

## MEMORANDUM

TO: Tom Tomlinson, City of San Diego  
Marco Camacho, City of San Diego

FROM: Stephen Cook, PE, Chen Ryan Associates

DATE: May 21, 2019

RE: **City of San Diego DIF Program – Residential Scaling Methodology**

---

The City of San Diego (City) is currently investigating the potential for changing the residential fee structure within their Developer Impact Fee (DIF) program. The fee structure would be changed from a flat fee, by unit type, to a scaled fee based on the unit type and size. The purpose of this memo is to document the sources, assumptions and methodologies utilized to develop a recommended fee scaling structure for residential units within the DIF program.

### 1. Current DIF Program

The City currently maintains a DIF program which provides funding for public facilities projects throughout the City, including transportation, fire services, libraries and parks. DIF fees are currently calculated, collected and spent within each Community Planning Area. The dollar amount of the DIF is based upon the collective cost of remaining public facilities projects, divided by total community development allowed by the respective currently adopted Community Plan (buildout of the adopted Land Use Element). At time of building permit issuance, the owner/developer of any parcel being developed must pay a DIF based on the DIF Rate Schedule in effect at the time of building permit issuance, and as determined by the type of development. Currently, the fee program has a flat rate for residential units based on type (Single Family or Multifamily), while the fees for commercial uses (such as retail, office, etc.) are based on the type and size of the development.

### 2. Potential Changes to the Current DIF Program

As noted previously, the City of San Diego is currently investigating the potential for changing the residential fee structure from a flat fee, by unit type, to a scaled fee based on the unit type and size. To make this change, and still maintain the nexus analyses that were developed for each community for the DIF Program, the new fee structure must do two things 1) the new fee structure cannot exceed the maximum residential fee values that were established for the current DIF program; 2) a connection has to be made relating to the fee's magnitude and the unit's impact on the improvements or four asset classes included in the program (transportation improvements, fire services, libraries and parks).

Based on the two nexus compliance objectives outlined above, the development of the scaled fee structure (based on unit size) should be developed using the following guidelines:

1. Develop a fee structure that is scaled as a percentage of the maximum residential fee, by community, that was authorized by the current DIF program.

2. Identify a metric, in which the fee can be scaled to, which relates to both the size of a residential unit and the impact the unit will have on the four asset classes.

### 3. Relating Unit Size to the Impacts on Asset Classes

As noted previously, to maintain the nexus established for the current DIF program, any cost scaling that is applied to residential fees must also reflect their associated impacts on the asset classes covered by the program. Therefore, the fee scaling must be based on a metric that relates both to the size of the unit and its impact to the asset classes.

One key metric that potentially relates to the size of a unit as well as the magnitude of impact on the four asset classes is the population. For example, larger units have the potential to attract a larger household population, thereby placing an additional burden on the asset classes included in the DIF program due to more people from that household using the associated facilities and services. Therefore, it can be argued that these larger units should pay a higher fair-share contribution towards the services, facilities and improvements included in the City’s DIF program. **Table 1** outlines how an increased population can relate to each asset class included in the current DIF program.

**Table 1: Relationships Between Population and the Asset Classes Included in the DIF Program**

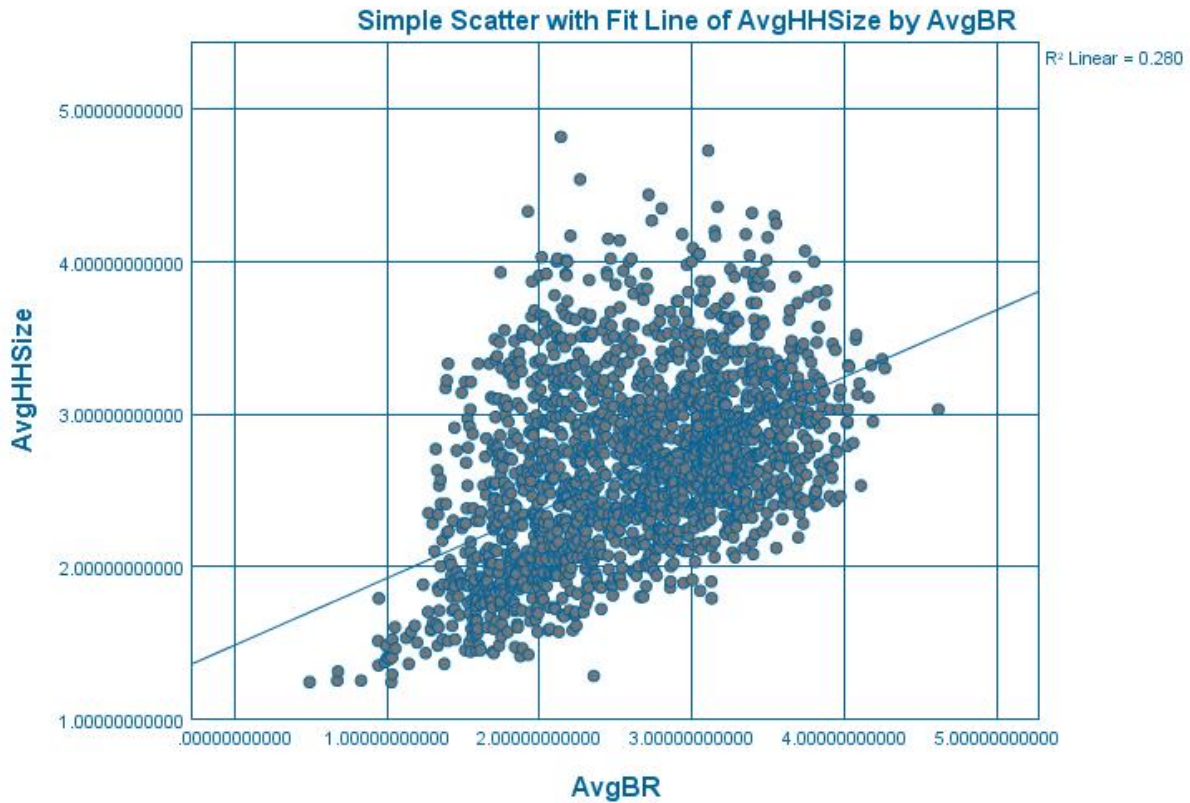
Asset Class	Relation to Population
<p style="text-align: center;"><b>Fire Services</b></p>	<p>The City of San Diego General Plan (2008) established the following policy regarding the development and funding of fire stations within the City:</p> <p>PF-D.2. Determine fire station needs, location, crew size and timing of implementation as the community grows.</p> <ul style="list-style-type: none"> <li>a) Use the fire unit development performance measures (based on population density per square mile) shown in Table PF-D.1 to plan for needed facilities. Where more than one square mile is not populated at similar densities, and/or a contiguous area with different density types aggregates into a population cluster area, use the measures provided in Table PF-D.2.</li> <li>b) Reflected needed fire-rescue facilities in community plans and associated facilities financing plans as a part of community plan updates and amendments.</li> </ul> <p>As noted in the policies listed above, fire station needs and implementation are to be determined as a community grows. The performance measures used to determine these improvements are based on population density. Therefore, the higher and denser the population is, the higher the demand for fire needs.</p>
<p style="text-align: center;"><b>Library</b></p>	<p>The City of San Diego General Plan (2008) established the following policy regarding the development and funding of libraries within the City:</p> <p>PF-J.6. Design libraries to provide consistent and equitable services as communities grow in order to maintain service levels which consider operational costs and are based on established guidelines.</p> <p>As noted in the policy listed above, libraries need to be maintained and developed to provide consistent and equitable services as communities grow. Community growth and needs are typically directly related population growth. Therefore, this policy creates a direct link to the impact that new/additional population may have on the library asset class.</p>

**Table 1: Relationships Between Population and the Asset Classes Included in the DIF Program**

Asset Class	Relation to Population
Parks	<p>The City of San Diego General Plan (2008) established standards for the development of population-based parks and recreation facilities, including Recreation Centers and Aquatic Complexes (<i>For additional detail about population-based park categories and guidelines, see the General Plan, Table RE-2</i>).</p> <p>The City's General Plan establishes a minimum standard of 2.8 acres of community park space for every 1,000 people. This standard creates a direct link to the impact of population to the impacts on the park asset class.</p>
Transportation	<p>The transportation related facilities included in the DIF program are generally developed based on the overall travel demand. Therefore, the higher the population within an area, the higher the demand for transportation facilities within the area across all modes of travel. This asset class can be directly related to household population size since the transportation related trip demands are directly correlated on a per person basis (2009 National Household Travel Survey found that each person generally generates 3.79 trips per day).</p>

#### 4. Link between Residential Unit Size and Household Population

In theory, the larger a residential unit (based on total SF), the more people it could house. Unfortunately, based on initial research there was no readily available data confirming this theory. However, it was found that American Community Survey 2016 (5 Year Estimate) does provide both Average Household Size (AvgHHSIZE) and Average Number of Bedroom data, for each census block group. Therefore, using this data could establish a link between Average Household Size (i.e. people per household) and the average number of bedrooms per household. Using the Statistical Packages of the Social Sciences (SPSS) software, a regression analysis was performed for the entire San Diego Region (1,187,644 points of data) to determine the statistical relationship between overall household size and the total number of bedrooms within the household. **Figure 1** below displays the results of the statistical analysis.



**Figure 1: Relationship between Average Household Size and Number of Bedrooms**

This statistical analysis found the relationship between Average Household Population and Average Number of Bedrooms within the household is as follows:

$$\text{Average Household Population} = 1.483 + 0.440(\text{The Average Number of Bedrooms})$$

Using this formula, the average household population per number of bedrooms was calculated for households with one to five bedrooms, which is the general number of bedrooms range found within the Region. **Table 2** displays the average household population by number of bedrooms, as determined by the statistical analysis.

**Table 2: Household Population by Bedroom - City of San Diego**

Number of Bedrooms	Average Household Population
1	1.9
2	2.4
3	2.8
4	3.2
5	3.7

Source: US Census – 2016 American Community Survey 5-Year Estimate

Note

Average number of people per household, based on total number of bedrooms

Once the relationship between average household population and average number of bedrooms was established, a relationship between number of bedrooms and residential unit size (sf) was needed. Once this relationship was established, the size of the residential unit is correlated back to the average population size using the number of bedrooms as the common link.

SANGIS parcel data, throughout the entire San Diego Region, was utilized to determine this relationship between residential unit size and number of bedrooms (over 785,000 data points). The SANGIS parcel data includes information such as land use type, total livable square feet (unit SF excluding uses such as garages), number of bedrooms and year built. This data was utilized to determine the average unit size (SF) based on the total number of bedrooms for both single family and multifamily units, as displayed in **Table 3**.

**Table 3: Household Population by Unit Size**

Bedrooms	Average Population <sup>1</sup>	Size (SF)	
		Single Family	Multifamily
1	1.9	870	706
2	2.4	1,188	1,084
3	2.8	1,630	1,436
4	3.2	2,228	N/A
5	3.7	2,996	N/A

Source: Chen Ryan Associates, November 2018

Note

<sup>1</sup> Based on information provided in Table 2

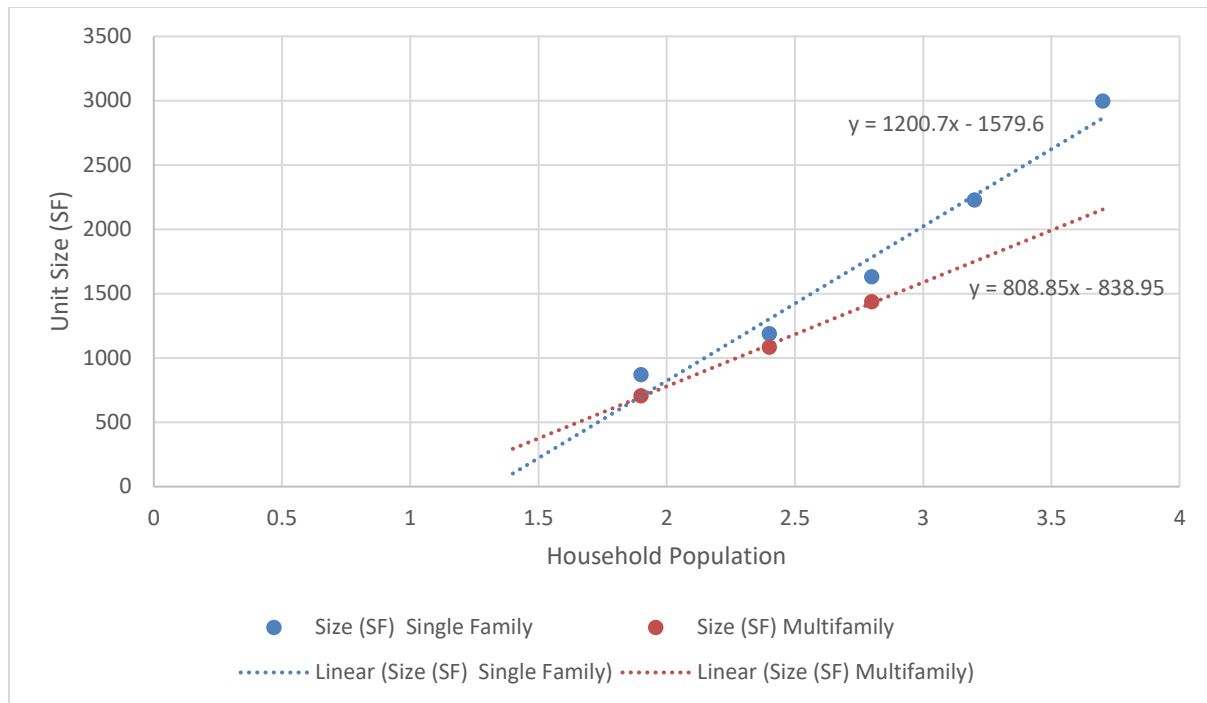
## 5. Scaling Based on Unit Size

As noted in Section 2, one of the guidelines for developing a scaled fee structure for residential units is to develop a structure that can be scaled as a percentage of the maximum residential fee authorized within the current DIF program. Therefore, the maximum authorized fee for residential units should be used as the high point of the scale (i.e. 100%) in which only the largest units pay, while the remaining smaller units would pay a percentage of the maximum fee. The percentage of the fee, in which smaller units would pay, should be based on the proportional burden they place on the different asset classes. As shown in in Table 1, household population size can be related to the burden placed on the DIF program asset classes; therefore, using household population size would be an equitable way in allocating the fee scale.

Using the trends set in Table 3, the household population can be calculated for any unit size. **Figure 2** displays the identified relationship between unit size and household population, as well as the equations for the plotted data points' trendlines. These equations, both for single family and multifamily units, can be used to derive the household population based on unit size.

Single Family: Projected Household Population = (Unit Size (SF) + 1579.6) / 1200.7

Multifamily: Projected Household Population = (Unit Size (SF) + 838.95) / 808.85



**Figure 2: Relationship between Unit Size and Household Population**

The units that would pay the maximum fee (i.e. those within the highpoint of the scale) was determined based on units that fall above the 80<sup>th</sup> percentile in size (SF) within the San Diego Region. This value was established for both single family and multifamily units utilizing the data in the SANGIS Parcel Database, the results of this analysis are displayed below:

Single Family Units 80<sup>th</sup> Percentile: 2,485 SF

Multifamily Units 80<sup>th</sup> Percentile: 1,336 SF

Based on the findings outlined above, it is recommended that single family units constructed larger than 2,500 SF would pay the maximum fee established for single family units by the current DIF program. Additionally, multifamily units constructed larger than 1,300 SF would pay the maximum fee established for multifamily units by the current DIF program. Using the equations derived above:

Single Family Units 80<sup>th</sup> Percentile: 2,500 SF = 3.4 People Per Household

Multifamily Units 80<sup>th</sup> Percentile: 1,300 SF = 2.6 People Per Household

Since unit sizes outlined above were identified as the highpoint of the scale, their associated household population values will be used as the highpoint value in which the fee structure will be scaled against for smaller units; meaning, the highpoint values listed above will be used as the denominator in calculating the percent of the maximum fee that the unit would pay (Projected Household Population / Highpoint People Per Household). Therefore, the percent of the maximum residential fee the unit would be calculated as follows:

Single Family: Percent of Maximum Fee =  $[(\text{Unit Size (SF)} + 1579.6) / 1200.7] / 3.4$

Multifamily: Percent of Maximum Fee =  $[(\text{Unit Size (SF)} + 838.95) / 808.85] / 2.6$

## 6. Recommendation

Based on the research and information presented in the previous sections, it is recommended that, if the City of San Diego decides to implement a scaled fee structure for residential uses in their DIF program, that the following methodology is used to develop the structure:

- The maximum residential fee allowable within each Community Planning Area (for both single family and multifamily units) should be used as the highpoint in which the fee scale is based on.
- The fee scale would have a cap at 2,500 SF for single family units and 1,300 SF for multifamily units. Units at or above this size would pay their respective maximum fee rate.
- For units below the cap, the fee rates would be calculated as follows:
  - Single Family: Maximum Fee X  $[(\text{Unit Size (SF)} + 1579.6) / 1200.7] / 3.4$
  - Multifamily: Maximum Fee X  $[(\text{Unit Size (SF)} + 838.95) / 808.85] / 2.6$

**Table 4** displays the scaled fee rate for single family units, in 50 square foot increments, based on the formula outlined above. The scaled fee rate should be applied to the total residential DIF fee rate for each respective CPA.

**Table 4: Scaled Fee Rate – Single Family**

Unit Size (SF)	Scaled Fee Rate
2,501 <	Full Fee
2,401 - 2,450	99%
2,351 - 2,400	97%
2,301 - 2,350	96%
2,251 - 2,300	95%
2,201 - 2,250	94%
2,151 - 2,200	93%
2,101 - 2,150	91%
2,051 - 2,100	90%
2,001 - 2,050	89%
1,951 - 2,000	88%
1,901 - 1,950	86%
1,851 - 1,900	85%
1,801 - 1,850	84%
1,751 - 1,800	83%
1,701 - 1,750	82%
1,651 - 1,700	80%
1,601 - 1,650	79%
1,551 - 1,600	78%

**Table 4: Scaled Fee Rate – Single Family**

Unit Size (SF)	Scaled Fee Rate
1,501 - 1,550	77%
1,451 - 1,500	75%
1,401 - 1,450	74%
1,351 - 1,400	73%
1,301 - 1,350	72%
1,251 - 1,300	71%
1,201 - 1,250	69%
1,151 - 1,200	68%
1,101 - 1,150	67%
1,051 - 1,100	66%
1,001 - 1,050	64%
> 1,000	63%

**Table 5** displays the scaled fee rate for multifamily units, in 50 square foot increments, based on the formula outlined above. The scaled fee rate should be applied to the total residential DIF fee rate for each respective CPA.

**Table 5: Scaled Fee Rate – Multifamily**

Unit Size (SF)	Scaled Fee Rate
1,251 <	Full Fee
1,201 - 1,250	99%
1,151 - 1,200	97%
1,101 - 1,150	95%
1,051 - 1,100	92%
1,001 - 1,050	90%
951 - 1,000	87%
901 - 950	85%
851 - 900	83%
801 - 850	80%
751 - 800	78%
701 - 750	76%
651 - 700	73%
601 - 650	71%
551 - 600	68%
501 - 550	66%
< 500	64%