

# CITY OF LONG BEACH

# R-25

DEPARTMENT OF DEVELOPMENT SERVICES

333 West Ocean Blvd., 3rd Floor, Long Beach, CA 90802 (562) 570-5237

May 23, 2017

HONORABLE MAYOR AND CITY COUNCIL  
City of Long Beach  
California

## RECOMMENDATION:

Review the population data by Council District and direct the City Manager to work with the appropriate Departments to conduct the next population review for redistricting after the 2020 decennial census. (Citywide)

## DISCUSSION

The City Council is authorized by the City Charter to review the City population by Council District and enter into a redistricting process if there is an uneven distribution of residents. Typically, cities redistrict by Ordinance every decade, one year after the decennial census data is released. The City Charter states the City Council may choose to redistrict every five years or whenever it is determined to be necessary. Mid-decade redistricting is possible, though it requires additional levels of population estimation to extrapolate from the available data. In 2006, the last mid-decade redistricting period, the City Council chose to forgo a mid-decade redistricting process. The last redistricting process occurred in 2011 and was done based on 2010 decennial census data.

Section 103 of the City Charter reads in part: *The City shall be divided, for electoral purposes, into nine (9) Councilmanic Districts approximately equal in population. Commencing the second quarter of 1981 and at intervals of five (5) years, or at any other time the City Council may direct, the Planning Commission shall ascertain the number of inhabitants in each Councilmanic District and report its findings to the City Council. If the report shows that the Councilmanic Districts are not approximately equal in number of inhabitants, the City Council shall, by Ordinance, redistrict the City into nine (9) Councilmanic Districts, each having approximately an equal number of inhabitants.*

On March 2, 2017, the Planning Commission reviewed population estimates by Council District and unanimously voted to transmit the population estimates to the City Council. The City Council should use this data to determine if there is a significant imbalance between Council District populations that would prompt the need to redistrict. The Council District ideal population (citywide population divided by nine) and the percentage difference from the ideal population are key factors in making this determination. The limited data available mid-decade from the U.S. Census Bureau limits the accuracy and usefulness for redistricting. The 2011-2015 American Community Survey (ACS) five-year estimates data were used to estimate the population for each Council District. Table 1 depicts the population by Council District in 2010, estimates for 2015, and the percent

difference from the ideal population. A negative percentage indicates that the district has a smaller population than the ideal distribution; a positive percentage indicates that the district's population is larger than the ideal.

**Table 1: Population by Council District**

<i>Council District</i>	<i>2010 Total Population</i>	<i>Percent Difference from 2010 Ideal Population</i>	<i>2015 Estimate Total Population</i>	<i>Percent Difference from 2015 Ideal Population</i>
1	49,117	-4.37	49,051	-6.59
2	51,218	-0.28	51,106	-2.68
3	52,371	1.96	53,298	1.50
4	51,405	0.08	52,249	-0.50
5	49,852	-2.94	50,732	-3.39
6	49,444	-3.73	49,310	-6.10
7	52,013	1.27	56,075	6.78
8	53,009	3.21	56,090	6.81
9	53,828	4.80	54,702	4.17
<b>Total</b>	<b>462,257</b>	-	<b>472,613</b>	-
<b>Ideal Distribution</b>	<b>51,362</b>	-	<b>52,513</b>	-
+/- 5% range	48,794-53,930	-	49,888-55,138	-

While not defined within the City Charter or any statute, as a general rule, Council Districts should be within 5 percent above or below the ideal population (citywide population divided by nine). According to the ACS data, Long Beach's population increased by 2.19 percent between April 2010 and December 2015. Population change varied by Council District, with six districts increasing and three districts decreasing. The percent difference from the ideal population varies between 0.5 and 6.81 percent among the nine districts. The estimates show that five of nine Council Districts are within the 5 percent margin. The estimated population changes are shown in the attached map (Exhibit A – Population Change Map by Block Group). The divergence in population distribution is within the statistical margin of error of the data itself. There is no guarantee that a redistricting process would result in an actual population that is closer to the ideal population or whether the various sampling and estimating errors could in fact counterbalance any attempt to bring the district boundaries toward the ideal population.

Every ten years, the U. S. Census Bureau conducts a “point in time” count of every person in the United States. When this decennial census data is first released, it is the most accurate population data available. However, the data continually ages and becomes less accurate year after year. In the intervening years, the U. S. Census Bureau completes rolling estimates of population known as the ACS. The ACS data are “time period”

estimates, not a complete population count. The U.S. Census Bureau mails a survey to a random sample of addresses to collect population and other demographic data. The survey is sent to approximately 1 in 38 households per year, which accounts for between 0.5 and 10 percent of households in a given census tract. Non-responding households are contacted by phone, but unlike the decennial census, there are no serious consequences for a resident who chooses not to respond.

Though the ACS data is the best available data source for mid-decade population estimates, this data can be problematic for redistricting. In the ACS data, survey response rates, sampling, weighting, and statistical adjustments vary by census tract. The ACS data is survey data, not a complete population count. Survey data inherently includes a range of uncertainty due to sampling error and the margin of error is high for the population estimate provided for this redistricting review. For ACS data, the smallest level of geography that the data is available for is the block group level. The margin of error for the block groups range from 6 to 2,607. For this data there is a 90 percent confidence level that the population estimate is within the margin of error. For example, if the population estimate for a block group is 1,313 persons and the margin of error is 559, then there is a 90 percent confidence that the population for that block group is between 754 and 1,872 persons (1,313 +/- 559). This is a wide range when discerning population difference from the ideal population of 52,513. The margin of error for the block group population estimates make it uncertain that redistricting would result in populations in each Council District that are closer to the ideal population when compared with the ACS population estimates in Table 1.

Exhibit B shows the Coefficient of Variation (CV) for each block group, which is the measure of relative error in the estimate (the amount of sampling error in the estimate relative to the size of the estimate itself). The CV is determined by the ratio of the standard of error to the value being estimated, expressed as a percentage. The lower the number, the higher the relative reliability of the estimate. Most of the block groups have a medium reliability, between 12 and 40 percent, which means the estimates should be used with caution. The reliability is increased if the data is reviewed at the census tract level instead of by block group, but that level of geography is not useful for redistricting purposes.

The margin of error varies drastically throughout the City based on the population and survey responses within each block group. Response rate to the surveys also vary significantly for different populations throughout the City. For example, people who live on the western and northern areas of the City may be less likely to return the surveys than people who live on the eastern or southern areas. Additionally, this issue is compounded because the data is reported at the census block group level, which does not align with Council District boundaries. Because of this, using ACS data poses challenges for assigning population estimates for block groups that are located within two Council Districts and does not provide a reliable means to calculate the population per Council District. In order to best estimate population in these scenarios, block group population estimates were split and assigned to Council Districts based on area within each district. While staff made appropriate assumptions to assign those block group population estimates to the correct Council District, the results are not statistically credible. The ACS data, therefore, does not have a standard margin of error the way the decennial census does. For analysis over a broad area, such as measuring the population

of the state of California, the overall error remains low. However, for the task of local redistricting, which requires the use of census blocks to accurately determine Council District population, the error balloons to high levels in some block groups.

The redistricting process is meant to ensure that all Council Districts have nearly equal population. The City must comply with the California Election Code and the federal Voting Rights Act of 1965 for the redistricting process. In establishing the boundaries of the Council Districts, the City Council may give consideration to the following factors: (1) topography, (2) geography, (3) cohesiveness, contiguity, integrity, and compactness of territory, and; (4) community interest of the Council Districts.

Due to the issues with using ACS population estimates instead of the decennial census population counts, staff recommends conducting the next population review and redistricting process in 2021. Similarly, in 2006, the last mid-decade redistricting period, the City Council chose to forgo a mid-decade redistricting process. However, the City Council has the option to begin the redistricting process now with the less accurate ACS data. During the last redistricting process in 2011, the City Council adopted criteria prior to the start of the process to guide staff. Should the City Council wish to continue with the redistricting process mid-decade, staff recommends the City Council adopt similar criteria to guide staff through the redistricting process. These criteria are important to ensure a smooth process, provide transparency in the process, allow for meaningful public input and ensure a legally defensible outcome. The previously City Council-adopted criteria would serve as a basis for developing an updated set of criteria (Exhibit C – 2011 Redistricting Process Criteria). Also included for your reference is the November 29, 2016 memo, which provided a brief overview of the mid-decade redistricting process, including the existing criteria, roles of the City Council and staff, costs, deadlines, and planned methodology (Exhibit D – Mid-Decade Redistricting Process).

The California Environmental Quality Act (CEQA) requires analysis of discretionary projects carried out or approved by public agencies. Reviewing population data and providing direction to staff for redistricting is not defined as a “project” pursuant to Section 21065 of the CEQA guidelines.

This matter was reviewed by Assistant City Attorney Michael J. Mais on May 1, 2017 and by Budget Management Officer Rhutu Amin Gharib on May 4, 2017.

#### TIMING CONSIDERATIONS

City Council action is requested on May 23, 2017, to allow enough time to prepare for the redistricting process should the City Council choose to redistrict mid-decade.

#### FISCAL IMPACT

There is no fiscal or local job impact associated with the recommendation to conduct the next population review for redistricting after the 2020 decennial census. The preliminary estimated cost to conduct a mid-term redistricting process is between \$150,000 and \$200,000, and would require redirecting staff from other projects to accomplish redistricting within the required deadlines. If the City Council decides to begin redistricting now, staff will return to the City Council with a more detailed estimate of costs.

HONORABLE MAYOR AND CITY COUNCIL

May 23, 2017

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**SUGGESTED ACTION:**

Approve recommendation.

Respectfully submitted,



**AMY J. BODEK, AICP  
DIRECTOR OF DEVELOPMENT SERVICES**

AJB:LFT:CK:fn

P:\Planning\City Council Items (Pending)\Council Letters\2017\2017-05-23\DS - Redistricting v3.docx

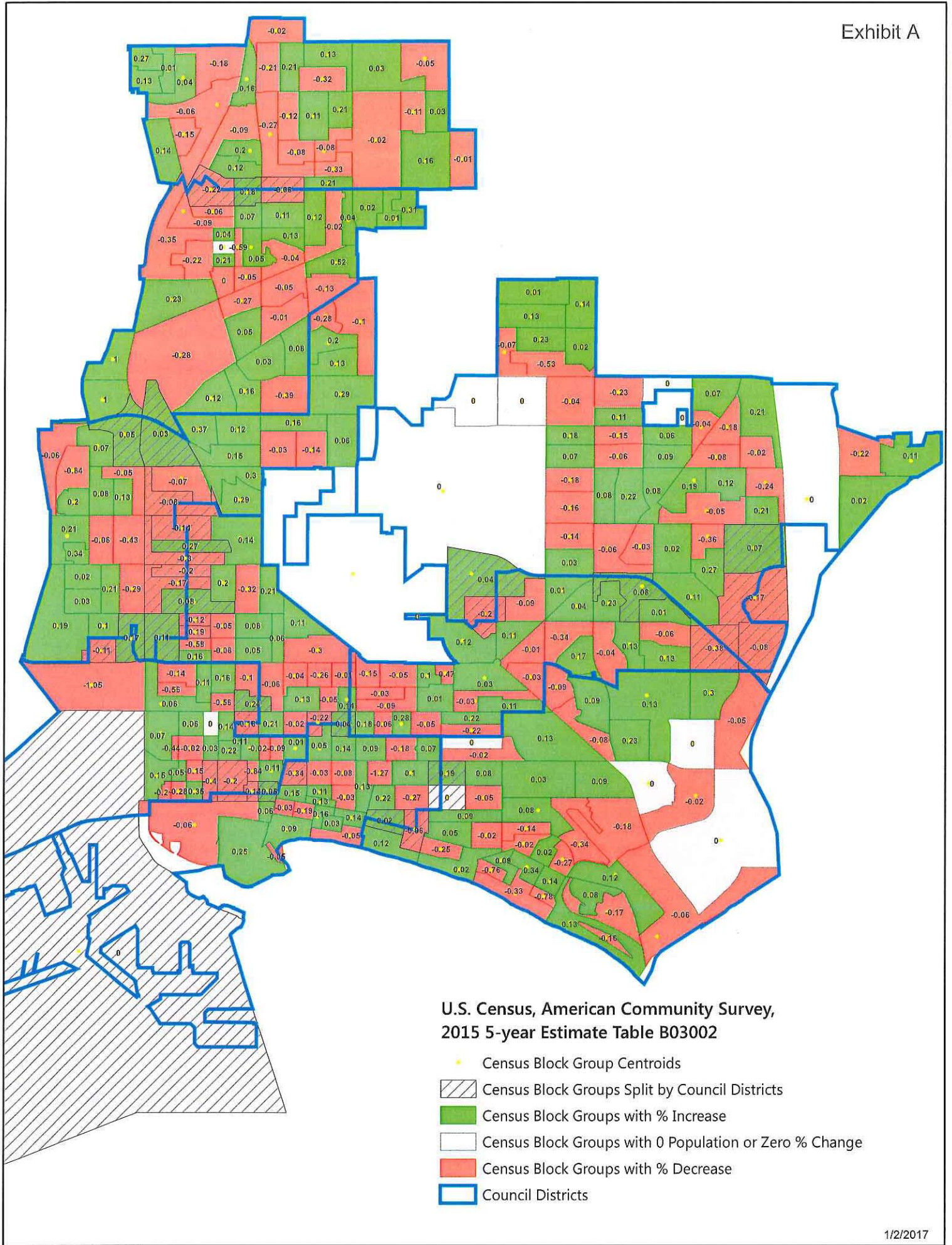
**APPROVED:**



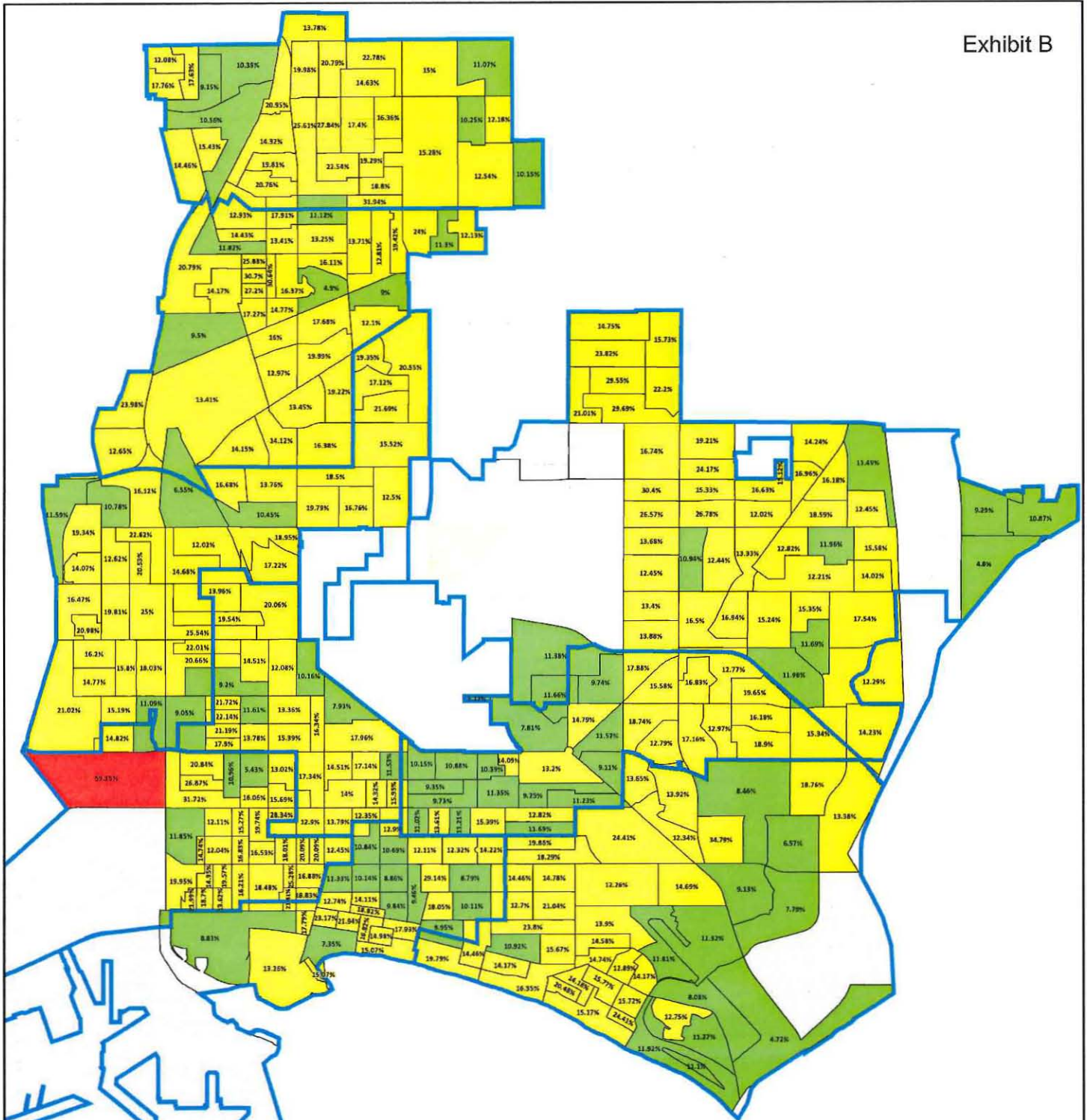
**PATRICK H. WEST  
CITY MANAGER**

Attachments:   Exhibit A - Population Change Map by Block Group  
                  Exhibit B - Coefficient of Variation Map by Block Group  
                  Exhibit C - 2011 Redistricting Process Criteria  
                  Exhibit D - Mid-Decade Redistricting Process Memo









**U.S. Census, American Community Survey, 2015 5-year Estimate Table B03002**

Census Block Groups by Coefficient of Variation (CV) - Measure of relative error in the estimate (Measures the amount of sampling error in the estimate relative to the size of the estimate itself)

- <= 12% High Reliability: Small CVs - sampling error is small relative to the estimate, and the estimate is reasonably reliable.
- 12% to 40% Medium Reliability: Estimates within this CV range must be used with caution.
- >40% Low Reliability: Large CVs - sampling error is large relative to the estimate and estimate is considered very unreliable.
- Census Block Groups with 0 Population
- Council Districts



# CITY OF LONG BEACH

OFFICE OF THE CITY MANAGER

Exhibit C

## R-18

333 WEST OCEAN BOULEVARD • LONG BEACH, CALIFORNIA 90802 • (562) 570-6711 • FAX (562) 570-6583

PATRICK H. WEST  
CITY MANAGER

March 22, 2011

HONORABLE MAYOR AND CITY COUNCIL  
City of Long Beach  
California

### RECOMMENDATION

Adopt criteria for the upcoming redistricting process as recommended by the City Manager, or adopt alternative criteria as deemed appropriate by the City Council.  
(Citywide)

### DISCUSSION

At the City Council Study Session on February 15, 2011, the City Council received a presentation regarding the upcoming redistricting process. A component of this presentation was the City Manager's recommendation for the criteria that should be used in the redistricting process. Although the feedback regarding the criteria provided by the City Council at the Study Session was favorable, staff recommends the City Council formally adopt the criteria.

The recommended criteria for the redistricting process are provided below. (The criteria have been numbered for identification purposes only.)

1. Transparency and public information should be of the highest priority;
2. Staff will receive input from many sources, but formal direction will come from the City Council in open session;
3. Direction to staff on adjustments shall occur in public session of the City Council;
4. Requested information will be shared publicly with all members of the City Council and the community;
5. Staff will provide the City Council with several options, and request direction until consensus is reached;
6. Deviations from mean population should be as small as possible, but not greater than +/- 5%;
7. Splits in neighborhoods, ethnic communities and other groups having a clear identity should be avoided;



HONORABLE MAYOR AND CITY COUNCIL

March 22, 2011

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8. Districts should be as compact as possible, avoiding gerrymandering;
9. Residences of Councilpersons should remain within their respective districts;
10. Boundaries should, wherever practicable, follow major roads and other readily identifiable features;
11. Preservation of communities of interest, where possible;
12. Boundary adjustments should generally consist of easily identifiable blocks/ areas;
13. Use Census tract boundaries wherever possible; Redistricting shall not split a Census block;
14. Preservation of population cores which have consistently been associated with particular districts;
15. Avoidance of large scale dislocations of district populations;
16. Recognition of inevitable and historical topographic and geographic limitations on district boundaries; and
17. Redistricting should focus on areas of population, and not on areas of non-population (parks, businesses, etc.).

This matter was reviewed by Chief Assistant City Attorney Heather A. Mahood on March 10, 2011 and by Budget Management Officer Victoria Bell on March 11, 2011.

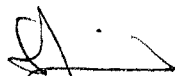
FISCAL IMPACT

There is no fiscal impact or local job impact associated with this recommendation.

SUGGESTED ACTION

Approve recommendation.

Respectfully submitted,



PATRICK H. WEST  
CITY MANAGER



Date: November 29, 2016

To: Patrick H. West, City Manager *T.H.W.*

From: *AJB* Andy J. Bodek, Director of Development Services

For: Mayor and Members of the City Council

Subject: **Mid-Decade Redistricting Process**

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### **Introduction**

On December 7, 2015, the Elections Oversight Committee held a meeting to discuss the redistricting process in Long Beach, and requested additional information from staff on the process, the timelines, the potential for a Citizen Redistricting Advisory Commission, and whether the City needs to redistrict. This memo will provide a brief overview of the mid-decade redistricting process, including the existing criteria, roles of the City Council and staff, estimated costs, deadlines, and planned redistricting methodology.

The Elections Oversight Committee further recommended that the City Council receive a report regarding the redistricting process, and the necessary steps to begin that process. This report will serve as the information necessary to begin the process.

### **Charter Requirements**

Section 103 of the Long Beach City Charter requires that the City be divided, for electoral purposes, into nine (9) Councilmanic Districts that are approximately equal in population. The opportunity for redistricting in Long Beach happens every five years, or at any other time the City Council directs. The last major redistricting was in 2011. Prior to that, in 2006, the City Council made a finding that redistricting was not necessary. Section 103 also directs that the Planning Commission shall ascertain the number of inhabitants in each Councilmanic District and report its findings to the City Council. If the report shows that the Districts are not approximately equal in number of inhabitants, the City Council will redistrict by ordinance.

### **Redistricting Criteria**

During the 2011 redistricting, the City Council adopted criteria prior to the start of the process to guide staff through the redistricting process. These criteria are important to ensure a smooth process, provide transparency in the process, allow for meaningful public input, provide direction to staff as they bring options back to the City Council, and ensure a legally defensible outcome. The previously adopted criteria would serve as a basis for developing an updated set of criteria for the 2016 redistricting process. A copy of the adopted 2011 Redistricting Criteria can be found in Attachment A.

**Roles of City Council and Staff**

The City Council, City staff, and the Long Beach community play key roles in guiding the redistricting process. The following is a brief description of the role each of the key stakeholders will play during redistricting.

Name	Role
City Council	Provides direction to staff, adopts final redistricting ordinance
City Manager	Acts as staff support for the redistricting process and coordinates department staff
City Clerk	Transmits final ordinance to County, verifies the maps with the County, oversees election process, consolidates precincts and voting centers within the new District boundaries, reports any reconciliations necessary prior to next election, assists voters with finding their Districts leading up to Election Day
City Attorney	Legal oversight; coordination with outside counsel
Technology & Innovation Dept., Development Services Dept.	GIS mapping of District boundaries and technical support for census data and population estimates
Planning Commission	Certification of population and District boundary data and recommendation of the need for redistricting to City Council
County of Los Angeles	Provides guidance on the District submission process; implements new boundary lines; voter outreach
Community	Provides public input during redistricting process

**Estimate of the Need for Redistricting**

Typically, cities redistrict by ordinance every decade, one year after the decennial census data is released. The Charter states that the City Council can choose to redistrict every five years, or whenever it is determined to be necessary. Mid-decade redistricting is possible, though it requires additional levels of population estimation in order to extrapolate from the available data.

For the mid-decade update, the only population estimates available from the U.S. Census Bureau are the American Community Survey (ACS) five-year survey estimates for Census Block Groups. This data can be problematic for redistricting. For example, many block groups are split by two or more Council Districts and, therefore, do not provide a reliable means to calculate the population per Council District. The level of uncertainty is further compounded by the fact that current Council District boundaries split census block group lines. While staff made appropriate assumptions to break up those block groups and speculatively estimate population, the results are not statistically accurate.

As a general rule, Council Districts should be within 5 percent above or below the ideal population (1/9 of the total population). The initial estimates show that eight of nine Council Districts are within the 5 percent margin. Council District 7 shows a growth of over 3,000 residents in the 2010-2014 time period, putting it 6.7 percent above the ideal. This divergence, however, is within the statistical margin of error within the data itself. There is no guarantee that a redistricting process would result in an actual population that is closer to the ideal or whether the various sampling and estimating errors could in fact counterbalance any attempt to bring the District boundaries toward the ideal population. See Attachment B for the mid-decade methodology utilized to estimate the Council District populations, and the challenges with using the data for redistricting.

#### **Timeline for Redistricting**

Since the last Election Oversight Committee meeting, staff has been reviewing information relevant to the mid-decade redistricting process, including accurate data options, mapping and analysis tools, and applicable laws and regulations. Staff has also examined available data sources and issues regarding overcrowding and vacancy. If redistricting occurs mid-decade, staff will do additional research in order to provide the most accurate estimates, despite the issues with using population estimates instead of decennial census counts.

In order to be certified for the 2018 election cycle, new District maps must be adopted by the City Council, and verified and approved by the Los Angeles County Registrar, by November 2017.

The Census Bureau will be releasing the latest population estimates, ACS 2015, on December 8, 2016. This would be the most suitable option for population estimates data if mid-decade redistricting is conducted. Once this data is released, staff will do a revised analysis of the estimated population by Council District and determine which Districts are within the 5 percent margin. Again, this analysis is based on population estimates, not actual counts, which is why the redistricting efforts after a decennial census produces the most accurate results.

After the revised data analysis, staff will bring the information to the Planning Commission in early spring 2017. The Planning Commission will make a recommendation to the City Council regarding the population distribution by Council District. Subsequently, the City Council will review the Planning Commission's recommendation, the revised population estimates by Council District, and other pertinent information, and decide whether or not to redistrict mid-decade or wait until 2021 when the decennial census data will be used.



Before adjusting the boundaries of a District, a minimum of two City Council meetings would be required.

### **Community Outreach Process**

Throughout the redistricting process, public input is one of the most important components that influence redistricting results. In the past, the City created a very robust public input process, designed to solicit feedback on proposed maps and ensure that the final maps are the result of community engagement. Previous efforts included community meetings, mapping workshops, City Council study sessions, Planning Commission meetings, website feedback, and transparency of all redistricting related data. Should the City Council wish to proceed with mid-decade redistricting, staff would continue to employ these techniques, as well as consider other avenues to encourage public engagement in the redistricting process.

### **Follow-up from Elections Oversight Committee**

On December 7, 2015, Common Cause presented the Long Beach Elections Oversight Committee with a PowerPoint presentation on the merits of developing a Citizen Redistricting Advisory Commission comprised of Long Beach residents. This section of the memo follows up on additional items of interest that arose during the December 7, 2015 presentation.

The amount of time necessary to establish a citizens' commission for redistricting depends on a number of factors. The Elections Oversight Committee and the City Council must determine a set of criteria for selecting commissioners or task force members, approve the criteria, and then appoint the commissioners, who then go through the City's onboarding process. In a recent example, the Medical Cannabis Task Force was created by the City Council on February 10, 2015, and held their first meeting on April 1, 2015. It took six weeks to get all task force members cleared to serve on the task force. This task force was facilitated by an outside consultant, involved numerous staff at multiple meetings, and cost approximately \$75,000. The Queen Mary Land Development Task Force met ten times, from January 2016 through August 2016, and was staffed by two City employees in addition to support and research by several other staff members and a design consultant. That effort cost approximately \$60,000. Management of task forces or advisory committees require a high level of staff commitment and financial resources, and do not necessarily result in additional community input.

Staff estimates that a citizens' commission for redistricting would require at least two full-time staff members, including a GIS expert, technical staff to ensure that online maps are frequently updated for public viewing, an assigned City Clerk staff member to coordinate meeting minutes and agendas, and a project manager to shepherd the process. In-house costs are estimated to be approximately \$150,000-\$200,000 for eight to nine months of a redistricting process. This higher cost estimate is due to the complexity and involvement of staff in preparing detailed population estimates and maps every time a suggestion for a boundary change is made.

A citizens' commission would be a process to vet information and gather public comments; however, the commission would be advisory to the City Council who has the final decision

authority on redistricting pursuant to the City Charter. Staff believes that the City can achieve the same benefits of a commission in a shorter time period and at lower cost through staff efforts and the planned robust public outreach.

### **Redistricting Requirements**

The purpose of redistricting is to ensure that the nine Councilmanic Districts have an approximate equal population. In addition to Article 1, Section 103 of the City Charter, redistricting must conform to other legal guidelines and regulations. Specifically, the federal Voting Rights Act and the State California Elections Code are applicable to redistricting at the local level, even for a charter city. The Voting Rights Act prohibits redistricting plans that discriminate on the basis of race, color, or membership in a language minority group. California Elections Code Section 21620 stipulates that the City Council may consider the following factors in establishing the boundaries of the Council Districts: (1) topography; (2) geography; (3) cohesiveness, contiguity, integrity, and compactness of territory; and (4) community of interest of the Districts.

These requirements are meant to ensure that all votes count equally and to prevent gerrymandering. During the redistricting process, the City Council cannot redraw the District lines in order to deliberately increase the likelihood of a particular political result. For example, a particular community could not be divided by District boundaries in order to diminish the voting power of a community with common social, cultural, or economic concerns; nor can the District lines be redrawn to intentionally stack a District to achieve a particular result.

For further information on the redistricting process, please contact Tom Modica, Assistant City Manager, at 562-570-5091, or Amy Bodek, Director of Development Services, at 562-570-6428. Thank you.

AJB:LT:fn  
P:\ExOfc\TFF\2016\11.29.16 Redistricting Memo for EOC v7 Draft.docx

ATTACHMENT A – 2011 REDISTRICTING CRITERIA  
ATTACHMENT B – POPULATION ESTIMATES

CC: ELECTIONS OVERSIGHT COMMITTEE MEMBERS  
CHARLES PARKIN, CITY ATTORNEY  
LAURA L. DOUD, CITY AUDITOR  
TOM MODICA, ASSISTANT CITY MANAGER  
ARTURO SANCHEZ, DEPUTY CITY MANAGER  
REBECCA JIMENEZ, ASSISTANT TO THE CITY MANAGER  
LINDA TATUM, PLANNING MANAGER

# City of Long Beach: Redistricting Criteria

*Adopted, March 22, 2011*

The Long Beach City Council adopted redistricting criteria applicable to Long Beach City Council districts for the 2011 redistricting process on Tuesday, March 22, 2011. The criteria are presented below and have been numbered for identification purposes only.

1. Transparency and public information should be of the highest priority;
2. Staff will receive input from many sources, but formal direction will come from the City Council in open session;
3. Direction to staff on adjustments shall occur in public session of the City Council;
4. Requested information will be shared publicly with all members of the City Council and the community;
5. Staff will provide the City Council with several options, and request direction until consensus is reached;
6. Deviations from mean population should be as small as possible, but not greater than +/- 5%;
7. Splits in neighborhoods, ethnic communities and other groups having a clear identity should be avoided;
8. Districts should be as compact as possible, avoiding gerrymandering;
9. Residences of Councilpersons should remain within their respective districts;
10. Boundaries should, wherever practicable, follow major roads and other readily identifiable features;
11. Preservation of communities of interest, where possible;
12. Boundary adjustments should generally consist of easily identifiable blocks/areas;
13. Use Census tract boundaries wherever possible; Redistricting shall avoid splitting Census blocks whenever possible;
14. Preservation of population cores which have consistently been associated with particular districts;
15. Avoidance of large scale dislocations of district populations;
16. Recognition of inevitable and historical topographic and geographic limitations on district boundaries; and
17. Redistricting should focus on areas of population, and not on areas of non-population (parks, businesses, etc.).



## Attachment B Population Estimates

The current Council Districts were drawn using data from the 2010 decennial census. That data set includes 100 percent certain data down to the block level and contains less than 1 percent margin of error.

For the mid-decade update, the only population estimates available from the Census Bureau are the American Community Survey (ACS) 5-year survey estimates for Census Block Groups. Unfortunately, many block groups overlap or are split by two or more Council Districts and, therefore, do not provide a reliable means to calculate the population per Council District. Using the ACS 2014 5-year survey estimates for Census Block Groups, we determined the percentage of difference in population from 2010 for each block group.

### Population Change Equation

$$\% \text{ Difference} = \frac{2014 \text{ Estimated Population} - 2010 \text{ Census Population}}{2010 \text{ Census Population}}$$

This block group change percentage was then used to estimate the 2014 population for each block within the block group. We then tallied the new estimated population for each Council District using block estimates.

Unlike the data in the decennial census, the ACS data is an estimate based on a rolling 5-year set of household surveys. The Census bureau mails questionnaires to between 0.5% and 10% of households in a given census tract. Non-responding households are contacted by phone, but unlike the decennial census, there are no serious consequences for a resident who chooses not to respond. Beginning in 2013, the Census Bureau also began supplementing its data collection with an internet-based survey.

In the ACS data, survey response rates, sampling, weighting, and statistical adjustments vary by census tract. The ACS data, therefore, does not have a standard margin of error the way the decennial census does. For analysis over a broad area, such as measuring the population of the State of California, the overall error remains low. However, for the task of local redistricting, which requires the use of census blocks to accurately determine District population, the error balloons to as high as 20 percent in some block groups. ACS 2015 data will be released in December 2016, which may provide us with more current data should we choose to redevelop estimates at that time, but will still have the same sampling and statistical limitations.

The level of uncertainty is further compounded by the fact that current Council District boundaries split census block group lines. While staff made appropriate assumptions to break up those block groups and speculatively estimate population, the results are not statistically credible.

Staff continues to refine the data in order to improve the reliability of the estimates. However, the available data from the U.S. Census limits the accuracy and usefulness of the data. Initial results are shown in the table below. A negative percentage indicates that the District has a smaller population than the ideal distribution; a positive percentage indicates that the District's population is larger than the ideal.



Council District	2010 Population (Census)	Variance from 2010 Ideal	2014 Estimate Total Population	Variance from 2014 Ideal
1	49,117	-4.37%	49,693	-4.73%
2	51,218	-0.28%	51,817	-0.65%
3	52,371	1.96%	51,301	-1.64%
4	51,405	0.08%	52,106	-0.10%
5	49,852	-2.94%	51,067	-2.09%
6	49,444	-3.73%	49,757	-4.60%
7	52,013	1.27%	55,662	6.72%
8	53,009	3.21%	53,353	2.29%
9	53,828	4.80%	54,662	4.80%
<b>Total</b>	<b>462,257</b>		<b>469,418</b>	
<b>Ideal Population</b>	<b>51,362</b>		<b>52,158</b>	
<b>+/- 5% Range</b>	<b>48,794 - 53,930</b>		<b>49,550 – 54,766</b>	

As a general rule, Council Districts should be within 5 percent above or below of the ideal population (1/9 of the total population). The preliminary numbers using ACS 2014 data show that eight out of nine Districts are within this 5 percent. Council District 7 is now overpopulated with a total of 55,662 residents, 6.72 percent more than the 52,158 statistical ideal. This divergence, however, is within the statistical margin of error within the data itself. There is no guarantee that a redistricting process would result in an actual population that is closer to the ideal or whether the various sampling and estimating errors could in fact counterbalance any attempt to bring the District boundaries toward the ideal population.

Alternatively, the City Council can initiate a citywide census instead of relying on census data. This option requires significant investment in terms of time and financial resources. Staff believes that there is enough available data, both internally and externally, to construct a good estimate of the changes in population in each District since 2011, despite the limitations of the available information. As such, staff does not recommend initiating a Citywide census if the City Council determines that a 2016 redistricting process is necessary.