Impacts on Redistricting: The Case of New Rochelle, NY

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Can Synthetic data be used reliably for redistricting?

- The decennial Census and ACS (especially the special CVAP file created by the Redistricting Office) are the core data used in redistricting.
- Using the recently-released Synthetic data based upon the 2010 Census, I will assess the utility of using such Synthetic data for redistricting by comparing the Synthetic Census data ("Synthetic data") with the Census 2010 Released data ("Census 2010")
  - Can Synthetic data be used to assess accurately equal population among districts in redistricting plans?
  - Does Synthetic data give an accurate measure of the presence of minority groups in the population and districts? How is that to be related to Census and other data measuring similar items, such as the ACS Citizens of Voting Age Population (CVAP) or the administrative records CVAP?
  - Do Synthetic data provide accurate enough information about population and distribution of minority and majority residents at the block level to make it possible to create legislative districts reliably?

Census and Redistricting

- Beyond the Census and the ACS, other materials including election data and turnout, party registration, local neighborhood boundaries, physical boundaries, and political boundaries also play a role.
- Much of the analysis for redistricting relies upon the block level data being accurate enough to be combined with other data sources based upon small areas (election districts, small neighborhoods, property data).
- Often the data must be allocated either from the Census or ACS data to other boundaries, or from other boundaries to Census boundaries.
- ***For these reasons, the local accuracy and reliability of the Census block level data is crucial.***

Testing the utility of the demonstration file of Synthetic data created from the 2010 Census

- I will use the case of New Rochelle, a city of about 77,000 in southern Westchester County in New York State, where I authored redistricting plans for two decades.
- Most of the focus will be on the 2011 plan, which used the 2010 PL94-171 data along with the then most recently released CVAP file (2005-2009) from the ACS.
- Noam Bramson, Mayor of New Rochelle, along with a majority coalition of Democrats on the City Council closely monitored the work.
- Additional stakeholders, including the League of Women Voters and other community groups, added their voices and changes were made.
- I worked under the supervision of a well-known Civil Rights lawyer, Randy McClaughlin, with whom I had worked several times in the past.

The need to redistrict New Rochelle

- In 2003 I was involved in the lawsuit that alleged that the African American majority district in New Rochelle had been diluted.
- The outcome of that suit was a new plan that preserved the CVAP majority of the African American district to be in place by the 2007 election.
- New Rochelle settled after the opinion was rendered and I crafted the plan by working with various city officials, including the Mayor and the council majority.
- The plan was approved by all parties and the federal judge overseeing the case.
- However, due to the four year election cycle, the council majority needed to redistrict again in time the for 2011 election since the 2010 Census indicated great change since 2000.

Aspects of the redistricting process

- When lines are redrawn, redistricting is a very public process.
- Usually a legislative body must approve the lines, and often become quite involved in drawing them. They may be challenged in federal or state courts,
- Moving a block or two this way or that is often very important for local redistricting (it was in New Rochelle).
- Once the plan was informally approved by the council, it was publicly released, and several iterations occurred because of community feedback, which were also released.
- Plans from various opponents also had to be reviewed and analyzed.
- In all cases, everyone involved was mindful of the population counts and composition at a very granular level, as well as voting and other patterns.
- The next few slides show the sort of information that is released to the public and also outline “traditional redistricting principles.” The Appendix has much of the other data and information released publicly.
- In my experience, New Rochelle did an excellent job of engaging the community.

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Why Redistrict?

Redistricting ensures fair and equal political representation for all the people of New Rochelle.

Every ten years, the U.S. Census Bureau releases official population counts for all communities and neighborhoods in America. Political district lines at every level of government must then be re-drawn to account for population shifts. This process creates districts of approximately equal population and also helps provide opportunities for minority representation. New Rochelle's six council districts have experienced significant changes in population during the last ten years and must now be re-drawn.

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Legal Requirements (Musts)

Council districts must meet certain legal tests:

Contiguous: Council districts must be contiguous. This means that every portion of a district must be connected.

Approximately Equal Population: Council districts must have approximately equal population. The difference in population between districts should not exceed 10%, and no district should deviate from the population of the average district by more than 5%.

African--American Representation: One district must provide for African-American representation. Depending upon the racial composition, political behavior and history of a community, the Voting Rights Act may require that a district be drawn to offer minority residents an opportunity to select a representative of their choosing. The key metric employed by the U.S. Justice Department is Citizens of Voting Age Population (CVAP.)

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Goals (Shoulds)

In addition to meeting mandatory legal tests, council districts can also be drawn to meet other community objectives. These include:

Hispanic Representation: A council district should be drawn to enhance opportunities for representation of minority groups of substantial size. Hispanics constitute New Rochelle's largest and fastest growing minority, but citizenship rates among Hispanics are much lower than among other demographic groups. The key metric for this test is overall population.

Compact Appearance: To the extent practical, council districts should be compact in form. There are various mathematical and geometrical standards for measuring the compactness of a district.

Neighborhood Cohesion: To the extent practical, neighborhoods should be kept entirely or significantly whole within single council districts.

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Balancing Objectives

As a practical matter, certain redistricting goals may conflict with each other or with mandatory legal requirements.

For example, drawing perfectly compact, equally--sized districts that keep all neighborhoods whole is impossible, because of: (a) wide variations in population density, (b) minority housing patterns, and (c) the sometimes irregular shapes of the census blocks, roadways and physical features that form district boundaries.

Because a redistricting plan can never accomplish every objective, it should be judged by its overall balance.

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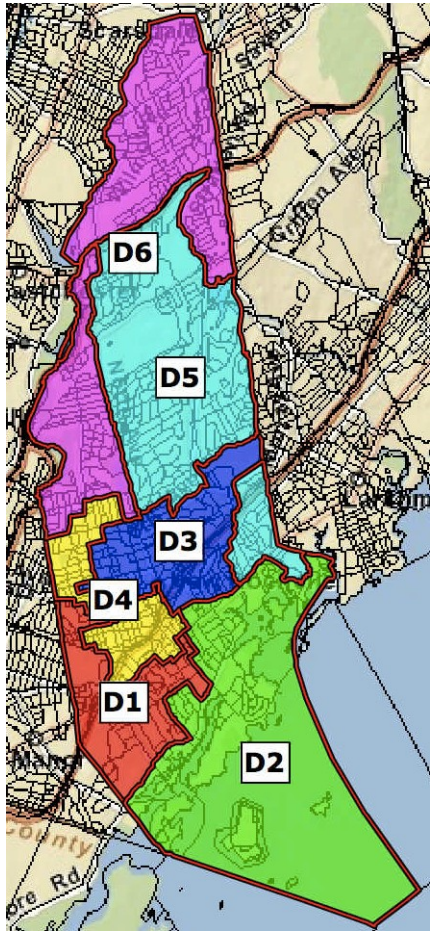
Current Districts: Demographics



District	Popula)on	Deviation	NH White	NH Black	Hispanic
1	12,947	+0.8%	45.8%	10.0%	39.5%
2	12,263	–4.5%	43.4%	23.6%	26.4%
3	12,372	–3.7%	23.8%	42.2%	29.0%
4	14,680	+14.3%	24.7%	19.1%	50.7%
5	11,693	–9.0%	75.3%	9.5%	9.6%
6	13,107	+2.0%	78.8%	8.1%	7.4%
Total	77,062	NA	47.9%	18.7%	27.8%

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Current Districts: Challenges

Because of changes recorded in the 2010 Census, New Rochelle's current council districts now fail the basic Constitutional requirement of approximately equal population. In addition, the current districts fall short of several community goals. The challenges associated with the current districts include:

Unequal Population: The population deviation between the largest and smallest districts is an unacceptably high 23.3% Two council districts deviate from the average district population by 14.3% and 9.0% respectively, higher than the 5.0% standard. This condition alone requires that New Rochelle's districts be re--drawn.

African--American Population Trends: Non-Hispanic Blacks have declined as a share of district three's population since the legal settlement that established the present lines. Providing for African--American representation was the original motivation for establishing council districts in New Rochelle.

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Current Districts: Challenges (Continued)

Divided Hispanic Population: Although Hispanic population city-wide and within various council districts has increased, significant divisions of Hispanic population between districts reduce the concentration of Hispanic residents in any single district and diminish possibilities for Hispanic representation.

Non--Compact Features: The current districts contain several notable physical features that reduce their overall compactness. These include the unpopulated corridor at City Park that connects the northern and southern portions of district five and the corridors that link the west--central, southwestern, and south--central portions of district one.

Split Neighborhoods: The current districts significantly divide several neighborhoods, including the West End and the East End.

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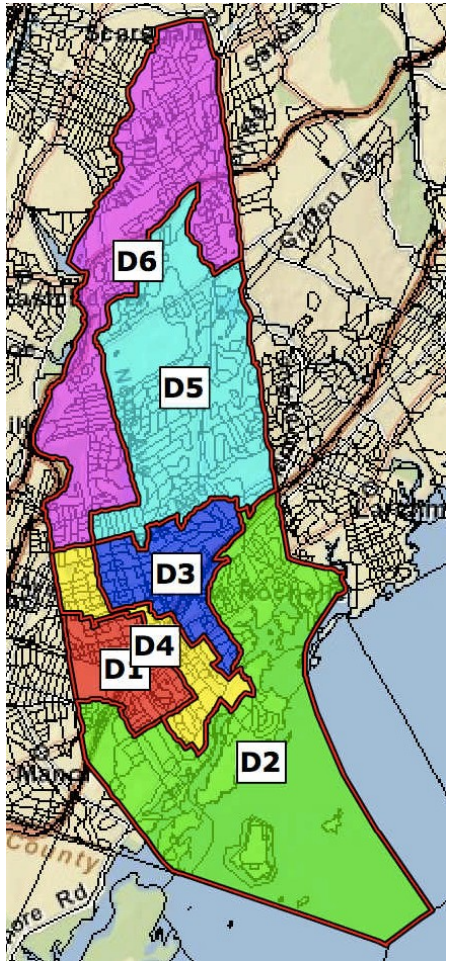
Proposed Districts: Demographics



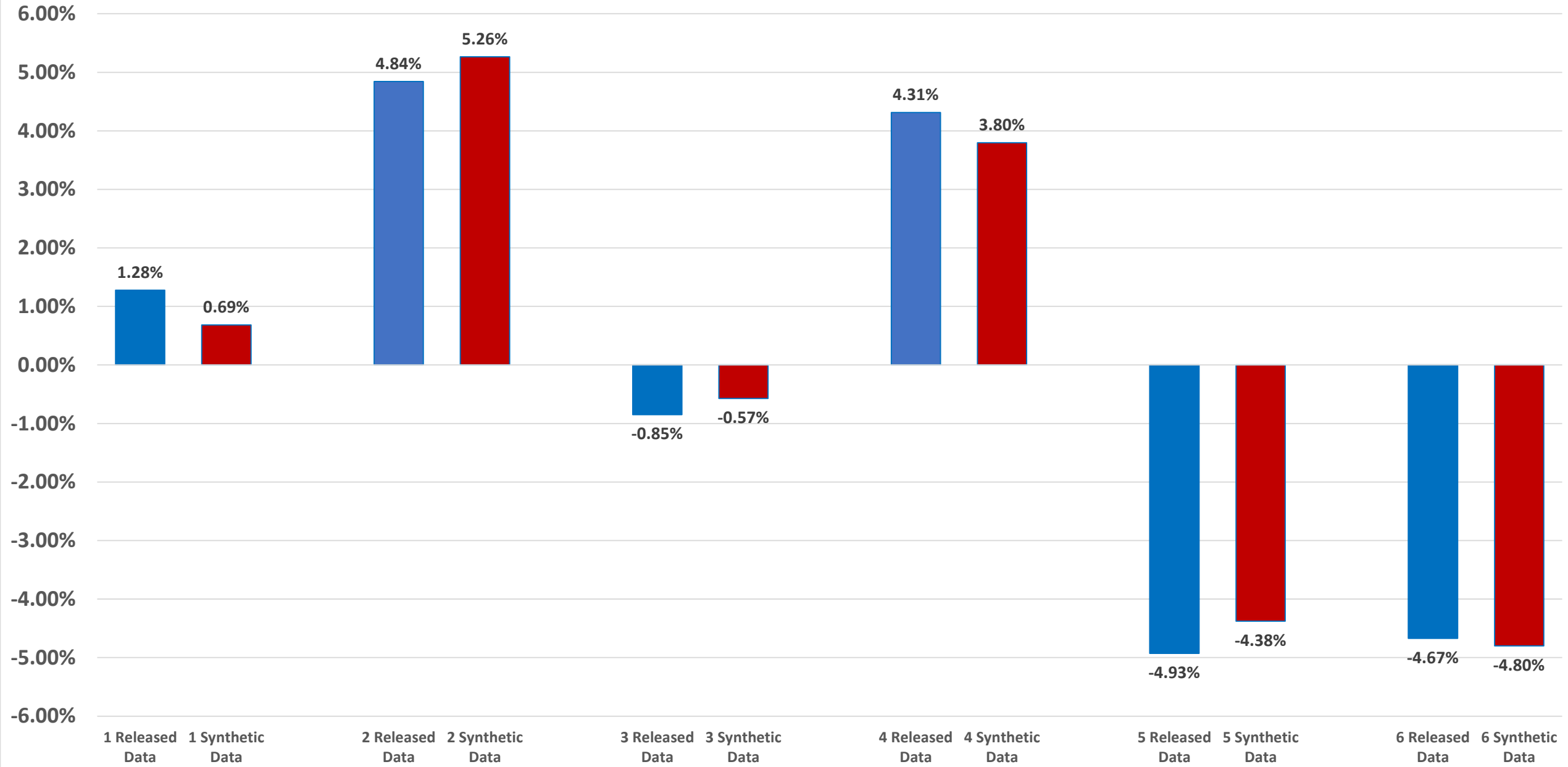
District	Population	Deviation	NH White	NH Black	Hispanic
1	13,008	+1.3%	24.3%	9.8%	62.5%
2	13,466	+4.8%	61.4%	11.7%	20.7%
3	12,735	–0.8%	18.9%	43.2% (52.6 CVAP)*	33.2%
4	13,398	+4.3%	36.4%	26.2%	29.4%
5	12,211	–4.9%	69.3%	12.6%	13.0%
6	12,244	–4.7%	79.9%	8.1%	6.3%
Tot	77,062	NA	47.9%	18.7%	27.8%

* Non–Hispanic Blacks are a majority of Proposed District Three's eligible voters -Citizens of Voting Age Population (CVAP)

Analyzing the Impact of Synthetic Data on the New Rochelle Adopted Plan

- Using the Synthetic data released by the Census Bureau in October, I analyzed how the adopted plan would stack up compared to the official plan (based on 2010 Census data) in three different ways:
  1. Synthetic data population equality compared to Census 2010 population equality.
  2. Synthetic data minority representation compared to Census 2010 minority representation.
  3. Differences at the block level for the Synthetic data versus the Census 2010 data.

Figure 1. Populations Deviations from Ideal (Average) Size by Districts for Census 2010 Data and Synthetic Data



Synthetic Data Inaccurately Shows Plan is “Illegal”

- The Synthetic data reports a deviation in District 2 of 5.26%, while Census 2010 had it at 4.84%.
- Also, the Synthetic data reports a deviation in District 6 of -4.80%, while Census 2010 had it at -4.67%.
- Therefore the total population deviation is now reported to be 10.06%, instead of 9.77%.
- This is a very consequential change. For years, there has been a 10% safe harbor for deviations, except for Congressional redistricting, which requires virtually exact equality.
- In fact, in cases I have testified in and in other settings, efforts to achieve an even smaller deviation are often prioritized.
- In short, given current standards, the districts would fail to meet “traditional redistricting principles” if they were based upon the Synthetic data.

Figure 2. Adopted District 1 with 2010 Census Data Compared to Synthetic Data for Major Race and Hispanic Groups (Hispanic Majority District CVAP)

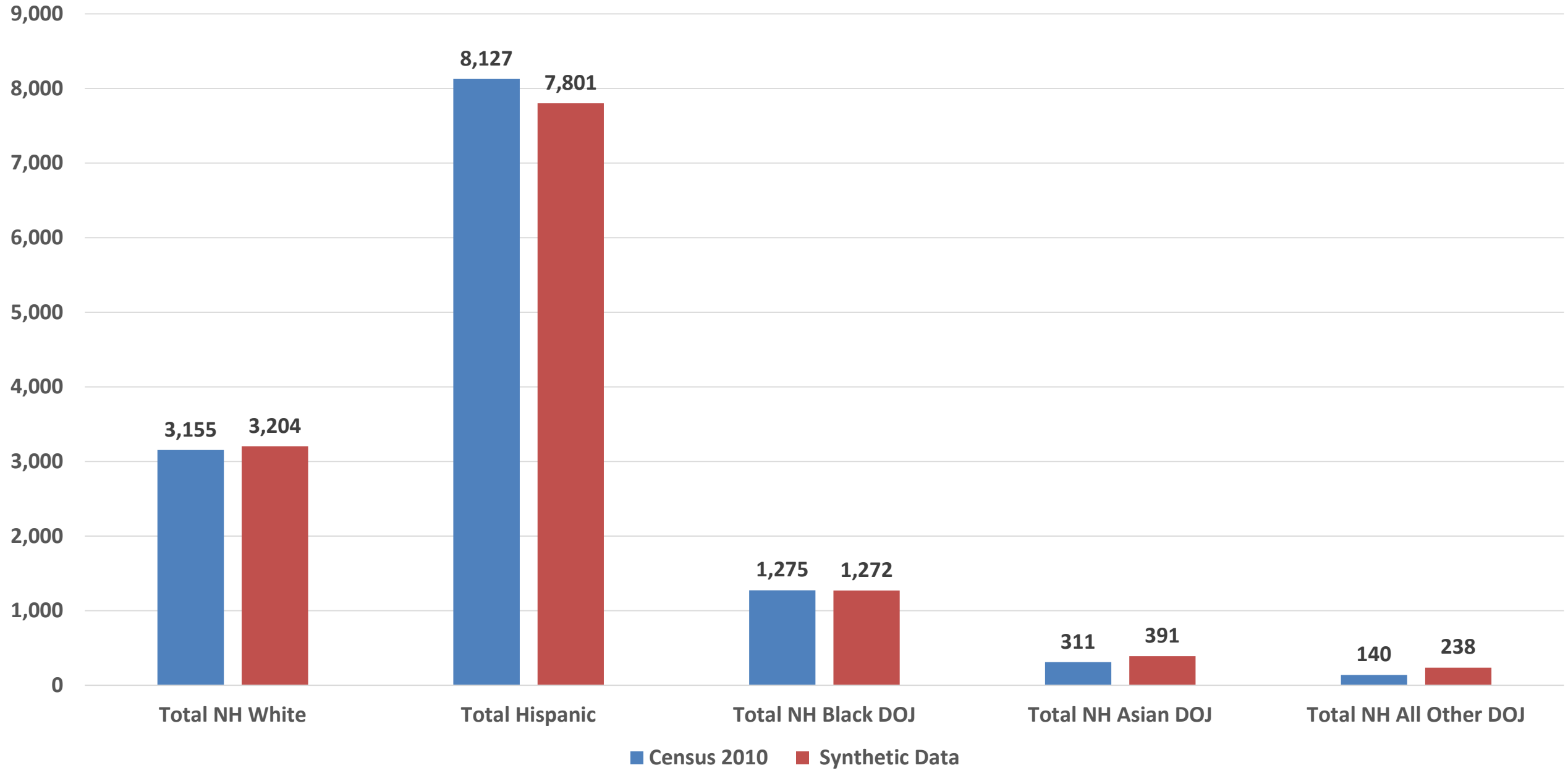
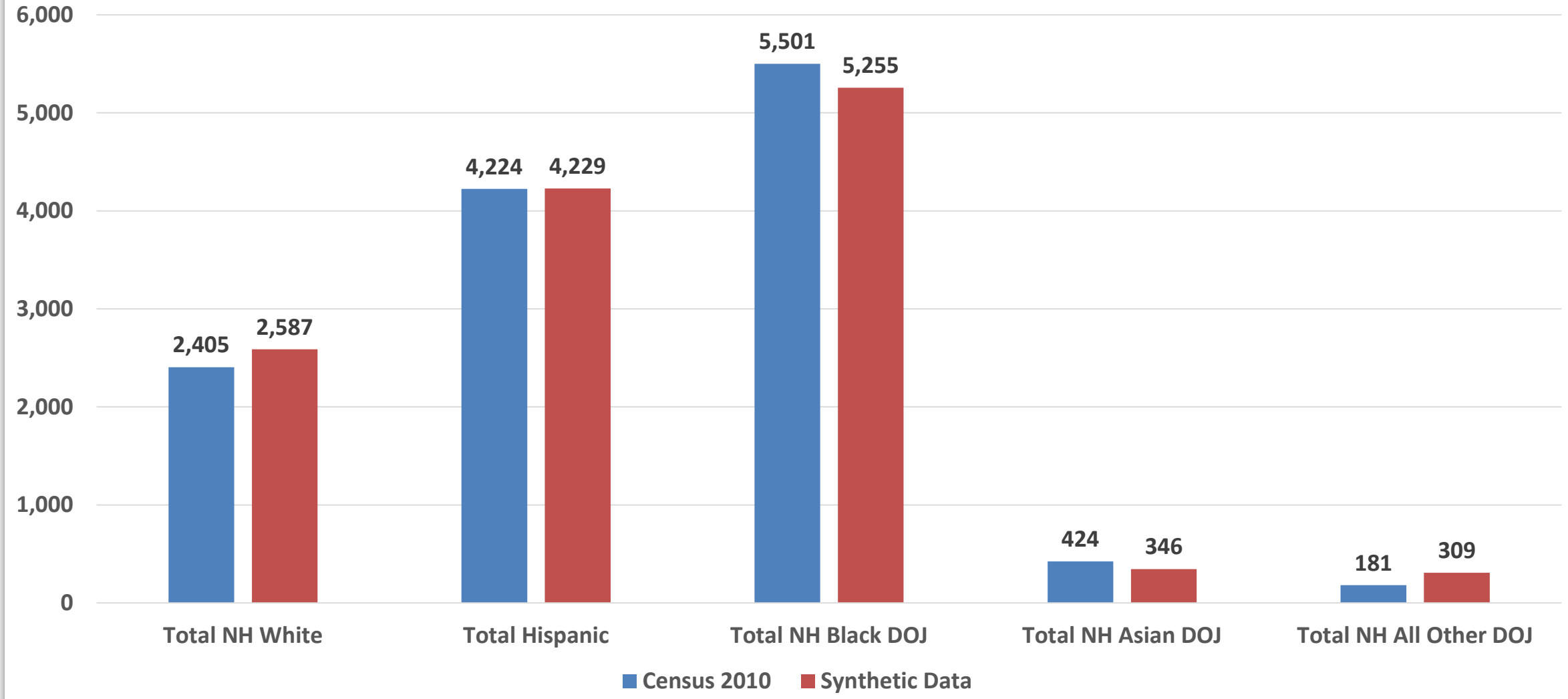


Figure 3. Adopted District 3 with 2010 Census Data Compared to Synthetic Data For Major Race and Hispanic Groups (NH Black Majority District CVAP)



Dilution of Reported Minority Population in Majority-Minority Districts

- New Rochelle crafted two minority-majority districts in 2011. District 1 is a Latino district, District 3 is an African American district.
- The number and percentage of the population of each minority is inaccurately reported as lower in the Synthetic data than it is in the 2010 Census data
- The legal basis for such districts is that the minority groups needs at least 50% plus one person who could be eligible to vote, so that they could potentially elect a candidate of choice.
- This calculation is often done using a file of Citizens of Voting Age (CVAP by non-Hispanic race groups and Hispanic based upon the ACS and provided by the Census Redistricting Office.
- The Census is currently mandated to create a block level CVAP file using administrative records.
- How this file will relate to the Synthetic data from the 2020 Census to be released in 2021 is still unknown.
- The relationship of the current ACS CVAP file to the Synthetic data is also unknown, as is its relationship to the proposed CVAP administrative file.

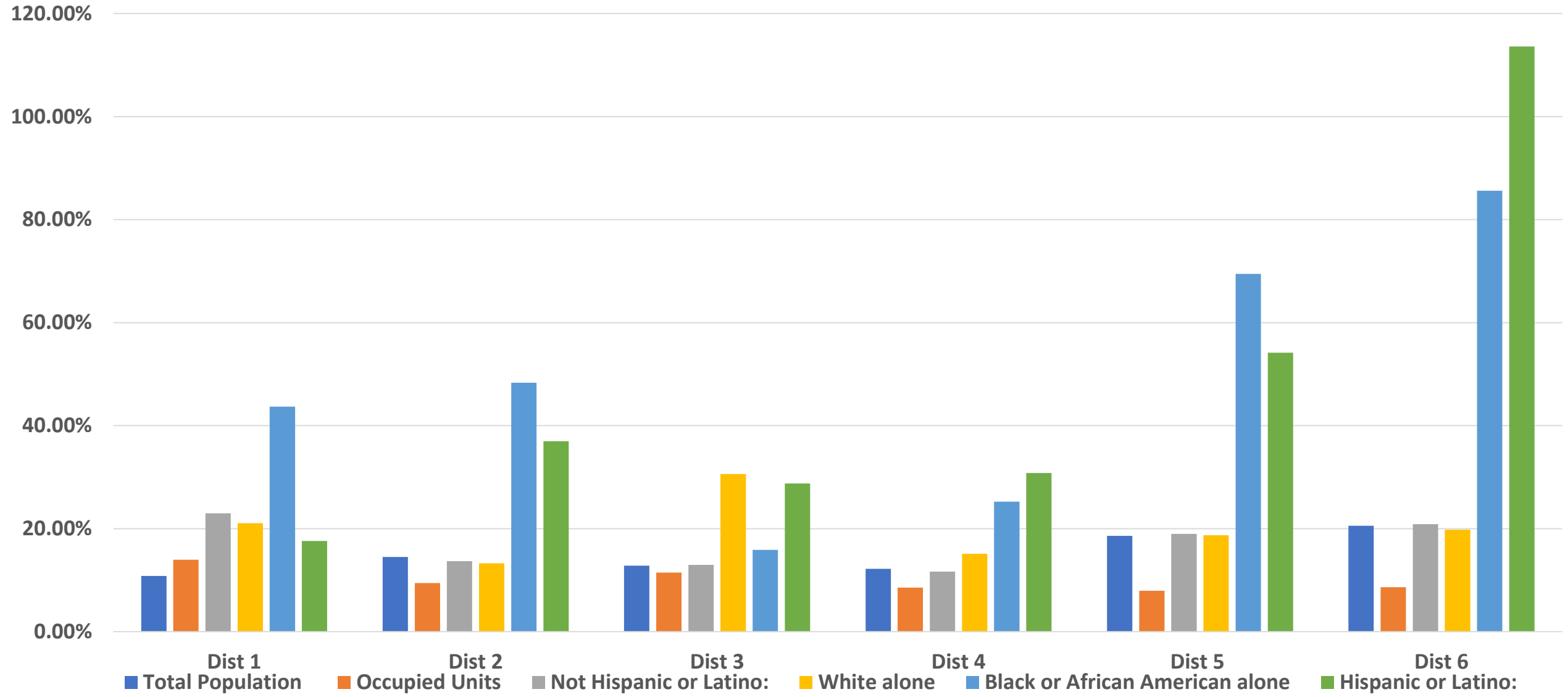
Table 1. Differences Between Census 2010 Data and Synthetic Data in New Rochelle

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	77,062	76,915	-147	-0.19%	11,065	14.4%
Housing Units	29,586	29,586	0	0.00%	0	0.0%
Occupied Units	27,953	27,121	-832	-2.98%	3,194	11.4%
Vacant Units	1,633	2,465	832	50.95%	3,194	195.6%
Not Hispanic or Latino:	55,610	55,497	-113	-0.20%	9,221	16.6%
White alone	36,948	36,923	-25	-0.07%	6,659	18.0%
Black or African American alone	13,956	13,857	-99	-0.71%	4,753	34.1%
American Indian and Alaska Native alone	94	93	-1	-1.06%	163	173.4%
Asian alone	3,212	3,225	13	0.40%	2,679	83.4%
Native Hawaiian and Other Pacific Islander alone	20	40	20	100.00%	60	300.0%
Some Other Race alone	242	213	-29	-11.98%	347	143.4%
Two or More Races	1,138	1,146	8	0.70%	1,570	138.0%
Hispanic or Latino:	21,452	21,418	-34	-0.16%	6,354	29.6%

Massive inaccuracies in population and for race and Hispanic groups in Synthetic block data compared to Census 2010 block data

- The table and charts show a huge difference in the population from block to block for population totals, and by race and Hispanic group.
- For New Rochelle overall, the percent of total population that is changed from block to block to created the Synthetic data (either a positive or negative change in a block) is 14.4%. For non-Hispanic whites it is 18.0%. However, for non-Hispanic blacks it is 34.1%, and for Hispanics it is 29.6%.
- When these percentages are computed for each district, the variations are sometimes higher and sometimes lower. (These are shown in Figure 3 with more details in the appendix tables.)
- It is also the case that the same discrepancies by race and Hispanic groups are found for the entire county and state. (These tables are also in the appendix.)
- The noise infusion method creating the Synthetic data makes a higher proportion of changes to the populations of minority (smaller) groups than to the majority (larger) groups in most cases.

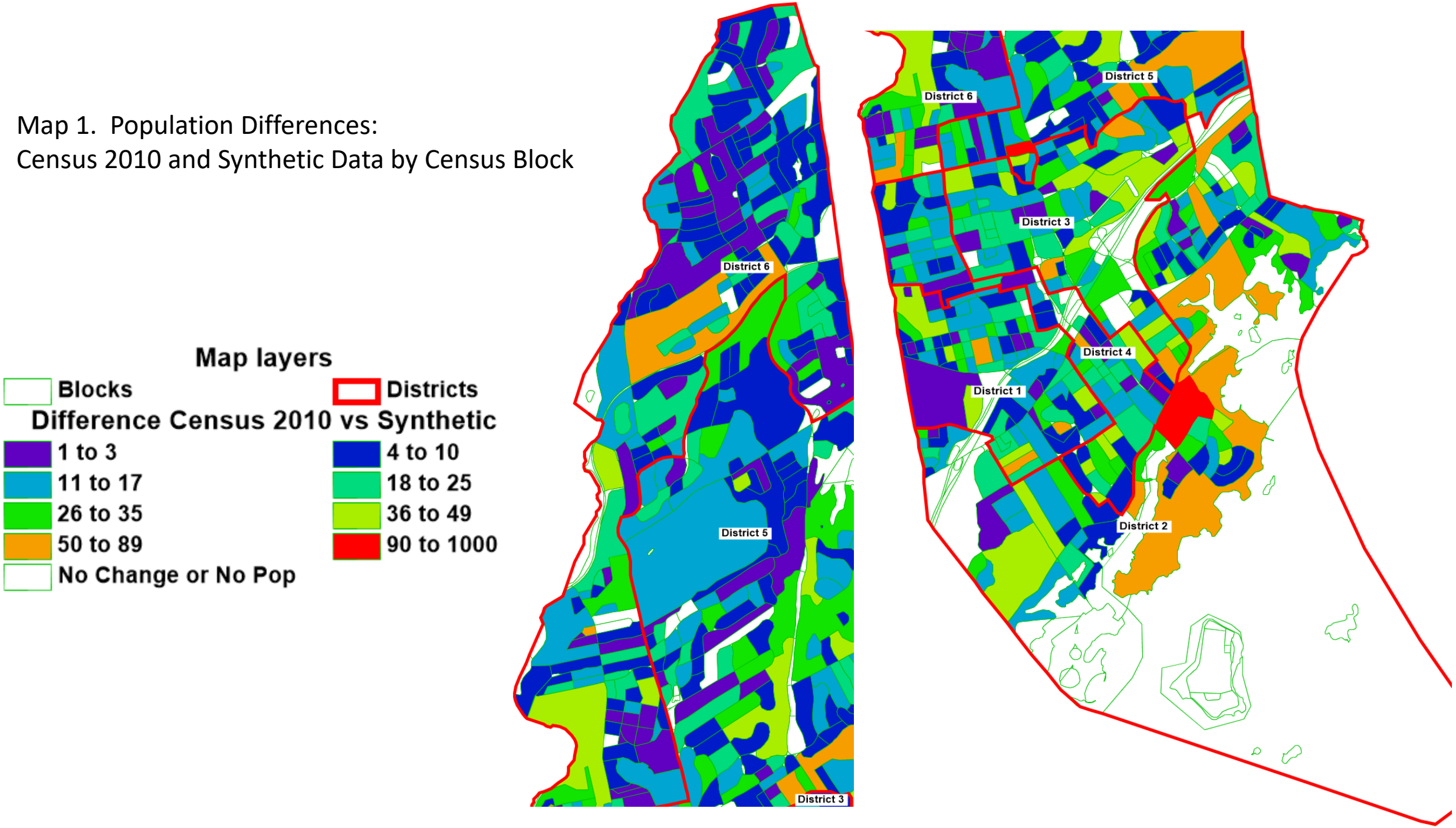
Figure 4. Percent Population Differs from Census 2010 to Synthetic Data by Total Population, Non-Hispanic Total, White Alone, Black Alone and Hispanic or Latino Population for Census Blocks



Population differences at the Block Level between Census 2010 and the Synthetic Data

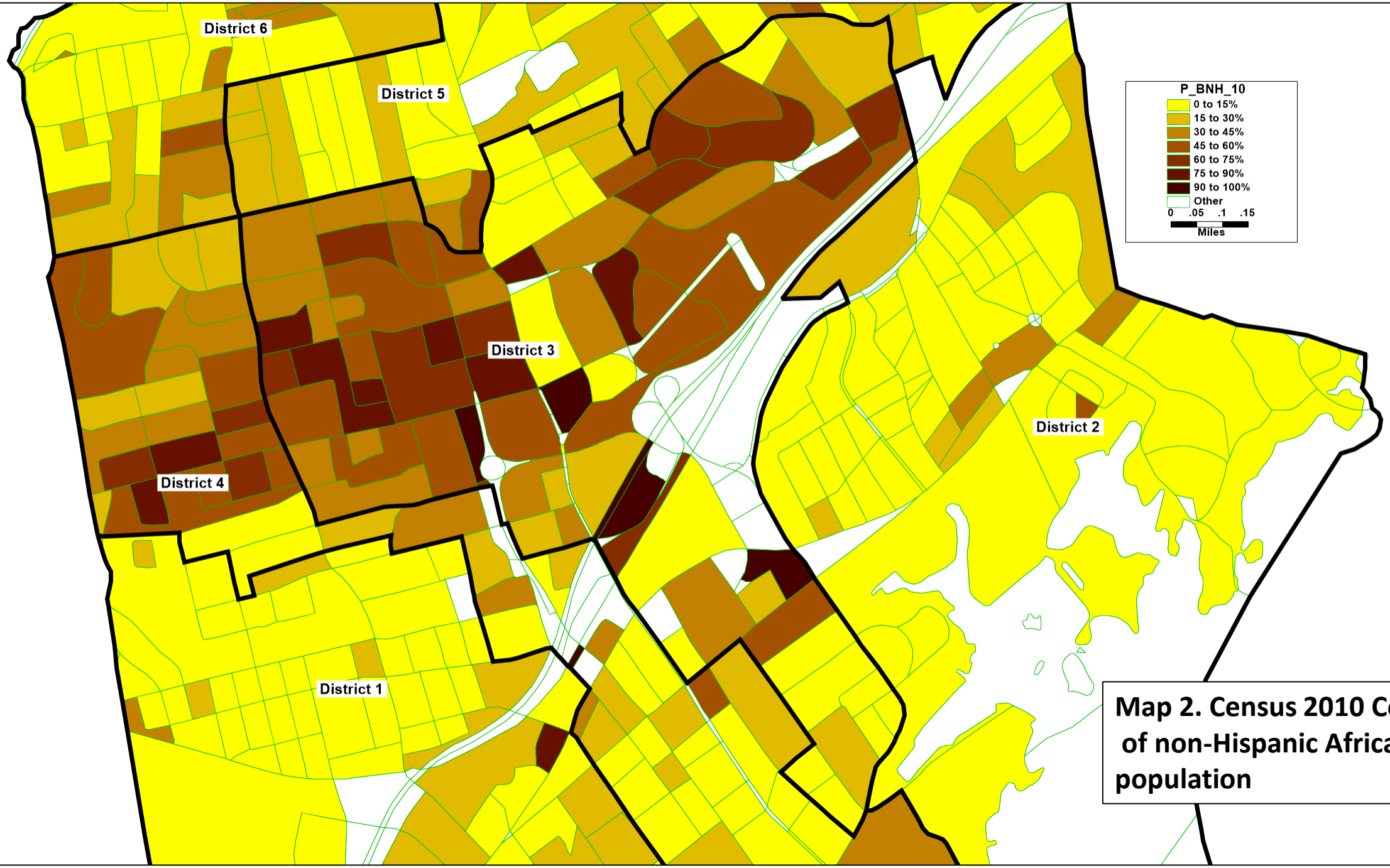
- Map 1 below shows population change (either positive or negative) by block in New Rochelle comparing Census 2010 to the Synthetic data. Simply put, the population count is modified for most blocks in the city, sometimes greatly.

Map 1. Population Differences:
Census 2010 and Synthetic Data by Census Block

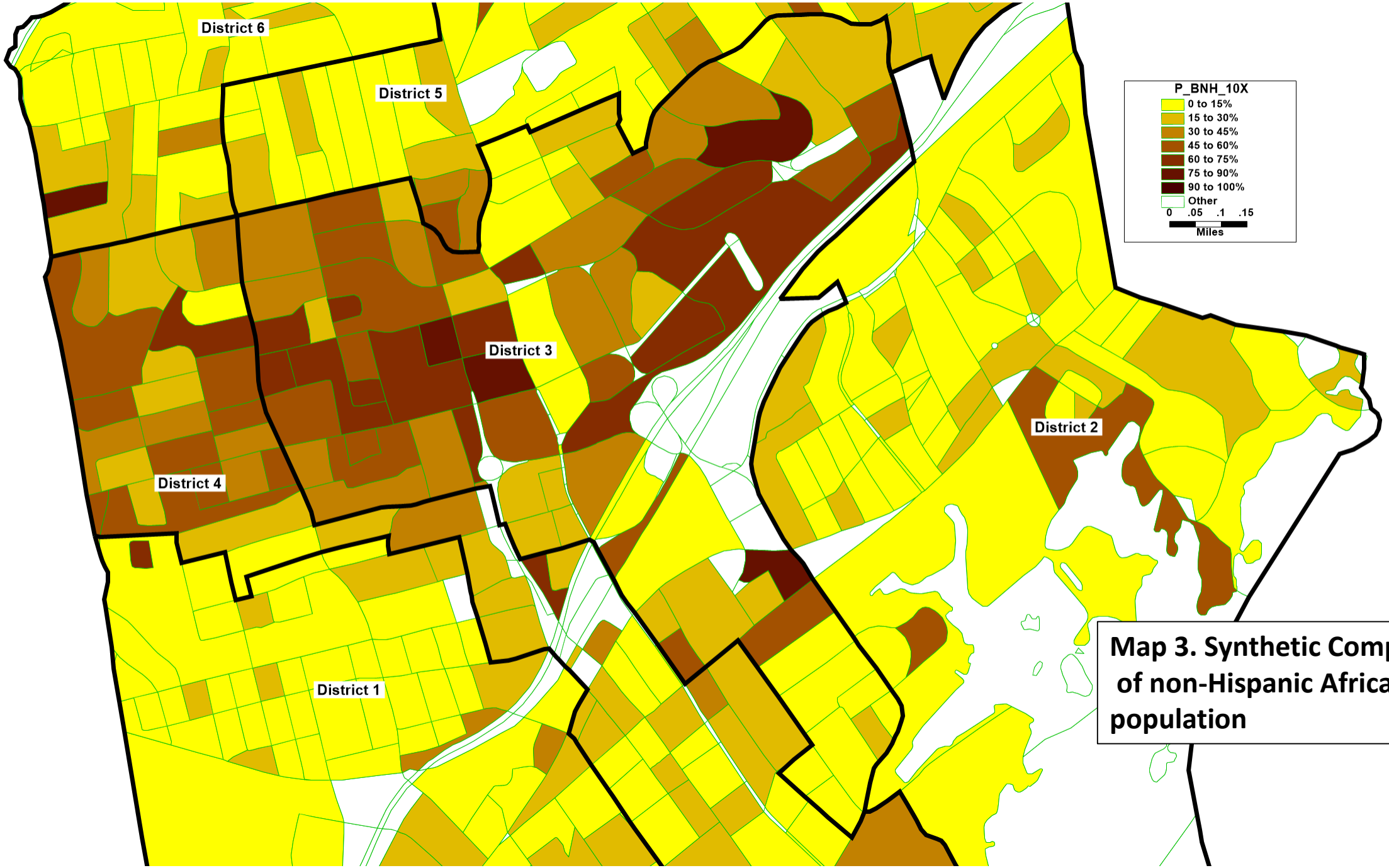


Differences in composition for non-Hispanic African American population at the for Census 2010 and Synthetic census block data

- Maps 2 and 3 show the Census 2010 blocks by percentage of non-Hispanic black population—first for released Census 2010 data and then for the Synthetic data zeroing in on District 3, the majority African American district. Flipping back and forth one can see that there are a numerous block changes that could have substantial effects on drawing districts.



Map 2. Census 2010 Composition of non-Hispanic African American population

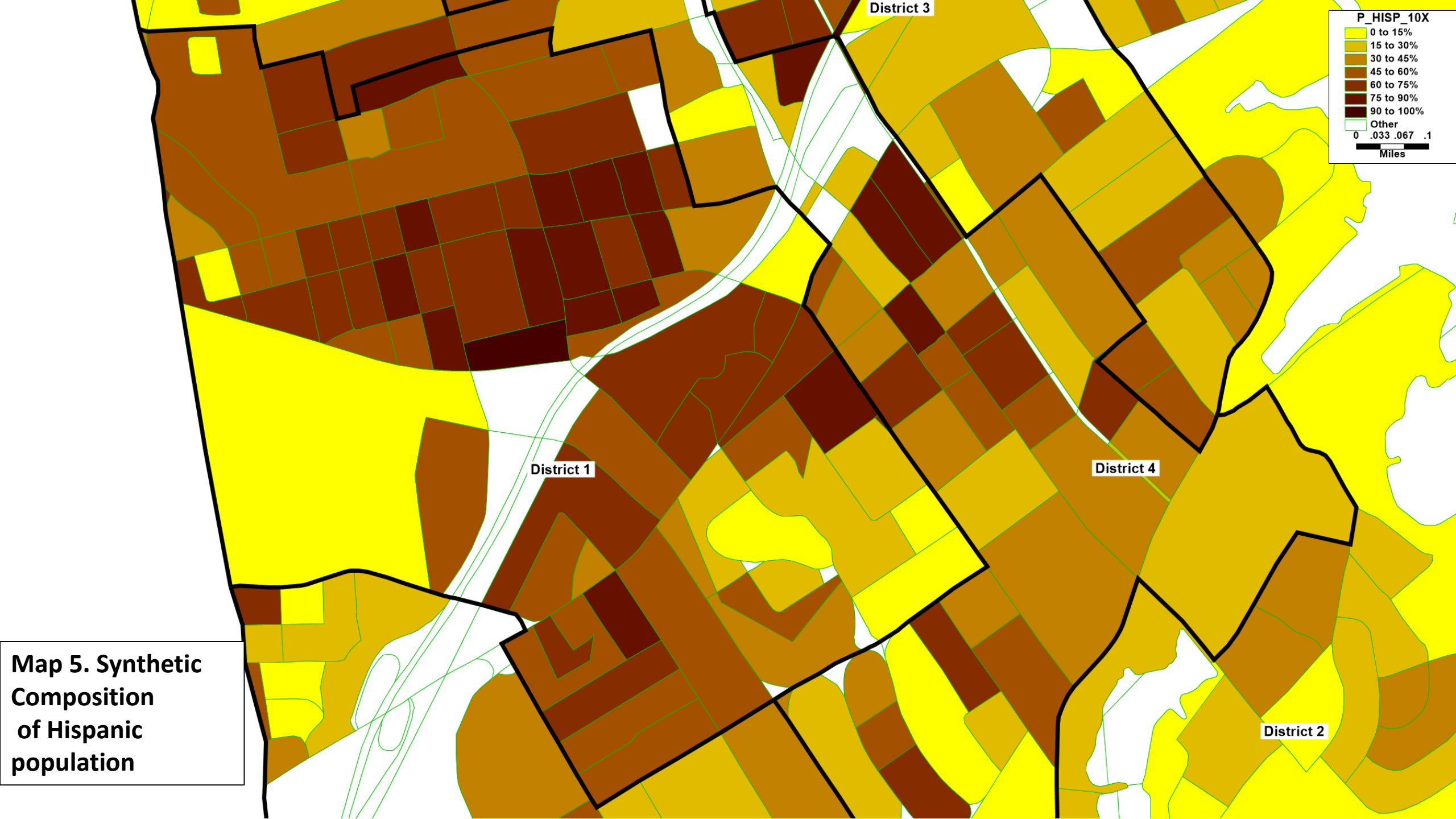


Map 3. Synthetic Composition of non-Hispanic African American population

Differences in composition for Hispanic population for Census 2010 and Synthetic census block data

- Maps 4 and 5 show the Census 2010 blocks by percentage of Hispanic population—first for released Census 2010 data and then for the Synthetic data zeroing in on District 1, the majority Hispanic district. Flipping back and forth one can see that there are a numerous block changes that could have substantial effects on drawing districts.

Map 4. Census 2010 Composition of Hispanic population



Map 5. Synthetic Composition of Hispanic population

Conclusions and Recommendations—Inaccuracies

Based upon this analysis, the current Synthetic data demonstration product is in not suitable for use in redistricting at the local level, or for any such use where community and neighborhood input is necessary.

- The net population changes for districts of roughly 13,000 population means that one cannot be assured of accurately meeting population equality criteria using Synthetic data.
- For the Synthetic data the size of minority group in majority minority districts understates the actual size of the minority.
- Furthermore, how these data will relate to either the current ACS CVAP or the proposed administrative records CVAP is not clear.
- ***Thus, the use of Synthetic data to show compliance with "traditional redistricting principles" will be extremely difficult.***

Conclusions and Recommendations—Other Considerations

- The massive change of population and composition of various population groups at the block level will make district drawing problematic
- It appears that for African Americans, Latinos, Asians and even more so for other smaller groups the block population changes are much greater (at least in NY State) than they are for majority groupings
- Serious input from decisionmakers, much less other stakeholders, into redistricting plans will be almost impossible
- There will be serious difficulty accounting for a myriad of local factors, as well as linking census data to voting or other data
- ***My strong recommendation is that for the implementation of any disclosure protection system that there be accuracy criteria at the block level for total population, and population of specific groups so that the use of Census 2020 for redistricting not be compromised, or made virtually impossible***

Appendix to Presentation

- Materials from New Rochelle Redistricting Presentation
- Tables of block level changes in Westchester County and New York State from Census 2010 to Synthetic Data
- Charts of non-majority minority districts in New Rochelle for Census 2010 and Synthetic data composition
- Tables of block level changes for Districts 1 to 6 for New Rochelle from Census 2010 to Synthetic Data

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Appendix A–1: City--Wide Census Statistics

Table 1. New Rochelle Population Composition Based Upon 2000 and 2010 Census, and 2005-2009 ACS Data as Tabulated for United States DOJ

	2000		2010		Change	% Change	Change % Composition
Total Population:	72,154		77,062		4,908	6.8%	
Hispanic	14,489	20.1%	21,452	27.8%	6,963	48.1%	7.7%
Non-Hispanic:	57,665	79.9%	55,610	72.2%	-2,055	-3.6%	-7.7%
White	40,253	55.8%	36,948	48.0%	-3,305	-8.2%	-7.8%
Black	13,385	18.6%	13,956	18.1%	571	4.3%	-0.5%
American Indian	64	0.1%	94	0.1%	30	46.9%	0.0%
Asian	2,302	3.2%	3,212	4.2%	910	39.5%	1.0%
Native Pacific Islander	22	0.0%	20	0.0%	-2	-9.1%	0.0%
Other	280	0.4%	242	0.3%	-38	-13.6%	-0.1%
Multiracial	1,359	1.9%	1,138	1.5%	-221	-16.3%	-0.4%
	2000		2010		Change	% Change	Change % Composition
Voting Age Population	54,808		59,554		4,746	8.66%	
Hispanic	10,003	18.3%	14,870	25.0%	4,867	48.66%	6.7%
Non-Hispanic:	44,805	81.8%	44,684	75.0%	-121	-0.27%	-6.8%
White	31,973	58.3%	30,312	50.9%	-1,661	-5.20%	-7.4%
Black	9,921	18.1%	10,893	18.3%	972	9.80%	0.2%
American Indian	42	0.1%	69	0.1%	27	64.29%	0.0%
Asian	1,736	3.2%	2,562	4.3%	826	47.60%	1.1%
Native Pacific Islander	19	0.0%	16	0.0%	-3	-15.79%	0.0%
Other	216	0.4%	160	0.3%	-56	-25.93%	-0.1%
Multiracial	898	1.6%	672	1.1%	-226	-25.17%	-0.5%
	2000 Census Long Form Estimate		2005-2009 ACS Estimate		Change	% Change	Change % Composition
	44,365		45,845		1,480	3.3%	
Hispanic	3,970	8.9%	5,195	11.3%	1,225	30.9%	2.4%
Non-Hispanic:	40,395	91.1%	40,650	88.7%	255	0.6%	-2.4%
White	30,185	68.0%	30,125	65.7%	-60	-0.2%	-2.3%
Black	8,940	20.2%	8,810	19.2%	-130	-1.5%	-0.9%
Asian	1,125	2.5%	1,585	3.5%	460	40.9%	0.9%
All Other	145	0.3%	130	0.3%	-15	-10.3%	0.0%

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Appendix A–2: Current District Statistics

Table 2. Population Composition of Current Districts for Total Population, Voting Age Population (VAP) Based Upon 2010 Census and Citizen of Voting Age Population (CVAP) Based upon 2005- 2009 ACS Data as Tabulated for US Department of Justice.

District	Total pop	Deviation	%Deviation	Total NH White	%Total NH White	Total Hispanic	%Total Hispanic	Total NH Black DOJ	%Total NH Black DOJ	Total NH Asian DOJ	%Total NH Asian DOJ	Total NH All Other DOJ	%Total NH All Other DOJ
1	12,947	103	0.8%	5,925	45.8%	5,115	39.5%	1,295	10.0%	469	3.6%	143	1.1%
2	12,263	-581	-4.5%	5,321	43.4%	3,234	26.4%	2,888	23.6%	688	5.6%	132	1.1%
3	12,372	-472	-3.7%	2,946	23.8%	3,585	29.0%	5,216	42.2%	464	3.8%	161	1.3%
4	14,680	1,836	14.3%	3,623	24.7%	7,443	50.7%	2,801	19.1%	641	4.4%	172	1.2%
5	11,693	-1,151	-9.0%	8,801	75.3%	1,108	9.5%	1,120	9.6%	574	4.9%	90	0.8%
6	13,107	263	2.1%	10,332	78.8%	967	7.4%	1,064	8.1%	638	4.9%	106	0.8%
Total	77,062			36,948	47.9%	21,452	27.8%	14,384	18.7%	3,474	4.5%	804	1.0%

District	VAP pop	%VAP pop	VAP NH White	%VAP NH White	VAP Hispanic	%VAP Hispanic	VAP NH Black DOJ	% VAP NH Black DOJ	VAP NH Asian DOJ	% VAP NH Asian DOJ	VAP NH All Other DOJ	%VAP NH All Other DOJ	
1	10,192	78.7%	5,195	51.0%	3,544	34.8%	984	9.7%	379	3.7%	90	0.9%	
2	10,278	83.8%	4,791	46.6%	2,470	24.0%	2,365	23.0%	550	5.4%	102	1.0%	
3	9,349	75.6%	2,548	27.3%	2,354	25.2%	3,986	42.6%	352	3.8%	108	1.2%	
4	10,902	74.3%	3,030	27.8%	5,056	46.4%	2,177	20.0%	518	4.8%	121	1.1%	
5	8,850	75.7%	6,759	76.4%	760	8.6%	845	9.5%	428	4.8%	59	0.7%	
6	9,983	76.2%	7,989	80.0%	686	6.9%	787	7.9%	449	4.5%	72	0.7%	
Total	59,554	77.3%	30,312	50.9%	14,870	25.0%	11,144	18.7%	2,676	4.5%	552	0.9%	

District	CVAP Total	%CVAP Total	CVAP NH White	%CVAP NH White	CVAP Hispanic	% CVAP Hispanic	CVAP NH Black DOJ	%CVAP NH Black DOJ	CVAP NH Asian DOJ	%CVAP NH Asian DOJ	CVAP NH All Other DOJ	%CVAP NH All Other DOJ	
1	7,627	74.8%	5,803	76.1%	1,035	13.6%	605	7.9%	124	1.6%	60	0.8%	
2	7,112	69.2%	4,332	60.9%	916	12.9%	1,599	22.5%	265	3.7%	0	0.0%	
3	7,148	76.5%	2,225	31.1%	1,034	14.5%	3,702	51.8%	178	2.5%	10	0.1%	
4	6,297	57.8%	2,956	46.9%	1,400	22.2%	1,522	24.2%	386	6.1%	33	0.5%	
5	7,732	87.4%	6,424	83.1%	418	5.4%	622	8.0%	268	3.5%	0	0.0%	
6	9,871	98.9%	8,387	85.0%	387	3.9%	721	7.3%	363	3.7%	13	0.1%	
Total	45,787	76.9%	30,126	65.8%	5,190	11.3%	8,772	19.2%	1,584	3.5%	115	0.3%	

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Appendix A–3: Proposed District Statistics

Proposed Majority Plan (Final - 4/25) Total Population, Voting Age Population Based ((VAP), Upon 2010 Census and Citizen of Voting Age Population (CVAP) Based upon 2005-2009 ACS Data as Tabulated for US Department of Justice.

District	Total pop	Deviation	%Deviation	Total NH White	%Total NH White	Total Hispanic	%Total Hispanic	Total NH Black DOJ	%Total NH Black DOJ	Total NH Asian DOJ	%Total NH Asian DOJ	Total NH All Other DOJ	%Total NH All Other DOJ
1	13,008	164	1.3%	3,155	24.3%	8,127	62.5%	1,275	9.8%	311	2.4%	140	1.1%
2	13,466	622	4.8%	8,269	61.4%	2,792	20.7%	1,574	11.7%	701	5.2%	130	1.0%
3	12,735	-109	-0.8%	2,405	18.9%	4,224	33.2%	5,501	43.2%	424	3.3%	181	1.4%
4	13,398	554	4.3%	4,872	36.4%	3,945	29.4%	3,508	26.2%	902	6.7%	171	1.3%
5	12,211	-633	-4.9%	8,461	69.3%	1,592	13.0%	1,534	12.6%	526	4.3%	98	0.8%
6	12,244	-600	-4.7%	9,786	79.9%	772	6.3%	992	8.1%	610	5.0%	84	0.7%
Total	77,062			36,948	47.9%	21,452	27.8%	14,384	18.7%	3,474	4.5%	804	1.0%

District	VAP pop	%VAP pop	VAP NH White	%VAP NH White	VAP Hispanic	%VAP Hispanic	VAP NH Black DOJ	%VAP NH Black DOJ	VAP NH Asian DOJ	%VAP NH Asian DOJ	VAP NH All Other DOJ	%VAP NH All Other DOJ
1	9,484	72.9%	2,718	28.7%	5,430	57.3%	983	10.4%	264	2.8%	89	0.9%
2	11,233	83.4%	7,306	65.0%	2,044	18.2%	1,228	10.9%	561	5.0%	94	0.8%
3	9,676	76.0%	2,081	21.5%	2,883	29.8%	4,282	44.3%	303	3.1%	127	1.3%
4	10,926	81.5%	4,313	39.5%	2,922	26.7%	2,825	25.9%	743	6.8%	123	1.1%
5	9,171	75.1%	6,548	71.4%	1,071	11.7%	1,110	12.1%	382	4.2%	60	0.7%
6	9,064	74.0%	7,346	81.0%	520	5.7%	716	7.9%	423	4.7%	59	0.7%
Total	59,554	77.3%	30,312	50.9%	14,870	25.0%	11,144	18.7%	2,676	4.5%	552	0.9%

District	CVAP Total	%CVAP Total	CVAP NH White	%CVAP NH White	CVAP Hispanic	%CVAP Hispanic	CVAP NH Black DOJ	%CVAP NH Black DOJ	CVAP NH Asian DOJ	%CVAP NH Asian DOJ	CVAP NH All Other DOJ	%CVAP NH All Other DOJ
1	5,236	55.2%	3,054	58.3%	1,264	24.1%	703	13.4%	216	4.1%	0	0.0%
2	9,092	80.9%	7,027	77.3%	1,041	11.4%	783	8.6%	171	1.9%	70	0.8%
3	6,989	72.2%	2,004	28.7%	1,113	15.9%	3,677	52.6%	186	2.7%	10	0.1%
4	7,563	69.2%	4,016	53.1%	1,071	14.2%	2,051	27.1%	405	5.4%	20	0.3%
5	8,212	89.5%	6,580	80.1%	392	4.8%	902	11.0%	337	4.1%	1	0.0%
6	8,694	95.9%	7,444	85.6%	308	3.5%	657	7.6%	270	3.1%	14	0.2%
Total	45,787	76.9%	30,126	65.8%	5,190	11.3%	8,772	19.2%	1,584	3.5%	115	0.3%

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Appendix B: Methodology & Analysis

Memo Regarding New Rochelle Demographic Changes and the Construction of the Proposed Redistricting Plan

Andrew A. Beveridge, Ph.D.[1]

Every ten years, new districts must be drawn to account for any population shifts. New Rochelle continued to experience demographic change between 2000 and 2010, as shown by the 2010 Census results released on March 24th 2011 for New York State. Table 1 gives some information about these changes. Unlike some of the other portions of lower Westchester, New Rochelle grew during the past decade. Its population increased from 72,154 to, 77,062. This gain of 4,908 people represented a 6.8 percent increase in the population.

Most notable was the strong increase in Hispanics by over 48 percent, from 20.1 percent to 27.8 percent of the total population. The African American population grew 4.3 percent, and the Asian population grew about 40 percent, but is still relatively small. There was a decline in the non-Hispanic white population, which now accounts for slightly less than half the population of New Rochelle.

Though the allocation of districts is based upon total population, when examining the likelihood of a district electing a candidate of choice for a minority group, the standards are based upon the Citizens of Voting Age Population (CVAP), that is: eligible voters. American Community Survey (ACS) data on Citizen Voting Age Population has replaced data once collected from the so-called Census Long Form, which is no longer administered. Small area data, down to the block group, are collected monthly, but due to sample size, files depicting such information are based upon five years of data collection.

For the 2000 Census, data on the CVAP were not released by the Census Bureau in time for the first round of redistricting, so these data were developed and paid for by a consortium of redistricting consultants. For the 2010 Census, the CVAP tabulation was ordered by the US Department of Justice (DOJ), and is based upon the 2005 to 2009 ACS. The racial and Hispanic categories reported were chosen by the DOJ and are the standard counts used in redistricting.

The ACS data are the standard tools for redistricting with respect to computing the so-called effective majority of a minority group in a given district. But they do have some limitations. Though the Census goes down to the block level, the lowest geographic level for these ACS data is the block group. The data are rounded to five people in each table to protect confidentiality and are based upon the 2000 Census geographies. Furthermore, they do have a sampling error, since they are based upon the ACS, which uses sampling instead of a full enumeration like the Census. In addition, allocating these data to the block level and then using the block correspondence files to make them conform to the 2010 blocks could also introduce error.

[1] Andrew A. Beveridge is Professor of Sociology at Queens College and the Graduate Center of CUNY. He has been a demographic consultant for the *New York Times* since 1993. He has served as an expert witness and litigation consultant in over 35 cases involving demographic analysis, including several related to districting and redistricting. These include, Goosby v. Town Board of Hempstead, considered a landmark in the 2nd Circuit, as well as most recently U.S. v. Village of Port Chester. Most relevant for this engagement is that he served as plaintiff's expert in the case New Rochelle Voter Rights Committee, et al vs. New Rochelle, et al. For that case he prepared the plaintiffs plan, drafted a report, submitted an affirmation, testified at trial, and eventually crafted a plan agreed to by New Rochelle, the plaintiffs, the Conservative Party, and accepted by the court. He worked with Randall McClaughlin, who is at the Pace Law School, as well as his associate counsel, Richard St. Paul.

A further issue is that since the data are based upon the 2005-2009 ACS, they will not fully capture changes that have occurred between 2000 and 2010, or the shifts that have occurred in the location of various groups in New Rochelle. This leads directly to the fact that the CVAP number and percent tend to be overstated for the Non-Hispanic White population, who are declining in New Rochelle, and understated for the Hispanic and non-Hispanic African American population. Nonetheless, they are the only data available to make these estimates that can be used for the geography in place for council districts in New Rochelle. The Census Bureau cautions that ACS data are to be used to gauge percents and not absolute numbers, thus a direct numeric comparison of Census 2000 and the ACS 2005-2009 CVAP is inappropriate.

The third panel of Table 1 examines the change in the Citizen of Voting Age population for various groups. The non-Hispanic white population, though having declined, still accounts for almost two-thirds of New Rochelle's total CVAP. CVAP for Hispanics increased slightly, but still lags far behind the total Hispanic population. For this reason, it is not possible to construct a district in which Hispanics constitute a majority of eligible voters. Instead, total population provides the best measure of potential voting strength in the coming years, as the Hispanic population ages and citizenship rates rise. Concentrating the overall Hispanic population creates the best present and future opportunity for Hispanic representation.

The non-Hispanic African American CVAP of New Rochelle declined slightly since 2000 and continues to be roughly one-fifth of the population

The New Rochelle Voter Rights Committee, et al vs. New Rochelle, et al court case surrounding the last redistricting round in New Rochelle resulted in a court-ordered stipulation to draw a district that had a majority representation of Non-Hispanic African American (CVAP). The general, albeit modest, decline in New Rochelle's African-American CVAP poses a challenge to this goal, but one that is surmountable.

Table 2 presents an analysis of the composition of the current districts based upon the 2010 Census and 2005-2009 ACS CVAP data. It is plain that substantial redistricting is needed to accommodate the significant population changes and shifts that have occurred. Two districts, numbers 4 and 5, are outside of what are usually considered acceptable population deviations. Indeed, district 4 is 14.9 percent higher than the so-called ideal or average district.

The proposed plan does the following:

1. Balances the population among the six districts.
2. Eliminates the split block on the Larchmont border and the split blocks along Barnard road that were used to keep City Park intact.
3. Reunifies some neighborhoods.
4. Creates one district (District 3) with a Non-Hispanic African American estimated CVAP of 52.6 percent, therefore preserving and strengthening the minority majority district.
5. Creates another district (District 1) with a total Hispanic population of 61.9 percent and an estimated Hispanic CVAP of 24.0 percent, yielding a more substantial influence district.

All calculations here are based upon the recommendations from the US Department of Justice for the classification of the various racial and Hispanic groups. The new districts are also more compact than the old districts by various measures of compactness.

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Appendix C: Neighborhood Listing

En)rely or Substantially Whole: Anchorage, Sans Souci, Sugon Manor, Premium Point Park, Premium Point, Rochelle Heights, Rochelle Park, Halcyon Park, Sunset View Park, Edgewood Park, Feeney Park, Glenwood Lake, Lincoln Avenue Neighborhood Association, Greater Mount Joy, Huguenot Park, Nature Study Woods, Highland Park, John Alden, Primrose Area, Wykagyl Crossways, Beechmont, Forest Heights, Paine Heights, Wykagyl Park, Larchmont Woods, Bayberry, South End Civic, Northfield, Wykagyl Estates, Pineridge, Innisfree, Kensington Woods, Pinebrook Estates, Huguenot Lake, Northwood Circle, Maplewood Park, Stragon Hills, Stragon Woods, Hutchinson, Mount Joy, Wilmot Circle, Wilmot Woods, Howard Acres, Whitewood, Northwood Knolls, Lawrence Park, Bloomingdale Estates, Parcot Avenue Area, Scarsdale Downs, West End, Scarsdale Park, Dorchester Hills, Pryor Manor Marsh, Sun Haven, Hazelhurst, Chatsworth/City Park, Hilltop, Huguenot Heights, French Ridge, Ward Acres, New Bonnie Crest, Echo Heights, East End Civic, Dennis/Pengilly, Sycamore Park.

Split: Bonnie Crest, Residence Park (Split also in Current Plan)

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Appendix D: Compactness Analysis

CURRENT District	Polsby/ Popper	Area/ Convex	Schwartz berg	Grofman
1	.24	.68	2.04	7.24
2	.42	.74	1.55	5.49
3	.32	.74	1.75	6.22
4	.18	.59	2.33	8.26
5	.26	.71	1.94	6.89
6	.15	.53	2.62	9.27
Average	**.26**	**.67**	**2.04**	**7.23**

PROPOSED District	Polsby/ Popper	Area/ Convex	Schwartz berg	Grofman
1	.56	.87	1.33	4.73
2	.31	.67	1.79	6.33
3	.32	.69	1.76	6.23
4	.16	.48	2.48	8.78
5	.39	.78	1.61	5.69
6	.20	.60	2.23	7.91
Average	**.32**	**.68**	**1.87**	**6.61**

NOTE: For Schwartzberg and Grofman, lower scores indicate greater compactness.
For Polsby/Popper and Area/Convex, higher scores indicate greater compactness.

REDISTRICTING – 2011

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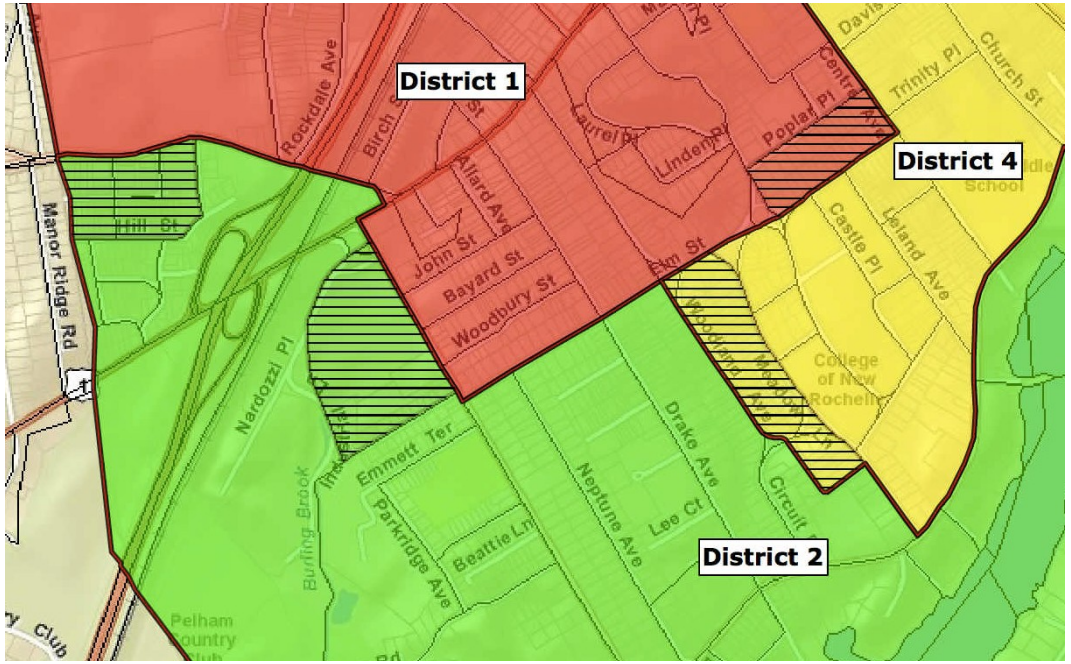
Appendix E: Revisions of April 20th



All maps and demographic statistics throughout presentation have been revised to reflect changes.

Shaded Green
CD1 to CD2

Shaded Yellow
CD2 to CD4

Shaded Red
CD4 to CD1

REDISTRICTING – 2011

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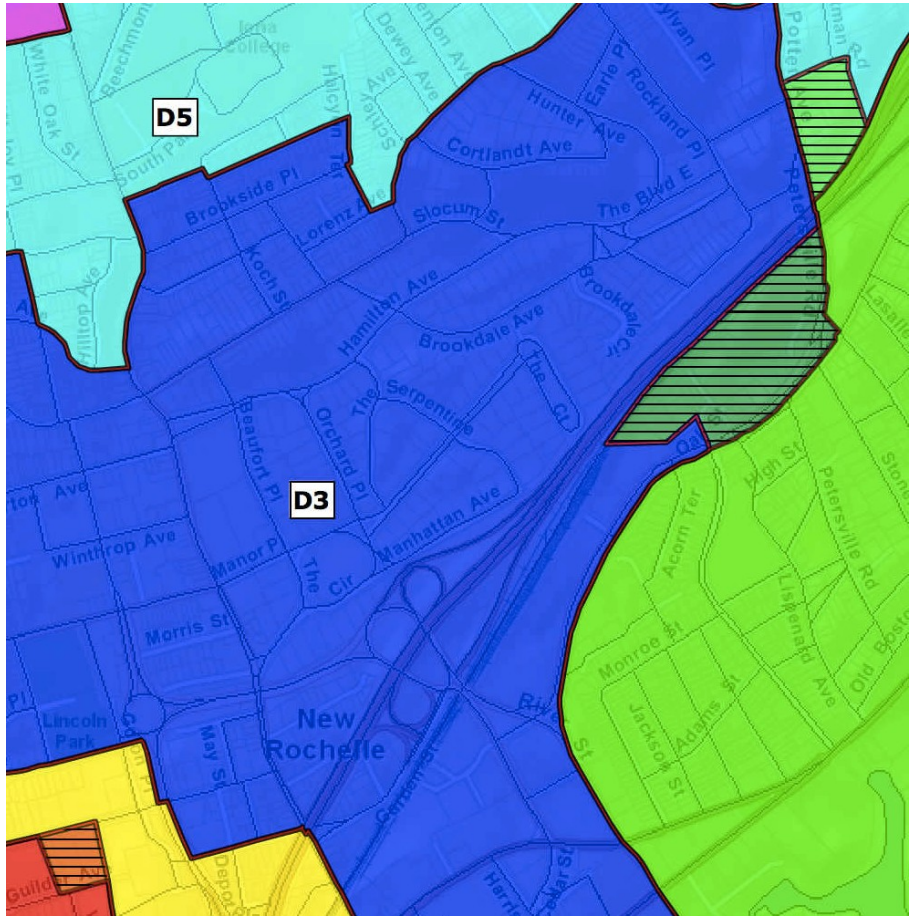
Appendix F: Revisions of April 25th



All maps and demographic statistics throughout the presentation have been revised to reflect changes.

<u>Shaded Light Green</u>
CD5 to CD2

<u>Shaded Dark Green</u>
CD3 to CD2

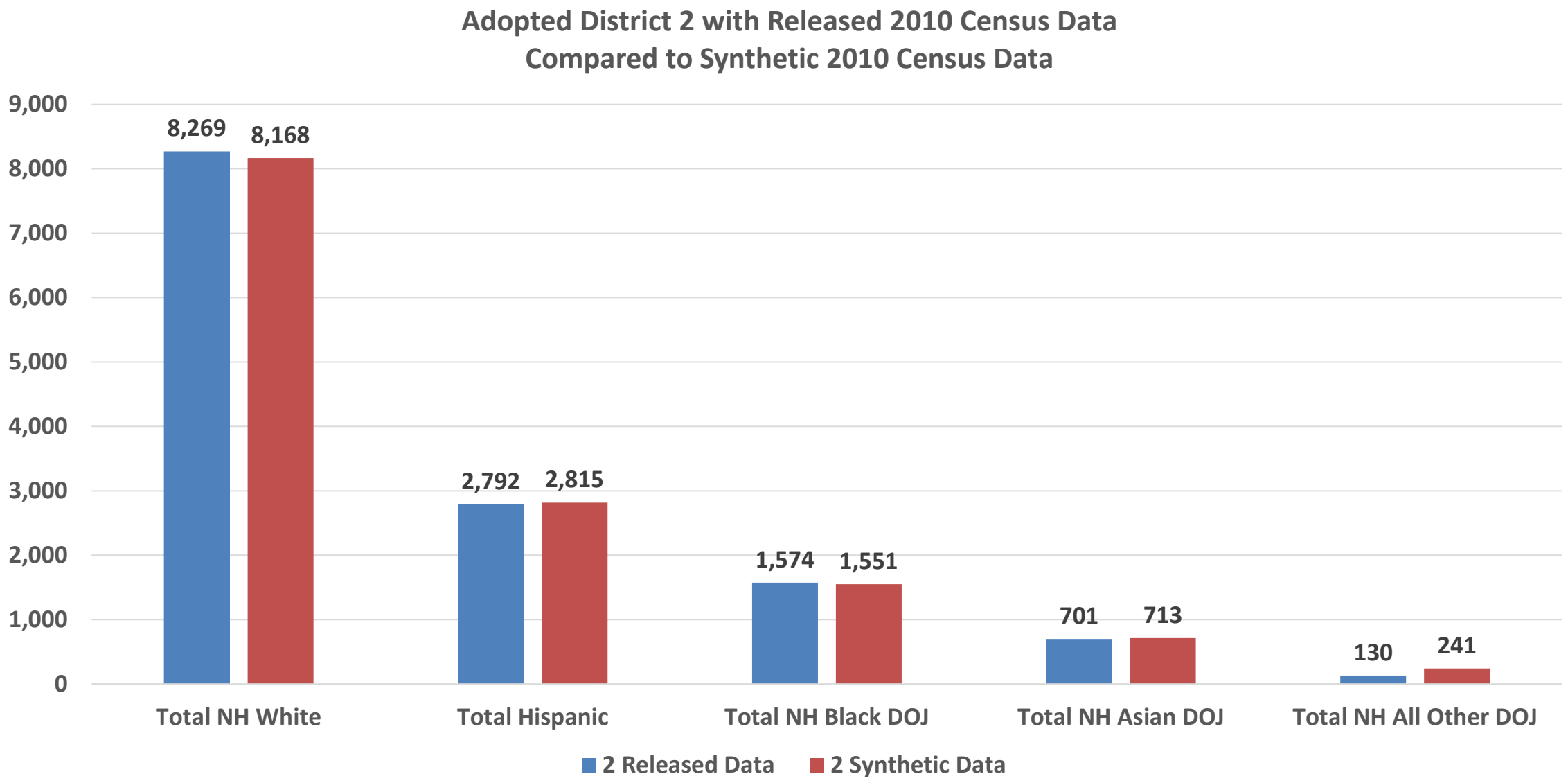
<u>Shaded Orange/Red</u>
CD4 to CD1

Westchester County

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Creat Syntheric Data Released Data
Total Population	949,113	948,855	-258	-0.03%	157,014	16.5%
Housing Units	370,821	370,821	0	0.00%	0	0.0%
Occupied Units	347,232	343,174	-4058	-1.17%	38,944	11.2%
Vacant Units	23,589	27,647	4058	17.20%	38,944	165.1%
Not Hispanic or Latino:	742,081	741,822	-259	-0.03%	131,367	17.7%
White alone	544,563	544,382	-181	-0.03%	102,551	18.8%
Black or African American alone	126,585	126,597	12	0.01%	41,882	33.1%
American Indian and Alaska Native alone	1,141	1,055	-86	-7.54%	1,994	174.8%
Asian alone	51,123	51,149	26	0.05%	42,888	83.9%
Native Hawaiian and Other Pacific Islander alone	218	212	-6	-2.75%	420	192.7%
Some Other Race alone	3,757	3,753	-4	-0.11%	5,832	155.2%
Two or More Races	14,694	14,674	-20	-0.14%	19,868	135.2%
Hispanic or Latino:	207,032	207,033	1	0.00%	81,245	39.2%

New York State

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	19,378,102	19,378,102	0	0.00%	2,929,344	15.1%
Housing Units	8,108,103	8,108,103	0	0.00%	0	0.0%
Occupied Units	7,317,755	7,314,513	-3242	-0.04%	985,650	13.5%
Vacant Units	790,348	793,590	3242	0.41%	985,650	124.7%
Not Hispanic or Latino:	15,961,180	15,960,911	-269	0.00%	2,666,237	16.7%
White alone	11,304,247	11,304,115	-132	0.00%	2,206,788	19.5%
Black or African American alone	2,783,857	2,783,836	-21	0.00%	664,237	23.9%
American Indian and Alaska Native alone	53,908	53,908	0	0.00%	78,152	145.0%
Asian alone	1,406,194	1,406,108	-86	-0.01%	578,576	41.1%
Native Hawaiian and Other Pacific Islander alone	5,320	5,187	-133	-2.50%	10,075	189.4%
Some Other Race alone	81,620	81,661	41	0.05%	98,547	120.7%
Two or More Races	326,034	326,096	62	0.02%	394,404	121.0%
Hispanic or Latino:	3,416,922	3,417,191	269	0.01%	1,115,351	32.6%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Compared to Synthetic 2010 Census Data
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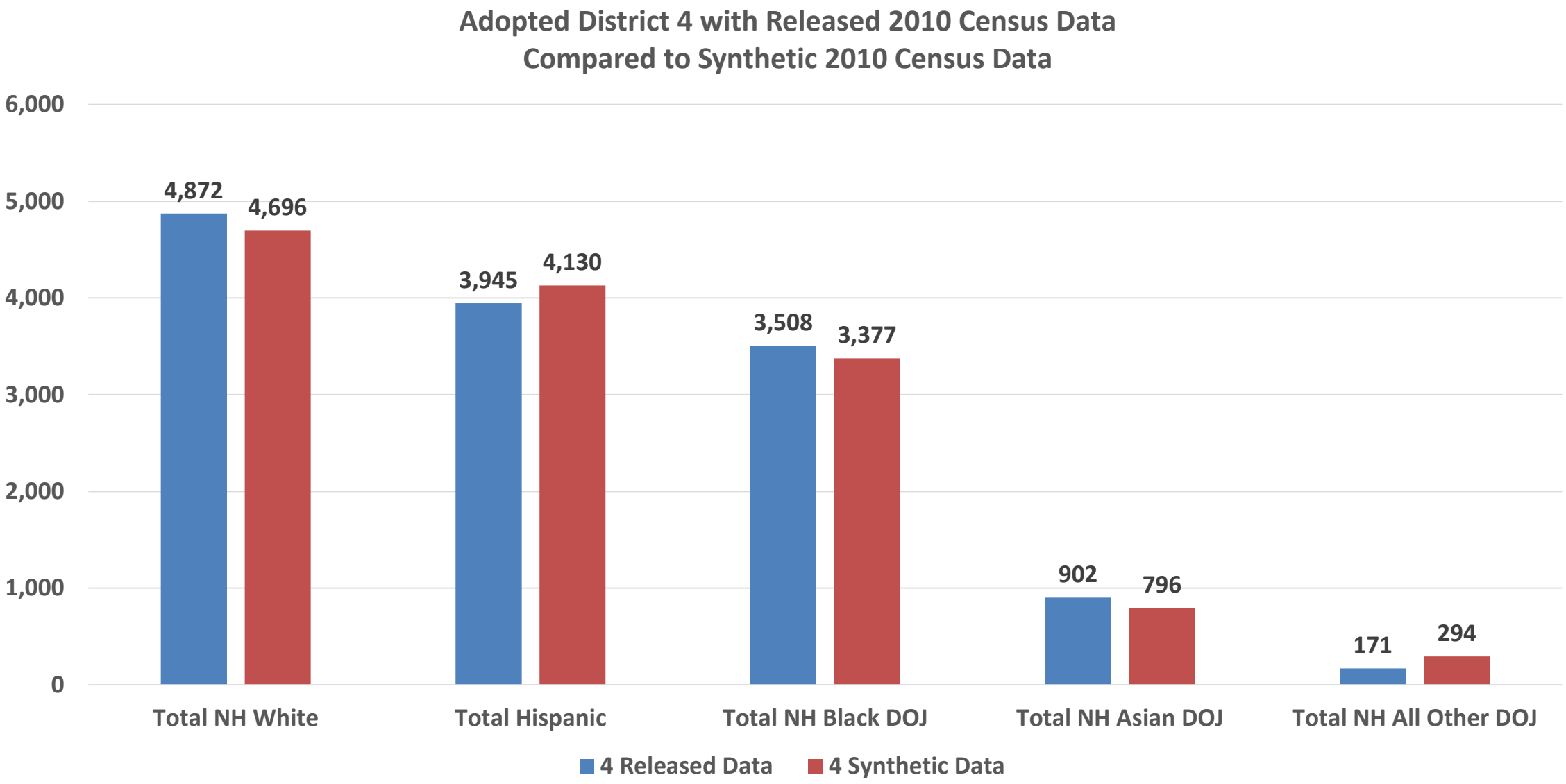
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
8,269
8,168
2,792
2,815
1,574
1,551
701
713
130
241
Total NH White
Total Hispanic
Total NH Black DOJ
Total NH Asian DOJ
Total NH All Other DOJ
2 Released Data
2 Synthetic Data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Compared to Synthetic 2010 Census Data
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4,000
3,000
2,000
1,000
0
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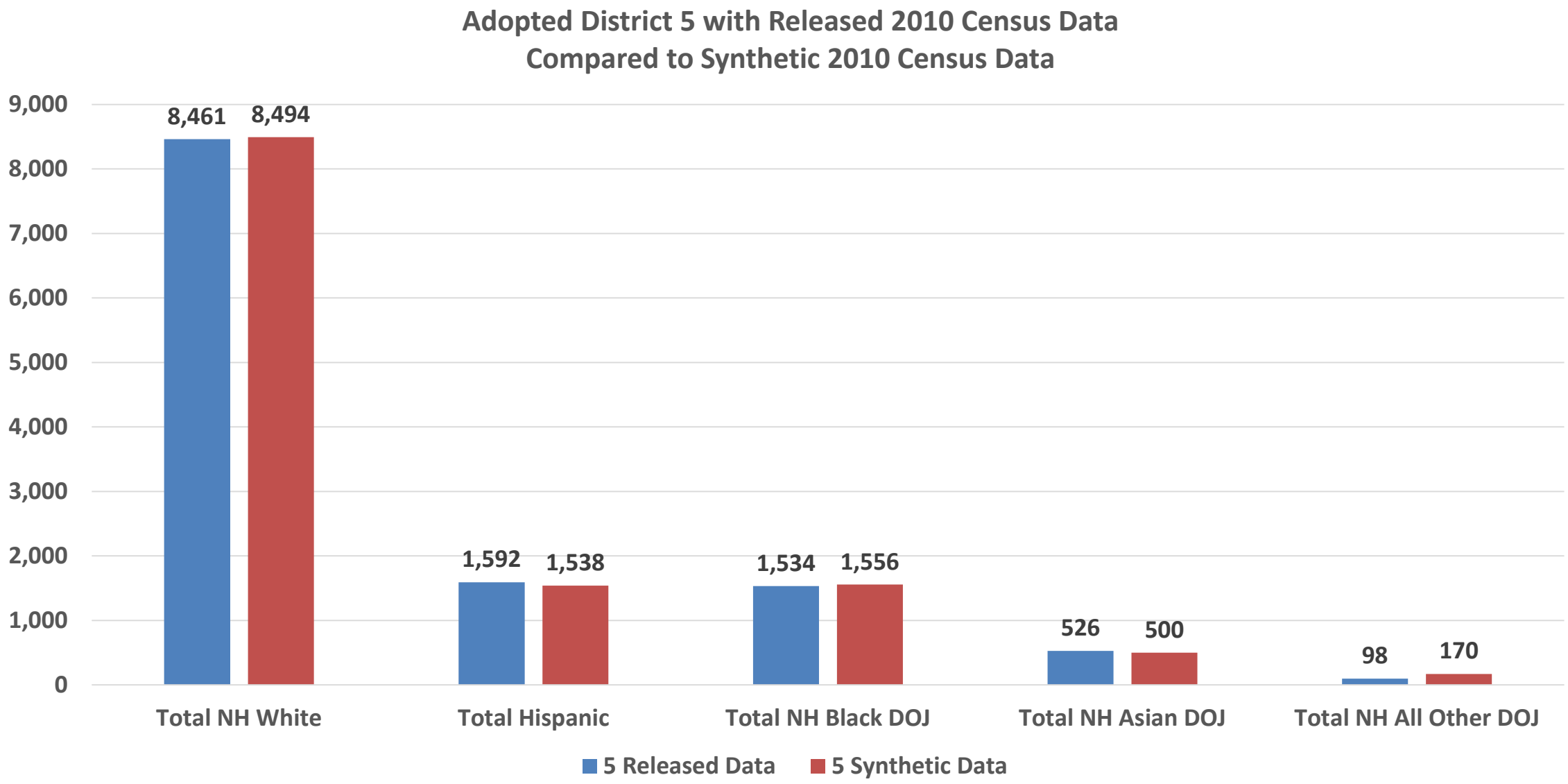
4,696
3,945
4,130
3,508
3,377
902
796
171
294
Total NH White
Total Hispanic
Total NH Black DOJ
Total NH Asian DOJ
Total NH All Other DOJ
4 Released Data
4 Synthetic Data


Adopted District 5 with Released 2010 Census Data
Compared to Synthetic 2010 Census Data
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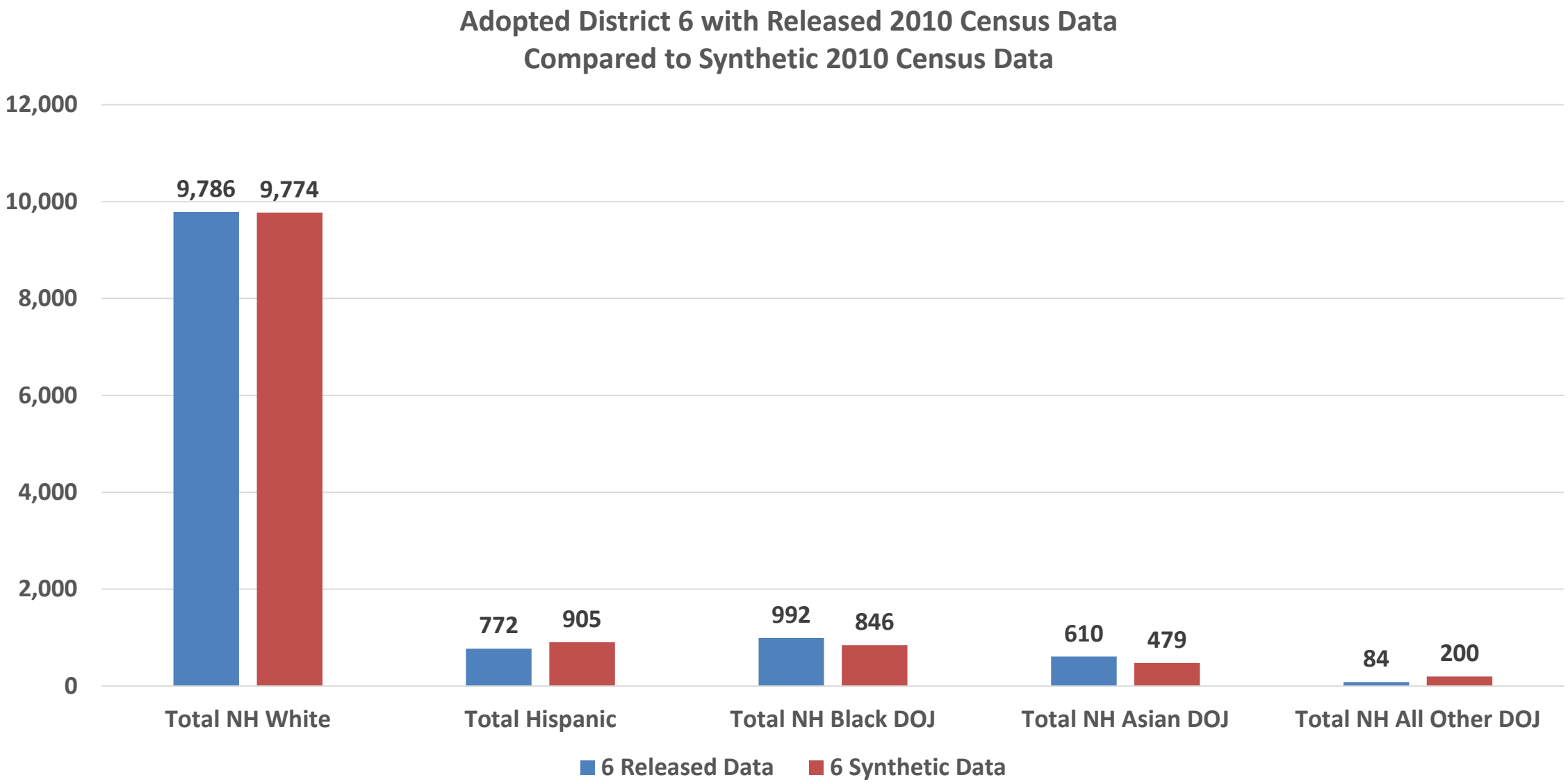
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
8,461
8,494
1,592
1,538
1,534
1,556
526
500
98
170
Total NH White
Total Hispanic
Total NH Black DOJ
Total NH Asian DOJ
Total NH All Other DOJ
5 Released Data
5 Synthetic Data


Adopted District 6 with Released 2010 Census Data
Compared to Synthetic 2010 Census Data
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10,000
8,000
6,000
4,000
2,000
0
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9,774
772
905
992
846
610
479
84
200
Total NH White
Total Hispanic
Total NH Black DOJ
Total NH Asian DOJ
Total NH All Other DOJ
6 Released Data
6 Synthetic Data

District 1

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	13,008	12,907	-101	-0.78%	1,411	10.8%
Housing Units	4,513	4,513	0	0.00%	0	0.0%
Occupied Units	4,283	4,002	-281	-6.56%	599	14.0%
Vacant Units	230	511	281	122.17%	599	260.4%
Not Hispanic or Latino:	4,881	5,106	225	4.61%	1,121	23.0%
White alone	3,155	3,204	49	1.55%	665	21.1%
Black or African American alone	1,222	1,272	50	4.09%	534	43.7%
American Indian and Alaska Native alone	28	17	-11	-39.29%	45	160.7%
Asian alone	292	391	99	33.90%	307	105.1%
Native Hawaiian and Other Pacific Islander alone	3	1	-2	-66.67%	4	133.3%
Some Other Race alone	41	56	15	36.59%	83	202.4%
Two or More Races	140	165	25	17.86%	197	140.7%
Hispanic or Latino:	8,127	7,801	-326	-4.01%	1,432	17.6%

District 2

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	13,466	13,494	28	0.21%	1,956	14.5%
Housing Units	6,215	6,215	0	0.00%	0	0.0%
Occupied Units	5,894	5,654	-240	-4.07%	556	9.4%
Vacant Units	321	561	240	74.77%	556	173.2%
Not Hispanic or Latino:	10,674	10,679	5	0.05%	1,461	13.7%
White alone	8,269	8,168	-101	-1.22%	1,099	13.3%
Black or African American alone	1,516	1,551	35	2.31%	733	48.4%
American Indian and Alaska Native alone	19	10	-9	-47.37%	23	121.1%
Asian alone	663	713	50	7.54%	518	78.1%
Native Hawaiian and Other Pacific Islander alone	1	6	5	500.00%	7	700.0%
Some Other Race alone	42	61	19	45.24%	51	121.4%
Two or More Races	164	170	6	3.66%	222	135.4%
Hispanic or Latino:	2,792	2,815	23	0.82%	1,033	37.0%

District 3

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	12,735	12,746	11	0.09%	1,635	12.8%
Housing Units	4,485	4,485	0	0.00%	0	0.0%
Occupied Units	4,085	4,328	243	5.95%	469	11.5%
Vacant Units	400	157	-243	-60.75%	469	117.3%
Not Hispanic or Latino:	8,511	8,517	6	0.07%	1,104	13.0%
White alone	2,405	2,587	182	7.57%	736	30.6%
Black or African American alone	5,402	5,255	-147	-2.72%	859	15.9%
American Indian and Alaska Native alone	29	27	-2	-6.90%	38	131.0%
Asian alone	391	346	-45	-11.51%	319	81.6%
Native Hawaiian and Other Pacific Islander alone	5	20	15	300.00%	25	500.0%
Some Other Race alone	50	33	-17	-34.00%	65	130.0%
Two or More Races	229	249	20	8.73%	304	132.8%
Hispanic or Latino:	4,224	4,229	5	0.12%	1,215	28.8%

District 4

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	13,398	13,306	-101	-0.75%	1,635	12.2%
Housing Units	5,803	5,803	0	0.00%	0	0.0%
Occupied Units	5,483	5,045	-281	-5.12%	469	8.6%
Vacant Units	320	758	281	87.81%	469	146.6%
Not Hispanic or Latino:	9,453	9,176	225	2.38%	1,104	11.7%
White alone	4,872	4,696	49	1.01%	736	15.1%
Black or African American alone	3,404	3,377	50	1.47%	859	25.2%
American Indian and Alaska Native alone	12	16	-11	-91.67%	38	316.7%
Asian alone	854	796	99	11.59%	319	37.4%
Native Hawaiian and Other Pacific Islander alone	4	13	-2	-50.00%	25	625.0%
Some Other Race alone	53	30	15	28.30%	65	122.6%
Two or More Races	254	248	25	9.84%	304	119.7%
Hispanic or Latino:	3,945	4,130	-326	-8.26%	1,215	30.8%

District 5

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	12,211	12,258	47	0.38%	2,273	18.6%
Housing Units	4,035	4,035	0	0.00%	0	0.0%
Occupied Units	3,862	3,873	11	0.28%	307	7.9%
Vacant Units	173	162	-11	-6.36%	307	177.5%
Not Hispanic or Latino:	10,619	10,720	101	0.95%	2,019	19.0%
White alone	8,461	8,494	33	0.39%	1,585	18.7%
Black or African American alone	1,467	1,556	89	6.07%	1,019	69.5%
American Indian and Alaska Native alone	5	6	1	20.00%	11	220.0%
Asian alone	471	500	29	6.16%	515	109.3%
Native Hawaiian and Other Pacific Islander alone	0	0	0		0	
Some Other Race alone	29	8	-21	-72.41%	29	100.0%
Two or More Races	186	156	-30	-16.13%	272	146.2%
Hispanic or Latino:	1,592	1,538	-54	-3.39%	862	54.1%

District 6

Variable	Census 2010 Data	Synthetic 2010 Data	Net Difference Synthetic and Census Data	Percent Difference Synthetic vs. Census Data	Total Population Changes to Create Synthetic Block Data	Percent Population Changes to Create Synthetic Block Data
Total Population	12,244	12,204	-40	-0.33%	2,518	20.6%
Housing Units	4,535	4,535	0	0.00%	0	0.0%
Occupied Units	4,346	4,219	-127	-2.92%	375	8.6%
Vacant Units	189	316	127	67.20%	375	198.4%
Not Hispanic or Latino:	11,472	11,299	-173	-1.51%	2,393	20.9%
White alone	9,786	9,774	-12	-0.12%	1,936	19.8%
Black or African American alone	945	846	-99	-10.48%	809	85.6%
American Indian and Alaska Native alone	1	17	16	1600.00%	18	1800.0%
Asian alone	541	479	-62	-11.46%	680	125.7%
Native Hawaiian and Other Pacific Islander alone	7	0	-7	-100.00%	7	100.0%
Some Other Race alone	27	25	-2	-7.41%	52	192.6%
Two or More Races	165	158	-7	-4.24%	285	172.7%
Hispanic or Latino:	772	905	133	17.23%	877	113.6%