin for the decennial census years 1990, 2000, and 2010 summarized in Table 4. We chose 1990 census tract boundaries as our base geographic unit of analysis to accommodate for census tract boundary changes over time. Even though non-White, Asian and Hispanic population percentages have increased city-wide between 1990 and 2010, the buffer analysis shows that this increase happened almost entirely in the tracts outside of where BMR (and market-rate on an even larger scale) development occurred.

Maps 4 and 5 show percentage point change in Hispanic and Asian populations between 2000 and 2010. South of Market and the Mission corridor show a marked drop in Hispanic population between 2000 and 2010 (Map 4). Map 5 shows gains in percentage point of Asian population between 2000 and 2010 in the South of Market neighborhood as well as in the Sunset and Visitation Valley neighborhoods.

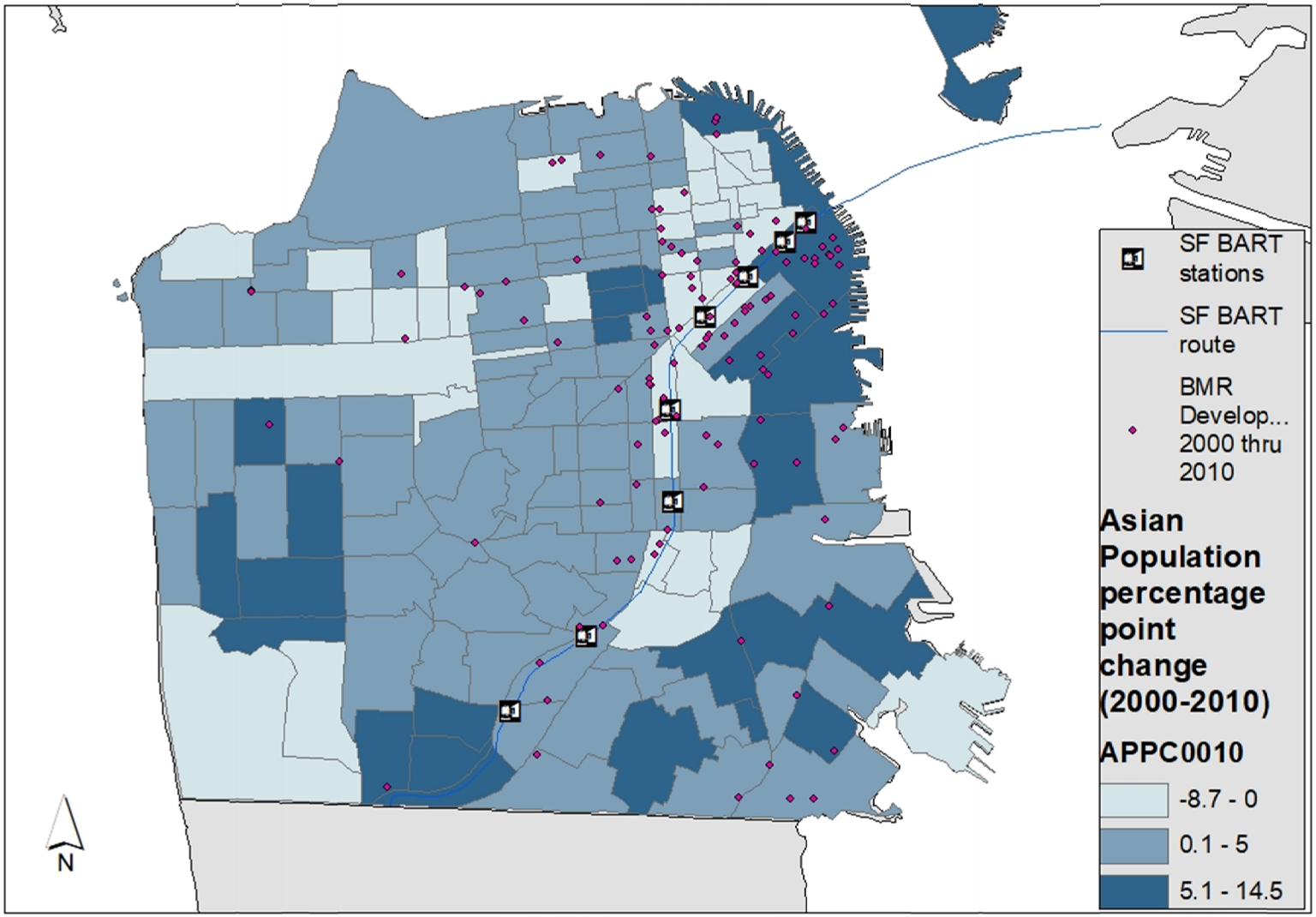
Next, we analyzed whether or not census tracts in close proximity to projects with BMR units have experienced statistically significant change in race and ethnicity using difference of means testing. The proximity analysis involved buffering in ArcGIS to identify census tracts within walking distance of BMR units (defined as 1/4 mile) and creation of a dummy variable (1 for close proximity and all others 0). This dummy variable was created using GIS and exported to SPSS to carry out difference of means testing.

Map 4: Hispanic Population Change and BMR developments (2000 thru 2010)



Data source: SF MOHCD (March 16, 2019 SF Open Data download); Map created using ArcMap 10.4.1.
Map excludes fee payment developments.

Map 5: Asian Population Change and BMR developments (2000 thru 2010)



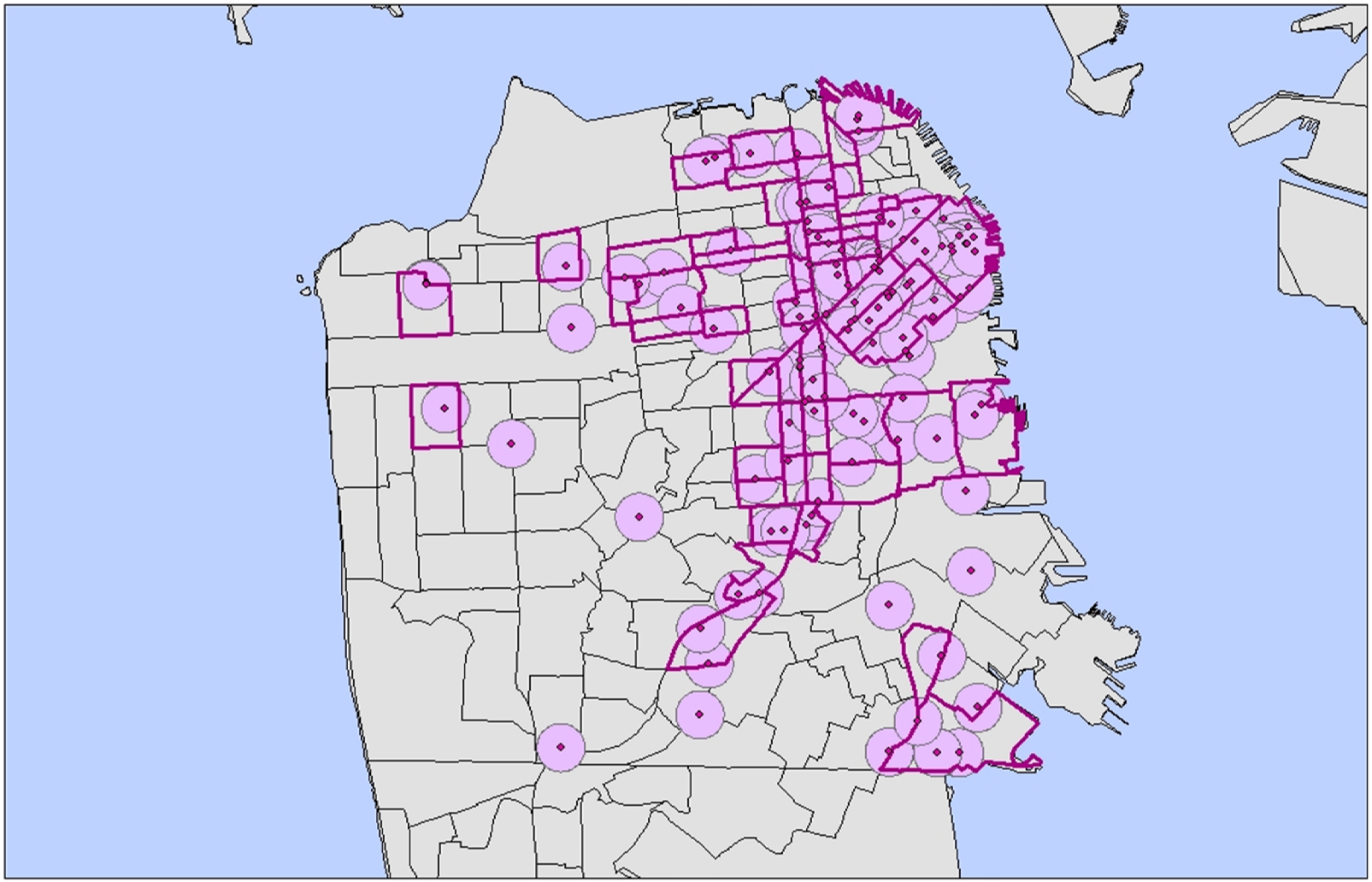
Data source: SF MOHCD (March 16, 2019 SF Open Data download); Map created using ArcMap 10.4.1.
Map excludes fee payment developments.

Table 5: Racial and Ethnic Change and proximity to BMR Developments			
Variable name	Variable description	Within BMR Clusters	Outside of BMR clusters
APPC9000	Asian percentage point change 1990-2000	-0.3	2.5
APPC9010	Asian percentage point change 1990-2010	1.0	4.8
HPPC9000	Hispanic percentage point change 1990-2000	-0.7	0.4
HPPC0010	Hispanic percentage point change 2000-2010	0.2	1.8
HPPC9010	Hispanic percentage point change 1990-2010	-0.6	2.2
NPPC9000	Non White percentage point change 1990-2000	-0.8	3.2
NPPC0010	Non White percentage point change 2000-2010	0.3	2.2
NPPC9010	Non White percentage point change 1990-2010	-0.4	5.4
Difference of means significant for all variables $p < .05$ (two-tail test)			
Data Source: U.S. Census Bureau decennial census 1990, 2000, and 2010; SF MOHCD			

Using the 1/4 mile definition for buffer creation resulted in 55 census tracts falling within close proximity of a BMR development and 91 outside of the 1/4 mile buffer (Map 6). Table 5 shows the results of difference of means testing within and outside of the buffers. All of the results presented in Table 5 are statistically significant ($p<0.05$). Asian population growth has predominantly occurred outside of the buffers. Census tracts are more likely to have experienced Asian population growth (2.5 mean percentage point change) outside of the buffers when compared to inside of the buffers (-0.3 mean percentage point drop) between 1990 and 2000. A similar trend is observed between 1990 and 2010 (4.8 mean percentage point change outside of the buffers, 1.0 mean percentage point change inside the buffers).

For Hispanics, census tracts inside the buffer have experienced a drop in mean percentage point change (-0.7) when compared to tracts outside of the buffer (0.4) between 1990 and 2000. Between 2000 and 2010, Hispanics on average increased more in percentage points outside of the buffers (1.8 percentage point change) than inside (0.2 percentage point change). Overall, between 1990 and 2010, census tracts outside the buffers experienced a mean percentage point increase of 2.2 while tracts within the buffers experienced a mean decrease of 0.6 percentage points.

Map 6: BMR Developments (2000 thru 2010), 1/4 mile buffer, and census tracts with centroid in buffer



Data source: SF MOHCD (March 16, 2019 SF Open Data download); Map created using ArcMap 10.4.1.
Map excludes fee payment developments.

For the overall Non-White population, the increase in population also occurred in higher numbers outside of the buffers than inside. Between 1990 and 2000, the mean increase is 3.2 percentage points outside of the buffers compared to a mean decrease (-0.8) within the buffers. The same trend is observed between 1990 and 2010 with a mean percentage point decrease of -0.4 within buffers and mean increase in percentage points of 5.4 outside of the buffers.

Taken together, the proximity analysis shows that the Asian, Hispanic, and Non-White shares of the population have actually increased *outside* of areas where BMR developments have clustered. This is a striking result, which differs significantly from Kontokosta's analysis of Montgomery County, Maryland, where he found that the placement of IZ units did lead to increased racial diversity. Again, further research would have to be conducted to understand some of the reasons why increased racial diversity is occurring more in areas without BMR units.

These findings likely show that given the sheer volume of market-rate developments in transit rich neighborhoods in SF, even with BMR units also clustered in those same areas they have been unable to reverse a trend to keep minority households in these neighborhoods. BMR units have not led to increased diversity because they are located in tracts where there have been many more new market rate units, and these BMR units cannot offset displacement of minorities or inflow of whites resulting from market rate development.

These results are echoed in UC Berkeley's Urban Displacement project maps that show the same neighborhoods where BMR projects are clustered have also experienced gentrification, especially the South of Market and Mission neighborhoods (http://www.urbandisplacement.org/map/sf)

CONCLUSION

San Francisco's Inclusionary Housing Program is one of the most sophisticated and creatively designed programs in the nation to increase affordable housing supply and keep minorities from being displaced due to gentrification. For example, San Francisco's preferences for city-sponsored affordable housing[15] prioritizes households who are risk for displacement, including 1) former San Francisco residents displaced in the 1960s and 1970s during the federally-funded urban renewal program; 2) tenants who have been evicted by Ellis Act or owner move-in or lost unit due to fire; 3) San Francisco residents who currently live in the same Supervisor district as the market-rate development subject to Inclusionary Zoning requirements or ½ mile from the development; 4) residents who live or work in San Francisco.

While the volume of BMR production has not been sufficient to retain minority households in San Francisco it is a crucial component of a comprehensive affordable housing strategy that should address the many dimensions of the current affordable housing crisis. As the recently completed CASA Compact (2019) articulates, any effective strategy to address the most complex problem our region is currently facing must address not only the production of affordable housing, but also the preservation of existing affordable housing stock, and the protection of tenants. Reliance on market-rate housing development alone to solve the housing crisis appears insufficient and puts longtime residents at risk of displacement. Doing nothing and keeping the housing stock steady would also likely increase displacement.

[15] https://sfmohcd.org/lottery-preference-programs

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