Seattle Non-Residential Affordable Housing Impact and Mitigation Study

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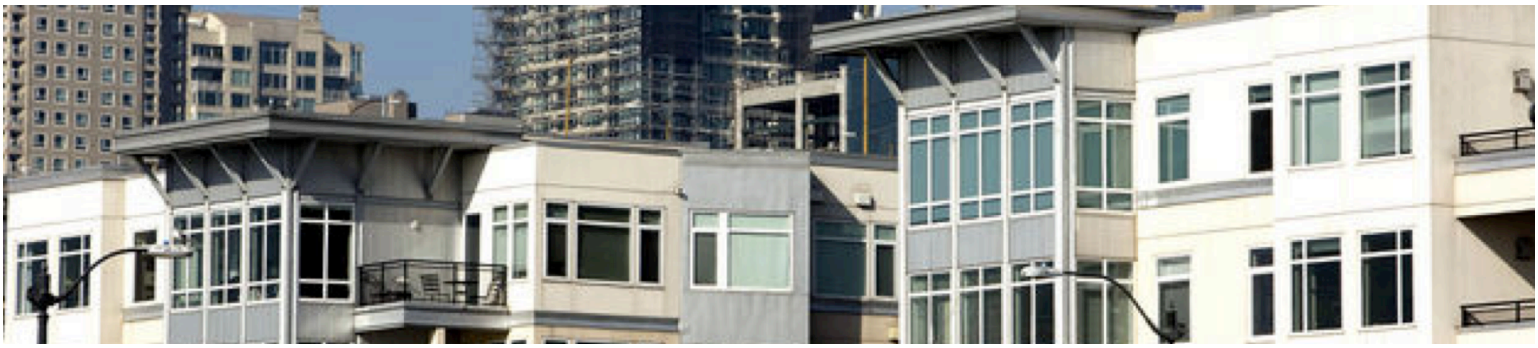

Background and Introduction

The City of Seattle (City) retained David Paul Rosen & Associates (DRA) to prepare an impact and mitigation study addressing the relationship between non-residential development and the need for affordable housing in the City.

This report describes the methodology, assumptions and findings of the mitigation fee analysis. The mitigation fee analysis estimates the number of very low and low income households associated with development of new non-residential development in the City, and calculates the mitigation fee based on the cost to produce housing affordable to these households. The mitigation fee analysis is based on the demographic and economic characteristics of employees expected to work in the non-residential buildings. All mitigation fee calculations are based on the minimum wage scheduled to take effect in 2017.

In May 2013, the Seattle City Council adopted Resolution 31444, which sets out a work program for reviewing and potentially revising the current affordable housing incentive program and reviewing best practices for affordable housing production and preservation. A review of national best practices was conducted by Otak and Peninger Consulting.

Pursuant to Resolution 31444, the City of Seattle (City) retained DRA to conduct an economic analysis for the purpose of advising the City on revision and potential expansion of its affordable housing incentive programs for commercial and residential development, currently in place in the Downtown and South Lake Union Urban Centers and other areas of the City that have been upzoned since 2006. This analysis involved the development of 24 residential and commercial prototypes.

The City subsequently retained DRA to prepare an affordable housing impact and mitigation study addressing the relationship between residential and non-residential development and the need for affordable housing in the City. The residential and non-residential impact and mitigation study examined 13 of the original 24 prototypes included in DRA's 2014 incentive zoning analysis, and added 10 additional low- and mid-rise, mixed-use, and non-residential prototypes.

This report presents an analysis that identifies the impact that certain nonresidential development prototypes have on the need for affordable housing. Then, based on the prototypes, it determines the amount of a mitigation fee that would be needed to address the identified impacts. The intent of this report is to provide the City a tested method of analysis for the assessment of the affordable housing impacts and mitigation related to non-residential development.

This report is presented in the following major sections:

- Target Income Levels
- Non-Residential Impact Analysis
- Affordability Gap Analysis
- Mitigation Fees

Target Income Levels

The impact and mitigation analysis uses income limits commonly defined by the U.S. Department of Housing and Urban Development (HUD) and the Low Income Housing Tax Credit program. This study addresses the following income categories in King County in 2015:

- Households with incomes up to 30 percent of area median income (AMI), or approximately $26,900 for a four-person household;
- Households with incomes between 31 percent and 60 percent of AMI, or between $26,901 and $53,760 for a four-person household; and
- Households with incomes between 61 percent and 80 percent of AMI, or between $53,761 and $65,800 for a four-person household.

All of these income limits are based on the 2015 median family income (MFI) of $89,600 for the Seattle-Bellevue HUD Metro FMR Area (HMFA)[1], adjusted by household size, as provided by the City of Seattle Department of Planning and Development. **Table 1** shows 2015 income limits for the City of Seattle for these income categories for household sizes of one to six persons.

[1]FMR stands for Fair Market Rent. The Seattle-Bellevue HMFA is a HUD-defined metropolitan area comprised of King and Snohomish Counties.

Table 1 2015 Affordable Housing Income Limits by Household Size City of Seattle Affordable Housing Impact and Mitigation Study			
Household Size	**30% AMI**	**60% AMI**	**80% AMI**
One Person	$18,550	$37,080	$46,100
Two Persons	$21,550	$43,020	$52,650
Three Persons	$24,250	$48,420	$55,950
Four Persons	$26,900	$53,760	$65,800
Five Persons	$29,100	$58,080	$71,100
Six Persons	$31,200	$62,400	$76,350

Source: 2015 median household income for the Seattle-Bellevue HMFA of $89,600, adjusted by household size and income level; City of Seattle Department of Planning and Development; DRA.

Non-Residential Impact Analysis

The methodology used by DRA in this report quantifies the estimated increase in lower income households associated with new non-residential development, and estimates the costs of providing housing affordable to these new households. These costs are then translated into a mitigation fee on non-residential development that addresses the impacts of the prototype.

Overview of Non-Residential Impact Methodology

This analysis uses a conservative approach that understates the number of lower income households and mitigation fee amounts. Therefore, the housing impacts are likely even greater than indicated in the analysis.

The non-residential impact methodology employs the following steps:

1. Estimate total new employees in prototype buildings;
2. Estimate new employees living in the City;
3. Adjust for potential future increase in labor force participation, as appropriate;
4. Adjust from employees to employee households;

5. Distribute employee households by occupation for each prototype;

6. Estimate wages by occupation; and

7. Estimate very low and low income households.

The result of these steps is the estimated number of households by prototype living in the City and qualifying as very low and low income based on new non-residential development in the City. DRA uses the results of the housing affordability gap analysis to calculate the mitigation fee required to make housing affordable to the very low and low income households who will need to find housing in the City in connection with new non-residential development in the City.

The 2013 wage data for the Seattle-Bellevue-Everett Metropolitan Division from the U.S. Department of Labor used in this analysis do not take into account Seattle's new minimum wage ordinance (Ordinance 124490) adopted by the City Council in June 2014. The $15 per hour minimum wage for employees in 2017 means that a full-time minimum wage worker will earn an annual wage of approximately $31,200, which is identical to the 30% of area median income limit in 2015 for a six-person household. This means that virtually all of the full-time 30% AMI employees will move up into the 30% to 60% AMI category under the new minimum wage. For purposes of this study, it is assumed that the employment created by the commercial development will be full-time employment. It is understood that part-time employment could result in workers earning less than 30% AMI. Therefore, DRA performed the analysis with just two income levels (under 60% of AMI, and 60% to 80% of AMI), assuming the households earning less than 30% of AMI move into the 30% to 60% of AMI category. This reduces the mitigation fees, since it is more costly to provide an affordable unit at 30% of AMI than at 60% of AMI. It is also a conservative assumption, since it includes households at a range of salaries from 30% to 60% AMI, while housing affordability for these households is calculated at the top of the income range at 60% AMI.

The analysis uses office and hotel prototypes, which are described in **Table 2**, as well as additional non-residential and mixed-use prototypes, which are described in **Table 3**. These prototypes reflect the range of non-residential land uses permitted by current zoning categories in the City. Since the fee is calculated per square foot and the methodological assumptions do not vary by the height or size of the prototype buildings, the height or size of the buildings does not affect the resulting supportable fees.

Table 2
Non-Residential Development Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

	Office	Hotel
Zoning	In DOC 2 500/300-500	in SM 160/85-240
Zip Code(s)	98121 / 98101	98121 / 98101
Neighborhood/Geographic Subarea	Downtown Urban Center	Downtown Urban Center
Primary Land Use(s)	Office	Hotel
Total Site Area (Acre)	0.74 Acres	0.34 Acres
Total Site Area (SF)	32,400	15,000
Construction Type	Type I	Type I-A
Approximate Building Stories	8 Stories	14 Stories
Total Gross Building SF, Including Parking (1)	447,000	206,000
Office Space (Gross SF)	324,000	0
Hotel Space (Gross SF)	0	144,000
Ground Floor Retail Space (Gross SF)	3,000	3,000
Ground Floor Service/Lobby Space	32,400	15,000
Residential Space (Gross SF)	0	0
Number of Hotel Rooms	0	206
Building Efficiency Ratio (%)	77%	80%
Site Coverage (Bldg. Footprint) (%)	100%	100%
Max. Bldg Footprint, Ground Floor (Gross SF)	32,400	15,000
Levels Underground Parking	4.0	4.0
Levels Structured Parking Above Grade	0.0	0.0
Stories of Ground Floor Retail/Lobby/Service Space	1.0	1.0
Stories of Office Space	10.0	0.0
Stories of Hotel Space	0.0	13.0
Stories of Residential Space	0.0	0.0
Total Stories Above Ground	11.0	14.0
Net Rentable SF Retail	2,100 SF	2,100 SF
Net Rentable SF Office	249,480 SF	0 SF
Net SF Hotel	0 SF	115,200 SF
Net SF Residential	0 SF	0 SF
Net SF Total	251,580 SF	117,300 SF
Unit Bedroom Count Distribution		
Studio	0	0
One Bedroom	0	0
Two Bedroom	0	0
Three Bedroom	0	0
Total	0	0
Units by BR Count		
Studio	0	0
One Bedroom	0	0
Two Bedroom	0	0
Three Bedroom	0	0
Total Residential Units	**0**	**0**
Residential Density (units per acre)	**0 du/a**	**0 du/a**
Unit Size (Net SF)		
Studio	0 SF	0 SF
One Bedroom	0 SF	0 SF
Two Bedroom	0 SF	0 SF
Three Bedroom	0 SF	0 SF
Average Unit Size	*0 SF*	*0 SF*
Parking Ratio - Residential (Spaces/Unit)	0	0
Parking Ratio - Office (Spaces/1000 GSF)	1	Max 1
Parking Spaces Per Floor	85 Spaces/Floor	37 Spaces/Floor
No. of Underground Parking Spaces	324 Spaces	147 Spaces
No. of Above-Ground Parking Spaces	0 Spaces	0 Spaces
Total Parking Spaces Provided	324 Spaces	147 Spaces
Total Parking Spaces Required	**324 Spaces**	**0 Spaces**
Gross SF/Parking Space (Incl. Circulation)	380 SF	400 SF
Total Parking SF	123,000 SF	0 SF
Total Underground Parking SF	123,000 SF	59,000 SF
Total Parking SF Above Grade	0 SF	0 SF

(1) Includes below-grade and above-grade parking.
Source: City of Seattle Department of Planning and Development; DRA

Table 3
Additional Non-Residential and Mixed-Use Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

	Mixed-Use / Grocery Store	Mixed-Use / Restaurant	Mixed-Use / Entertainment	Single-Story Stand Alone Retail	R&D Laboratory	Medical Office
Zoning	SM / C / NC - 65	9b in NC 65	SM / C / NC - 65	IG / IC / C	SM 85	SM/NC/C-85
Zip Code(s)	Multiple	Zips throughout the city except downtown and SLU.	Multiple	Multiple	98104, 98109, 98105, 98122	98104, 98109, 98105, 98122
Neighborhood/Geographic Subarea	Multiple	Urban Centers Outside Downtown and Urban Villages Citywide	Multiple	Multiple	First Hill, South Lake Union, University District, Capitol Hill	First Hill, South Lake Union, University District, Capitol Hill
Primary Land Use(s)	Rental Apts. Grocery Store	Rental Apts. Restaurant	Rental Apts. Entertainment	Retail	R&D Laboratory	Medical Office Grnd. Floor Retail
Residential Tenure (Renter/Owner)	Rental	Rental	Rental	N/A	N/A	N?A
Total Site Area (Acre)	1.15 Acres	0.46 Acres	0.46 Acres	1.15 Acres	0.46 Acres	0.46 Acres
Total Site Area (SF)	50,000	20,000	20,000	50,000	20,000	20,000
Construction Type	Type V over Type I	Type V over Type I	Type V over Type I	Type VB	Type I	Type I
Parking Type	Subterranean	Subterranean	Subterranean	Surface	Subterranean	Subterranean
Approximate Building Stories	6 Stories	4 Stories	6 Stories	1 Stories	7 Stories	6 Stories
Total Gross Building SF, Including Subt. Parking (1)	310,000 SF	81,740 SF	128,200 SF	25,000 SF	187,000 SF	162,000 SF
Total Gross Building SF Above Ground (Incl. Pkg)	50,000	65,000	95,000	25,000	130,000	90,000
Floor Area Ratio (Gross Bldg SF, Incl. Pkg.)	6.00	3.25	4.75	0.50	8.45	8.00
Total Gross Building SF (Excluding Parking)	210,000 SF	65,400 SF	95,000 SF	25,000 SF	130,000 SF	90,000 SF
Floor Area Ratio (Gross Bldg SF, Excl. Pkg.)	4.20	3.27	4.75	0.50	6.50	4.50
Total Gross Building SF Above Ground		65,000				
Total Gross Parking SF Above Ground		0				
Total Gross SF Above Ground Excluding Parking	200,000	65,000				
Total Net Building SF Excluding Parking						
Building Efficiency Ratio (%)	75%	75%	75%	80%	80%	80%
Site Coverage (Bldg. Footprint) (%)	100%	100%	100%	100%	100%	100%
Max. Bldg Footprint, Ground Floor (Gross SF)	50,000					
Average Floor Plate Above Ground Floor						
Max. Tower Floor Plate (Gross SF)						
Assumed Floor Plate for Commercial (Gross SF)						
Levels Underground Parking	2.0	0.0	2.0	0.0	4.0	4.0
Levels Structured Parking Above Grade	1.0	0.0	0.0	0.0	0.0	0.0
Stories of Ground Floor Retail/Lobby/Service Space	0.0	1.0	1.0	1.0	1.0	1.0
Stories of Non-Residential Space (2nd Story and Above)	0.0	0.0	0.0	0.0	6.0	5.0
Stories of Residential Space	5.0	0.0	5.0	0.0	0.0	0.0
Total Stories Above Ground	6.0	1.0	6.0	1.0	7.0	6.0
Net Rentable SF R&D	0 SF	0 SF	0 SF	0 SF	80,000 SF	0 SF
Net Rentable SF General Office	0 SF	0 SF	0 SF	0 SF	8,000 SF	0 SF
Net Rentable SF Medical Office	0 SF	0 SF	0 SF	0 SF	0 SF	69,600 SF
Net Rentable SF Retail	0 SF	0 SF	0 SF	20,000 SF	16,000 SF	2,400 SF
Net Rentable SF Grocery Store	37,500 SF	0 SF	0 SF	0 SF	0 SF	0 SF
Net Rentable SF Restaurant	0 SF	2,250 SF	0 SF	0 SF	0 SF	0 SF
Net Rentable SF Entertainment	0 SF	0 SF	11,250 SF	0 SF	0 SF	0 SF
Net Rentable SF Residential	112,500 SF	46,800 SF	60,000 SF	0 SF	0 SF	0 SF
Net Rentable SF Total	150,000 SF	49,050 SF	71,250 SF	20,000 SF	104,000 SF	72,000 SF
Net SF Community Space	7,500 SF	0 SF	0 SF	0 SF	0 SF	0 SF
Total Net Bldg. SF	157,500 SF	49,050 SF	71,250 SF	20,000 SF	104,000 SF	72,000 SF
Gross SF R&D	0 SF	0 SF	0 SF	0 SF	100,000 SF	0 SF
Gross SF Office	0 SF	0 SF	0 SF	0 SF	10,000 SF	0 SF
Gross SF Medical Office	0 SF	0 SF	0 SF	0 SF	0 SF	87,000 SF
Gross SF Retail	0 SF	0 SF	0 SF	25,000 SF	20,000 SF	3,000 SF
Gross SF Grocery Store	50,000 SF	0 SF	0 SF	0 SF	0 SF	0 SF
Gross SF Restaurant	0 SF	3,000 SF	0 SF	0 SF	0 SF	0 SF
Gross SF Entertainment	0 SF	0 SF	15,000 SF	0 SF	0 SF	0 SF
Gross SF Residential	150,000 SF	62,400 SF	80,000 SF	0 SF	0 SF	0 SF
Gross SF Community Space						
Total Gross Bldg. SF	200,000 SF	65,400 SF	95,000 SF	25,000 SF	130,000 SF	90,000 SF
Unit Bedroom Count Distribution						
Studio	25%	25%	25%	N/A	N/A	N/A
One Bedroom	50%	50%	50%	N/A	N/A	N/A
Two Bedroom	25%	25%	25%	N/A	N/A	N/A
Three Bedroom	0%	0%	0%	N/A	N/A	N/A
Total	100%	100%	100%	N/A	N/A	N/A
Units by BR Count						
Studio	43	18	22	N/A	N/A	N/A
One Bedroom	87	36	44	N/A	N/A	N/A
Two Bedroom	43	18	22	N/A	N/A	N/A
Three Bedroom	0	0	0	N/A	N/A	N/A
Total Residential Units	**173**	**72**	**88**	N/A	N/A	N/A
Residential Density (units per acre)	**151 du/a**	**157 du/a**	**192 du/a**	N/A	N/A	N/A
Unit Size (Net SF)						
Studio	450 SF	450 SF	450 SF	N/A	N/A	N/A
One Bedroom	650 SF	650 SF	650 SF	N/A	N/A	N/A
Two Bedroom	850 SF	850 SF	850 SF	N/A	N/A	N/A
Three Bedroom	0 SF	0 SF	0 SF	N/A	N/A	N/A
Average Unit Size	*650 SF*	*650 SF*	*650 SF*	N/A	N/A	N/A
Parking Spaces Per Floor	125 Spaces/Floor	53 Spaces/Floor	50 Spaces/Floor	N/A	36.75 Spaces/Floor	45 Spaces/Floor
No. of Underground Parking Spaces	250 Spaces	43 Spaces	83 Spaces	0 Spaces	147 Spaces	180 Spaces
No. of Above-Ground Parking Spaces	0 Spaces	0 Spaces	0 Spaces	105 Spaces	0 Spaces	0 Spaces
Total Parking Spaces Provided	250 Spaces	43 Spaces	83 Spaces	105 Spaces	147 Spaces	180 Spaces
Total Parking Spaces Required						
Gross SF/Subt. Parking Space (Incl. Circulation)	400 SF	380 SF	400 SF	0 SF	388 SF	400 SF
Total Parking SF	100,000 SF	16,340 SF	33,200 SF	0 SF	57,000 SF	72,000 SF
Total Underground Parking SF	100,000 SF	16,340 SF	33,200 SF	0 SF	57,000 SF	72,000 SF
Total Parking SF Above Grade	0 SF		0 SF	0 SF	0 SF	0 SF

(1) Includes below-grand and above-grade parking.
Source: City of Seattle Department of Planning and Development; DRA

Non-Residential Impact Methodology and Assumptions

The impact analysis requires a number of assumptions. In all cases, DRA strives to employ conservative assumptions that serve to understate the number of lower income households and the mitigation fee calculation. We expect that the cumulative effect of these assumptions understates the mitigation fee calculation for each building type. We do not believe, therefore, that changing individual assumptions would fundamentally alter the conclusions of the analysis.

Each of the steps in the analysis is described below, along with corresponding assumptions.

Estimate Total New Employees in Prototype Buildings

The first step estimates the total number of direct employees who will work at or in the prototype being analyzed. This step implicitly assumes that all employees are new employees to the City. When firms and their employees relocate from other buildings in the City, they will have vacated spaces that will likely be filled by other firms and employees.

The estimate of the number of employees that will be working in each prototype building is based on an employment density factor for each land use (i.e. number of net square feet per employee). The net square feet of building area is divided by the employment density factor to calculate employment.

The employment density factors used in this analysis are listed below by land use. These factors are based on industry standards, DRA's experience with prior mitigation fee studies, available data and selected interviews, as well as DPD's review of employment densities. DRA considers these conservative assumptions, as the recent trend is toward higher employment densities (or a smaller number of square feet per employee) across non-residential land uses.

Office: 250 net square feet per employee.

City staff reviewed employment densities in sample office projects throughout the City and found a range of 130 square feet to 275 square feet per employee. Employment densities in projects outside of the Downtown and South Lake Union areas were found to be as high or higher than in the Downtown/South Lake Union. An employment density of 250 square feet is considered a

conservative assumption for a typical office building and generalizable across the City.

Medical Office: 350 net square feet per employee.

Medical office space tends to have lower employment densities than general office space because of the additional space requirements for medical office equipment. DRA interviewed investors in medical office properties in Seattle and concluded that 350 square feet per employee is a reasonable assumption.

R&D Laboratory: 350 net square feet per employee.

Grocery Store: 500 net square feet per employee.

DRA reviewed data from "Understanding the Grocery Industry," published by The Reinvestment Fund in 2011. The study found that the average selling area of a traditional or conventional supermarket has remained fairly stable at approximately 33,300 square feet from 2007 to 2011, while the employment density declined slightly from an average of 463 square feet per employee in 2007 to 504 square feet per employee in 2010. Smaller grocery stores tend to have higher employment densities. DRA considers an assumption of 500 square feet per employee conservative for the grocery store prototype used in this analysis.

Restaurant: 500 net square feet per employee.

Entertainment: 750 net square feet per employee.

Stand-Alone Retail: 500 net square feet per employee.

Hotel: One employee per room and an average of 500 square feet per hotel room.

Estimate New Employees Living in the City of Seattle

This step estimates the number of new employees associated with new employment growth in the City that would live in the City.

The 2012 Five-Year ACS indicates that 50.6% percent of total workers in Seattle aged 16 years and older lived in the City[1]. For the purposes of this analysis, we

[1] Based on 497,136 total workers in the City of Seattle, and 251,756 workers in the City of Seattle that lived and worked in the same place.

have assumed that 50.6 percent of new City workers will reside in the City. This assumption understates the impacts, as it is likely that more employees would live in the City if they could afford it.

Adjust for Potential Increase in Future Labor Force Participation

In periods of economic recession, the typical pattern is for unemployment rates to increase as people lose their jobs or can't find work, and for labor force participation rates to decrease as some people give up looking for work altogether. In periods of high unemployment and low labor force participation, a significant share of new jobs may be filled by existing residents in the area who are currently unemployed or who are drawn back into the labor force. In June 2014, according to the U.S. Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics, Seattle's unemployment rate and labor participation rate were at pre-recession levels of approximately 4.8% and 70.3% respectively. These rates indicate a relatively tight labor market in which job growth will be accompanied by an influx of new workers. Therefore, no adjustment was made for increased labor force participation.

Adjust from Employees to Employee Households

The next step in the analysis converts the number of employees living in the City to the number of employee households that will work at or in the building type being analyzed. This step recognizes that there is, on average, more than one worker per household, and thus the number of housing units in demand for new workers must be reduced. The worker per worker household ratio also eliminates all non-working households, including retired persons, students, and those on public assistance.

Based on ACS Five-Year estimates for 2012, the City of Seattle had 356,914 employed residents and 224,155 households with one or more workers (full time and part time), for an average of 1.59 workers per worker households. Using the 1.59 workers per household in the mitigation fee calculations is a conservative assumption, because if only full-time workers were included, the ratio of workers per household would be smaller, leading to a larger estimate of new households created. In addition, wages by occupation and industry assume full-time employment. Household incomes will be lower for households with part-time workers, generating a larger impact than projected in this study.

DISTRIBUTE EMPLOYEE HOUSEHOLDS BY OCCUPATION

This step distributes households by occupational groupings for each land use. This step is necessary to estimate new workers' incomes. DRA reviewed data from the May, 2013 U.S. Bureau of Labor Statistics, National Industry-Specific Occupational Employment and Wage Estimates to estimate the percentage distribution of employment by industry occupational category for the non-residential land uses. This data is based on national estimates, the best data available, and therefore is generalizable to locations across the City. These distributions are shown in **Table 4** for the original office and hotel prototypes and in **Table 5** for the additional non-residential uses**.** The projected numbers of new employee households by occupational category are shown in **Table 6** for the office and hotel prototypes, **Table 7** for non-residential uses in the mixed-use prototypes, and **Table 8** for the additional non-residential prototypes. These tables, and other tables referred to in this report, are contained following the text.

ESTIMATE WAGES BY OCCUPATION

In this step, occupation is translated to income based on May 2013 wage and salary information for the Seattle-Bellevue-Everett Metropolitan Division from the U.S. Department of Labor, Bureau of Labor Statistics. Data on mean, median, 10th percentile, 25th percentile, 75th percentile and 90th percentile hourly wages by occupation were used to estimate the percentage of employees earning salaries in the very low and low income categories based on the 2013 HUD income limits for the Seattle-Bellevue HMFA. Since household income is derived primarily from wages, particularly at lower income levels, these percentage distributions should remain relatively constant over short time frames. The wage data used in the analysis, summarized in **Table 9**, is for the metro area and thus is generalizable to locations across the City.

ESTIMATE VERY LOW AND LOW INCOME HOUSEHOLDS

The estimated percentage and number of households earning salaries under 30 percent AMI, between 31 percent and 60 percent AMI, and between 61 percent and 80 percent AMI are shown in **Tables 10** through **12** for the office and hotel prototypes, and in **Tables 13** through **15** for the additional non-residential and mixed-use prototypes. These estimates were derived using 2013 income limits to correspond to the 2013 wage data. The 2013 income limits for a family of 2 persons were $20,800 for households earning less than 30 percent of AMI, $41,600 for households at 60 percent of AMI, and $55,500 for households at 80 percent of AMI. Given the new minimum wage in Seattle that will take effect in

2017, the workers in the 30 percent of AMI category were moved into the 60 percent of AMI category.

Individual employee income data was used to calculate the number of households that fall into these income categories by assuming that multiple earner households are, on average, formed of individuals with incomes within the same income category (very low income or low income).

Affordability Gap Analysis

The affordability gap analysis compares the cost of developing housing in the City with the amount very low and low income households can afford to pay for housing. The affordability gap represents the capital subsidy required to develop housing affordable to families at target income levels. The methodology, key assumptions and findings of the affordability gap analysis are summarized below.

The gap analysis is based on the costs to build new low- or mid-rise multifamily rental housing in Seattle, which DRA considers the most cost-effective means of housing these very low and low income employee households. Use of the mid-rise prototype for calculating the affordability gap and mitigation fees will understate the supportable fee for high-rise construction of affordable housing in Downtown and South Lake Union, because high-rise construction is more costly to build.

Mid-rise housing can be developed in a variety of zones and locations within the City. DRA calculated mitigation fees under low, middle and high-cost scenarios reflecting variations in market-rate housing sales prices and rents in different neighborhoods in the City.

Methodology

The first step in the gap analysis establishes the amount a tenant or homebuyer can afford to contribute to the cost of renting or owning a dwelling unit. The second step estimates the costs of constructing or preserving affordable housing in the City. For the purposes of the impact analysis, DRA calculated the affordability gap based on the costs to build new low- or mid-rise multifamily housing in Seattle, considered by DRA to be the most cost-effective means of housing these very low and low income employee households. Given the average household size of 2.06[1]

[1]Based on a household population of 583,735 divided by 283,510 households in the City of Seattle as of the 2010 census.

persons in the City, the affordability gap for a one-bedroom unit is used to calculate the mitigation fees. This is a conservative assumptions as households of more than two persons are generally considered under housed in a one-bedroom unit.

The third step in the gap analysis establishes the housing expenses borne by the tenants and owners. These costs can be categorized into operating costs, and financing or mortgage obligations. Operating costs are the maintenance expenses of the unit, including utilities, property maintenance, property taxes, management fees, property insurance, replacement reserve, and insurance. For the rental prototype used in this analysis, DRA assumed that the landlord pays all but certain tenant-paid utilities as an annual operating cost of the unit paid from rental income.

Financing or mortgage obligations are the costs associated with the purchase or development of the housing unit itself. These costs occur when all or a portion of the development cost is financed. This cost is always an obligation of the landlord or owner. Supportable financing is deducted from the total development cost, to determine the capital subsidy required to develop the prototypical housing unit affordable to an eligible family at each income level.

For the rental housing prototype used in this analysis, the gap analysis calculates the difference between total development costs and the conventional mortgage supportable by net operating income from restricted rents.

The purpose of the gap analysis is to determine the cost required to develop housing affordable to the very low and low income households who will need to find housing in the City in connection with new non-residential development in the City. Therefore, no other housing subsidies, or leverage, are assumed.

Housing Development Costs

DRA estimated the costs to build the new low- to mid-rise rental housing prototypes used in the gap analysis based on interviews with developers active in the Seattle Area as part of DRA's "Affordable Housing Incentive Program Economic Analysis," 2014. Based on this analysis, DRA assumed an average unit size of 650 net square feet for a one-bedroom unit, and 2014 average development costs of $350 per square foot for low or mid-rise multifamily construction under the low cost scenario, $375 under the middle cost scenario, and $425 under the high cost

scenario. These costs were escalated by 5 percent to 2015 costs per square foot of $368, $394, and $446 under the low, middle and high cost scenarios, respectively.

Calculation of Per Unit Affordability Costs

The per unit costs to make new housing affordable to households at the target income levels were calculated by subtracting per unit development costs from the per unit mortgage supportable from affordable rents. No leverage (e.g. use of tax credits) is assumed. The resulting per unit subsidy requirements by income level and cost scenario are shown in **Table 16**. The results of the gap analysis show significant affordability gaps at the income levels examined

Table 16
Per Unit Affordability Gaps
New Construction Multifamily Housing
City of Seattle Affordable Housing Impact and Mitigation Study

Cost Scenario	Per Unit Development Cost[1]	Per Unit Affordability Gap by Percent of Area Median Income[2]	
		60% AMI	80% AMI
Low Scenario	$239,300	$190,400	$155,800
Middle Scenario	$256,100	$207,300	$172,700
High Scenario	$289,900	$241,100	$206,500

[1]Assumes average unit size of 650 NSF for a one-bedroom unit and development costs of $368 per net square foot (NSF) under the low cost scenario, $394 under the middle cost scenario, and $446 under the high cost scenario, based on DRA's "Affordable Housing Incentive Program Economic Analysis", 2014, escalated 5% to 2015.
[2]Based on per unit supportable mortgage by income level less total development cost, assuming affordable rents at 30% of gross income, utility allowances of $110 for studio/one-bedroom units, annual operating costs of $6,760 per unit, and a 30-year fixed mortgage at an interest rate of 6.5%.
Source: DRA.

Detailed affordability gap calculations are shown in **Tables 17, 18** and **19** under the low, middle and high cost scenarios, respectively.

Mitigation Fees

DRA calculated mitigation fees for the non-residential prototypes analyzed. These fee amounts represent fees that minimally would be justified if the City decided to mitigate all of the impacts of the prototype based on the conservative assumptions

used in this analysis. Because of the conservative assumptions used, higher fees might also be justified. **Table 20** summarizes the estimated supportable non-residential mitigation fees for the non-residential and mixed-use prototypes, under the low scenario. The mitigation fees shown are for the non-residential uses within the mixed-use prototypes.

While fees were calculated under low, middle and high cost scenarios, these tables show fees under the low cost scenario, which is the most conservative. These fees understate the impacts in middle and high cost areas.

Table 20
Estimated Mitigation Fees
Non-Residential and Mixed-Use Prototypes[1]
2017 Minimum Wage
Low Cost Scenario
City of Seattle Affordable Housing Impact and Mitigation Study

Prototype	Prototype Gross Building Square Feet	Mitigation Fee per Gross Square Foot		
		Under 60% AMI	60% to 80% AMI	Total
Office	324,000	$48.60	$31.40	$80.00
Hotel	144,000	$57.65	$13.42	$71.07
MU Grocery Store	50,000	$56.87	$11.67	$68.54
MU Restaurant	3,000	$60.29	$10.91	$71.20
MU Entertainment	15,000	$37.83	$7.48	$45.30
Stand-Alone Retail	25,000	$60.47	$12.46	$72.94
R&D Laboratory	100,000	$39.77	$24.68	$64.45
Medical Office	87,000	$39.73	$24.60	$64.33

MU=Mixed Use
[1]For non-residential uses in mixed-use prototypes.
Source: DRA

Detailed calculation of the mitigation fees for the original commercial prototypes are shown in **Tables 21**, **22** and **23** under low, middle, and high cost scenarios, respectively. Calculation of the mitigation fees for the additional non-residential and mixed used prototypes is shown in **Table 24** under low, middle, and high cost scenarios.

List of Conservative Assumptions

As noted above, DRA uses many conservative assumptions that serve to understate the calculation of the number of lower income households and mitigation fee for each prototype. These conservative assumptions include the following:

1. The employment density factors used in calculating the number of employees in each non-residential prototype are considered conservative and the trend across non-residential land uses is toward higher employment densities.

2. The analysis assumes 50.6 percent of new workers will reside in the City, based on recent data on the actual percentage of workers in the City that also lives in the City. More workers would likely prefer to live in the City if they could afford it.

3. Lower income household generation is understated because the analysis projects lower income households generated in specified occupational categories, but does not include additional households in other occupational categories for which corresponding wage data was not available.

4. The analysis adjusts household incomes upward for the 2017 minimum wage, which is not currently in place, while using estimated 2015 housing costs. Housing development costs are likely to increase further by 2017, increasing the affordability gap.

5. The under 60% AMI income category is a broad category that includes a number of households earning closer to 30% AMI than 60% AMI. By calculating the affordability gap at 60% AMI, the analysis understates the impacts for all households earning less than the maximum income limit. Similarly, the gap for the 60% to 80% AMI category is calculated at the upper limit of 80% AMI, and will understate the impact for households earning less than 80% AMI.

6. The mitigation fees are based on the costs to build new one-bedroom low- to mid-rise multifamily rental housing in Seattle, which is considered the most cost-effective means of housing lower income employee households.

7. The gap for a one-bedroom unit is used in calculating the mitigation fees, while the average household size in the City is 2.06 persons. This is a

conservative assumption, as households of more than two persons would be considered under housed in a one-bedroom unit.

8. Mitigation fees calculated under the low cost scenario, which is the most conservative, will understate the impact in middle to high cost areas.

Table 4
National Office and Hotel Worker Distribution by Occupation

Industry/Occupation Category	Office Workers	Hotel Workers
Management	8.9%	5.0%
Business and Financial Operations	17.1%	0.0%
Computer and Mathematical	3.4%	0.0%
Architecture and Engineering	4.9%	0.0%
Life, Physical and Social Science	0.0%	0.0%
Community and Social Services	0.0%	0.0%
Legal	3.6%	0.0%
Education, Training, and Library	0.0%	0.0%
Arts, Design, Entertainment, Sports and Media	0.0%	0.0%
Healthcare Practitioners and Technical	8.9%	0.0%
Healthcare Support	4.4%	0.0%
Protective Service	0.0%	0.0%
Food Preparation and Serving Related	0.0%	27.2%
Building and Grounds Cleaning and Maintenance	0.0%	29.0%
Personal Care and Service	0.0%	7.3%
Sales and Related	6.6%	3.0%
Office and Administrative Support	30.0%	16.8%
Farming, Fishing and Forestry	0.0%	0.0%
Construction and Extraction	0.0%	0.0%
Installation, Maintenance and Repair	3.8%	3.9%
Production	0.0%	0.0%
Transportation and Material Moving	0.0%	0.0%
All Other Office Related Occupations	8.4%	7.9%
Industry Total	100.0%	100.0%

Source: Bureau of Labor Statistics, Occupational Employment Statistics, May 2013 National Industry-Specific Occupational Employment and Wage Estimates.

Table 5
Projected Occupational Distribution of New Employee Households
Additional Non-Residential Uses

Industry/Occupation Category	Grocery Store	Restaurant	Entertainment	Retail	R&D Laboratory	Medical Office
Management	2.2%	2.2%	2.2%	2.2%	8.9%	8.9%
Business and Financial Operations	0.0%	0.0%	0.0%	0.0%	9.7%	9.7%
Computer and Mathematical	0.0%	0.0%	0.0%	0.0%	3.4%	3.4%
Architecture and Engineering	0.0%	0.0%	0.0%	0.0%	4.9%	4.9%
Life, Physical and Social Science	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Community and Social Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Legal	0.0%	0.0%	0.0%	0.0%	3.6%	3.6%
Education, Training, and Library	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Arts, Design, Entertainment, Sports and Media	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Healthcare Practitioners and Technical	0.0%	0.0%	0.0%	0.0%	8.9%	8.9%
Healthcare Support	0.0%	0.0%	0.0%	0.0%	4.4%	4.4%
Protective Service	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Food Preparation and Serving Related	40.0%	40.0%	40.0%	40.0%	0.0%	0.0%
Building and Grounds Cleaning and Maintenance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Personal Care and Service	2.6%	2.6%	2.6%	2.6%	0.0%	0.0%
Sales and Related	29.1%	29.1%	29.1%	29.1%	6.6%	6.6%
Office and Administrative Support	8.9%	8.9%	8.9%	8.9%	37.4%	37.4%
Farming, Fishing and Forestry	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction and Extraction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Installation, Maintenance and Repair	4.1%	4.1%	4.1%	4.1%	3.8%	3.8%
Production	2.9%	2.9%	2.9%	2.9%	0.0%	0.0%
Transportation and Material Moving	5.8%	5.8%	5.8%	5.8%	0.0%	0.0%
All Other Office Related Occupations	4.4%	4.4%	4.4%	4.4%	8.4%	8.4%
Industry Total	100%	100%	100%	100.0%	100%	100%

Notes: Based on 2012 national industry occupation distributions from the BLS for office and retail workers. The retail distribution is used for grocery store, restaurant and entertainment uses. The office distribution isused for R&D laboratory and medical office uses.
Source: Bureau of Labor Statistics, Occupational Employment Statistics, May 2013 National Industry-Specific Occupational Employment and Wage Estimates; DRA.

Table 6
Projected New Employee Households
Office and Hotel Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	Factor	Office			Hotel		
		%	No.	Units	%	No.	Units
1. Net Square Feet			249,480			115,200	
2. Employment Density Factor			250	NSF/Emp.		1.00 500	Emp./Rm. NSF/Emp.
Number of Employees			998	Emp.		230	Emp.
3. Employees Living in Seattle (1)	50.6%		505	Emp.		116	Emp.
4. Adjustment for Number of Employees Per Household	1.59 Emp/HH		318	HH		73	HH
5. Household Occupational Distribution (2)							
Management		9%	28.3	HH	5%	3.6	HH
Business and Financial Operations		17%	54.3	HH	0%	0.0	HH
Computer and Mathematical		3%	10.8	HH	0%	0.0	HH
Architecture and Engineering		5%	15.6	HH	0%	0.0	HH
Life, Physical and Social Science		0%	0.0	HH	0%	0.0	HH
Community and Social Services		0%	0.0	HH	0%	0.0	HH
Legal		4%	11.5	HH	0%	0.0	HH
Education, Training, and Library		0%	0.0	HH	0%	0.0	HH
Arts, Design, Entertainment, Sports and Media		0%	0.0	HH	0%	0.0	HH
Healthcare Practitioners and Technical		9%	28.2	HH	0%	0.0	HH
Healthcare Support		4%	14.1	HH	0%	0.0	HH
Protective Service		0%	0.0	HH	0%	0.0	HH
Food Preparation and Serving-Related		0%	0.0	HH	27%	19.9	HH
Building/Grounds Cleaning and Maintenance		0%	0.0	HH	29%	21.2	HH
Personal Care and Service		0%	0.0	HH	7%	5.3	HH
Sales and Related		7%	20.8	HH	3%	2.2	HH
Office and Administrative Support		30%	95.3	HH	17%	12.3	HH
Farming, Fishing and Forestry		0%	0.0	HH	0%	0.0	HH
Construction and Extraction		0%	0.0	HH	0%	0.0	HH
Installation, Maintenance and Repair		4%	12.1	HH	4%	2.8	HH
Production		0%	0.0	HH	0%	0.0	HH
Transportation and Material Moving		0%	0.0	HH	0%	0.0	HH
All Other Occupations		8%	26.5	HH	8%	5.8	HH
Total		100%	317.5		100%	73.1	

Legend: HH = households; SF = square feet; Emp = employees.
(1) Source: American Community Survey, five-year estimates, 2006-2010.
(2) From Bureau of Labor Statistics, Occupational Employment Statistics, May 2013 National Industry-Specific Occupational Employment and Wage Estimates.
Source: American Community Survey; Bureau of Labor Statistics; DRA.

Table 7
Projected New Employee Households
Non-Residential Uses in Mixed-Use Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	Factor	Grocery Store			Restaurant			Entertainment		
		%	No.	Units	%	No.	Units	%	No.	Units
1. Net Square Feet			37,500			2,250			11,250	
2. Employment Density Factor			500	NSF/Emp.		500	NSF/Emp.		750	NSF/Emp.
Number of Employees			75	Emp.		5	Emp.		15	Emp.
3. Employees Living in Seattle (1)	50.6%		38	Emp.		3	Emp.		8	Emp.
4. Adjustment for Number of Employees Per Household	1.59 Emp/HH		24	HH		2	HH		5	HH
5. Household Occupational Distribution (2)										
Management		2%	0.5	HH	2%	0.0	HH	2%	0.1	HH
Business and Financial Operations		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Computer and Mathematical		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Architecture and Engineering		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Life, Physical and Social Science		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Community and Social Services		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Legal		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Education, Training, and Library		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Arts, Design, Entertainment, Sports and Media		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Healthcare Practitioners and Technical		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Healthcare Support		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Protective Service		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Food Preparation and Serving-Related		40%	9.5	HH	40%	0.6	HH	40%	1.9	HH
Building/Grounds Cleaning and Maintenance		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Personal Care and Service		3%	0.6	HH	3%	0.0	HH	3%	0.1	HH
Sales and Related		29%	6.9	HH	29%	0.5	HH	29%	1.4	HH
Office and Administrative Support		9%	2.1	HH	9%	0.1	HH	9%	0.4	HH
Farming, Fishing and Forestry		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Construction and Extraction		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Installation, Maintenance and Repair		4%	1.0	HH	4%	0.1	HH	4%	0.2	HH
Production		3%	0.7	HH	3%	0.0	HH	3%	0.1	HH
Transportation and Material Moving		6%	1.4	HH	6%	0.1	HH	6%	0.3	HH
All Other Occupations		4%	1.1	HH	4%	0.1	HH	4%	0.2	HH
Total		100%	23.8		100%	1.5		100%	4.7	

Legend: HH = households; SF = square feet; Emp = employees.
(1) Source: American Community Survey, five-year estimates, 2006-2010.
(2) From Bureau of Labor Statistics, Occupational Employment Statistics, May 2013 National Industry-Specific Occupational Employment and Wage Estimates.
Source: American Community Survey; Bureau of Labor Statistics; DRA.

Table 8
Projected New Employee Households
Additional Non-Residential Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	Factor	Stand-Alone Retail %	Stand-Alone Retail No.	Stand-Alone Retail Units	R&D Laboratory %	R&D Laboratory No.	R&D Laboratory Units	Medical Office %	Medical Office No.	Medical Office Units
1. Net Square Feet			20,000			80,000			69,600	
2. Employment Density Factor			500	NSF/Emp.		350	NSF/Emp.		350	NSF/Emp.
Number of Employees			40	Emp.		229	Emp.		199	Emp.
3. Employees Living in Seattle (1)	50.6%		20	Emp.		116	Emp.		101	Emp.
4. Adjustment for Number of Employees Per Household	1.59 Emp/HH		13	HH		73	HH		63	HH
5. Household Occupational Distribution (2)										
Management		2%	0.3	HH	9%	6.5	HH	9%	5.6	HH
Business and Financial Operations		0%	0.0	HH	10%	7.1	HH	10%	6.1	HH
Computer and Mathematical		0%	0.0	HH	3%	2.5	HH	3%	2.2	HH
Architecture and Engineering		0%	0.0	HH	5%	3.6	HH	5%	3.1	HH
Life, Physical and Social Science		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Community and Social Services		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Legal		0%	0.0	HH	4%	2.6	HH	4%	2.3	HH
Education, Training, and Library		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Arts, Design, Entertainment, Sports and Media		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Healthcare Practitioners and Technical		0%	0.0	HH	9%	6.5	HH	9%	5.6	HH
Healthcare Support		0%	0.0	HH	4%	3.2	HH	4%	2.8	HH
Protective Service		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Food Preparation and Serving-Related		40%	5.1	HH	0%	0.0	HH	0%	0.0	HH
Building/Grounds Cleaning and Maintenance		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Personal Care and Service		3%	0.3	HH	0%	0.0	HH	0%	0.0	HH
Sales and Related		29%	3.7	HH	7%	4.8	HH	7%	4.2	HH
Office and Administrative Support		9%	1.1	HH	37%	27.3	HH	37%	23.7	HH
Farming, Fishing and Forestry		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Construction and Extraction		0%	0.0	HH	0%	0.0	HH	0%	0.0	HH
Installation, Maintenance and Repair		4%	0.5	HH	4%	2.8	HH	4%	2.4	HH
Production		3%	0.4	HH	0%	0.0	HH	0%	0.0	HH
Transportation and Material Moving		6%	0.7	HH	0%	0.0	HH	0%	0.0	HH
All Other Occupations		4%	0.6	HH	8%	6.1	HH	8%	5.3	HH
Total		100%	12.7		100%	73.0		100%	63.3	

Legend: HH = households; SF = square feet; Emp = employees.
(1) Source: American Community Survey, five-year estimates, 2006-2010.
(2) From Bureau of Labor Statistics, Occupational Employment Statistics, May 2013 National Industry-Specific Occupational Employment and Wage Estimates.
Source: American Community Survey; Bureau of Labor Statistics; DRA.

Table 9
Wages by Occupational Grouping
Seattle-Bellevue-Everett Metropolitan Division
May, 2013

SOC Code Prefix (1)	Occupational Category	2013 Employment Estimates	% of Total Employment	Mean Hourly Wage	Mean Annual Wage	10th Percentile Hourly Wage	25th Percentile Hourly Wage	Median (50th Percentile) Hourly Wage	75th Percentile Hourly Wage	90th Percentile Hourly Wage
11	Management	78,480	5%	$59.30	$123,340	$28.17	$39.15	$54.11	$72.47	N/A
13	Business and Financial Operations	107,980	7%	$38.00	$79,050	$20.65	$26.36	$34.85	$45.72	$59.45
15	Computer and Mathematical	115,870	8%	$49.35	$102,640	$26.81	$37.53	$49.34	$59.90	$70.97
17	Architecture and Engineering	50,710	3%	$42.51	$88,420	$24.94	$32.28	$41.52	$52.40	$63.40
19	Life, Physical and Social Science	17,990	1%	$34.54	$71,840	$18.08	$22.38	$31.04	$42.34	$55.14
21	Community and Social Services	19,460	1%	$21.56	$44,840	$12.07	$15.18	$20.20	$26.36	$33.57
23	Legal	12,690	1%	$49.49	$102,950	$20.79	$29.08	$39.22	$63.40	N/A
25	Education, Training, and Library	73,840	5%	$26.67	$55,470	$13.76	$17.38	$23.66	$32.29	$40.70
27	Arts, Design, Entertainment, Sports, Media	27,790	2%	$27.87	$57,970	$11.57	$16.39	$24.01	$35.31	$46.95
29	Healthcare Practitioners and Technical	68,090	5%	$40.93	$85,130	$19.43	$26.55	$36.72	$47.42	$61.69
31	Healthcare Support	31,940	2%	$17.43	$36,260	$11.52	$13.29	$16.29	$20.39	$25.52
33	Protective Service	25,600	2%	$25.27	$52,550	$10.48	$13.21	$21.27	$36.13	$44.56
35	Food Preparation and Serving-Related	114,810	8%	$12.74	$26,500	$9.24	$9.37	$10.92	$14.19	$18.50
37	Building and Grounds Cleaning and Maintenance	34,380	2%	$14.84	$30,870	$9.42	$10.86	$13.80	$17.55	$21.74

Table 9
Wages by Occupational Grouping
Seattle-Bellevue-Everett Metropolitan Division
May, 2013

SOC Code Prefix (1)	Occupational Category	2013 Employment Estimates	% of Total Employment	Mean Hourly Wage	Mean Annual Wage	10th Percentile Hourly Wage	25th Percentile Hourly Wage	Median (50th Percentile) Hourly Wage	75th Percentile Hourly Wage	90th Percentile Hourly Wage
39	Personal Care and Service	43,790	3%	$14.53	$30,210	$9.36	$10.15	$11.75	$16.23	$24.67
40	Sales and Related	148,800	10%	$22.15	$46,080	$9.51	$11.13	$16.11	$26.20	$44.26
43	Office and Administrative Support	196,340	14%	$19.38	$40,320	$11.34	$14.29	$18.29	$23.17	$28.47
45	Farming, Fishing, Forestry	1,360	0%	$16.12	$33,530	$9.22	$9.31	$11.99	$21.47	$29.70
47	Construction and Extraction	53,680	4%	$27.38	$56,960	$14.82	$19.16	$26.98	$34.49	$42.00
49	Installation, Maintenance and Repair	47,390	3%	$25.58	$53,210	$13.79	$17.82	$24.63	$32.33	$40.16
51	Production	88,040	6%	$21.04	$43,770	$10.50	$13.52	$18.70	$27.53	$35.59
53	Transportation and Material Moving	90,730	6%	$19.92	$41,430	$9.64	$12.04	$16.89	$23.52	$33.96
	TOTAL	1,449,770	100%							

(1) The first two digits of the six digit Standard Occupational Classification (SOC) code.
(2) Based on the following income limits adjusted for a 2 person household: $20,800 at 30% AMI; $41,600 at 60%AMI and $55,500 at 80% AMI.

Source: U.S. Department of Labor, Bureau of Labor Statistics, May 2013 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates, Seattle-Bellevue-Tacoma Metropolitan Division; DRA

Table 9
Wages by Occupational Grouping
Seattle-Bellevue-Everett Metropolitan Division
May, 2013

SOC Code Prefix (1)	Occupational Category	2013 Employ-ment Estimates	10th Percentile Annual Wage	25th Percentile Annual Wage	Median (50th Percentile) Annual Wage	75th Percentile Annual Wage	90th Percentile Annual Wage	Est. % of Jobs Below 30% AMI (2)	Est. % of Jobs Between 30%-60% AMI (2)	Est. % of Jobs Between 60%-80% AMI (2)
11	Management	78,480	$58,594	$81,432	$112,549	$150,738	N/A	0%	0%	10%
13	Business and Financial Operations	107,980	$42,952	$54,829	$72,488	$95,098	$123,656	0%	10%	20%
15	Computer and Mathematical	115,870	$55,765	$78,062	$102,627	$124,592	$147,618	0%	0%	10%
17	Architecture and Engineering	50,710	$51,875	$67,142	$86,362	$108,992	$131,872	0%	0%	15%
19	Life, Physical and Social Science	17,990	$37,606	$46,550	$64,563	$88,067	$114,691	5%	10%	25%
21	Community and Social Services	19,460	$25,106	$31,574	$42,016	$54,829	$69,826	7%	43%	30%
23	Legal	12,690	$43,243	$60,486	$81,578	$131,872	N/A	0%	10%	15%
25	Education, Training, and Library	73,840	$28,621	$36,150	$49,213	$67,163	$84,656	5%	35%	20%
27	Arts, Design, Entertainment, Sports, Media	27,790	$24,066	$34,091	$49,941	$73,445	$97,656	8%	32%	25%
29	Healthcare Practitioners and Technical	68,090	$40,414	$55,224	$76,378	$98,634	$128,315	0%	15%	15%
31	Healthcare Support	31,940	$23,962	$27,643	$33,883	$42,411	$53,082	10%	70%	20%
33	Protective Service	25,600	$21,798	$27,477	$44,242	$75,150	$92,685	10%	40%	25%
35	Food Preparation and Serving-Related	114,810	$19,219	$19,490	$22,714	$29,515	$38,480	40%	40%	10%
37	Building and Grounds Cleaning and Maintenance	34,380	$19,594	$22,589	$28,704	$36,504	$45,219	20%	50%	20%

Table 9
Wages by Occupational Grouping
Seattle-Bellevue-Everett Metropolitan Division
May, 2013

SOC Code Prefix (1)	Occupational Category	2013 Employ-ment Estimates	10th Percentile Annual Wage	25th Percentile Annual Wage	Median (50th Percentile) Annual Wage	75th Percentile Annual Wage	90th Percentile Annual Wage	Est. % of Jobs Below 30% AMI (2)	Est. % of Jobs Between 30%-60% AMI (2)	Est. % of Jobs Between 60%-80% AMI (2)
39	Personal Care and Service	43,790	$19,469	$21,112	$24,440	$33,758	$51,314	35%	55%	10%
40	Sales and Related	148,800	$19,781	$23,150	$33,509	$54,496	$92,061	25%	40%	15%
43	Office and Administrative Support	196,340	$23,587	$29,723	$38,043	$48,194	$59,218	10%	35%	35%
45	Farming, Fishing, Forestry	1,360	$19,178	$19,365	$24,939	$44,658	$61,776	35%	40%	10%
47	Construction and Extraction	53,680	$30,826	$39,853	$56,118	$71,739	$87,360	5%	30%	20%
49	Installation, Maintenance and Repair	47,390	$28,683	$37,066	$51,230	$67,246	$83,533	15%	20%	25%
51	Production	88,040	$21,840	$28,122	$38,896	$57,262	$74,027	10%	5%	65%
53	Transportation and Material Moving	90,730	$20,051	$25,043	$35,131	$48,922	$70,637	20%	45%	15%
	TOTAL	1,449,770								

Table 10
Estimated Households Earning Up to 30% AMI
Office and Hotel Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	% of Employees Earning Up to 30% AMI	Office		Hotel	
		Percent (1)	No. (2)	Percent (1)	No. (2)
6. Households Earning Up to 30% AMI					
Management	0%	0%	0.0	0%	0.0
Business and Financial Operations	0%	0%	0.0	0%	0.0
Computer and Mathematical	0%	0%	0.0	0%	0.0
Architecture and Engineering	0%	0%	0.0	0%	0.0
Life, Physical and Social Science	5%	0%	0.0	0%	0.0
Community and Social Services	7%	0%	0.0	0%	0.0
Legal	0%	0%	0.0	0%	0.0
Education, Training, and Library	5%	0%	0.0	0%	0.0
Arts, Design, Entertainment, Sports and Media	8%	0%	0.0	0%	0.0
Healthcare Practitioners and Technical	0%	0%	0.0	0%	0.0
Healthcare Support	10%	0%	1.4	0%	0.0
Protective Service	10%	0%	0.0	0%	0.0
Food Preparation and Serving Related	40%	0%	0.0	11%	8.0
Building and Grounds Cleaning and Maintenance	20%	0%	0.0	6%	4.2
Personal Care and Service	35%	0%	0.0	3%	1.9
Sales and Related	25%	2%	5.2	1%	0.6
Office and Administrative Support	10%	3%	9.5	2%	1.2
Farming, Fishing and Forestry	35%	0%	0.0	0%	0.0
Construction and Extraction	5%	0%	0.0	0%	0.0
Installation, Maintenance and Repair	15%	1%	1.8	1%	0.4
Production	10%	0%	0.0	0%	0.0
Transportation and Material Moving	20%	0%	0.0	0%	0.0
TOTAL		6%	17.9	22%	16.3

(1) Percent distribution of households by occupation by land use multiplied by estimated percent of occupation earning less than 30% AMI.
(2) Percent of occupation earning less than 30% AMI by land use multiplied by total employee households generated by land use.
Source: Bureau of Labor Statistics; DRA

Table 11
Estimated Households Earning Between 31% and 60% AMI
Office and Hotel Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	% of Employees Earning 31% to 60% AMI	Office		Hotel	
		Percent (1)	No. (2)	Percent (1)	No. (2)
6. Households Earning Between 31% AMI and 60% AMI					
Management	0%	0%	0.0	0%	0.0
Business and Financial Operations	10%	2%	5.4	0%	0.0
Computer and Mathematical	0%	0%	0.0	0%	0.0
Architecture and Engineering	0%	0%	0.0	0%	0.0
Life, Physical and Social Science	10%	0%	0.0	0%	0.0
Community and Social Services	43%	0%	0.0	0%	0.0
Legal	10%	0%	1.2	0%	0.0
Education, Training, and Library	35%	0%	0.0	0%	0.0
Arts, Design, Entertainment, Sports and Media	32%	0%	0.0	0%	0.0
Healthcare Practitioners and Technical	15%	1%	4.2	0%	0.0
Healthcare Support	70%	3%	9.9	0%	0.0
Protective Service	40%	0%	0.0	0%	0.0
Food Preparation and Serving Related	40%	0%	0.0	11%	8.0
Building and Grounds Cleaning and Maintenance	50%	0%	0.0	14%	10.6
Personal Care and Service	55%	0%	0.0	4%	2.9
Sales and Related	40%	3%	8.3	1%	0.9
Office and Administrative Support	35%	11%	33.4	6%	4.3
Farming, Fishing and Forestry	40%	0%	0.0	0%	0.0
Construction and Extraction	30%	0%	0.0	0%	0.0
Installation, Maintenance and Repair	20%	1%	2.4	1%	0.6
Production	5%	0%	0.0	0%	0.0
Transportation and Material Moving	45%	0%	0.0	0%	0.0
Total		20%	64.8	37%	27.3

(1) Percent distribution of households by occupation by land use multiplied by estimated percent of occupation earning between 31% and 60% AMI.
(2) Percent of occupation earning between 31% and 60% AMI by land use multiplied by total households generated by land use.
Source: Bureau of Labor Statistics; DRA

Table 12
Estimated Households Earning Between 61% and 80% AMI
Office and Hotel Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	% of Employees Earning 61% to 80% AMI	Office		Hotel	
		Percent (1)	No. (2)	Percent (1)	No. (2)
6. Households Earning Between 61% AMI and 80% AMI					
Management	10%	1%	2.8	0%	0.4
Business and Financial Operations	20%	3%	10.9	0%	0.0
Computer and Mathematical	10%	0%	1.1	0%	0.0
Architecture and Engineering	15%	1%	2.3	0%	0.0
Life, Physical and Social Science	25%	0%	0.0	0%	0.0
Community and Social Services	30%	0%	0.0	0%	0.0
Legal	15%	1%	1.7	0%	0.0
Education, Training, and Library	20%	0%	0.0	0%	0.0
Arts, Design, Entertainment, Sports and Media	25%	0%	0.0	0%	0.0
Healthcare Practitioners and Technical	15%	1%	4.2	0%	0.0
Healthcare Support	20%	1%	2.8	0%	0.0
Protective Service	25%	0%	0.0	0%	0.0
Food Preparation and Serving Related	10%	0%	0.0	3%	2.0
Building and Grounds Cleaning and Maintenance	20%	0%	0.0	6%	4.2
Personal Care and Service	10%	0%	0.0	1%	0.5
Sales and Related	15%	1%	3.1	0%	0.3
Office and Administrative Support	35%	11%	33.4	6%	4.3
Farming, Fishing and Forestry	10%	0%	0.0	0%	0.0
Construction and Extraction	20%	0%	0.0	0%	0.0
Installation, Maintenance and Repair	25%	1%	3.0	1%	0.7
Production	65%	0%	0.0	0%	0.0
Transportation and Material Moving	15%	0%	0.0	0%	0.0
Total		21%	65.3	17%	12.4

(1) Percent distribution of households by occupation by land use multiplied by estimated percent of occupation earning between 61% and 80% AMI.
(2) Percent of occupation earning between 61% and 80% AMI by land use multiplied by total households generated by land use.
Source: Bureau of Labor Statistics; DRA

Table 13
Estimated Households Earning Up to 30% AMI
Additional Non-Residential Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	% of Employees Earning Up to 30% AMI	Grocery Store		Restaurant		Entertainment		Stand-Alone Retail		R&D Laboratory		Medical Office	
		Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)
6. Households Earning Up to 30% AMI													
Management	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Business and Financial Operations	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Computer and Mathematical	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Architecture and Engineering	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Life, Physical and Social Science	5%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Community and Social Services	7%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Legal	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Education, Training, and Library	5%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Arts, Design, Entertainment, Sports and Media	8%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Healthcare Practitioners and Technical	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Healthcare Support	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.3	0%	0.3
Protective Service	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Food Preparation and Serving-Related	40%	16%	3.8	16%	0.2	16%	0.8	16%	2.0	0%	0.0	0%	0.0
Building/Grounds Cleaning and Maintenance	20%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Personal Care and Service	35%	1%	0.2	1%	0.0	1%	0.0	1%	0.1	0%	0.0	0%	0.0
Sales and Related	25%	7%	1.7	7%	0.1	7%	0.4	7%	0.9	2%	1.2	2%	1.1
Office and Administrative Support	10%	1%	0.2	1%	0.0	1%	0.0	1%	0.1	4%	2.7	4%	2.4
Farming, Fishing and Forestry	35%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Construction and Extraction	5%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Installation, Maintenance and Repair	15%	1%	0.2	1%	0.0	1%	0.0	1%	0.1	1%	0.4	1%	0.4
Production	10%	0%	0.1	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Transportation and Material Moving	20%	1%	0.3	1%	0.0	1%	0.1	1%	0.1	0%	0.0	0%	0.0
Total		27%	6.4	27%	0.4	27%	1.3	27%	3.4	6%	4.7	6%	4.1

(1) Percent distribution of households by occupation by land use multiplied by estimated percent of occupation earning less than 30% AMI.
(2) Percent of occupation earning less than 30% AMI by land use multiplied by total employee households generated by land use.
Source: Bureau of Labor Statistics; DRA

Table 14
Estimated Households Earning Between 31% and 60% AMI
Additional Non-Residential Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	% of Employees Earning 31% to 60% AMI	Grocery Store		Restaurant		Entertainment		Stand-Alone Retail		R&D Laboratory		Medical Office	
		Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)
6. Households Earning Between 31% AMI and 60% AMI													
Management	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Business and Financial Operations	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	1%	0.7	1%	0.6
Computer and Mathematical	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Architecture and Engineering	0%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Life, Physical and Social Science	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Community and Social Services	43%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Legal	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.3	0%	0.2
Education, Training, and Library	35%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Arts, Design, Entertainment, Sports and Media	32%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Healthcare Practitioners and Technical	15%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	1%	1.0	1%	0.8
Healthcare Support	70%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	3%	2.2	3%	2.0
Protective Service	40%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Food Preparation and Serving-Related	40%	16%	3.8	16%	0.2	16%	0.8	16%	2.0	0%	0.0	0%	0.0
Building/Grounds Cleaning and Maintenance	50%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Personal Care and Service	55%	1%	0.3	1%	0.0	1%	0.1	1%	0.2	0%	0.0	0%	0.0
Sales and Related	40%	12%	2.8	12%	0.2	12%	0.6	12%	1.5	3%	1.9	3%	1.7
Office and Administrative Support	35%	3%	0.7	3%	0.0	3%	0.1	3%	0.4	13%	9.6	13%	8.3
Farming, Fishing and Forestry	40%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Construction and Extraction	30%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Installation, Maintenance and Repair	20%	1%	0.2	1%	0.0	1%	0.0	1%	0.1	1%	0.6	1%	0.5
Production	5%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Transportation and Material Moving	45%	3%	0.6	3%	0.0	3%	0.1	3%	0.3	0%	0.0	0%	0.0
Total		36%	8.5	36%	0.5	36%	1.7	36%	4.5	22%	16.2	22%	14.1

(1) Percent distribution of households by occupation by land use multiplied by estimated percent of occupation earning between 31% and 60% AMI.
(2) Percent of occupation earning between 31% and 60% AMI by land use multiplied by total households generated by land use.
Source: Bureau of Labor Statistics; DRA

Table 15
Estimated Households Earning Between 61% and 80% AMI
Additional Non-Residential Prototypes
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

Steps	% of Employees Earning 61% to 80% AMI	Grocery Store		Restaurant		Entertainment		Stand-Alone Retail		R&D Laboratory		Medical Office	
		Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)	Percent (1)	No. (2)
6. Households Earning Between 61% AMI and 80% AMI													
Management	10%	0%	0.1	0%	0.0	0%	0.0	0%	0.0	1%	0.7	1%	0.6
Business and Financial Operations	20%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	2%	1.4	2%	1.2
Computer and Mathematical	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.3	0%	0.2
Architecture and Engineering	15%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	1%	0.5	1%	0.5
Life, Physical and Social Science	25%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Community and Social Services	30%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Legal	15%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	1%	0.4	1%	0.3
Education, Training, and Library	20%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Arts, Design, Entertainment, Sports and Media	25%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Healthcare Practitioners and Technical	15%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	1%	1.0	1%	0.8
Healthcare Support	20%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	1%	0.6	1%	0.6
Protective Service	25%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Food Preparation and Serving-Related	10%	4%	1.0	4%	0.1	4%	0.2	4%	0.5	0%	0.0	0%	0.0
Building/Grounds Cleaning and Maintenance	20%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Personal Care and Service	10%	0%	0.1	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Sales and Related	15%	4%	1.0	4%	0.1	4%	0.2	4%	0.6	1%	0.7	1%	0.6
Office and Administrative Support	35%	3%	0.7	3%	0.0	3%	0.1	3%	0.4	13%	9.6	13%	8.3
Farming, Fishing and Forestry	10%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Construction and Extraction	20%	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0
Installation, Maintenance and Repair	25%	1%	0.3	1%	0.0	1%	0.1	1%	0.1	1%	0.7	1%	0.6
Production	65%	2%	0.5	2%	0.0	2%	0.1	2%	0.3	0%	0.0	0%	0.0
Transportation and Material Moving	15%	1%	0.2	1%	0.0	1%	0.0	1%	0.1	0%	0.0	0%	0.0
Total		16%	3.7	16%	0.2	16%	0.7	16%	2.0	22%	15.8	22%	13.7

(1) Percent distribution of households by occupation by land use multiplied by estimated percent of occupation earning between 61% and 80% AMI.
(2) Percent of occupation earning between 61% and 80% AMI by land use multiplied by total households generated by land use.
Source: Bureau of Labor Statistics; DRA

Table 17
Rental Affordability Gap Calculations
Low and Mid-Rise Rental Prototypes
Low Cost Scenario
Seattle Non-Residential Affordable Housing Impact and Mitigation Study
Economic Analysis

Assumptions

HUD Median Household Income, Seattle-Bellevue HMFA, 2015	$89,600
Affordable Housing Expense As a % of Income	30%

No. of Bedrooms	**Studio**	**1 Bedroom**	**2 Bedroom**	**3 Bedroom**	**4 Bedroom**
Household Size	1.0 Persons	1.5 Persons	3.0 Persons	4.5 Persons	6.0 Persons
Household Size Income Adjust. Factor	70%	75%	90%	104%	116%
Renter Utility Allowance, City of Seattle (1)					
Tenant Pays All Utilities (2)	$110	$110	$160	$245	$325
Tenant Pays Heat and Electricity	$35	$35	$60	$95	$155
Tenant Pays Electricity Only	$15	$15	$20	$35	$65
Assumed for these calculations:	$110	$110	$160	$245	$325

Miscellaneous Income Per Unit Per Year	$100
Vacancy Rate	3.00%
Operating Cost Per Unit Per Year	
Low-Rise/Mid-Rise Prototypes, Citywide	$6,760
Mortgage Interest Rate	6.50%
Mortgage Amortization (Years)	30
Debt Coverage Ratio	1.00
Prototype Development Cost per Net SF (3)	$368

Income Levels by Family Size	**1.0 Persons**	**1.5 Persons**	**2.0 Persons**	**2.5 Persons**	**3.0 Persons**	**4.0 Persons**	**5.0 Persons**
Household Size Income Adjust. Factor	70%	75%	80%	85%	90%	100%	108%
30% of Median	$18,850	$20,200	$21,550	$22,900	$24,250	$26,900	$29,100
60% of Median	$37,680	$40,350	$43,020	$45,720	$48,420	$53,760	$58,080
80% of Median	$46,100	$49,375	$52,650	$55,950	$59,250	$65,800	$71,100

Affordability Gap Calculations	**Studio**	**1 Bedroom**	**2 Bedroom**
Average Unit Size (3)	450	650	850
Average Per Unit Development Cost	$165,600	$239,200	$312,800
30% of Median			
Annual Income Limit	$18,850	$20,200	$24,250
Affordable Monthly Housing Expense	$471	$505	$606
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$361	$395	$446
Annual Gross Rental Income Per Unit	$4,332	$4,740	$5,352
Less: Vacancy	($130)	($142)	($161)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	($2,558)	($2,162)	($1,569)
Available for Debt Service	($2,558)	($2,162)	($1,569)
Supportable Mortgage Per Unit	($33,700)	($28,500)	($20,700)
Per Unit Affordability Gap (4)	$165,600	$239,200	$312,800
60% of Median			
Annual Income Limit	$37,680	$40,350	$48,420
Affordable Monthly Housing Expense	$942	$1,009	$1,211
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$832	$899	$1,051
Annual Gross Rental Income Per Unit	$9,984	$10,788	$12,612
Less: Vacancy	($300)	($324)	($378)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	$2,924	$3,704	$5,474
Available for Debt Service	$2,924	$3,704	$5,474
Supportable Mortgage Per Unit	$38,600	$48,800	$72,200
Per Unit Affordability Gap (4)	$127,000	$190,400	$240,600
80% of Median			
Annual Income Limit	$46,100	$49,375	$59,250
Affordable Monthly Housing Cost	$1,153	$1,234	$1,481
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$1,043	$1,124	$1,321
Annual Gross Rental Income Per Unit	$12,516	$13,488	$15,852
Less: Vacancy	($375)	($405)	($476)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	$5,381	$6,323	$8,616
Supportable Mortgage Per Unit	$70,900	$83,400	$113,600
Per Unit Affordability Gap (4)	$94,700	$155,800	$199,200

(1) Source: Seattle Housing Authority, effective 11/1/2013.
(2) Includes electricity, heating, water, and garbage.
(3) From DRA" Affordable Housing Incentive Program Economic Analysis," 2014. Represents average cost per net SF for low- and mid-rise rental prototypes.
(4) Equals per unit development cost less per unit supportable mortgage.

Source: City of Seattle Department of Planning and Development; Seattle Housing Authority; DRA

Table 18
Rental Affordability Gap Calculations
Low and Mid-Rise Rental Prototypes
Middle Cost Scenario
Seattle Non-Residential Affordable Housing Impact and Mitigation Study
Economic Analysis

Assumptions

HUD Median Household Income, Seattle-Bellevue HMFA, 2015	$89,600
Affordable Housing Expense As a % of Income	30%

No. of Bedrooms	**Studio**	**1 Bedroom**	**2 Bedroom**	**3 Bedroom**	**4 Bedroom**
Household Size	1.0 Persons	1.5 Persons	3.0 Persons	4.5 Persons	6.0 Persons
Household Size Income Adjust. Factor	70%	75%	90%	104%	116%
Renter Utility Allowance, City of Seattle (1)					
Tenant Pays All Utilities (2)	$110	$110	$160	$245	$325
Tenant Pays Heat and Electricity	$35	$35	$60	$95	$155
Tenant Pays Electricity Only	$15	$15	$20	$35	$65
Assumed for these calculations:	$110	$110	$160	$245	$325

Miscellaneous Income Per Unit Per Year	$100
Vacancy Rate	3.00%
Operating Cost Per Unit Per Year	
Low-Rise/Mid-Rise Prototypes, Citywide	$6,760
Mortgage Interest Rate	6.50%
Mortgage Amortization (Years)	30
Debt Coverage Ratio	1.00
Prototype Development Cost per Net SF (3)	$394

Income Levels by Family Size	**1.0 Persons**	**1.5 Persons**	**2.0 Persons**	**2.5 Persons**	**3.0 Persons**	**4.0 Persons**	**5.0 Persons**
Household Size Income Adjust. Factor	70%	75%	80%	85%	90%	100%	108%
30% of Median	$18,850	$20,200	$21,550	$22,900	$24,250	$26,900	$29,100
60% of Median	$37,680	$40,350	$43,020	$45,720	$48,420	$53,760	$58,080
80% of Median	$46,100	$49,375	$52,650	$55,950	$59,250	$65,800	$71,100

Affordability Gap Calculations	**Studio**	**1 Bedroom**	**2 Bedroom**
Average Unit Size (3)	450	650	850
Average Per Unit Development Cost	$177,300	$256,100	$334,900
30% of Median			
Annual Income Limit	$18,850	$20,200	$24,250
Affordable Monthly Housing Expense	$471	$505	$606
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$361	$395	$446
Annual Gross Rental Income Per Unit	$4,332	$4,740	$5,352
Less: Vacancy	($130)	($142)	($161)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	($2,558)	($2,162)	($1,569)
Available for Debt Service	($2,558)	($2,162)	($1,569)
Supportable Mortgage Per Unit	($33,700)	($28,500)	($20,700)
Per Unit Affordability Gap (4)	$177,300	$256,100	$334,900
60% of Median			
Annual Income Limit	$37,680	$40,350	$48,420
Affordable Monthly Housing Expense	$942	$1,009	$1,211
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$832	$899	$1,051
Annual Gross Rental Income Per Unit	$9,984	$10,788	$12,612
Less: Vacancy	($300)	($324)	($378)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	$2,924	$3,704	$5,474
Available for Debt Service	$2,924	$3,704	$5,474
Supportable Mortgage Per Unit	$38,600	$48,800	$72,200
Per Unit Affordability Gap (4)	$138,700	$207,300	$262,700
80% of Median			
Annual Income Limit	$46,100	$49,375	$59,250
Affordable Monthly Housing Cost	$1,153	$1,234	$1,481
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$1,043	$1,124	$1,321
Annual Gross Rental Income Per Unit	$12,516	$13,488	$15,852
Less: Vacancy	($375)	($405)	($476)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	$5,381	$6,323	$8,616
Supportable Mortgage Per Unit	$70,900	$83,400	$113,600
Per Unit Affordability Gap (4)	$106,400	$172,700	$221,300

(1) Source: Seattle Housing Authority, effective 11/1/2013.
(2) Includes electricity, heating, water, and garbage.
(3) From DRA" Affordable Housing Incentive Program Economic Analysis," 2014. Represents average cost per net SF for low- and mid-rise rental prototypes.
(4) Equals per unit development cost less per unit supportable mortgage.

Source: City of Seattle Department of Planning and Development; Seattle Housing Authority; DRA

Table 19
Rental Affordability Gap Calculations
Low and Mid-Rise Rental Prototypes
High Cost Scenario
Seattle Non-Residential Affordable Housing Impact and Mitigation Study
Economic Analysis

Assumptions

HUD Median Household Income, Seattle-Bellevue HMFA, 2015	$89,600
Affordable Housing Expense As a % of Income	30%

No. of Bedrooms	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Household Size	1.0 Persons	1.5 Persons	3.0 Persons	4.5 Persons	6.0 Persons
Household Size Income Adjust. Factor	70%	75%	90%	104%	116%
Renter Utility Allowance, City of Seattle (1)					
Tenant Pays All Utilities (2)	$110	$110	$160	$245	$325
Tenant Pays Heat and Electricity	$35	$35	$60	$95	$155
Tenant Pays Electricity Only	$15	$15	$20	$35	$65
Assumed for these calculations:	$110	$110	$160	$245	$325

Miscellaneous Income Per Unit Per Year	$100
Vacancy Rate	3.00%
Operating Cost Per Unit Per Year	
Low-Rise/Mid-Rise Prototypes, Citywide	$6,760
Mortgage Interest Rate	6.50%
Mortgage Amortization (Years)	30
Debt Coverage Ratio	1.00
Prototype Development Cost per Net SF (3)	$446

Income Levels by Family Size	**1.0 Persons**	**1.5 Persons**	**2.0 Persons**	**2.5 Persons**	**3.0 Persons**	**4.0 Persons**	**5.0 Persons**
Household Size Income Adjust. Factor	70%	75%	80%	85%	90%	100%	108%
30% of Median	$18,850	$20,200	$21,550	$22,900	$24,250	$26,900	$29,100
60% of Median	$37,680	$40,350	$43,020	$45,720	$48,420	$53,760	$58,080
80% of Median	$46,100	$49,375	$52,650	$55,950	$59,250	$65,800	$71,100

Affordability Gap Calculations	**Studio**	**1 Bedroom**	**2 Bedroom**
Average Unit Size (3)	450	650	850
Average Per Unit Development Cost	$200,700	$289,900	$379,100
30% of Median			
Annual Income Limit	$18,850	$20,200	$24,250
Affordable Monthly Housing Expense	$471	$505	$606
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$361	$395	$446
Annual Gross Rental Income Per Unit	$4,332	$4,740	$5,352
Less: Vacancy	($130)	($142)	($161)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	($2,558)	($2,162)	($1,569)
Available for Debt Service	($2,558)	($2,162)	($1,569)
Supportable Mortgage Per Unit	($33,700)	($28,500)	($20,700)
Per Unit Affordability Gap (4)	$200,700	$289,900	$379,100
60% of Median			
Annual Income Limit	$37,680	$40,350	$48,420
Affordable Monthly Housing Expense	$942	$1,009	$1,211
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$832	$899	$1,051
Annual Gross Rental Income Per Unit	$9,984	$10,788	$12,612
Less: Vacancy	($300)	($324)	($378)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	$2,924	$3,704	$5,474
Available for Debt Service	$2,924	$3,704	$5,474
Supportable Mortgage Per Unit	$38,600	$48,800	$72,200
Per Unit Affordability Gap (4)	$162,100	$241,100	$306,900
80% of Median			
Annual Income Limit	$46,100	$49,375	$59,250
Affordable Monthly Housing Cost	$1,153	$1,234	$1,481
Less: Monthly Utility Allowance	($110)	($110)	($160)
Affordable Monthly Rent	$1,043	$1,124	$1,321
Annual Gross Rental Income Per Unit	$12,516	$13,488	$15,852
Less: Vacancy	($375)	($405)	($476)
Less: Annual Unit Operating Costs	($6,760)	($6,760)	($6,760)
Net Operating Income Per Unit	$5,381	$6,323	$8,616
Supportable Mortgage Per Unit	$70,900	$83,400	$113,600
Per Unit Affordability Gap (4)	$129,800	$206,500	$265,500

(1) Source: Seattle Housing Authority, effective 11/1/2013.
(2) Includes electricity, heating, water, and garbage.
(3) From DRA" Affordable Housing Incentive Program Economic Analysis," 2014. Represents average cost per net SF for low- and mid-rise rental prototypes.
(4) Equals per unit development cost less per unit supportable mortgage.

Source: City of Seattle Department of Planning and Development; Seattle Housing Authority; DRA

Table 21
Calculation of Estimated Mitigation Fees: Office and Hotel Prototypes
2017 Minimum Wage
Low Cost Scenario
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

		Office	Hotel
Gross Square Feet by Prototype		324,000	144,000
Households Earning Up to 60% AMI			
1. Number of Employee Households		82.7	43.6
2. Estimated Housing Gap Cost at Per Unit Gap of: (1)	$190,400	$15,746,080	$8,301,440
3. Cost of Housing Gap Per Gross Square Foot Bldg. Area		**$48.60**	**$57.65**
Households Earning Between 61% and 80% AMI			
1. Number of Employee Households		65.3	12.4
2. Estimated Housing Gap Cost at Per Unit Gap of: (1)	$155,800	$10,173,740	$1,931,920
3. Cost of Housing Gap Per Gross Square Foot Bldg. Area		**$31.40**	**$13.42**
Total Fee Per Square Foot		**$80.00**	**$71.07**

(1) Based on per unit affordability gap for one-bedroom units.

Table 22
Calculation of Estimated Mitigation Fees: Office and Hotel Prototypes
2017 Minimum Wage
Middle Cost Scenario
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

		Office	Hotel
Gross Square Feet by Prototype		324,000	144,000
Households Earning Up to 60% AMI			
1. Number of Employee Households		82.7	43.6
2. Estimated Housing Gap Cost at Per Unit Gap of: (1)	$207,300	$17,143,710	$9,038,280
3. Cost of Housing Gap Per Gross Square Foot Bldg. Area		**$52.91**	**$62.77**
Households Earning Between 61% and 80% AMI			
1. Number of Employee Households		65.3	12.4
2. Estimated Housing Gap Cost at Per Unit Gap of: (1)	$172,700	$11,277,310	$2,141,480
3. Cost of Housing Gap Per Gross Square Foot Bldg. Area		**$34.81**	**$14.87**
Total Fee Per Square Foot		**$87.72**	**$77.64**

(1) Based on per unit affordability gap for one-bedroom units.

Table 23
Calculation of Estimated Mitigation Fees: Office and Hotel Prototypes
2017 Minimum Wage
High Cost Scenario
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

		Office	Hotel
Gross Square Feet by Prototype		324,000	144,000
Households Earning Up to 60% AMI			
1. Number of Employee Households		82.7	43.6
2. Estimated Housing Gap Cost at Per Unit Gap of: (1)	$241,100	$19,938,970	$10,511,960
3. Cost of Housing Gap Per Square Foot Bldg. Area		**$61.54**	**$73.00**
Households Earning Between 61% and 80% AMI			
1. Number of Employee Households		65.3	12.4
2. Estimated Housing Gap Cost at Per Unit Gap of: (1)	$206,500	$13,484,450	$2,560,600
3. Cost of Housing Gap Per Square Foot Bldg. Area		**$41.62**	**$17.78**
Total Fee Per Square Foot		**$103.16**	**$90.78**

(1) Based on per unit affordability gap for one-bedroom units.

Table 24
Calculation of Estimated Mitigation Fees: Non-Residential Uses in Additional Prototypes
2017 Minimum Wage
Low, Middle and High Cost Scenarios
Seattle Non-Residential Affordable Housing Impact and Mitigation Study

		Grocery Store	Restaurant	Entertainment	Stand-Alone Retail	R&D Laboratory	Medical Office
Gross Square Feet of Land Use		50,000	3,000	15,000	25,000	100,000	87,000
TOTAL EMPLOYEE HOUSEHOLDS BY INCOME LEVEL							
Households Earning Up to 60% AMI		14.9	1.0	3.0	7.9	20.9	18.2
Households Earning Between 61% and 80% AMI		3.7	0.2	0.7	2.0	15.8	13.7
Total		18.7	1.2	3.7	9.9	36.7	31.9
FEES UNDER LOW COST SCENARIO							
Households Earning Up to 60% AMI							
Est.Total Housing Gap at Per Unit Gap of: (1)	$190,400	$2,843,624	$180,880	$567,392	$1,511,776	$3,977,456	$3,456,712
Justifiable Fee Per Gross Square Foot Bldg. Area		**$56.87**	**$60.29**	**$37.83**	**$60.47**	**$39.77**	**$39.73**
Households Earning Between 61% and 80% AMI							
Est.Total Housing Gap at Per Unit Gap of: (1)	$155,800	$583,471	$32,718	$112,176	$311,600	$2,467,872	$2,139,913
Justifiable Fee Per Square Foot Bldg. Area		**$11.67**	**$10.91**	**$7.48**	**$12.46**	**$24.68**	**$24.60**
Total Fee Per Square Foot		**$68.54**	**$71.20**	**$45.30**	**$72.94**	**$64.45**	**$64.33**
FEES UNDER MID COST SCENARIO							
Households Earning Up to 60% AMI							
Est.Total Housing Gap at Per Unit Gap of: (1)	$207,300	$3,096,026	$196,935	$617,754	$1,645,962	$4,330,497	$3,763,532
Justifiable Fee Per Gross Square Foot Bldg. Area		**$61.92**	**$65.65**	**$41.18**	**$65.84**	**$43.30**	**$43.26**
Households Earning Between 61% and 80% AMI							
Est.Total Housing Gap at Per Unit Gap of: (1)	$172,700	$646,762	$36,267	$124,344	$345,400	$2,735,568	$2,372,035
Justifiable Fee Per Square Foot Bldg. Area		**$12.94**	**$12.09**	**$8.29**	**$13.82**	**$27.36**	**$27.26**
Total Fee Per Square Foot		**$74.86**	**$77.73**	**$49.47**	**$79.65**	**$70.66**	**$70.52**
FEES UNDER HIGH COST SCENARIO							
Households Earning Up to 60% AMI							
Est.Total Housing Gap at Per Unit Gap of: (1)	$241,100	$3,600,829	$229,045	$718,478	$1,914,334	$5,036,579	$4,377,171
Justifiable Fee Per Gross Square Foot Bldg. Area		**$72.02**	**$76.35**	**$47.90**	**$76.57**	**$50.37**	**$50.31**
Households Earning Between 61% and 80% AMI							
Est.Total Housing Gap at Per Unit Gap of: (1)	$206,500	$773,343	$43,365	$148,680	$413,000	$3,270,960	$2,836,278
Justifiable Fee Per Square Foot Bldg. Area		$15.47	**$14.46**	**$9.91**	**$16.52**	**$32.71**	**$32.60**
Total Fee Per Square Foot		**$87.48**	**$90.80**	**$57.81**	**$93.09**	**$83.08**	**$82.91**

(1) Based on per unit affordability gap for one-bedroom units under low-, medium- and high-cost scenarios.
Source: DRA