KEYSER MARSTON ASSOCIATES

JOBS HOUSING NEXUS ANALYSIS
SAN FRANCISCO, CALIFORNIA

Prepared for
City and County of San Francisco

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May 2019

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I. EXECUTIVE SUMMARY

This Jobs Housing Nexus Analysis has been prepared for the City and County of San Francisco ("City") in support of the City's Jobs Housing Linkage Program ("JHLF Program") established in Section 413 of the San Francisco Planning Code. The JHLF Program establishes affordable housing fees applicable to non-residential development (the "Jobs Housing Linkage Fee" or "JHLF Fee"). The purpose of this report is to determine nexus support for fees under the JHLF Program consistent with the requirements of the Mitigation Fee Act (Government Code Section 66000 et. seq.). Findings represent the results of an impact analysis only and are not recommended requirements.

The nexus analysis establishes the relationships among construction of new non-residential buildings, added employment, and increased affordable housing demand. The analysis addresses construction of eight types of workplace buildings in San Francisco covering uses currently subject to the City's Jobs Housing Linkage Program plus medical and institutional uses which are included for consistency with the City's prior nexus study and to provide flexibility in adjusting program requirements in the future.

The eight building types addressed are:

- Office
- Research and Development (R&D)
- Retail
- Entertainment
- Hotel
- Production Distribution and Repair (PDR)
- Medical
- Institutional

The analysis establishes the additional demand for affordable units for each 1,000 square feet of net new non-residential gross floor area. This represents the maximum level of affordable unit demand to be mitigated by the City's JHLF Program consistent with the requirements of the Mitigation Fee Act, referred to for purposes of this Report as the "Affordable Unit Demand Factor." This Affordable Unit Demand Factor is a multiplier that the City can use in combination with current information regarding the subsidy required to produce affordable units to determine the maximum Jobs Housing Linkage Fee level consistent with the requirements of the Mitigation Fee Act.

Analysis Methodology

The nexus analysis links new non-residential buildings with new workers; these workers demand additional housing, a portion of which needs to be affordable to the workers in lower income households. The analysis begins by assuming a 100,000 square foot building for each of the eight building types and then makes the following calculations:

- Number of employees is estimated based on average employment density data.
- New jobs are adjusted to new households, using San Francisco demographics on the number of workers per household. We know from the Census that many workers are members of households where more than one person is employed; we use factors derived from the Census to translate the number of workers into the number of households.
- Household incomes of workers by building type is estimated based on data specific to San Francisco's workforce derived from the United States Census American Community Survey (ACS) Public Use Microdata Sample for 2011 through 2016.
- The household income categories addressed in the analysis are Extremely Low Income, Very Low Income, Low Income and Moderate Income. The number of households within each income category generated by the new development is calculated by comparing data on household income to the income limits applicable to each income category. The number of households per 100,000 square feet of non-residential gross floor area (GFA) is then divided by 100 to arrive at coefficients of housing units needed for every 1,000 square feet of GFA, which are the Affordable Unit Demand Factor conclusions of the analysis.

The maximum Jobs Housing Linkage Fee per square foot of gross floor area (GFA) supported by this nexus analysis may be determined by multiplying each Affordable Unit Demand Factor by the required net subsidy to deliver each unit of affordable housing in San Francisco ("affordability gap") and then dividing by 1,000 square feet. Affordability gaps are published by the Mayor's Office of Housing and Community Development and updated regularly for purposes of San Francisco's affordable housing programs. Because affordability gaps for San Francisco are published regularly and vary over time with changes in development costs and median income levels, the final step in the fee calculation, multiplication by an affordability gap to determine mitigation cost, was not included in this report.

Nexus Findings: Affordable Unit Demand Factors

The Affordable Unit Demand Factors for the eight building types are as follows:

Table I-1: Affordable Unit Demand Factors

Number of Affordable Units Needed per 1,000 Square Feet of Gross Floor Area	
Office	0.80892
R&D	0.44599
Retail	1.02229
Entertainment	0.34275
Hotel	0.51642
PDR	0.53153
Medical	0.68647
Institutional	0.33176

These figures express the maximum number of affordable units per 1,000 square feet of gross floor area to be mitigated by JHLF Fees applicable to the eight building types. Affordable Unit Demand Factors by income category are provided in Table III-6 on page 14. They are not recommended levels for requirements; they represent only the maximums established by the impact analysis.

The results of the analysis are heavily driven by the density of employees within buildings in combination with the household incomes of workers. Retail has both high employment density and a high proportion of lower income workers. These factors combine to drive the greater Affordable Unit Demand Factor conclusions for retail.

Appendix C addresses the potential for overlap between affordable housing impacts documented in this Jobs Housing Nexus Analysis and the City's separate Residential Affordable Housing Nexus Analysis. The analysis demonstrates that adopted requirements are within the maximums supported by the nexus analyses even in the unlikely event significant overlap were to occur.

II. INTRODUCTION

The following report is a Jobs Housing Nexus Analysis, an analysis of the linkages between non-residential development and the need for additional affordable housing in San Francisco. This Jobs Housing Nexus Analysis has been prepared by Keyser Marston Associates, Inc. (KMA) in support of affordable housing fees under the City's Jobs Housing Linkage Program.

Purpose and Use of This Study

The purpose of a Jobs-Housing Nexus Analysis is to document and quantify the impact of the development of new non-residential buildings and the employees that work in them, on the demand for affordable housing. This nexus study has been prepared for the limited purpose of determining nexus support for the San Francisco JHLF Program consistent with the requirements of Government Code Section 66000 (Mitigation Fee Act). The analysis establishes the basis for calculating Jobs Housing Linkage Fees that could be imposed on a non-residential development project in a manner consistent with the requirements of the Mitigation Fee Act, referred to for purposes of this Report as the "Affordable Unit Demand Factor." Because jobs in all buildings cover a range of compensation levels, there are housing needs at all affordability levels. This analysis quantifies the need for affordable housing created by eight categories of workplace buildings. The affordable housing need is then translated into Affordable Housing Demand Factors representing the number of affordable units needed per 1,000 square feet of non-residential gross floor area (GFA). The Affordable Unit Demand Factor is a multiplier that the City can use to quantify and impose JHLF Fees to address the additional demand for affordable housing units resulting from non-residential development.

This study updates a prior nexus study prepared by KMA in 1997. In the 21 years since the prior study was prepared, there have been changes in the business activity taking place in the City, in the occupation and compensation structure of the City's workforce and in the cost of delivering affordable units to workers who cannot afford housing at market rates, all of which make an update to the City's nexus study advisable at this time.

This analysis has not been prepared as a document to guide policy design in the broader context. We caution against the use of this study, or any impact study for that matter, for purposes beyond the intended use. All nexus studies are limited and imperfect but can be helpful for addressing narrow concerns. The findings presented in this report represent the results of an impact analysis only and <u>are not</u> policy recommendations for changes to the JHLF Program.

San Francisco's Jobs Housing Linkage Program

San Francisco's affordable housing fee program applicable to non-residential development has been in place for over 30 years. The predecessor to the current JHLF Program, the Office Affordable Housing Production Program (OAHHP), was enacted in 1985. The OAHHP program linked development of office buildings to the demand for affordable housing, by requiring office developers to either build affordable housing or pay an in-lieu fee. The program has been expanded and amended several times and now covers the following building types:

- Office,
- Research and Development (R&D),
- Retail,
- Entertainment,
- Hotel,
- Integrated Production Distribution and Repair (PDR), and
- Small Enterprise Workspace[1].

San Francisco's JHLF Program is established in Section 413 of the Planning Code. Fee requirements apply to projects adding more than 25,000 square feet of any combination of the above uses. Projects have the option to provide affordable units as an alternative to payment of fees or to comply through a combination of fee payment and provision of affordable units.

Legal Context

San Francisco's JHLF Program is among the first jobs housing linkage programs adopted in the U.S. Since the program was adopted in the mid-1980s, there have been several court cases and California statutes that affect what local jurisdictions must demonstrate when imposing impact fees on development projects. The most important U.S. Supreme Court cases are Nollan v. California Coastal Commission and Dolan v. City of Tigard (Oregon). The rulings on these cases, and others, help clarify what governments must find in the way of the nature of the relationship between the problem to be mitigated and the action contributing to the problem. Here, the problem is the lack of affordable housing and the action contributing to the problem is building workspaces that mean more jobs and worker households needing more affordable housing.

Following the Nollan decision in 1987, the California legislature enacted AB 1600 which requires local agencies proposing an impact fee on a development project to identify the purpose of the fee, the use of the fee, and to determine that there is a reasonable relationship between the fee's use and the development project on which the fee is imposed. The local agency must also demonstrate that there is a reasonable relationship between the fee amount and the cost of

[1] Defined in Planning Code Section 102 as a use comprised of discrete workspace units of limited size that are independently accessed from building common areas.

mitigating the problem that the fee addresses. Studies by local governments designed to fulfill the requirements of AB 1600 are often referred to as AB 1600 or "nexus" studies.

One court case that involved housing linkage fees was Commercial Builders of Northern California v. City of Sacramento decided in 1991. The commercial builders of Sacramento sued the City following the City's adoption of a housing linkage fee. Both the U.S. District Court and the Ninth Circuit Court of Appeals upheld the City of Sacramento and rejected the builders' petition. The U.S. Supreme Court denied a petition to hear the case, letting stand the lower court's opinion.

Since the Sacramento case in 1991, there have been several additional court rulings reaffirming and clarifying the ability of California cities to adopt impact fees. A notable case was the San Remo Hotel v. the City and County of San Francisco, which upheld the impact fee levied by the City and County on the conversion of residence hotels to tourist hotels and other uses. The court found that a suitable nexus, or deleterious impact, had been demonstrated. In 2009, in the Building Industry Association of Central California v. the City of Patterson, the Court invalidated the City's fee since the impact of the proposed project as related to the fee had not been demonstrated. A 2010 ruling upheld most of the impact fees levied by the City of Lemoore in Southern California. Of note relevant to housing impact fees was the judges' opinion that a "fee" may be "established for a broad class of projects by legislation of general applicability….the fact that specific construction plans are not in place does not render the fee unreasonable." In other words, cities do not have to identify specific affordable housing projects to be constructed at the time of adoption.

In summary, the case law at this time appears to be fully supportive of fees under the JHLF Program that have been in place in San Francisco since the 1980s and are the subject of this updated nexus analysis.

Analysis Scope

This analysis examines eight types of workplace buildings encompassing uses subject to the City's JHLF Program. The Institutional and Medical categories are not generally subject to fees at this time but are included for consistency with the 1997 study and to provide flexibility in amending the program in the future.

- **Office** encompasses the full range of office users in San Francisco from high tech firms that have represented an increasing share of leasing activity in recent years to the financial and professional services sector and medical offices.
- **Research and Development (R&D)** encompasses the Laboratory and Life Science uses defined in Planning Code Section 102.
- **Retail** includes all types of retail, restaurants and personal services.
- **Entertainment** includes performance venues, movie theaters and other entertainment.

- **Hotel** covers the range from full service hotels to limited service accommodations.
- **Production Distribution and Repair (PDR)** is a use category defined in Planning Code Section 102 encompassing industrial, wholesale, auto repair and service, storage, delivery services, and a range of other uses of an industrial or semi-industrial character.
- **Medical** encompasses hospitals, outpatient and nursing care facilities. Medical office is not included as it is captured within the office category.
- **Institutional** uses encompass educational, cultural, religious and other institutional buildings except medical, which are captured as a separate category.

Small enterprise workspace is not addressed as a separate use category in the nexus analysis because these buildings are defined more by the size of businesses and interior configuration and may include one or more of the above uses.

The household income categories addressed in the analysis are:

- Extremely Low Income: households earning up to 30% of median income;
- Very Low Income: households earning over 30% up to 50% of median;
- Low Income: households earning over 50% up to 80% of median; and,
- Moderate Income: households earning over 80% up to 120% of median.

Report Organization

The report is organized into five sections and three appendices, as follows:

- Section I is the Executive Summary;
- Section II provides an introduction;
- Section III presents an analysis of the jobs and housing relationships associated with each workplace building type and concludes with the number of households at each income level associated with each building type;
- Section IV provides draft findings consistent with the requirements of the Mitigation Fee Act;
- Appendix A provides a discussion of various specific factors and assumptions in relation to the nexus concept;
- Appendix B contains support information regarding the industry categories identified as applicable to each building type; and

- Appendix C – provides an analysis to address the potential for overlap between jobs counted in this Jobs Housing Nexus Analysis and the separate Residential Affordable Housing Nexus Analysis prepared for the City in 2016.

Data Sources and Qualifications

The analyses in this report have been prepared using the best and most recent data available. Local and current data were used whenever possible. The American Community Survey of the U.S. Census is used extensively. Other sources and analyses used are noted in the text and footnotes. While we believe all sources utilized are sufficiently accurate for the purposes of the analyses, we cannot guarantee their accuracy. KMA assumes no liability for information from these or other sources.

III. JOBS HOUSING NEXUS ANALYSIS

This section presents a summary of the analysis linking the development of the eight types of workplace buildings to the estimated number of lower income housing units required in each of four income categories.

Analysis Approach and Framework

The analysis establishes the jobs housing nexus for individual land use categories, quantifying the connection between employment growth in San Francisco and affordable housing demand.

The analysis examines the employment associated with the development of workplace building prototypes. Then, through a series of steps, the number of employees is converted to households and housing units by income level. The findings are expressed in terms of numbers of households per 100,000 square feet, for ease of presentation. In the final step, we convert the numbers of households for an entire building to the number of households per 1,000 square feet of building area, which becomes the basis for the Affordable Unit Demand Factors that are the conclusions of the analysis.

Household Income Limits

The analysis estimates demand for affordable housing in four household income categories: Extremely Low, Very Low, Low and Moderate Income. The analysis uses income limits applicable to San Francisco's affordable housing programs published by the San Francisco Mayor's Office of Housing and Community Development (MOHCD) for 2018 as shown in Table III-1.

Table III-1: 2018 Income Limits for San Francisco

	Household Size (Persons)					
	1	2	3	4	5	6 +
Extr. Low (Under 30% AMI)	$24,850	$28,400	$31,950	$35,500	$38,350	$41,200
Very Low (30%-50% AMI)	$41,450	$47,350	$53,300	$59,200	$63,950	$68,700
Low (50%-80% AMI)	$66,300	$75,750	$85,250	$94,700	$102,300	$109,900
Moderate (80%-120% AMI)	$99,500	$113,650	$127,850	$142,100	$153,400	$164,800
Median (100% of Median)	$82,900	$94,700	$106,550	$118,400	$127,850	$137,350

Source: San Francisco Mayor's Office of Housing and Community Development.

Analysis Steps

Following is a description of the four major steps in the analysis.

Step 1 – Estimate of Total New Employees

The first step identifies the total number of direct employees who will work in the building type being analyzed. Average employment density factors are used to make the calculation. Employment density estimates are drawn from a variety of sources including a separate KMA study on office employment density specific to San Francisco, estimates used in the San Francisco Planning Department's Land Use Allocation Model, Environmental Impact Reports, Institute of Transportation Engineers (ITE) and other sources. Estimates are tailored to the character of development and the types of tenancies expected in San Francisco.

- *Office* – 238 square feet per employee based on a separate office employment density study completed by KMA in 2017. The estimate reflects the mix of tech, professional services, financial, and legal tenants in San Francisco.
- *Research and Development* – 400 square feet per employee. The estimate reflects laboratory, life sciences and other research facilities and utilizes the Association of Bay Area Government's estimate of employment density from the ITE Trip Generation Manual, 5th Edition.
- *Retail* – Estimated at 368 square feet per employee consistent with the San Francisco Planning Department's Land Use Allocation Model and other planning applications. Restaurant space typically has a higher employment density, while retail space ranges widely depending on the type of retail, with furniture stores, for example, representing the lower end. The density range within this category is wide, with some types of retail as much as five times as dense as other types.
- *Entertainment* – Estimated at 900 square feet per employee. This category address lower employment density entertainment uses such as movie theaters and live performance venues. The estimate is based on ITE Trip Generation Manual, 7th Edition data applicable to movie theaters.
- *Hotel* – 787 square feet per employee. The 787 square feet per employee average covers a range from higher service hotels, which are far more employment intensive, to minimal service extended stay hotels which have very low employment density. The employment density estimate is consistent with the San Francisco Planning Department's Land Use Allocation Model.
- *Production Distribution and Repair (PDR)* – 597 square feet per employee. This category encompasses a wide range of industrial, storage and service uses. The employment density figure is specific to the PDR category and is based on the estimate used in the San Francisco Planning Department's Land Use Allocation Model.

- *Medical* – 350 square feet per employee. This category reflects hospitals, outpatient and nursing care facilities. The employment density estimate comes from the City's land use allocation model. By way of comparison, the Environmental Impact Report (EIR) for the reconstruction of San Francisco General Hospital reflected a similar employment density while the EIR for the University of California San Francisco Medical Center in Mission Bay reflects a somewhat higher density of employment than estimated here.
- *Institutional* – 1,000 square feet per employee. The institutional use category encompasses educational, cultural, religious and other institutional uses other than those of a medical nature which are represented in the separate medical category. The employment density estimate is based on data from the Institute of Transportation Engineers on employment densities for a range of institutional uses. Cultural facilities such as museums may be less dense than the average while schools may have a higher density of employment. The estimate is less than that used in the City's Land Use Allocation Model to capture lower density of employment uses included in this category.

KMA conducted the analysis on 100,000 square foot buildings. This facilitates the presentation of the nexus findings, as it allows jobs and housing units to be presented in whole numbers that can be more readily understood. At the conclusion of the analysis, the findings are converted to the number of units per 1,000 square feet so that the findings can be applied to buildings of any size. Table III-2 shows the employment estimate.

Table III-2: Number of Employees Per 100,000 Square Feet of Gross Floor Area (GFA)

	Employment Density (SF/Employee)	Number of Employees per 100,000 sq.ft. of GFA
Office	238	420
R&D	400	250
Retail	368	272
Entertainment	900	111
Hotel	787	127
PDR	597	168
Medical	350	286
Institutional	1,000	100

Step 2 – Adjustment from Employees to Employee Households

This step (Table III-3) converts the number of employees to the number of employee households, recognizing that that there is, on average, more than one worker per household, and thus the number of housing units needed for new workers is less than the number of new workers. The workers-per-worker-household ratio eliminates from the equation all non-working households, such as retired persons and students.

The number of workers per household in a given geographic area is a function of household size, labor force participation rate and employment availability, as well as other factors. According to the 2011-2015 ACS, the number of workers per worker household in San Francisco is 1.74, including full- and part-time workers. The total number of jobs created is divided by 1.74 to determine the number of new households. This is a conservative estimate because it excludes all non-worker households (such as students and the retired). If the average number of workers in all households was used, it would have produced a greater demand for housing units. Table III-3 presents the results of this calculation step.

Table III-3: Adjustment from Employees to Employee Households

	Number of Workers per 100,000 sq.ft. of GFA	Number of Worker Households
		(=no. workers / 1.74)
Office	420	241.7
R&D	250	143.8
Retail	272	156.3
Entertainment	111	63.9
Hotel	127	73.1
PDR	168	96.4
Medical	286	164.3
Institutional	100	57.5

Step 3 – Worker Household Incomes

Household incomes for workers are estimated using data from the U.S. Census American Community Survey (ACS) for 2011 to 2016. The ACS data is accessed in raw form through the Public Use Microdata Sample (PUMS) program. Data on household income from individual Census survey responses is summarized for each of the eight building types. Household income data is for San Francisco's workforce, including in-commuters. Workers were grouped by building type based on their industry category. A list of industries corresponding to each of the eight building types is included in Appendix Table B - 1. Incomes are adjusted for changes in the consumer price index (CPI) since the applicable survey year consistent with the approach used by the U.S. Department of Housing and Urban Development in establishing income limits. Each individual household's income is then compared to income limits for San Francisco to determine the applicable income category (Extremely Low, Very Low, Low and Moderate).

The percentage of individual survey respondents within each income category is summarized by building type as shown in Table III-4. As indicated, more than 65% of retail worker household and over 70% of hotel worker households are below the 120% of median income level. R&D space has lowest percentage of workers under 120% of median at approximately 31%.

Table III-4: Percentage of New Worker Households by Income Category								
	Office	**R&D**	**Retail**	**Entertainment**	**Hotel**	**PDR**	**Medical**	**Institutional**
Extremely Low	3.0%	3.5%	10.9%	8.1%	6.7%	7.4%	3.1%	7.4%
Very Low Income	4.2%	1.2%	15.1%	7.8%	17.1%	10.1%	5.5%	9.4%
Low Income	10.0%	6.4%	20.1%	16.2%	24.5%	18.4%	13.6%	18.6%
Moderate Income	16.2%	19.9%	19.4%	21.5%	22.3%	19.3%	19.6%	22.3%
Subtotal 0-120% of median	**33.5%**	**31.0%**	**65.4%**	**53.6%**	**70.7%**	**55.2%**	**41.8%**	**57.7%**
Above Moderate (over 120% of median)	**66.5%**	**69.0%**	**34.6%**	**46.4%**	**29.3%**	**44.8%**	**58.2%**	**42.3%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Lower income households have been found to over-report income in self-reported Census surveys,[2] which may artificially reduce the share that qualify within the four income tiers. Therefore, use of self-reported household income derived from American Community Survey data likely provides a conservative estimate that understates affordable housing demand.

The distribution of household incomes from Table III-4 is applied to the number of households from Table III-3 to calculate the number of affordable units needed by income category per 100,000 square feet of building area summarized in table III-5.

Table III-5: New Worker Households by Income Level per 100,000 square feet								
	Office	**R&D**	**Retail**	**Entertainment**	**Hotel**	**PDR**	**Medical**	**Institutional**
Extremely Low	7.3	5.1	17.0	5.2	4.9	7.1	5.1	4.3
Very Low Income	10.3	1.7	23.6	5.0	12.5	9.8	9.0	5.4
Low Income	24.3	9.2	31.3	10.4	17.9	17.7	22.3	10.7
Moderate Income	39.0	28.6	30.3	13.8	16.3	18.6	32.2	12.8
Subtotal 0%-120% of median	**80.9**	**44.6**	**102.2**	**34.3**	**51.6**	**53.2**	**68.6**	**33.2**
Above Moderate (over 120% of median)	160.8	99.2	54.1	29.6	21.4	43.2	95.7	24.3
Total	**241.7**	**143.8**	**156.3**	**63.9**	**73.1**	**96.4**	**164.3**	**57.5**

[2]Murray-Close, Marta and Heggeness, Misty L. 2018. Manning up and womaning down: How husbands and wives report their earnings when she earns more. The paper examines bias in reporting of income in Census surveys as a reflection of gender and gender roles based on a comparison to administrative records. Self-reported income was found to exceed that indicated in administrative records for households in the bottom 50th percentile of income (Figure 1, pp 13) in three of the four categories addressed.

Step 4 – Affordable Unit Demand Factors

Affordable unit demand factors representing the number of housing units per 1,000 square feet of building area are calculated by dividing the number of worker households within each income tier per 100,000 square feet of building area from step 3 by 100. The Affordable Unit Demand Factors for the eight building types are presented in Table III-6:

Table III-6: Affordable Unit Demand Factors
[Affordable Units Needed per 1,000 SF of GFA]

Building Type	Affordable Unit Demand Per 1,000 Square Feet of GFA				Total Affordable Unit Demand Per 1,000 Square Feet of GFA (0% to 120% AMI)
	Extremely Low	Very Low Income	Low Income	Moderate Income	
Office	0.07312	0.10265	0.24268	0.39047	0.80892
R&D	0.05100	0.01682	0.09175	0.28642	0.44599
Retail	0.17037	0.23571	0.31348	0.30274	1.02229
Entertainment	0.05176	0.04968	0.10373	0.13759	0.34275
Hotel	0.04891	0.12531	0.17919	0.16302	0.51642
PDR	0.07085	0.09757	0.17683	0.18628	0.53153
Medical	0.05059	0.09047	0.22300	0.32240	0.68647
Institutional	0.04255	0.05391	0.10722	0.12808	0.33176

These figures express the maximum number of affordable units to be mitigated per 1,000 square feet of gross floor area for the eight building types. They are <u>not</u> recommended requirements; they represent only the maximums established by this analysis, below which JHLF Program requirements may be set.

The results of the analysis are heavily driven by the density of employees within buildings in combination with the occupational make-up of the workers. Retail has both high employment density and a high proportion of lower paying jobs. These factors combine to drive the greater Affordable Unit Demand Factor conclusions for retail.

This is the summary of the housing nexus analysis, or the linkage from buildings to employees to housing demand, by income level in relationship to non-residential building area.

Maximum Supported JHLF Program Fees

This report does not include a calculation of maximum supported fee level. Maximum supported fee levels per square foot of building area may be calculated by:

1) Multiplying affordable unit demand factors summarized in Table III-6 by an affordability gap representing the estimated average net cost to produce each unit of affordable housing; and
2) Dividing by 1,000 square feet of building area.

Affordability gaps are published by the Mayor's Office of Housing and Community Development and periodically updated as required under Planning Code Section 415.5. Affordability gaps are subject to change as a function of construction costs and other factors. The step of calculating maximum supported fee levels in dollar terms was not included in this report given there is a process in place to determine and regularly update the affordability gap.

Appendix C addresses the potential for overlap between affordable housing impacts documented in this Jobs Housing Nexus Analysis and the City's separate Residential Affordable Housing Nexus Analysis. The analysis demonstrates that adopted requirements are within the maximums supported by the nexus analyses even after consideration of potential overlap between the impacts addressed in the two studies.

IV. MITIGATION FEE ACT FINDINGS

This section identifies the findings of the Nexus Analysis consistent with the requirements of the Mitigation Fee Act as set forth in Government Code § 66000 et seq:

(1) Identify the purpose of the fee (66001(a)(1)).

The purpose of the fee under the JHLF Program is to fund construction of affordable housing units to address the affordable housing needs of new workers added by construction of non-residential buildings in San Francisco.

(2) Identify the use to which the fee is to be put (66001(a)(2)).

JHLF Program fees are used to increase the supply of housing affordable to qualifying Extremely Low, Very Low, Low and Moderate-Income households earning from 0% through 120% of median income.

(3) Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed (66001(a)(3)).

The foregoing Jobs Housing Nexus Analysis has demonstrated that there is a reasonable relationship between the use of the fee, which is to increase the supply of affordable housing in San Francisco, and the development of new non-residential buildings which increases the need for affordable housing. Development of new non-residential buildings increases the number of jobs in San Francisco. A share of the new workers in these new jobs will have household incomes that qualify as Extremely Low, Very Low, Low and Moderate Income and result in an increased need for affordable housing.

(4) Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed (66001(a)(4)).

The analysis has demonstrated that there is a reasonable relationship between the development of non-residential workspace buildings in San Francisco and the need for additional affordable units. Development of new workspace buildings accommodates additional jobs in San Francisco. Eight different non-residential development types were analyzed (Office, R&D, Retail, Entertainment, Hotel, Production Distribution and Repair, Medical and Institutional). The number of jobs added in various types of new non-residential buildings is documented on page 10. Based on household income levels for the new workers in these new jobs, a significant share of the need is for housing affordable to Extremely Low, Very Low, Low and Moderate Income levels. The nexus

analysis concludes that for every 100,000 square feet of new office space, 80.9 incremental affordable units are needed. For R&D, 44.6 affordable units are needed per 100,000 square feet of space developed, 102.2 for Retail, 34.3 for Entertainment, 51.6 for Hotel, 53.2 for Production Distribution and Repair, 68.6 for Medical and 33.2 for Institutional.

(5) Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed. (66001(b)).

There is a reasonable relationship between the amount of the fee and the cost of the needed affordable housing attributable to the new non-residential development. The nexus analysis has quantified the increased need for affordable units in relation to each type of new non-residential use being developed. The cost of providing each needed affordable unit is determined by the Mayor's Office of Housing and Community Development and regularly updated. Costs reflect the net subsidy required to produce the affordable units based on recent cost information for affordable housing units. Per unit costs are multiplied by the Affordable Housing Demand Factors established in this nexus study and divided by 1,000 square feet to determine maximum per square foot fees based on affordable housing need attributable to each type of development. JHLF Fees are charged per square foot of building area and updated annually. JHLF Fees for each building type are set at a level that does not exceed the per square foot cost of providing affordable housing attributable to each type of development.

(6) A fee shall not include the costs attributable to existing deficiencies in public facilities (66001(g)).

The nexus analysis quantifies only the net new affordable housing needs generated by new non-residential development in San Francisco. Existing deficiencies with respect to housing conditions in San Francisco are not considered nor in any way included in the analysis.

APPENDIX A: DISCUSSION OF VARIOUS FACTORS IN RELATION TO NEXUS CONCEPT

This appendix provides a discussion of various specific factors and assumptions in relation to the nexus concept.

1. Addressing the Housing Needs of a New Population vs. the Existing Population

This nexus analysis assumes there is no excess supply of affordable housing available to absorb or offset new demand; therefore, new affordable units are needed to mitigate the new affordable housing demand generated by development of new workplace buildings.

This nexus study does not address the housing needs of the existing population. Rather, the study focuses exclusively on documenting and quantifying the housing needs created by development of new workplace buildings.

Local analyses of housing conditions have found that new housing affordable to lower income households is not being added to the supply in sufficient quantity to meet the needs of new employee households. If this were not the case and significant numbers of affordable units were being added to the supply, or if residential units were experiencing significant long-term vacancy levels, particularly in affordable units, then the need for new units would be questionable.

2. No Excess Supply of Affordable Housing

An assumption of this nexus analysis is that there is no excess supply of affordable housing available to absorb or offset new demand; therefore, new affordable units are needed to mitigate the new affordable housing demand generated by new non-residential development. Based on a review of San Francisco's Housing Element as well as recent Census information, conditions are consistent with this underlying assumption.

San Francisco is often ranked as one of the most expensive housing markets in the country. San Francisco's 2014 Housing Element indicates average rents for a two-bedroom apartment are more than twice the level that is affordable to a Low Income household and nearly four times the level affordable to Very Low Income households. The least expensive of 15 San Francisco neighborhoods surveyed as part of the Housing Element still has market rent levels that are more than twice the amount a Very Low income household can afford and well above a level affordable to Low Income households. Rents have increased significantly since the 2014 survey, further exacerbating the disparity between market rents and the rent level affordable to Extremely Low, Very Low, and Low-Income households. Ownership housing is similarly out of reach for the majority of households in San Francisco. According to the Housing Element, the median priced home is affordable to only 16% of San Francisco households. Census data for San Francisco (from the 2011 to 2015 American Community Survey) shows that 40% of all households in the City are paying thirty percent or more of their income on housing.

3. Nexus Relationships Hold on Macro Scale

The nexus analysis relates square feet of new non-residential development to added jobs in San Francisco on an individual building basis. While the analysis is conducted at the level of the individual building, the underlying relationships hold on a larger City-wide scale. KMA reviewed published data on office employment in San Francisco over the past 27 years in relationship to the absorption of new office space. As summarized in the table below, office employment has grown in proportion to the new office space that has been constructed and absorbed in San Francisco. Relationships between building area absorbed and jobs added has been relatively consistent over time with a modest trend toward increasing density of employment. As shown in the table below, over the past 27 years in San Francisco, an average of one new office job was added for every 235 square feet of added office space.

Table A-1
Relationship Between Added Jobs and Added Square Feet of Office Space in San Francisco

	1990	2017Q1	Incremental Growth 1990 - 2017
Office Square Feet in San Francisco [(1)]	59,857,000	79,953,100	20,096,100
Office Jobs in San Francisco	240,552	326,041	85,489
Ratio: Added Jobs to Square Feet of Office Space	**1 job per 249 square feet of office space**	**1 job per 245 square feet of office space**	**1 added job for every 235 square feet of added office space**

(1) Occupied Gross Floor Area.
Source: Office Employment Density Estimate. Keyser Marston Associates, Inc.

The above table is extracted from an analysis included in the 2017 Office Employment Density Estimate for San Francisco prepared by Keyser Marston Associates, Inc. The employment data is derived from the Quarterly Census of Employment and Wages and the data on office space absorption is reported by the brokerage firm Colliers International.

4. Substitution Factor

Any given new building may be occupied partly, or even perhaps totally, by employees relocating from elsewhere in the region. Buildings are often leased entirely to firms relocating from other buildings in the same jurisdiction. However, when a firm relocates to a new building from elsewhere in the region, there is a space in an existing building that is vacated and occupied by another firm. That building in turn may be filled by some combination of newcomers to the area and existing workers. Somewhere in the chain there are jobs new to the region. The net effect is that new buildings accommodate new employees, although not necessarily inside the new buildings themselves.

5. Indirect Employment and Multiplier Effects

The multiplier effect refers to the concept that the income generated by a new job recycles through the economy and results in additional jobs. The total number of jobs generated is broken down into three categories – direct, indirect and induced. In the case of this Jobs Housing Nexus Analysis, the direct jobs are those located in the new workspace buildings that would be subject to the linkage fee. Multiplier effects encompass indirect and induced employment. Indirect jobs are generated by suppliers to the businesses located in the new workspace buildings. Induced jobs are generated by local spending on goods and services by employees.

Multiplier effects vary by industry. Industries that draw heavily on a network of local suppliers tend to generate larger multiplier effects. Industries that are labor intensive also tend to have larger multiplier effects as a result of the induced effects of employee spending.

Theoretically, a jobs-housing nexus analysis could consider multiplier effects although the potential for double-counting exists to the extent indirect and induced jobs are added in other new buildings in jurisdictions that have jobs housing linkage fees. KMA chose to omit the multiplier effects (the indirect and induced employment impacts) to avoid potential double-counting and make the analysis more conservative.

In addition, the nexus analysis addresses direct “inside” employment only. In the case of an office building, for example, direct employment covers the various managerial, professional and clerical people that work in the building; it does not include the security guards, the delivery services, the landscape maintenance workers, and many others that are associated with the normal functioning of an office building. In other words, any analysis that ties lower income housing to the number of workers inside buildings will continue to understate the demand. Thus, confining the analysis to the direct employees does not address all the lower income workers associated with each type of building and understates the impacts.

6. Economic Cycles

An impact analysis of this nature is intended to support a one-time impact requirement to address impacts generated over the life of a project (generally 40 years or more). Short-term conditions, such as a recession or a vigorous boom period, are not an appropriate basis for estimating impacts over the life of the building. These cycles can produce impacts that are higher or lower on a temporary basis.

Development of new workspace buildings tends to be minimal during a recession and generally remains minimal until conditions improve or there is confidence that improved conditions are imminent. When this occurs, the improved economic condition will absorb existing vacant space and underutilized capacity of existing workers, employed and unemployed. By the time new buildings become occupied, conditions will have likely improved.

To the limited extent that new workspace buildings are built during a recession, housing impacts from these new buildings may not be fully experienced immediately, but the impacts will be experienced at some point. New buildings delivered during a recession can sometimes sit vacant for a period after completion. Even if new buildings are immediately occupied, overall absorption of space can still be zero or negative if other buildings are vacated in the process. Jobs added may also be filled in part by unemployed or underemployed workers who are already housed locally. As the economy recovers, firms will begin to expand and hire again filling unoccupied space as unemployment is reduced. New space delivered during the recession still adds to the total supply of employment space in the region. Though the jobs are not realized immediately, as the economy recovers and vacant space is filled, this new employment space absorbs or accommodates job growth. Although there may be a delay in experiencing the impacts, the fundamental relationship between new buildings, added jobs, and housing needs remains over the long term.

In contrast, during a vigorous economic boom period, conditions exist in which elevated impacts are experienced on a temporary basis. As an example, compression of employment densities can occur as firms add employees while making do with existing space. Compressed employment densities mean more jobs added for a given amount of building area. Boom periods also tend to go hand-in-hand with rising development costs and increasing home prices. These factors can bring market rate housing out of reach of a larger percentage of the workforce and increase the cost of delivering affordable units.

While the economic cycles can produce impacts that are temporarily higher or lower than normal, an impact fee is designed to be collected once, during the development of the project. Over the lifetime of the project, the impacts of the development on the demand for affordable housing will be realized, despite short-term booms and recessions.

7. Governmental Offices

The analysis has been performed for uses currently subject or potentially subject to the fee in the future. Buildings constructed by the City, State, or Federal government are generally exempt. However, governmental agencies also lease space in buildings that are built by the private sector and subject to the fee. For purposes of the analysis, tenancies in new office buildings are assumed to be primarily private sector tenants. Governmental agencies are not assumed as part of the tenant mix due to the difficulty in estimating the share governmental tenants would represent within privately developed buildings. To test the impact of this assumption, a sensitivity was performed to identify how findings would differ if office space were to be occupied by governmental tenants. The results indicate that affordable housing demand associated with occupancy by a governmental tenant would be greater than for the representative mix of private tenant types reflected in the analysis. This demonstrates that the approach used in the analysis, which does not assume governmental tenants, is conservative

because findings regarding affordable housing needs would be higher if a share of governmental tenants were included.

Table A-2
Percent of New Worker Households by Income Category – Sensitivity with Governmental Tenants

	Office Space Occupied by Private Tenant	Office Space Occupied by Governmental Tenants
Extremely Low	3.0%	3.3%
Very Low Income	4.2%	5.3%
Low Income	10.0%	13.1%
Moderate Income	16.2%	21.2%
Total 0% to 120% of median	**33.5%**	**42.9%**
Above Moderate (over 120% of median)	**66.5%**	**57.1%**
Total	**100%**	**100%**

APPENDIX B: LIST OF INDUSTRY CATEGORIES BY BUILDING TYPE

APPENDIX TABLE B-1
INDUSTRY CATEGORIES BY BUILDING TYPE
JOBS HOUSING NEXUS ANALYSIS
SAN FRANCISCO, CA

The following table summarizes the industry categories selected as applicable to each building type. Household income data by industry for San Francisco's workforce was translated to building type using the identified categories.

Office
Includes manufacturing businesses anticipated to locate offices rather than production facilities in San Francisco.

Computer and peripheral equipment manufacturing
Communications, and audio and video equipment manufacturing
Electronic component and product manufacturing, n.e.c.
Newspaper publishers
Periodical, book, and directory publishers
Software publishing
Internet publishing and broadcasting and web search portals
Wired telecommunications carriers
Telecommunications, except wired telecommunications carriers
Data processing, hosting, and related services
Libraries and archives
Other information services, except libraries and archives, and internet publishing and broadcasting and web search portals
Banking and related activities
Savings institutions, including credit unions
Nondepository credit and related activities
Securities, commodities, funds, trusts, and other financial investments
Insurance carriers and related activities
Real estate
Commercial, industrial, and other intangible assets rental and leasing
Legal services
Accounting, tax preparation, bookkeeping, and payroll services
Architectural, engineering, and related services
Specialized design services
Computer systems design and related services
Management, scientific, and technical consulting services
Advertising, public relations, and related services
Other professional, scientific, and technical services
Management of companies and enterprises
Employment services
Business support services
Investigation and security services
Services to buildings and dwellings (except cleaning during construction and immediately after construction)
Offices of physicians
Offices of dentists
Offices of chiropractors
Offices of optometrists
Offices of other health practitioners
Civic, social, advocacy organizations, and grantmaking and giving services
Business, professional, political, and similar organizations

APPENDIX TABLE B-1
INDUSTRY CATEGORIES BY BUILDING TYPE
JOBS HOUSING NEXUS ANALYSIS
SAN FRANCISCO, CA

Production, Distribution and Repair (PDR)
Animal food, grain and oilseed milling
Sugar and confectionery products
Fruit and vegetable preserving and specialty food manufacturing
Dairy product manufacturing
Animal slaughtering and processing
Retail bakeries
Bakeries and tortillerias, except retail bakeries
Seafood and other miscellaneous foods, n.e.c.
Not specified food industries
Beverage manufacturing
Tobacco manufacturing
Fiber, yarn, and thread mills
Fabric mills, except knitting mills
Textile and fabric finishing and coating mills
Carpet and rug mills
Textile product mills, except carpets and rugs
Knitting fabric mills, and apparel knitting mills
Cut and sew apparel manufacturing
Apparel accessories and other apparel manufacturing
Footwear manufacturing
Leather tanning and finishing, and other allied products manufacturing
Pulp, paper, and paperboard mills
Paperboard container manufacturing
Miscellaneous paper and pulp products
Printing and related support activities
Petroleum refining
Miscellaneous petroleum and coal products
Resin, synthetic rubber, and fibers and filaments manufacturing
Agricultural chemical manufacturing
Pharmaceutical and medicine manufacturing
Paint, coating, and adhesive manufacturing
Soap, cleaning compound, and cosmetics manufacturing
Industrial and miscellaneous chemicals
Plastics product manufacturing
Tire manufacturing
Rubber products, except tires, manufacturing
Pottery, ceramics, and plumbing fixture manufacturing
Clay building material and refractories manufacturing
Glass and glass product manufacturing
Cement, concrete, lime, and gypsum product manufacturing
Miscellaneous nonmetallic mineral product manufacturing
Iron and steel mills and steel product manufacturing
Aluminum production and processing
Nonferrous metal (except aluminum) production and processing
Foundries
Metal forgings and stampings
Cutlery and hand tool manufacturing
Structural metals, and boiler, tank, and shipping container manufacturing
Machine shops; turned product; screw, nut and bolt manufacturing
Coating, engraving, heat treating and allied activities
Ordnance
Miscellaneous fabricated metal products manufacturing
Not specified metal industries
Agricultural implement manufacturing
Construction, and mining and oil and gas field machinery manufacturing
Commercial and service industry machinery manufacturing

Metalworking machinery manufacturing
Engine, turbine, and power transmission equipment manufacturing
Machinery manufacturing, n.e.c. or not specified
Navigational, measuring, electromedical, and control instruments manufacturing
Household appliance manufacturing
Electric lighting and electrical equipment manufacturing, and other electrical component manufacturing, n.e.c.
Motor vehicles and motor vehicle equipment manufacturing
Aircraft and parts manufacturing
Aerospace products and parts manufacturing
Railroad rolling stock manufacturing
Ship and boat building
Other transportation equipment manufacturing
Sawmills and wood preservation
Veneer, plywood, and engineered wood products
Prefabricated wood buildings and mobile homes
Miscellaneous wood products
Furniture and related product manufacturing
Medical equipment and supplies manufacturing
Sporting and athletic goods, and doll, toy and game manufacturing
Miscellaneous manufacturing, n.e.c.
Not specified manufacturing industries
Motor vehicle and motor vehicle parts and supplies merchant wholesalers
Furniture and home furnishing merchant wholesalers
Lumber and other construction materials merchant wholesalers
Professional and commercial equipment and supplies merchant wholesalers
Metals and minerals (except petroleum) merchant wholesalers
Household appliances and electrical and electronic goods merchant wholesalers
Hardware, and plumbing and heating equipment, and supplies merchant wholesalers
Machinery, equipment, and supplies merchant wholesalers
Recyclable material merchant wholesalers
Miscellaneous durable goods merchant wholesalers
Paper and paper products merchant wholesalers
Drugs, sundries, and chemical and allied products merchant wholesalers
Apparel, piece goods, and notions merchant wholesalers
Grocery and related product merchant wholesalers
Farm product raw material merchant wholesalers
Petroleum and petroleum products merchant wholesalers
Alcoholic beverages merchant wholesalers
Farm supplies merchant wholesalers
Miscellaneous nondurable goods merchant wholesalers
Wholesale electronic markets and agents and brokers
Not specified wholesale trade
Services incidental to transportation
Warehousing and storage
Automotive equipment rental and leasing
Veterinary services
Landscaping services
Other administrative and other support services
Waste management and remediation services
Automotive repair and maintenance
Car washes
Electronic and precision equipment repair and maintenance
Commercial and industrial machinery and equipment repair and maintenance
Personal and household goods repair and maintenance

Research and Development (R&D)
Scientific research and development services

APPENDIX TABLE B-1
INDUSTRY CATEGORIES BY BUILDING TYPE
JOBS HOUSING NEXUS ANALYSIS
SAN FRANCISCO, CA

Retail
Automobile dealers
Other motor vehicle dealers
Automotive parts, accessories, and tire stores
Furniture and home furnishings stores
Household appliance stores
Electronics stores
Building material and supplies dealers
Hardware stores
Lawn and garden equipment and supplies stores
Grocery stores
Specialty food stores
Beer, wine, and liquor stores
Pharmacies and drug stores
Health and personal care, except drug, stores
Gasoline stations
Clothing stores
Shoe stores
Jewelry, luggage, and leather goods stores
Sporting goods, and hobby and toy stores
Sewing, needlework, and piece goods stores
Musical instrument and supplies stores
Book stores and news dealers
Department stores and discount stores
Miscellaneous general merchandise stores
Retail florists
Office supplies and stationery stores
Used merchandise stores
Gift, novelty, and souvenir shops
Miscellaneous retail stores
Electronic shopping
Electronic auctions
Mail-order houses
Vending machine operators
Fuel dealers
Other direct selling establishments
Not specified retail trade
Video tape and disk rental
Other consumer goods rental
Travel arrangements and reservation services
Restaurants and other food services
Drinking places, alcoholic beverages
Barber shops
Beauty salons
Nail salons and other personal care services
Drycleaning and laundry services
Funeral homes, and cemeteries and crematories
Other personal services

Entertainment
Motion pictures and video industries
Performing arts, spectator sports, and related industries
Bowling centers
Other amusement, gambling, and recreation industries

Hotel
Traveler accommodation

APPENDIX TABLE B-1
INDUSTRY CATEGORIES BY BUILDING TYPE
JOBS HOUSING NEXUS ANALYSIS
SAN FRANCISCO, CA

Institutional
Elementary and secondary schools
Colleges, universities, and professional schools, including junior colleges
Business, technical, and trade schools and training
Other schools and instruction, and educational support services
Individual and family services
Community food and housing, and emergency services
Vocational rehabilitation services
Child day care services
Museums, art galleries, historical sites, and similar institutions
Religious organizations

Medical
Outpatient care centers
Other health care services
Hospitals
Nursing care facilities (skilled nursing facilities)
Residential care facilities, except skilled nursing facilities

APPENDIX C: NON-DUPLICATION BETWEEN FEES UNDER INCLUSIONARY AFFORDABLE HOUSING AND JOBS HOUSING LINKAGE PROGRAMS

San Francisco has affordable housing fees for residential and non-residential development. Fees applicable to residential development (the "Inclusionary Housing Fee") are described in the Inclusionary Affordable Housing Program (Planning Code section 415 et seq.) and are supported by a separate nexus analysis prepared by KMA in 2016, the Residential Affordable Housing Nexus Analysis ("Residential Nexus"). Fees applicable to non-residential development (the "Jobs Housing Linkage Fee" or "JHLF Fee") are described in the Jobs Housing Linkage Program (Planning Code section 413 et seq.) and are supported by this nexus study ("Jobs Housing Nexus"). This Jobs Housing Nexus and the separate Residential Nexus both document the employment impacts of new development and the resulting need for affordable housing for those new workers. This appendix examines the potential for overlap between the two nexus fees.

A. Overview of the Two Affordable Housing Nexus Studies and Potential for Overlap

To briefly summarize the Jobs Housing Nexus, the logic begins with jobs located in new workplace buildings including office buildings, retail spaces and hotels. The Jobs Housing Nexus then identifies the income of the new worker households and the number of housing units needed by housing affordability level. The analysis concludes with the number of affordable units needed per 1,000 square feet of non-residential building area to house the new workers.

In the Residential Nexus, the logic begins with the households purchasing or renting new market rate units. The purchasing power of those households generates new jobs in the local economy. The nexus analysis quantifies the jobs created by the spending of the new households and then identifies the compensation structure of the new jobs, the income of the new worker households, and the housing affordability level of the new worker households, concluding with the number of new worker households in the lower income affordability levels.

The Jobs Housing Nexus and the Residential Nexus could overlap if both fees are assessed to address the affordable housing demands created by the same new employees.
However, this is unlikely to occur because many of the affordable housing needs for workers counted in this Jobs Housing Nexus are not addressed in the Residential Nexus at all. Firms in office, R&D, and hotel buildings often serve a much broader, sometimes international, market and are generally not focused on providing services to local residents. These non-local serving jobs are not counted in the Residential Nexus.

Retail, which is more local-serving, is the building type that has the greatest potential for overlap between the jobs counted in the Residential Nexus and the Jobs Housing Nexus. However, because daytime and visitor populations contribute a significant portion of the retail demand in San Francisco, most retail is not entirely local serving. Theoretically, there is a set of conditions in which there is substantial overlap between the jobs counted for purposes of the Jobs Housing Nexus and the jobs counted for purposes of the Residential Nexus. For example, a small retail store or restaurant might be located on the ground floor of a new apartment building and entirely

dependent upon customers from the apartments in the floors above. In this scenario, the commercial space on the ground floor would pay the Jobs Housing Linkage Fee and the apartments would pay the Inclusionary Housing Fee. In this special case, the two programs could mitigate the affordable housing demand created by the same set of workers. In this event, the combined fees for the two programs should not exceed 100% of the permissible amount pursuant to the Jobs Housing Nexus.

This theoretical example is unlikely to occur based on the following:

(1) The Jobs Housing Linkage Fee has a 25,000-square foot threshold for its application. Most ground floor retail spaces included as part of new residential projects are likely to be smaller than this and therefore would be exempted from the JHLF Program. For pharmacies and grocery stores built as standalone projects or as a component of a mixed-use development with residential, the threshold for application of fees is even larger -- 50,000 square feet and 75,000 square feet respectively.

(2) The overlap between the affordable housing demand mitigated by the two fee programs only occurs to the extent the new retail is being supported entirely by demand from residents in new residential units. In most cases, the larger retail spaces subject to the JHLF Program will be too large to be supported entirely by demand from new residential units. Instead it is more likely that the new retail will serve a broader customer base that also includes visitors, the workplace population and existing residents. As described in Section D below, demand for new retail could be supported by up to 94.9% of new residential customers without exceeding 100% of the permissible amount pursuant to the Jobs Housing Nexus.

(3) The visitor population in San Francisco contributes significantly to retail demand. The San Francisco Travel Association reports visitors to San Francisco spent an estimated $9 billion in 2016, a figure that includes retail as well as other types of visitor spending. Retail in Union Square, Fisherman's Wharf, and many other areas of the City are supported in part by visitor spending.

(4) San Francisco's large workplace and student populations also contribute to retail demand. The Financial District and South of Market are the most obvious examples, but other neighborhoods also have significant daytime populations. For example, near major institutions like the University of California San Francisco and San Francisco State.

(5) Future residential development in San Francisco will occur in infill locations and through redevelopment of previously built properties which, by virtue of being in San Francisco, will be in proximity to existing residential and businesses populations. Even when new retail is added as a component of a very large residential project or in a neighborhood

where much new residential development activity is occurring, new retail space is unlikely to be solely supported by the new residential.

Treasure Island and Hunters Point are special cases of major development projects that include retail that may be primarily supported by new residential. Each project adds thousands of new residential units and is relatively geographically isolated. The potential overlap was not analyzed in these projects, however, because both projects were implemented pursuant to a development agreement. Even so, local serving retail within these developments will still derive some customers from included employment uses, existing residents and visitors.

The analyses provided in Section B., C., and D. of this Appendix demonstrate that the combined mitigation requirements under the Inclusionary Affordable Housing and JHLF Programs would not exceed the maximums supported by the nexus even if significant overlap in the jobs counted in the Residential and Jobs Housing Nexus Analyses were to occur. As discussed, the potential for overlap exists mainly with retail jobs that serve residents of new housing in San Francisco; therefore, the overlap analysis is focused on the retail land use. The analysis expresses the requirements of the Inclusionary Affordable Housing and JHLF Programs in terms of the percentage of the affordable housing impacts documented in each nexus study that are being mitigated. The two mitigations are then evaluated in combination to demonstrate that requirements would not exceed the nexus maximums even if a significant degree of overlap were to occur.

B. Share of Affordable Unit Need Mitigated by JHLF Program

As the first step to determine if there is substantial overlap between the Jobs Housing Linkage Fee and the Inclusionary Housing Fee, this analysis determines the share of affordable housing impacts that are mitigated by every 1,000 square feet of new retail development subject to the Jobs Housing Linkage Fee. First, it converts the per square foot fee for retail development to a fee per 1,000 sq. feet. This value is then compared to the average local subsidy per affordable unit based on MOHCD data. The average local subsidy per affordable unit reflects construction loan closings and cost certifications for nine affordable housing projects from 2015 to 2017 and represents the net local subsidy without inclusion of other State and Federal subsidy sources.

Based on San Francisco's JHLF Program fees for retail of $25.15 per square foot and an average local subsidy per affordable unit of $235,000, for every 1,000 square feet of retail GFA, San Francisco's retail fee is estimated to result in approximately 0.1070 additional affordable units. The supporting calculation is shown in Table C-1 below.

Table C-1: Affordable Unit Demand Mitigated by JHLF Program Retail Fee			
A.	JHLF Retail Fee Per Sq.Ft.	$25.15	/ Sq.Ft. GFA
B.	JHLF Retail Fee Per 1,000 Sq.Ft.	$25,150	/ 1,000 Sq.Ft. GFA
C.	Average Local Subsidy Per Unit (from MOHCD)	$235,000	Per Unit
D.	**Affordable Unit Demand Mitigated by JHLF Retail Fees Per 1,000 Sq.Ft.**	0.1070	= B. / C.

Next, the analysis calculates the 1,000 sq. ft. retail fee as a percentage of the maximum supported Jobs Housing Nexus. Table C-2 below shows that the 0.1070 affordable units mitigated by the JHLF Retail Fee per 1,000 square feet is equivalent to approximately 10.5% of the total affordable unit demand of 1.0223 units per 1,000 square feet of new retail development. Thus, San Francisco's retail fee mitigates approximately 10.5% of the subsidy necessary to finance the demand for affordable units generated by new retail space.

Table C-2: Affordable Unit Demand As Percent of JHLF Nexus Maximum			
A.	Affordable Unit Demand Mitigated by JHLF Retail Fees Per 1,000 Sq. Ft.	1.0223	Affordable Units per 1,000 Sq.Ft. of GFA
B.	Jobs Housing Nexus Study: Maximum Supported Affordable Unit Requirement, per 1,000 Sq. Ft. Retail	0.1070	Affordable Units per 1,000 sq.ft. of GFA
C.	**Retail Fees per Affordable Unit as a Percent of Maximum JHLF Nexus**	**10.5%**	= A. / B.

C. Residential Requirement as a Percent of Maximum Supported

Unlike the JHLF Fees, San Francisco's Inclusionary Affordable Housing Program is expressed as an affordable unit percentage per market rate units in the residential project. The maximum supported affordable unit requirement per market rate unit is 37.6% for ownership units and 31.8% for rental units. In other words, for every 100 market rate units, the maximum number of affordable units that could be supported by the nexus is 37.6 ownership or 31.8 for rental units. The Board of Supervisors adopted 33% and 30% requirements for ownership and rental, respectively. Table C-3 below compares the maximum supported affordable unit percentage to the adopted requirement.

Table C-3: Affordable Housing Fee as Percent of Maximum Supported by Residential Nexus Analysis		
	Condominium	*Apartment*
A. Adopted Affordable Unit Percentage for Determining Affordable Housing Fees	33%	30%
B. Maximum Affordable Unit Percentage for Determining Affordable Housing Fee Supported by Nexus Analysis	37.6%	31.8%
Adopted Fee per Affordable Unit as Percent of Maximum Residential Nexus (A./B.)	**87.8%**	**94.3%**

Source: Keyser Marston Associates, Inc. 2016 Residential Affordable Housing Nexus Analysis.

Thus, San Francisco's Inclusionary Housing Fee is equal to 87.8% of the maximum supported by the Residential Nexus for Condominiums and 94.3% for Apartments.

Currently, the option of providing affordable units onsite represents a lower percentage of the maximum supported by the nexus than does the Affordable Housing Fee; however, this is anticipated to change over time due to scheduled increases in the onsite requirement.

D. Combined Requirements Within Nexus Maximums Even if Significant Overlap Occurs

This analysis determines the level of permissible overlap between the Jobs Housing Linkage Nexus and the Residential Nexus discussed in Section A, or the extent to which a new retail establishment could rely solely upon retail demand from new residential customers in the same development. Because the JHLF retail fee is set at 10.5% of the maximum nexus amount, there is 89.5% of the demand for affordable units is unmet by the Jobs Housing Linkage Fee.

As described above, the Inclusionary Affordable Housing Program only mitigates affordable housing impacts of new retail to the extent it is supported by spending of residents in new residential units. Based on the fact that the Residential Nexus is set at a 94.3% of the Residential Nexus maximum, the analysis determines that up to 94.9% of demand for new retail space could be derived from new residential units without exceeding the maximums supported by the nexus analysis. Table C-4 shows the derivation of this 94.9% figure.

Table C-4: Share of Demand for New Retail Derived from New Residential (vs. existing residents, businesses, workers and visitors) to Reach Nexus Maximum			
A.	Affordable housing impacts for retail workers unmitigated by JHLF Retail Fee.	89.5%	= balance after 10.5% mitigated by JHLF fee
B.	Inclusionary Affordable Housing Program Fees as Percent of Residential Nexus Maximum	94.3%	Finding for apartment
C.	**Share of Demand for New Retail Derived from New Residential** (vs. existing residents, businesses, workers and visitors) **to Reach Nexus Maximum**	**94.9%**	=A. / B.

As described in Section A, virtually all new retail space built in San Francisco will derive a significant share of demand from existing residents, visitors, businesses and the workplace population. It is improbable any new retail building subject to the JHLF Program would derive more than 94.9% of its customer base from new residential units. However, to address improbable and unforeseen conditions, San Francisco Planning Code Section 406 explicitly provides for waiver or reduction of fees in the event of duplication or absence of a reasonable relationship. If fees under either program are increased, this analysis should be updated.