



COMMERCIAL LINKAGE FEE NEXUS AND FEASIBILITY STUDY

DRAFT REPORT

Prepared for:
City of Santa Rosa
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I. EXECUTIVE SUMMARY

Introduction

The City of Santa Rosa is considering implementing a commercial linkage fee on new development projects. The purpose of this fee is to mitigate the impact of new market rate development on the demand for affordable housing. When a city or county adopts a development impact fee, it must establish a reasonable relationship or connection between the development project and the fee that is charged. Studies undertaken to demonstrate this connection are called nexus studies. This nexus study quantifies the connection between the development of market rate commercial space and the demand for affordable housing units.

This commercial linkage fee nexus study quantifies the connection between the development of commercial hotel, retail/restaurants/services, and business park/light industrial projects and the demand for affordable housing units. The study also considers feasibility and other policy implications of implementing an impact fee.

Report Organization

This executive summary highlights the study's approach, the results of the analysis, and recommendations. Subsequent chapters provide more detailed information on the data sources, methodology used in this analysis, and study findings.

The report is organized into five sections, an appendix, and a glossary of terms. Following this Executive Summary, Section II provides an introduction to the purpose of the study, and an overview of the nexus concept. Section III provides a detailed description of the methodology and the results of the maximum fee calculation. Section IV discusses financial feasibility testing of the maximum justified fee and other fee scenarios. Section V discusses other policy considerations that jurisdictions typically weigh before implementing a nexus fee and provides implementation options for the City of Santa Rosa.

Nexus Analysis Methodology and Results

This nexus study uses a 5 – step methodology to calculate the maximum legal fee charged on new commercial development for affordable housing. This section summarizes the steps taken to calculate the nexus-based maximum fee amount per rentable square foot of new commercial space. More detail on each step can be found in later sections of this report.

Step 1: Establish commercial prototypes representing typical commercial development in Santa Rosa.

The first step in the nexus study is to identify commercial prototypes. The prototypes used in this study are not intended to represent specific development projects; rather, they represent commercial development recently constructed or proposed in Santa Rosa. This study examined the jobs-housing linkage for three commercial development prototypes, shown in Figure 1.

FIGURE 1: COMMERCIAL PROTOTYPES

	Hotel	Retail/ Restaurants/ Services	Business Park/ Light Industrial
Gross Building Area (SF)	100,000	100,000	100,000
Efficiency Ratio (a)	N/A	0.95	0.95
Net Leasable Sq. Ft. (NSF)	N/A	95,000	95,000
Hotel Rooms	175		
Net Leasable Office Area (SF)			4,750
Parking Ratio (per Room/1000 SF)	1	4	3
Parking Spaces	175	400	300
Floor Area Ratio	1.0	0.2	0.4
Land Area (Acres)	2.3	11.5	5.7
Land Area (SF)	100,000	500,000	250,000

Notes:

(a) Refers to ratio of gross building area to net leasable area. An efficiency ratio of 0.95 means that 95% of the gross building area is leasable.

(b) The floor-area-ratio (FAR) is often used as a measure of density. In this analysis, it is calculated as the gross building area divided by the total land area.

Source: City of Santa Rosa, 2018; Strategic Economics, 2019.

Step 2: Estimate the number of workers that will work in the new commercial space.

The next step is to calculate the number of workers associated with each building prototype. These estimates are based on a review of national survey data for existing commercial buildings, as well as from recently completed linkage fee nexus studies in the Bay Area. These density factors represent the average density for the prototypes. The density factors were multiplied by the building size (100,000 square feet) to calculate the total number of workers occupying each commercial prototype, as shown in Figure 2.

FIGURE 2: EMPLOYMENT DENSITY AND NUMBER OF WORKERS BY PROTOTYPE

Commercial Prototype	Prototype Size (SF)	Average Density (SF per Worker)	Number of Workers in Prototype
Hotel	100,000	1,000	100
Retail/Restaurant/Services	100,000	300	333
Business Park/Light Industrial	100,000	350	286

Sources: Vallen and Vallen, "Chapter 1: The Traditional Hotel Industry," Check-In, Check-Out, 2012; Sonoma County Housing Needs Study, Economic & Planning Systems, 2006; A.C. Nelson, "Reshaping Metropolitan America," 2013; Jobs Housing Impact Fee Draft Nexus Study: City of Napa, CA, Vernazza Wolfe Associates Inc., 2011; City of Santa Rosa, 2018; Strategic Economics, 2019.

Step 3: Estimate Worker Household Incomes.

Next, the wages of workers who would be employed in the commercial prototypes were estimated. This step determines the proportion of households eligible for affordable housing. Estimating worker household incomes involves the following 4 steps:

- A. Establish a list of industries and occupations associated with each prototype.
- B. Estimate worker wages.

- C. Convert worker wages to household incomes.
- D. Determine the number of worker households eligible for affordable housing.

Figure 3 shows the number of households in four income categories by prototype.

FIGURE 3: NUMBER OF WORKER HOUSEHOLDS BY INCOME CATEGORY

Prototype	Number of Employee Households
Hotel	
Very Low Income ($\leq 50\%$ AMI)	2.4
Low Income (51-80% AMI)	45.6
Moderate Income (81-120% AMI)	8.0
Above Moderate ($>120\%$)	6.5
Total	62.4
Retail/Restaurant/Personal Services	
Very Low Income ($\leq 50\%$ AMI)	65.8
Low Income (51-80% AMI)	125.4
Moderate Income (81-120% AMI)	9.9
Above Moderate ($>120\%$)	7.0
Total	208.1
Business Park/Light Industrial	
Very Low Income ($\leq 50\%$ AMI)	0.6
Low Income (51-80% AMI)	48.8
Moderate Income (81-120% AMI)	51.6
Above Moderate ($>120\%$)	77.4
Total	178.4

Sources: Strategic Economics, 2019.

Step 4: Calculate the affordability gap for new, lower income households.

The fourth step is to calculate the housing affordability gap. The housing affordability gap is defined as the difference between what very low, low, and moderate-income households can afford to pay for housing, and the cost to develop new, modest housing units. Calculating the housing affordability gap involves the following three steps:

- A. Estimate affordable rents and housing prices for very low, low, and moderate-income households.
- B. Estimate development costs of building new, modest housing units, based on current construction and land cost data.
- C. Calculate the difference between what renters and owners can afford to pay for housing and the cost of development of rental and ownership units.

Figure 4 shows estimates of the housing affordability gap for very low, low, and moderate-income households.

FIGURE 4: AVERAGE AFFORDABILITY GAP BY INCOME GROUP

Income Level	Rental Gap	Ownership Gap	Average Affordability Gap
Very Low-Income (<=50% AMI)	\$210,392	N/A	\$210,392
Low-Income (50% - 80% AMI)	\$133,981	N/A	\$133,981
Moderate-Income (80% - 120% AMI)	\$75,924	\$82,003	\$78,963

Source: Strategic Economics, 2019.

Step 5: Calculate maximum commercial linkage fee for each prototype.

Finally, the maximum commercial linkage fee for each prototype was derived by multiplying the total number of very low, low, and moderate- income new worker households for each prototype (calculated in Step 3), by the corresponding affordable housing gap figure (calculated in Step 4). The total affordability gap was then divided by 100,000 SF, the size of each commercial prototype, to generate a maximum fee per square foot.

Figure 5 presents the results of the linkage fee calculations for each prototype.

FIGURE 5: MAXIMUM COMMERCIAL LINKAGE FEES

	Worker Households Requiring Affordable Housing	Affordability Gap for All New Worker Households	Size of Prototype (SF)	Maximum Fee per SF
Hotel	56	\$7,513,688	100,000	\$75
Retail/Restaurants/Personal Services	204	\$32,015,109	100,000	\$320
Business Park/Light Industrial	102	\$11,357,815	100,000	\$114

Source: Strategic Economics, 2019.

Policy and Feasibility Considerations

There are a number of policy considerations jurisdictions take into account when they consider a new commercial linkage fee. These may include factors such as:

- Development feasibility.
- Total development costs.
- Comparison to neighboring jurisdictions.
- The fee's role in the City's overall strategy for affordable housing implementation.

Financial Feasibility

Financial feasibility is just one of several factors to consider in making a decision regarding a potential nexus fee. In order to provide Santa Rosa with guidance on how proposed fees could impact

development decisions, the Consultant Team conducted a pro forma analysis that tested the financial impact of the maximum and reduced fee scenarios for each prototype.

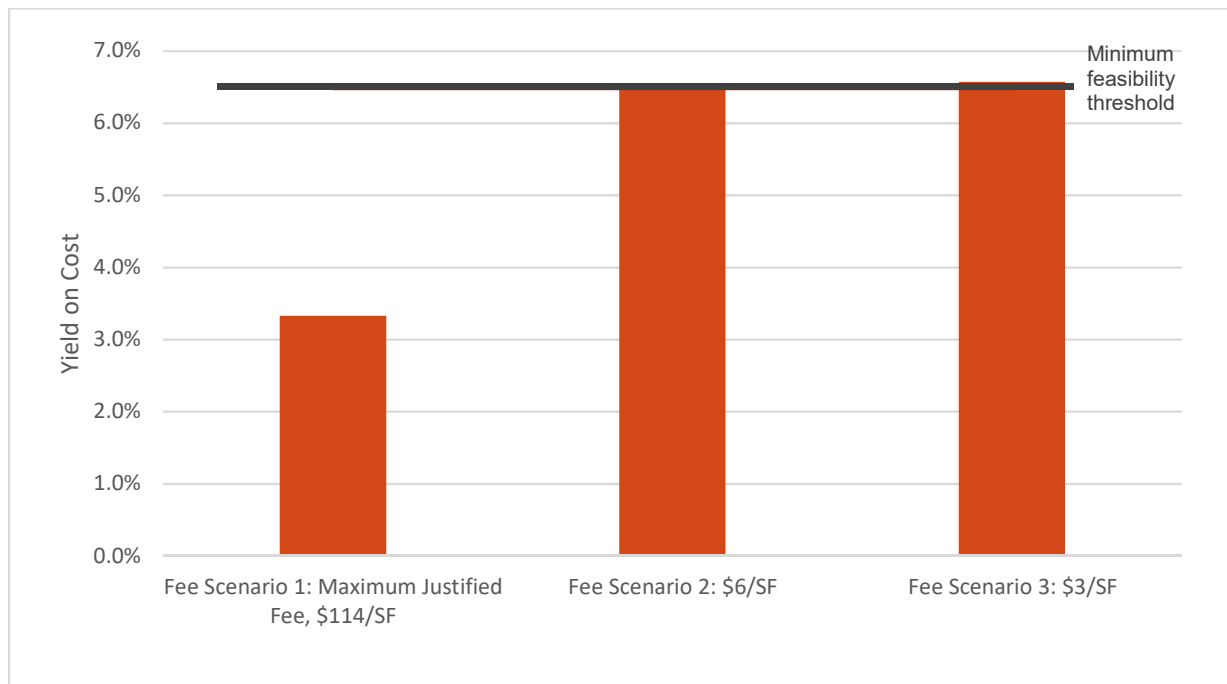
- **Hotel:** The feasibility analysis indicates that under current economic conditions, the maximum justified fee (\$75 per square foot) meets the required threshold (11.5%-13.5%) for financial feasibility as do two reduced fee levels of \$6 and \$3 per square foot (Figure 6).
- **Retail/Restaurants/Services:** The feasibility analysis indicates that under current economic conditions, the maximum justified fee (\$320 per square foot) does not meet the required threshold (6.5%-7.5%) for financial feasibility, but reduced fee levels of \$6 and \$3 per square foot do marginally meet the minimum feasibility threshold (Figure 7).
- **Business Park/Light Industrial:** The feasibility analysis indicates that under current economic conditions, the maximum justified fee (\$114 per square foot) does not meet the required threshold (6.0%-7.0%) for financial feasibility, but reduced fee levels of \$6 and \$3 per square foot do marginally meet the minimum feasibility threshold (Figure 8).

FIGURE 6: FEASIBILITY RESULTS, HOTEL PROTOTYPE



Source: Strategic Economics, 2019.

FIGURE 7: FEASIBILITY RESULTS, RETAIL/RESTAURANTS/SERVICES PROTOTYPE



Source: Strategic Economics, 2019.

FIGURE 8: FEASIBILITY RESULTS, BUSINESS PARK/LIGHT INDUSTRIAL PROTOTYPE



Source: Strategic Economics, 2019.

Total Development Cost

Currently, the total development costs (including building and onsite improvements, land, parking, indirect costs, financing costs, developer overhead, and existing fees) are \$423 per square foot for the hotel prototype, \$323 per net square foot for the retail/restaurant/services prototype, and \$125 per net square foot for the business park/light industrial prototype. The addition of the maximum housing impact fees would represent 15 percent, 50 percent, and 48 percent of total development cost of the hotel, retail/restaurant/services, and business park/light industrial prototypes, respectively. A fee of \$6 per square foot represents 1.4 percent, 1.8 percent, and 4.6 percent of total development cost of the hotel, retail/restaurant/services, and business park/light industrial prototypes, respectively, and a fee of \$3 per square foot represents 0.7 percent, 0.9 percent, and 2.3 percent of total development cost of the hotel, retail/restaurant/services, and business park/light industrial prototypes, respectively.

Comparison to Neighboring Jurisdictions

A comparison to current commercial linkage fees charged in nearby or comparison cities can be a helpful consideration. Figure 9 provides available information on commercial linkage fees to compare Santa Rosa's potential fee scenarios to existing fees in selected jurisdictions.

If the maximum commercial linkage fees calculated for Santa Rosa were adopted, they would significantly exceed the fees charged in neighboring and comparison jurisdictions, as listed in Figure 9. Current fees in neighboring and comparison jurisdictions range from \$0.69 per square foot for hotel in Rohnert Park to \$6.00 per square foot for hotel in Fremont and Napa and for retail uses in Fremont.

The recommended fee level of \$3 per square foot is comparable to or lower than the fees in place in several jurisdictions including Cotati, Napa, Petaluma, Pleasanton, and Sonoma County.

FIGURE 9: EXISTING COMMERCIAL LINKAGE FEES IN SELECTED CITIES

City/County	Hotel	Retail/Restaurant/ Personal Services	Business Park/Light Industrial
Berkeley	\$4.50	\$4.50	\$2.25
Cotati	\$2.08	\$3.59	\$2.15
Fremont	\$6.00	\$6.00	\$3.00
Napa	\$6.00	\$3.55	\$3.50
Petaluma	\$2.42	\$4.17	\$2.49
Pleasanton	\$3.15	\$3.15	\$3.15
Rohnert Park	\$0.69	\$1.19	\$0.71
San Rafael	\$1.91	\$5.73	\$4.14
Sonoma County	\$2.92	\$5.05	\$3.01

Source: Strategic Economics, 2019.

Implementation Options and Recommendations

This study finds the maximum justified linkage fees are \$75 per square foot for hotel, \$320 per square foot for retail/ restaurants/ services, and \$114 per square foot for business park/light industrial.

If Santa Rosa elects to impose a new commercial linkage fee, the recommended fee level is \$3 per square foot for the three land uses. These recommendations are based on the findings of the financial feasibility analysis, a comparison of fees in neighboring jurisdictions, and other factors as explained in the Policy Considerations section, above. The recommended fee levels are shown in Figure 10.

FIGURE 10: RECOMMENDED LINKAGE FEES BY COMMERCIAL PROTOTYPE

Prototype	Maximum Fee per SF	Recommended Fee per SF
Hotel	\$75	\$3
Retail/Restaurants/Personal Services	\$320	\$3
Business Park/Light Industrial	\$114	\$3

Sources: Strategic Economics, 2019.

II. INTRODUCTION

The City of Santa Rosa is considering implementing a commercial linkage fee charged on new retail, hotel, and light industrial/ business park development projects. The purpose of a commercial linkage fee is to mitigate the impact of new commercial development on the demand for affordable housing from new workers.

When a city or county adopts a commercial linkage fee, it must establish a reasonable relationship or connection between the development project and the fee that is charged. Studies undertaken to demonstrate this connection are called nexus studies. The nexus study quantifies the connection between new commercial development and the demand for affordable housing units.

Background

For more than thirty years, California cities and counties have imposed commercial linkage fees on new, non-residential developments. Linkage fees are one of several funding sources that jurisdictions can use to help meet the affordable housing needs of new workers. Commercial linkage fees and other impact fees have been a common practice and deemed legally defensible following landmark cases such as *Ehrlich v. Culver City* in 1996, in which the California Supreme Court established that exactions on developers were permissible provided that the exaction amount bear a reasonable relationship to, and reflect the magnitude of, the impact of the development on the community.

The funds raised by the linkage fees are deposited into a housing fund specifically reserved for use by a local jurisdiction to increase the supply of affordable housing for the workforce. Many municipalities offer alternative means of complying with their fee requirements, such as allowing developers to provide affordable units as a part of their development or dedicate land for affordable housing.

Santa Rosa does not currently have a commercial linkage fee in place. The purpose of this study is to provide the necessary nexus analysis for commercial linkage fees should Santa Rosa decide to adopt them.

The Nexus Concept

This commercial linkage fee nexus study establishes and quantifies the linkages or “nexus” between new commercial development and the need for additional housing affordable for new workers.

Growth in employment will provide jobs at various wage rates. While some jobs will pay salaries that will allow new workers to rent or purchase market rate housing, others will provide lower wages. Some of the new workers will have household incomes low enough to qualify them for income-restricted affordable housing. Given this, there may be an affordability gap between what worker households can afford to pay for housing, and what the actual costs of new housing may be. This study quantifies the demand for very low income, low income, and moderate income housing that is created by new development of commercial buildings. In order to adopt a commercial linkage fee, a nexus study is required to determine the reasonable relationship between the fee's use and the impact of the development project on which the fee is imposed.

The nexus analysis presented in this study is designed to define an upper limit for a commercial linkage fee to be charged on new commercial development to mitigate impacts on affordable housing needs. The maximum fee is not necessarily the recommended fee. Subsequent sections of this report address

additional policy considerations when adopting a commercial linkage fee quantify the increase in demand for affordable housing that accompanies new non-residential development.

III. CALCULATION OF THE NEXUS FEE

This commercial linkage nexus study uses a 5 – step methodology to calculate the maximum justified fee on new commercial development for affordable housing. This section describes the steps taken to calculate the nexus-based maximum fee amount per square foot.

Step 1: Establish the Commercial Prototypes

The first step in this study is to identify commercial prototypes. They are not intended to represent specific development projects; rather, the prototypes used in this study represent commercial development recently constructed or proposed in Santa Rosa. This study examined the jobs-housing linkage for three commercial development prototypes, which are described below and shown in Figure 11.

- **Hotel:** This building prototype includes full-service hotels, limited-service hotels, motels, and other lodging.
- **Retail/Restaurants/Services:** This building prototype includes a broad range of buildings, including retail stores, restaurants, and personal care spaces accommodating businesses like nail salons and dry cleaners.
- **Business Park/Light Industrial:** This building prototype could include a wide range of light industrial, office, and R&D users, including open floor-plan offices, medical offices, and cannabis-related uses found in Sonoma County.

The prototypes defined above represent the types of new commercial buildings recently constructed or proposed in Santa Rosa. Each prototype was assumed to be 100,000 square feet in size. This building size is not intended to represent the size of actual projects being built in Santa Rosa. Many linkage fee nexus studies use 100,000 square feet because it can easily be converted into per-square-foot calculations. The per-square-foot linkage fee can be applied to a project of any size.

FIGURE 11: COMMERCIAL PROTOTYPES

	Hotel	Retail/ Restaurants/ Services	Business Park/ Light Industrial
Gross Building Area (SF)	100,000	100,000	100,000
Efficiency Ratio (a)	N/A	0.95	0.95
Net Leasable Sq. Ft. (NSF)	N/A	95,000	95,000
Hotel Rooms	175		
Net Leasable Office Area (SF)			4,750
Parking Ratio (per Room/1000 SF)	1	4	3
Parking Spaces	175	400	300
Floor Area Ratio	1.0	0.2	0.4
Land Area (Acres)	2.3	11.5	5.7
Land Area (SF)	100,000	500,000	250,000

Notes:

(a) Refers to ratio of gross building area to net leasable area. An efficiency ratio of 0.95 means that 95% of the gross building area is leasable.

(b) The floor-area-ratio (FAR) is often used as a measure of density. In this analysis, it is calculated as the gross building area divided by the total land area.

Source: Strategic Economics, 2019.

Step 2. Estimate the Number of Workers

The next step is to calculate the number of workers associated with each building prototype. These estimates are based on a review of national survey data for existing commercial buildings, as well as from recently completed linkage fee nexus studies in the Bay Area.

The employment densities assumed for each prototype are described below. These density factors represent the average density for the prototypes; specific employment densities for development projects may vary. The density factors were multiplied by the building size (100,000 square feet) to calculate the total number of workers occupying each commercial prototype, as shown in Figure 12.

- **Hotel:** The hotel employment density assumption is 1,000 square feet per worker (or 1 worker per room, assuming an average of 1,000 gross square feet per room¹). For a 100,000-square-foot hotel, this density assumption results in a total number of 100 workers.
- **Retail/Restaurants/Services:** The average density for retail/restaurants/services is estimated at 300 square feet of space per worker. Using this density, the number of workers in a 100,000 square foot prototype is estimated at 333.
- **Business Park/Light Industrial:** The average density assumption for business park/light industrial is estimated at 350 square feet per worker. The resulting number of total workers in this prototype is estimated at 286.

FIGURE 12: EMPLOYMENT DENSITY AND NUMBER OF WORKERS BY PROTOTYPE

Commercial Prototype	Prototype Size (SF)	Average Density (SF per Worker)	Number of Workers in Prototype
Hotel	100,000	1,000	100
Retail/Restaurant/Personal Services	100,000	300	333
Business Park/Light Industrial	100,000	350	286

Sources: Vallen and Vallen, "Chapter 1: The Traditional Hotel Industry," Check-In, Check-Out, 2012; Sonoma County Housing Needs Study, Economic & Planning Systems, 2006; A.C. Nelson, "Reshaping Metropolitan America," 2013; Jobs Housing Impact Fee Draft Nexus Study: City of Napa, CA, Vernazza Wolfe Associates Inc., 2011; City of Santa Rosa; Strategic Economics, 2019.

¹ Gross square footage includes restaurants, conference facilities, gyms, business centers, and other hotel facilities.

Step 3. Estimate Worker Household Incomes

Next, the wages of workers who would be employed in the commercial prototypes were estimated. This allowed Strategic Economics to determine the income levels of worker households, and therefore the proportion of households eligible for affordable housing.

Estimating worker household incomes involves the following four steps:

- E. Establish a list of industries and occupations associated with each prototype.
- F. Estimate worker wages.
- G. Convert worker wages to household incomes.
- H. Determine the number of worker households eligible for affordable housing.

Step 3A. Establish Industries and Occupations Associated with each Prototype

The first step in calculating employee wages is to establish a list of the industries associated with each prototype. Using industry data from Quarterly Census of Employment and Wages (QCEW), industries (defined by NAICS codes) were identified that would be most likely to occupy each prototype. The appendix to this report includes figures showing the industries that are associated with the hotel, retail/restaurants/services and business park/light industrial prototypes, respectively.

The next step is to identify all the occupations that are associated with each industry based on data provided by the U.S. Bureau of Labor Statistics (BLS). The national BLS occupational matrix is then calibrated to match the county's employment mix by weighting the national employment distribution to reflect the distribution of employment by industry within Sonoma County. The complete list of occupations for each prototype is presented in the appendix.

Step 3B. Estimate Worker Wages

Next, the average wage by worker is calculated using data on average annual wages by occupation in the San Francisco-Redwood City-Sonoma Metro Division from the California Employment Development Department.

Figure 13 below summarizes the results of these calculations, computing the average annual weighted wage ² for each prototype. As shown, the average wage is lowest for workers in retail/restaurants/services. Hotel workers have a slightly higher average wage than retail/restaurant/service workers, while business park/light industrial employees have the highest average wage of the three prototypes.

² The weighted average wage takes into account the proportion of jobs in each occupational category.

FIGURE 13: AVERAGE ANNUAL WAGE BY PROTOTYPE

Commercial Prototype	Weighted Average Annual Wage (a)
Hotel	\$36,014
Retail/Restaurants/Personal Services	\$29,743
Business Park/Light Industrial	\$61,060

Notes:

(a) Average wages are weighted to take into account the proportion of jobs in each occupational wage category.
Sources: Quarterly Census of Employment and Wages; U.S. Bureau of Labor Statistics; Strategic Economics, 2019.

Step 3C. Convert Worker Wages to Household Incomes

Many households include multiple wage earners. In order to determine the number of worker households required to fill the jobs associated with each prototype, the number of new workers (calculated in Step 2) was divided by 1.60, or the average number of wage-earners per working household in Santa Rosa, according to the U.S. Census Bureau's American Community Survey, 5-Year Estimates, 2011-2015. The calculation of total new worker households is shown in Figure 14.

The analysis also assumed that the income of the second wage-earner in a household would be similar to the wage of the first wage-earner. Accordingly, individual worker wages (estimated in Step 3B) were multiplied by 1.60 to represent total household incomes.

FIGURE 14: NUMBER OF WORKER HOUSEHOLDS BY PROTOTYPE

Commercial Prototype	Number of New Workers	Workers Per Household	Number of New Worker Households
Hotel	100	1.60	62
Retail/Restaurant/Personal Services	333	1.60	208
Business Park/Light Industrial	286	1.60	178

Sources: US Census, American Community Survey 5-Year Estimates, 2012-2016; Strategic Economics, 2019.

Step 3D. Determine the Number of Worker Households Eligible for Affordable Housing

Next, worker households are categorized as very-low, low, moderate, and above-moderate income based on the income definitions and cut-offs established by the California Housing and Community Development Department (HCD) for a three-person household, or the average household size in the City of Santa Rosa according to the U.S. Census Bureau American Community Survey 5-Year Estimates, 2012-2016. These income cut-offs are shown in Figure 15. Figure 16 shows the number of households in each income category by prototype. Above-moderate income households were removed from the subsequent steps of the nexus analysis, as it is assumed that these income groups would be able to afford market-rate housing.

FIGURE 15: HOUSEHOLD INCOME CATEGORIES

Income Category	3-Person Household
Very Low Income (<=50% AMI)	\$37,200
Low Income (51-80% AMI)	\$59,350
Moderate Income (81-120% AMI)	\$89,200
Above Moderate Income (>120%)	>\$89,200

Source: California Department of Housing and Community Development, "State Income Limits for 2016," May 24, 2016.

FIGURE 16: NUMBER OF WORKER HOUSEHOLDS BY INCOME CATEGORY

Prototype	Number of Employee Households
Hotel	
Very Low Income (<=50% AMI)	2.4
Low Income (51-80% AMI)	45.6
Moderate Income (81-120% AMI)	8.0
Above Moderate (>120%)	6.5
Total	62.4
Retail/Restaurant/Personal Services	
Very Low Income (<=50% AMI)	65.8
Low Income (51-80% AMI)	125.4
Moderate Income (81-120% AMI)	9.9
Above Moderate (>120%)	7.0
Total	208.1
Business Park/Light Industrial	
Very Low Income (<=50% AMI)	0.6
Low Income (51-80% AMI)	48.8
Moderate Income (81-120% AMI)	51.6
Above Moderate (>120%)	77.4
Total	178.4

Sources: Strategic Economics, 2019.

Step 4. Calculate the Housing Affordability Gap

Next, the housing affordability gap is estimated. The housing affordability gap is defined as the difference between what very low, low, and moderate-income households can afford to pay for housing, and the cost to develop new, modest housing units. The calculation does not assume the availability of any other source of housing subsidy because not all "modest" housing is built with public subsidies, and tax credits and tax-exempt bond financing are highly competitive programs that will not always be available to developers of modest housing units.

Calculating the housing affordability gap involves the following three steps:

- D. Estimate affordable rents and housing prices for very low, low, and moderate-income households.
- E. Estimate development costs of building new, modest housing units, based on current construction and land cost data.

- F. Calculate the difference between what renters and owners can afford to pay for housing and the cost of development of rental and ownership units.

Each step is described below.

Step 4A. Estimate Affordable Rents and Sales Prices

The first step in calculating the housing affordability gap is to determine the maximum amount that households at the targeted income levels can afford to pay for housing. The maximum affordable monthly rent is calculated as 30 percent of gross monthly household income, minus a deduction for utilities. Homeowners are assumed to pay a maximum of 35 percent of gross monthly income on total housing costs. Figure 17 show the calculations for rental housing. Figure 18 show the calculations for ownership housing. Key assumptions used to calculate the maximum affordable rents and housing prices are discussed below.

- **Unit types.** For rental housing, the analysis included studios, and one-, two-, and three-bedroom apartment units. For for-sale housing, two- and three-bedroom townhouse units were included. These unit types represent the affordable and modestly priced rental and for-sale units available in Santa Rosa.
- **Occupancy and household size assumptions.** Calculating affordable unit prices requires defining household sizes for each unit type. Consistent with California Health and Safety Code Section 50052.5(h), unit occupancy was generally estimated as the number of bedrooms plus one. For example, a studio unit is assumed to be occupied by one person, a one-bedroom unit is assumed to be occupied by two people, and so on. Several adjustments to this general assumption were made in order to capture the full range of household sizes. In particular, it is assumed that two-bedroom townhouses could be occupied by two- or three-person households, and three-bedroom apartments and townhouses could be occupied by four- or five-person households.
- **Targeted income levels for rental housing.** For rental housing, affordable rents were calculated for very low, low, and moderate-income households. For eligibility purposes, most affordable housing programs define very low-income households as those earning 50 percent or less of area median income, or AMI, low-income households as those earning between 51 and 80 percent of AMI, and moderate-income households as those earning between 81 and 120 percent of AMI.
- **Targeted income levels for ownership housing.** For ownership housing, affordable home prices were calculated only for moderate income households. Higher income limits are used for ownership than for rental housing because ownership housing is more expensive to purchase and maintain. It is assumed that moderate-income homebuyers may earn slightly less than the maximum for that income category (120 percent of AMI).
- **Maximum monthly housing costs.** For renters, maximum monthly housing costs are assumed to be 30 percent of gross household income. For homebuyers, 35 percent of gross income is assumed to be available for monthly housing costs, reflecting the higher incomes of this group. These standards are based on California's Health & Safety Code Sections 50052.5 and 50053.

- **Utilities.** The monthly utility cost assumptions are based on utility allowances calculated by City of Santa Rosa Housing and Community Services.³ Both renters and owners are assumed to pay for heating, cooking, other electric, and water heating. In addition, owners are assumed to pay for water and trash collection.⁴
- **Mortgage terms & costs included for ownership housing.** For ownership housing, the mortgage calculations are based on the terms typically offered to first-time homebuyers (such as the terms offered by the California Housing Finance Authority), which is a 30-year mortgage with a five percent down payment. A five percent down payment standard is also used by many private lenders for first-time homebuyers. Based on recent interest rates to first-time buyers, the analysis assumes a 4.0 percent annual interest rate.⁵ In addition to mortgage payments and utilities, monthly ownership housing costs include homeowner association (HOA) dues,⁶ property taxes,⁷ private mortgage insurance,⁸ and hazard and casualty insurance.⁹

³ City of Santa Rosa Housing and Community Services, Utility Allowances, Effective December 2017, <https://srcity.org/DocumentCenter/View/4114/Utility-Allowances-for-Tenant-Furnished-Utilities--Duplex-and-Detached-House>; <https://srcity.org/DocumentCenter/View/4115/Utility-Allowances-for-Tenant-Furnished-Utilities--Apartment-and-Townhouse>.

⁴ Units are assumed to have natural gas heating, cooking, and water heating systems, as natural gas is the most common fuel for units located in Sonoma County. Source: U.S. Census Bureau, 2015 American Community Survey.

⁵ Sources: CalHFA Mortgage Calculator, accessed November 2018; Zillow.com, "Current Mortgage Rates and Home Loans," accessed November 2018.

⁶ HOA fees are estimated at \$330 per unit per month, based on common HOA fees in Santa Rosa as reported on Zillow.com in 2018.

⁷ The annual property tax rate is estimated at 1.60 percent of the sales price, based on the average total tax rate for Santa Rosa (calculated from Santa Rosa Consolidated Annual Financial Report, FY 2014-2015).

⁸ The annual private mortgage insurance premium rate is estimated at 1.08 percent of the total mortgage amount, consistent with standard requirements for conventional loans with a five percent down payment. Sources: GIC, Apr 2016; Radian, June 2016; Genworth, July 2016.

⁹ The annual hazard and casualty insurance rate is assumed to be 0.35 percent of the sales price, consistent with standard industry practice.

FIGURE 17: CALCULATION OF AFFORDABLE RENTS IN SANTA ROSA BY APARTMENT UNIT TYPE

	Apartment Unit Type			
	Studio (1 person)	1 bedroom (2 persons)	2 bedroom (3 persons)	3 bedroom (4 persons)
Very Low Income (<=50% AMI)				
Maximum Household Income at 50% AMI	\$34,400	\$39,300	\$44,200	\$49,100
Maximum Monthly Housing Cost ^(a)	\$860	\$983	\$1,105	\$1,326
Utility Deduction	\$41	\$46	\$64	\$80
Maximum Available for Rent	\$819	\$937	\$1,148	\$1,246
Low Income (50%-80% AMI)				
Maximum Household Income at 80% AMI	\$55,000	\$62,850	\$70,700	\$78,550
Maximum Monthly Housing Cost ^(a)	\$1,375	\$1,571	\$1,768	\$1,964
Utility Deduction	\$41	\$46	\$64	\$80
Maximum Available for Rent	\$1,334	\$1,525	\$1,884	\$1,884
Moderate Income (80%-120% AMI)				
Maximum Household Income at 120% AMI	\$70,650	\$80,750	\$90,850	\$100,900
Maximum Monthly Housing Cost ^(a)	\$1,766	\$2,019	\$2,271	\$2,523
Utility Deduction	\$41	\$46	\$64	\$80
Maximum Available for Rent	\$1,725	\$1,973	\$2,443	\$2,645

Notes:

^a 30 percent of maximum monthly household income.

Acronyms:

AMI: Area median income

Sources: Santa Rosa Housing and Community Services Income Guidelines, Effective June 1, 2018; Santa Rosa Housing and Community Services Utility Allowances, Effective December 1, 2017; Strategic Economics, 2019.

FIGURE 18: CALCULATION OF AFFORDABLE SINGLE FAMILY SALES PRICE IN SANTA ROSA BY UNIT TYPE

Unit Type	2 bedroom		3 bedroom	
Household Size	2 persons	3 persons	4 persons	5 persons
Moderate Income (120% AMI)				
Maximum Household Income at 120% AMI ^(a)	\$80,750	\$90,850	\$100,900	\$109,000
Maximum Monthly Housing Cost ^(b)	\$2,355	\$2,649	\$2,942	\$3,179
Monthly Deductions	\$0	\$0	\$0	\$0
Utilities	\$123	\$123	\$148	\$148
HOA Dues	\$345	\$345	\$345	\$345
Property Taxes and Insurance ^(c)	\$666	\$770	\$865	\$947
Monthly Income Available for Mortgage Payment ^(d)	\$1,222	\$1,413	\$1,587	\$1,740
Maximum Mortgage Amount ^(e)	\$237,708	\$274,812	\$308,585	\$338,343
Maximum Affordable Sales Price ^(f)				
By HH Size	\$250,219	\$289,276	\$324,826	\$356,150
By Unit Type	\$269,747		\$340,488	

Notes:

^(a) Calculated as 120 percent of the median household income reported by Santa Rosa Housing and Community Services for each household size.

^(b) Maximum housing cost is estimated at 35 percent of household income for homebuyers.

^(c) Assumes annual property tax rate of 1.62 percent of sales price; annual private mortgage insurance premium rate of 1.28 percent of mortgage amount; annual hazard and casualty insurance rate of 0.35 percent of sales price.

^(d) Maximum monthly housing cost minus deductions

^(e) Assumes 4.6 percent interest rate and 30-year loan term.

^(f) Assumes 5 percent down payment

Acronyms:

AMI: Area median income

HOA: Home owners association

Sources: Santa Rosa Housing and Community Services Income Guidelines, Effective June 1, 2018; Sonoma County Community Development Commission, Utility Allowances, Effective December 2017; Strategic Economics, 2019.

Step 4B. Estimate Housing Development Costs

The second step in calculating the housing affordability gap is to estimate the cost of developing new, modest housing units. First, an average, per-square foot development cost was estimated, using a pro forma model (Figure 19). Next, the per-square foot cost was translated to per-unit costs, using assumptions about average unit sizes (Figures 20 and 21). Key assumptions are discussed below.

- **Building characteristics:** The rental housing building characteristics shown in Figure 19 are based on a review of recent affordable apartment projects developed in Santa Rosa. The modest for-sale housing characteristics are based on non-luxury, market-rate townhouse development projects in Santa Rosa. Each prototype was assumed to include 100 units for ease of calculation.
- **Development cost assumptions:** Figure 19 also shows development cost assumptions. Land acquisition costs are based on asking sales prices for commercial land listed on Loopnet.com in September 2018. Hard cost, soft cost, and developer fee assumptions are based on a review of recent affordable housing pro formas and developer interviews. Soft costs are assumed to include design, engineering, city permits and fees, construction interest, contingencies, and legal expenses.
- **Unit sizes:** Unit sizes were estimated based on recent affordable and modest development projects.

FIGURE 19: PRO FORMA ANALYSIS

	Modest Rental Housing	Modest For-Sale Housing
Building Characteristics ^(a)		
Building Type	3 story wood frame apartment building	Attached townhouses
Number of Units	100	100
Average Unit Size (SF)	1,000	1,400
Net Building Area (SF)	100,000	140,000
Gross Building Area (SF)	117,647	164,706
Land Area (SF)	174,240	290,400
Parking Type	Surface	Surface
Parking Spaces/ Unit	2	2
Density (units per acre)	25	15
Development Cost Assumptions ^(b)		
Land Acquisition Costs (per SF Land)	\$17	\$17
Hard Costs (per Net SF)	\$190	\$160
Soft Costs (as % of Hard Costs)	35%	35%
Developer Fees (as % of Hard and Soft Costs)	12%	12%
Total Development Costs		
Land Cost	\$2,905,983	\$4,843,305
Hard Costs	\$19,000,000	\$22,400,000
Soft Costs	\$6,650,000	\$7,840,000
Developer Fees	\$3,078,000	\$3,628,800
Total Development Costs	\$31,633,983	\$38,712,105
Total Development Cost per Net SF	\$316	\$277

Notes:

^(a) Prototypical building characteristics based on review of recent affordable and modest market-rate development in Santa Rosa.

^(b) Cost estimates based on asking sales prices for residential land listed on Loopnet.com, December 2018; review of affordable housing developer pro formas; and interviews with developers.

Sources: Loopnet.com, December 2018; Selected Santa Rosa Rental Housing Pro Forms, 2017; Developer Interviews; Strategic Economics, 2019.

FIGURE 20: RENTAL HOUSING UNIT SIZES AND DEVELOPMENT COSTS

Unit Type	Estimated Cost per Net SF	Unit Size (net SF)	Development Costs
Studio	\$316	500	\$158,170
One bedroom	\$316	680	\$215,111
Two bedroom	\$316	900	\$284,706
Three bedroom	\$316	1,100	\$347,974

Source: Strategic Economics, 2019.

FIGURE 21: FOR - SALE UNIT SIZE AND DEVELOPMENT COSTS

Unit Type	Estimated Cost per Net SF	Unit Size (net SF)	Development Costs
Two bedroom	\$277	1,200	\$331,818
Three bedroom	\$277	1,600	\$442,424

Source: Strategic Economics, 2019.

Step 4C. Calculating the Housing Affordability Gap

The final step in calculating the housing affordability gap is to calculate the difference between what renters and owners can afford to pay and the total cost of developing new units.

Figure 22 shows the housing affordability gap calculation for rental units. For each rental housing unit type and income level, the gap is defined as the difference between the per-unit cost of development and the supportable debt per unit. The supportable debt is calculated based on the net operating income generated by an affordable monthly rent, incorporating assumptions about operating expenses (including property taxes, insurance, etc.), reserves, vacancy and collection loss, and mortgage terms based on discussions with local affordable housing developers. Because household sizes are not uniform and the types of units each household may occupy is variable, the average housing affordability gap is calculated by averaging the housing affordability gaps for the various unit sizes.

Figure 23 shows the housing affordability gap calculation for ownership units. For each unit type, the gap is calculated as the difference between the per-unit cost of development and the affordable sales price for each income level. As with rental housing, the average housing affordability gap for each income level is calculated by averaging the housing affordability gaps across unit sizes in order to reflect that households in each income group vary in size and may occupy any of these unit types.

Finally, tenure-neutral estimates of the housing affordability gap were estimated for very low, low, and moderate-income households (Figure 24). Because very low and low-income households that are looking for housing in today's market are much more likely to be renters, an ownership gap was not calculated for these income groups. The rental gap represents the overall affordability gap for these two income groups. On the other hand, moderate income households could be either renters or owners. Therefore, the rental and ownership gaps are averaged for this income group to calculate the overall affordability gap for moderate income households. The calculated average affordability gap per unit is \$210,392 for very low income households; \$133,981 for low income households, and \$75,924 for moderate income households.

FIGURE 22: AFFORDABILITY GAP CALCULATIONS FOR RENTAL UNITS

Income Level and Unit Type	Unit Size (SF)	Maximum Monthly Rent ^(a)	Annual Income	Net Operating Income ^(b)	Available for Debt Service ^(c)	Supportable Debt ^(d)	Development Costs ^(e)	Affordability Gap
Very-Low Income (50% AMI)								
Studio	500	\$819	\$9,828	\$1,837	\$1,469	\$19,448	\$158,170	\$138,722
1 Bedroom	700	\$937	\$11,238	\$3,176	\$2,541	\$33,633	\$215,111	\$181,478
2 Bedroom	970	\$1,041	\$12,492	\$4,367	\$3,494	\$46,248	\$284,706	\$238,458
3 Bedroom	1,170	\$1,197	\$14,363	\$6,144	\$4,916	\$65,065	\$347,974	\$282,909
Average Affordability Gap						\$41,098	\$251,490	\$210,392
Low Income (80% AMI)								
Studio	500	\$1,334	\$16,008	\$7,708	\$6,166	\$81,618	\$158,170	\$76,552
1 Bedroom	700	\$1,525	\$18,303	\$9,888	\$7,910	\$104,705	\$215,111	\$110,406
2 Bedroom	970	\$1,704	\$20,442	\$11,920	\$9,536	\$126,223	\$284,706	\$158,483
3 Bedroom	1,170	\$1,963	\$23,550	\$14,873	\$11,898	\$157,489	\$347,974	\$190,485
Average Affordability Gap						\$117,509	\$251,490	\$133,981
Moderate Income (120% AMI)								
Studio	500	\$1,725	\$20,703	\$12,168	\$9,734	\$128,849	\$158,170	\$329,321
1 Bedroom	700	\$1,973	\$23,673	\$14,989	\$11,991	\$158,726	\$215,111	\$56,385
2 Bedroom	970	\$2,207	\$26,487	\$17,663	\$14,130	\$187,035	\$284,706	\$97,671
3 Bedroom	1,170	\$2,544	\$30,525	\$21,499	\$17,199	\$227,656	\$347,974	\$120,318
Average Affordability Gap						\$175,567	\$251,490	\$75,924

Notes:

^(a) Affordable Rents are based on Santa Rosa Housing and Community Services Income Guidelines, Effective June 1, 2018.

^(b) Amount available for debt. Assumes 5% vacancy and collection loss and \$7,500 per unit for operating expenses and reserves.

^(c) Assumes 1.25 Debt Coverage Ratio.

^(d) Assumes 6.37%, 30 year loan. Calculations based on annual payments.

^(e) Assumes development cost of \$316 per net square foot on rental units.

Sources: Selected Santa Rosa Rental Housing Pro Formas, 2017; RS Means, 2018; LoopNet, 2018; Citi Community Capital's Multifamily Housing Indicative Rates and Terms, January 11, 2018; Strategic Economics, 2019.

FIGURE 23: AFFORDABILITY GAP CALCULATION FOR FOR - SALE UNITS

Income Level and Unit Type	Unit Size (SF)	Affordable Sales Price ^(a)	Development Costs ^(b)	Affordability Gap ^(c)
Moderate Income (120% of AMI)				
2 Bedroom	1,200	\$269,747	\$331,818	\$62,071
3 Bedroom	1,600	\$340,488	\$442,424	\$101,936
Average Affordability Gap		\$305,118	\$387,121	\$82,003

Notes:

^(a) See Figure 23 above.

^(b) Assumes \$277/SF for development costs, based on recent condominium sales.

^(c) Calculated as the difference between affordable sales price and development cost

Sources: RS Means, 2017; LoopNet, 2016; Strategic Economics, 2019.

FIGURE 24: AVERAGE AFFORDABILITY GAP BY INCOME GROUP

Income Level	Rental Gap	Ownership Gap	Average Affordability Gap
Very Low-Income (<=50% AMI)	\$210,392	N/A	\$210,392
Low-Income (50% - 80% AMI)	\$133,981	N/A	\$133,981
Moderate-Income (80% - 120% AMI)	\$75,924	\$82,003	\$78,963

Source: Strategic Economics, 2019.

Step 5. Calculate Maximum Linkage Fees

Finally, the maximum commercial linkage fee for each prototype was derived by multiplying the total number of very low, low, and moderate-income new worker households for each prototype (calculated in Step 3), by the corresponding affordable housing gap figure (calculated in Step 4). The total affordability gap was then divided by 100,000 SF, the size of each commercial prototype, to generate a maximum fee per square foot.

Figure 25 presents the results of the linkage fee calculations for each prototype. The calculations shown below assume that 100 percent of the very low, low, and moderate income households linked to the new commercial space would be accommodated in Santa Rosa. The maximum fee results are \$75 per square foot for hotel, \$320 per square foot for retail/restaurants/personal services, and \$114 per square foot for business park/light industrial.

The fees presented in Figure 25 represent the maximum that Santa Rosa could charge to mitigate affordable housing demand related to commercial development. The City may adopt a fee at a lower level than the maximum justified fees, depending on a variety of policy considerations such as other fees charged on new development, the financial feasibility of development projects, and other factors.

FIGURE 25: MAXIMUM COMMERCIAL LINKAGE FEES

	Worker Households Requiring Affordable Housing	Affordability Gap for All New Worker Households	Size of Prototype (SF)	Maximum Fee per SF
Hotel	56	\$7,513,688	100,000	\$75
Retail/Restaurants/Personal Services	204	\$32,015,109	100,000	\$320
Business Park/Light Industrial	102	\$11,357,815	100,000	\$114

Source: Strategic Economics, 2019.

IV. DEVELOPMENT FEASIBILITY

There are a number of policy considerations jurisdictions take into account when they consider updating their affordable housing impact fee on new market-rate development. These may include factors such as:

- Development feasibility.
- Comparison to neighboring jurisdictions.
- The fee's role in the City's overall strategy for affordable housing implementation.
- Total development cost.
- Comparison to existing City fees.

This chapter provides a discussion of development feasibility while the following chapter discusses other key policy questions for Santa Rosa.

Feasibility Testing

In order to provide Santa Rosa with guidance on how a commercial linkage fee could impact development decisions, Strategic Economics conducted a financial feasibility analysis that tested the impact of several fee scenarios on developer profit. This chapter provides a summary of the feasibility analysis for three commercial prototypes.

Methodology

This analysis tested the financial feasibility of a range of fee scenarios on prototypical commercial development projects. Financial feasibility was tested using a static pro forma model that measures **yield on cost** (YOC), a commonly used metric indicating the profitability of development projects. Yield on cost is calculated by dividing a project's expected net annual operating income at full lease-up¹⁰ by total development costs (including construction costs, soft costs, fees, and land costs but excluding financing costs). Using YOC as a metric for feasibility allows for a comparison of rates of return among different rental projects, without skewing the results based on the specific financing arrangements (such as the particular combination of debt and equity) that can be highly variable from project to project.

Prototypes

Strategic Economics worked with City staff to construct three commercial prototypes that represent the range of commercial development projects that can reasonably be expected in Santa Rosa based on recent development trends and a review of development proposals that are currently in the pipeline. Figure 26 summarizes the characteristics of the three development prototypes that were tested for financial feasibility:

¹⁰ Net operating income at full lease-up is calculated as total rental revenues minus operating costs, assuming a stable vacancy rate.

- **Hotel:** This building prototype includes full-service hotels, limited-service hotels, motels, and other lodging.
- **Retail/Restaurants/Services:** This building prototype includes a broad range of buildings, including retail stores, restaurants, and personal care spaces accommodating businesses like nail salons and dry cleaners.
- **Business Park/Light Industrial:** This building prototype could include a wide range of light industrial, office, and R&D users, including open floor-plan offices, medical offices, and cannabis-related uses found in Sonoma County.

The characteristics, including building type, size, density (floor-area-ratio), and parking assumptions are based on a review of recently built and proposed projects in Santa Rosa and Sonoma County. The financial feasibility of potential fee levels is tested for each of these prototypes.

FIGURE 26: COMMERCIAL PROTOTYPES

	Hotel	Retail/ Restaurants/ Services	Business Park/ Light Industrial
Gross Building Area (SF)	100,000	100,000	100,000
Efficiency Ratio (a)	N/A	0.95	0.95
Net Leasable Sq. Ft. (NSF)	N/A	95,000	95,000
Hotel Rooms	175		
Net Leasable Office Area (SF)			4,750
Parking Ratio (per Room/1000 SF)	1	4	3
Parking Spaces	175	400	300
Floor Area Ratio	1.0	0.2	0.4
Land Area (Acres)	2.3	11.5	5.7
Land Area (SF)	100,000	500,000	250,000

Notes:

(a) Refers to ratio of gross building area to net leasable area. An efficiency ratio of 0.95 means that 95% of the gross building area is leasable.

(b) The floor-area-ratio (FAR) is often used as a measure of density. In this analysis, it is calculated as the gross building area divided by the total land area.

Source: City of Santa Rosa, 2018; Strategic Economics, 2019.

Revenues

To estimate income from commercial development, the analysis used rental data from Costar, LoopNet and developer interviews for existing retail and light industrial buildings. Hotel room revenue is estimated based on current revenue per available room (RevPAR) from HVS Consulting and Smith Travel Research.

Figure 27 summarizes the calculations and data sources used for estimating the value of the prototypes.

FIGURE 27: PRO FORMA REVENUE INPUTS BY PROTOTYPE

Prototypes	Metric	Input
Hotel		
Revenues and Expenses		
Gross Annual Room Income (a)	RevPAR	\$46,612
Gross Annual Other Revenue (b)	% of Room Revenue	44%
Operating Expenses (b)	% of Room Revenue	70%
Estimates		
Rooms		175
Annual Gross Revenues		\$11,719,922.66
Operating Expenses		(\$5,709,946)
Annual Net Operating Income		\$6,009,976
Cap Rate		10.00%
Total Capitalized Value		\$60,099,763
Retail/Services		
Revenues and Expenses		
Annual Rent - NNN	per NSF	\$24
Operating Expenses	% of Gross	10%
Vacancy Rate	% of Gross	5%
Estimates		
Net Square Footage		95,000
Annual Gross Revenues		\$2,280,000
Operating Expenses		(\$228,000)
Vacancy Rate		(\$4,750)
Annual Net Operating Income		\$2,142,250
Cap Rate		5.00%
Total Capitalized Value		\$42,845,000
Business Park/Light Industrial		
Revenues and Expenses		
Annual Rent - NNN	per NSF	\$10.20
Operating Expenses	% of Revenues	5%
Vacancy Rate	% of Revenues	5%
Estimates		
Net Square Footage		95,000
Annual Gross Revenues		\$969,000
Operating Expenses		(\$48,450)
Vacancy Rate		(\$48,450)
Net Operating Income		\$872,100
Cap Rate		5.00%
Total Capitalized Value		\$17,442,000

Notes:

(a) RevPAR is a measure of revenue per room, calculated as occupancy percentage times average daily rate. Source: STR, 2018, Custom Trend Report including all mid-scale Santa Rosa hotels.

(b) Based on national data from STR Host Almanac, 2018.

Sources: CoStar, 2018; Loopnet, 2018; STR, 2018; Strategic Economics, 2019.

Development Costs

Cost estimates for the prototypes include land costs, direct construction costs (site work/infrastructure, building costs, and parking), indirect costs, financing costs, and developer overhead and profit. Land costs are based on average sales prices for commercial and industrial zoned property that was listed on LoopNet (a commercial real estate site) in Santa Rosa in September 2018 and interviews with developers. Direct building construction cost estimates include site work, building construction, and parking costs and are based on RS Means and information from developer interviews. Soft costs and developer overhead/profit were estimated based on review of similar project pro formas and interviews with developers. City fee calculations were provided by City staff. The cost factors used in the analysis are summarized in Figure 28.

FIGURE 28: DEVELOPMENT COST FACTORS

Development Assumptions	Metric	Hotel	Retail/ Restaurants/ Services	Industrial
Hard Costs (Building & On-Site Improvements) ^a	per sq. ft. of GBA	\$255	\$145	\$75
Land Acquisition	per sq. ft. land	\$35	\$15	\$9
Soft Costs				
Architecture, Engineering & Consulting	% of Hard Costs	5%	5%	5%
Tenant Improvements	per NSF	N/A	\$45	\$90
FF&E ^a	per room	\$28,300	N/A	N/A
Permits & Fees ^b	total	varies	varies	varies
Taxes, Insurance, Legal & Accounting	% of Hard Costs	3%	3%	3%
Financing Costs	% of Hard Costs	5%	5%	5%
Developer Overhead & Fee	% of Hard Costs	4%	4%	4%
Contingency	% of Hard Costs	5%	5%	5%

Notes:

(a) Hotel costs include Furniture, Fixtures & Equipment (FF&E).

(b) Permits & Fees provided by City staff.

Sources: Developer interviews; similar project pro formas; RS Means, 2018; HVS and STR Consulting; City staff; Strategic Economics, 2019.

Measure of Feasibility

To establish a reasonable threshold for a developer's rate of return on new commercial development projects in Santa Rosa, Strategic Economics interviewed local developers, reviewed other similar financial analyses in the Bay Area, and reviewed publications on the local and regional real estate market.

- **Yield on Cost:** A common rule of thumb is that the expected Yield on Cost (YOC) for a commercial development project should be about 1.5 to 2.0 percentage points higher than the average capitalization rate in the local market.¹¹ Local developers reported that expectations for returns are higher in the North Bay compared to San Francisco

¹¹ A project's capitalization (or "cap") rate is the ratio of net operating income divided by property value. Real estate brokerage firms typically calculate the market capitalization rate as the average capitalization rate for projects sold in a given period.

because of the differences in market conditions. Based on these dynamics, hotel projects with a YOC of at least 11.5 to 13.5 percent, retail/restaurant/services projects with a YOC of at least 6.5 to 7.5 percent, and business park/light industrial projects with a YOC of at least 6.0 to 7.0 percent were considered financially feasible for the purposes of this analysis. Developments with a YOC below these thresholds are not financially feasible, while projects with a YOC at the lower end of the thresholds are considered marginally feasible.

FIGURE 29: FEASIBILITY THRESHOLDS

Prototype	Capitalization Rates	Selected Threshold for Yield on Cost
Hotel (a)	9.5-11.5%	11.5%-13.5%
Retail/ Restaurants/ Services (b)	4.5-5.5%	6.5%-7.5%
Business Park/Light Industrial (c)	4.5-5.0%	6.0%-7.0%

Notes:

(a) CBRE Cap Rate Survey, 1st Half 2018, Oakland Suburban Market.

(b) CBRE Cap Rate Survey, 1st Half 2018, Oakland Suburban Market.

(c) CBRE Cap Rate Survey, 1st Half 2018 Oakland Market, developer interviews, 2018.

Strategic Economics, 2019.

Fee Scenarios Tested

Strategic Economics tested the impact of a range of different fee levels on development feasibility, including the maximum justified fee and two different fee levels below the maximum justified fee level. Figure 30 shows the fee scenarios tested. These scenarios are referred to as the “nexus fee scenarios” throughout this document. Note that the fees shown in Figure 30 only include the fees that are the subject of this nexus study; other fees (including existing City fees) are discussed above under “Costs.”

FIGURE 30: NEXUS FEE SCENARIOS

Prototype	Scenario 1 (Maximum Fee)	Scenario 2	Scenario 3
Hotel	\$75.14	\$6.00	\$3.00
Retail/ Restaurants/ Services	\$320.15	\$6.00	\$3.00
Business Park/Light Industrial	\$113.58	\$6.00	\$3.00

Source: Strategic Economics, 2019.

Financial Feasibility Results

Figures 31, 32, and 33 provide the pro forma model results for the commercial prototypes. To understand the financial burden of the fee scenarios on overall development costs, the pro forma analysis also measures the fees as a percent of total development costs. Below is a discussion of the findings.

Hotel

The feasibility analysis indicates that under current economic conditions, the yield on cost for the hotel prototype meets the required threshold (11.5%-13.5%) for financial feasibility under all three

scenarios. The following summarizes the financial feasibility results for potential commercial linkage fees at different levels:

- The maximum justified fee of \$75 per square foot results in a calculated yield on cost of 12.06 percent, which meets the minimum feasibility threshold.
- An impact fee set at \$6 per square foot results in a calculated yield on cost of 14.00 percent, which meets the feasibility threshold.
- An impact fee set at \$3 per square foot results in a calculated yield on cost of 14.10 percent, which meets the feasibility threshold.

Retail/Restaurants/Services

The feasibility analysis indicates that under current economic conditions, the yield on cost for the retail/restaurants/services prototype does not meet the required threshold (6.5%-7.5%) for financial feasibility under the maximum justified fee scenario but does marginally meet the minimum feasibility threshold for the two other fee scenarios. The following summarizes the financial feasibility results for potential commercial linkage fees at different levels:

- The maximum justified fee of \$320 per square foot results in a calculated yield on cost of 3.33 percent, which does not meet the minimum feasibility threshold.
- An impact fee set at \$6 per square foot results in a calculated yield on cost of 6.51 percent, which marginally meets the minimum feasibility threshold.
- An impact fee set at \$3 per square foot results in a calculated yield on cost of 6.57 percent, which marginally meets the minimum feasibility threshold.

Business Park/Light Industrial

The feasibility analysis indicates that under current economic conditions, the yield on cost for the business park/light industrial prototype does not meet the required threshold (6.0%-7.0%) for financial feasibility under the maximum justified fee scenario but does meet the minimum feasibility threshold for the two other fee scenarios. The following summarizes the financial feasibility results for potential commercial linkage fees at different levels:

- The maximum justified fee of \$114 per square foot results in a calculated yield on cost of 3.66 percent, which does not meet the minimum feasibility threshold.
- An impact fee set at \$6 per square foot results in a calculated yield on cost of 6.66 percent, which meets the minimum feasibility threshold.
- An impact fee set at \$3 per square foot results in a calculated yield on cost of 6.82 percent, which meets the minimum feasibility threshold.

FIGURE 31: PRO FORMA MODEL RESULTS, HOTEL PROTOTYPE

Hotel		
Development Costs	per Room	Total
Land	\$20,000	\$3,500,000
Hard Costs		
Building & On-Site Improvements	\$145,714	\$25,500,000
Soft Costs		
A&E & Consulting	\$7,286	\$1,275,000
Tenant Improvements ^a	\$0	\$0
FF&E ^b	\$28,300	\$4,952,500
Permits & Fees ^c	\$15,827	\$2,769,715
Taxes, Insurance, Legal & Accounting	\$4,371	\$765,000
Financing Costs	\$7,286	\$1,275,000
Developer Overhead & fee	\$5,828.57	\$1,020,000
Contingency	\$7,286	\$1,275,000
Total Soft Costs	\$76,184	\$13,332,215
Nexus Fee Scenarios	Fee per SF	Total Fees
Fee Scenario 1: Maximum Justified Fee	\$75.14	\$7,513,688
Fee Scenario 2	\$6.00	\$600,000
Fee Scenario 3	\$3.00	\$300,000
Total Development Costs (TDC)		TDC
Fee Scenario 1: Maximum Justified Fee		\$49,845,903
Fee Scenario 2		\$42,932,215
Fee Scenario 3		\$42,632,215
Revenues	per Room	Total
Annual Net Operating Income ^d	\$34,343	\$6,009,976
Yield on Cost		YOC
Fee Scenario 1: Maximum Justified Fee		12.06%
Fee Scenario 2		14.00%
Fee Scenario 3		14.10%
Threshold for Feasibility		11.5%-13.5%
Linkage Fees as % of TDC	Fee per SF	% of TDC
Fee Scenario 1: Maximum Justified Fee	\$75.14	15%
Fee Scenario 2	\$6.00	1%
Fee Scenario 3	\$3.00	1%

Notes:

a Tenant improvements for Office & Retail/Restaurant Space.

b Hotel costs include Furniture, Fixtures & Equipment (FF&E).

c Estimates by City staff.

d See Figure 27.

Source: Strategic Economics, 2019.

FIGURE 32: PRO FORMA MODEL RESULTS, RETAIL/RESTAURANTS/SERVICES PROTOTYPE

	Retail/Restaurants/ Services	
Development Costs	per SF of GBA	Total
Land	\$73	\$7,252,271
Hard Costs		
Building & On-Site Improvements	\$145	\$14,500,000
Soft Costs		
A&E & Consulting	\$7	\$725,000
Tenant Improvements ^a	\$43	\$4,275,000
FF&E ^b	\$0	\$0
Permits & Fees ^c	\$31	\$3,082,409
Taxes, Insurance, Legal & Accounting	\$4	\$435,000
Financing Costs	\$7	\$725,000
Developer Overhead & fee	\$6	\$580,000
Contingency	\$7	\$725,000
Total Soft Costs	\$105	\$10,547,409
Nexus Fee Scenarios	Fee per SF	Total Fees
Fee Scenario 1: Maximum Justified Fee	\$320.15	\$32,015,109
Fee Scenario 2	\$6.00	\$600,000
Fee Scenario 3	\$3.00	\$300,000
Total Development Costs (TDC)		TDC
Fee Scenario 1: Maximum Justified Fee		\$64,314,789
Fee Scenario 2		\$32,899,679
Fee Scenario 3		\$32,599,679
Revenues	per SF of GBA	Total
Annual Net Operating Income ^d	\$21	\$2,142,250
Yield on Cost		YOC
Fee Scenario 1: Maximum Justified Fee		3.33%
Fee Scenario 2		6.51%
Fee Scenario 3		6.57%
Threshold for Feasibility		6.5%-7.5%
Linkage Fees as % of TDC	Fee per SF	% of TDC
Fee Scenario 1: Maximum Justified Fee	\$320.15	50%
Fee Scenario 2	\$6.00	2%
Fee Scenario 3	\$3.00	1%

Notes:

a Tenant improvements for Office & Retail/Restaurant Space.

b Hotel costs include Furniture, Fixtures & Equipment (FF&E).

c Estimates by City staff.

d See Figure 27.

Source: Strategic Economics, 2019.

FIGURE 33: PRO FORMA MODEL RESULTS, BUSINESS PARK/LIGHT INDUSTRIAL PROTOTYPE

Business Park/Light Industrial		
Development Costs	per SF of GBA	Total
Land	\$23	\$2,274,007
Hard Costs		
Building & On-Site Improvements	\$75	\$7,500,000
Soft Costs		
A&E & Consulting	\$4	\$375,000
Tenant Improvements ^a	\$4	\$427,500
FF&E ^b	\$0	\$0
Permits & Fees ^c	\$6	\$641,462
Taxes, Insurance, Legal & Accounting	\$2	\$225,000
Financing Costs	\$4	\$375,000
Developer Overhead & fee	\$3	\$300,000
Contingency	\$4	\$375,000
Total Soft Costs	\$27	\$2,718,962
Nexus Fee Scenarios	Fee per SF	Total Fees
Fee Scenario 1: Maximum Justified Fee	\$113.58	\$11,357,815
Fee Scenario 2	\$6.00	\$600,000
Fee Scenario 3	\$3.00	\$300,000
Total Development Costs (TDC)		TDC
Fee Scenario 1: Maximum Justified Fee		\$23,850,784
Fee Scenario 2		\$13,092,969
Fee Scenario 3		\$12,792,969
Revenues	per SF of GBA	Total
Annual Net Operating Income ^d	\$9	\$872,100
Yield on Cost		YOC
Fee Scenario 1: Maximum Justified Fee		3.66%
Fee Scenario 2		6.66%
Fee Scenario 3		6.82%
Threshold for Feasibility		6.0%-7.0%
Linkage Fees as % of TDC	Fee per SF	% of TDC
Fee Scenario 1: Maximum Justified Fee	\$113.58	48%
Fee Scenario 2	\$6.00	5%
Fee Scenario 3	\$3.00	2%

Notes:

a Tenant improvements for Office & Retail/Restaurant Space.

b Hotel costs include Furniture, Fixtures & Equipment (FF&E).

c Estimates by City staff.

d See Figure 27.

Source: Strategic Economics, 2019.

V. POLICY CONSIDERATIONS AND IMPLEMENTATION OPTIONS

While the nexus study provides the necessary economic analysis for implementing a commercial linkage fee, it is up to policymakers to decide what fee level will be charged on new development. As discussed in the preceding chapter, development feasibility is one important factor to examine. In addition, there are a number of additional policy considerations that cities take into account when considering an update to impact fees, such as:

- How a commercial linkage fee fits into Santa Rosa's overall housing strategy.
- How much total development costs would increase with a new commercial linkage fee;
- How a commercial linkage fee in Santa Rosa would compare with those in neighboring or other comparable jurisdictions; and
- What options exist for establishing alternatives to the payment of fees.

Role of the Commercial Linkage Fee in Santa Rosa's Overall Housing Strategy

Santa Rosa does not currently have a commercial linkage fee in place. The revenues to be collected from a commercial linkage fee provide an important source of local funding; however, fee revenues do not generally cover the entire funding gap encountered by sponsors of new affordable housing. Additional funding is almost always required. Affordable housing in Santa Rosa is currently funded through the use of a variety of financing sources, including funding provided by the City's existing residential impact fee. The City's existing inclusionary housing program covers for-sale housing only and developers may elect to build units on-site or pay the existing affordable housing impact fee. The existing inclusionary housing policy has not resulted in a significant number of affordable housing units built as most developers elect to pay the impact fee rather than build units on-site.

Commercial linkage fee revenues would augment existing affordable housing funds. The existence of a local revenue source such as nexus fees can help make certain projects more competitive for outside funding. It should be noted that revenues from a commercial linkage fee need to be spent on housing that benefits the workforce since the funds stem from affordable housing impacts related to new employment.

Total Development Cost

Currently, the total development costs (including building and onsite improvements, land, parking, indirect costs, financing costs, developer overhead, and existing fees) are \$423 per square foot for the hotel prototype, \$323 per net square foot for the retail/restaurant/services prototype, and \$125 per net square foot for the business park/light industrial prototype. The addition of the maximum housing impact fees would represent 15 percent, 50 percent, and 48 percent of total development cost of the hotel, retail/restaurant/services, and business park/light industrial prototypes, respectively. A fee of \$6 per square foot represents 1.4 percent, 1.8 percent, and 4.6 percent of total

development cost of the hotel, retail/restaurant/services, and business park/light industrial prototypes, respectively, and a fee of \$3 per square foot represents 0.7 percent, 0.9 percent, and 2.3 percent of total development cost of the hotel, retail/restaurant/services, and business park/light industrial prototypes, respectively.

Comparison to Neighboring Jurisdictions.

A comparison to current commercial linkage fees charged in nearby or comparison cities can be a helpful consideration. Figure 34 provides available information on commercial linkage fees to compare Santa Rosa's potential fee scenarios to existing fees in selected jurisdictions.

If the maximum commercial linkage fees calculated for Santa Rosa were adopted, they would significantly exceed the fees charged in neighboring and comparison jurisdictions, as listed in Figure 34. Current fees in neighboring and comparison jurisdictions range from \$0.69 per square foot for hotel in Rohnert Park to \$6.00 per square foot for hotel in Fremont and Napa and for retail uses in Fremont.

FIGURE 34: EXISTING COMMERCIAL LINKAGE FEES PER SQUARE FOOT IN SELECTED CITIES

City/County	Hotel	Retail/Restaurant/ Personal Services	Business Park/Light Industrial
Berkeley	\$4.50	\$4.50	\$2.25
Cotati	\$2.08	\$3.59	\$2.15
Fremont	\$6.00	\$6.00	\$3.00
Napa	\$6.00	\$3.55	\$3.50
Petaluma	\$2.42	\$4.17	\$2.49
Pleasanton	\$3.15	\$3.15	\$3.15
Rohnert Park	\$0.69	\$1.19	\$0.71
San Rafael	\$1.91	\$5.73	\$4.14
Sonoma County	\$2.92	\$5.05	\$3.01

Source: Strategic Economics, 2019.

Potential for Overlap Between Residential and Commercial Fees

The City of Santa Rosa also has a residential impact fee in place and is undertaking an update to that fee simultaneously. One issue that may arise if a city considers the adoption of both fees is whether there is any overlap between the two impact fees, resulting in potential “double-counting” of impacts.

The commercial linkage fee study examined jobs located in new commercial buildings. The nexus analysis then calculated the average wages of the workers associated with each commercial building to derive the annual income of the new worker households. The analysis determines the area median income (AMI) level of the new worker households to identify the number of worker households that would require affordable housing.

The housing impact fee nexus analysis examines households buying or renting new market rate units in the jurisdiction. The household expenditures by these new residents have an economic impact in the county, which can be linked to new jobs. The nexus analysis quantified the jobs linked to new household spending, and then calculated the wages of new workers and the household income of new

worker households. Each worker household was then categorized by AMI to determine the number of households that require affordable housing.

There may be a share of jobs counted in the commercial linkage fee analysis that are also included in the residential nexus analysis, particularly those in the service sector. Other types of jobs counted in the residential nexus analysis are unique to that analysis and are not included in the commercial linkage fee analysis (for example, public sector employees).

There is potential that some jobs could be counted in both analyses, and that the two programs may overlap in mitigating the affordable housing demand from the same worker households. Each of the proposed fees is required to mitigate no more than 100 percent of the demand for affordable units by new worker households. However, the recommendations presented in this study (and in the housing impact fee study) do not exceed the nexus, even if every job counted in the residential nexus study was duplicated in the commercial linkage fee study.

The calculations below show that the nexus fee levels recommended in both studies represent less than the justified nexus amount.

- First, the recommended linkage fees are less than the maximum justified nexus amount for all prototypes. Therefore, the commercial linkage fee would mitigate less than 100 percent of the demand for affordable units generated by the new non-residential space.
- Secondly, the recommended housing impact fee levels are also less than 100 percent of the maximum fee level supported by the residential nexus analysis. Therefore, the combined programs (commercial and housing fees) would mitigate less than 100 percent of the impact even if there were overlap in the jobs counted in the two nexus analyses.

Options for Establishing Alternatives to Payment of Fees

When Santa Rosa designs its ordinance governing commercial linkage fees, it can provide options that developers may choose instead of the payment of fees. For example, one option would be for the developer to provide affordable housing units on- or off-site or to provide a building site for affordable housing. This flexibility is provided to allow development of creative solutions that may provide more affordable housing than would be created by payment of fees. Regardless of whether a commercial developer elects to provide affordable housing or provide a building site, it is necessary to calculate how these alternatives would compare with any fees established by the City.

The first step in establishing options for a specific development project would be for the City to calculate the total fees that are owed by the new development. Then, establishing an alternative compliance method will depend on what is offered by the developer. For example, if the developer offers to provide land for an affordable housing site, a recent site appraisal generally suffices to place a value on a contribution of land. This land value can then be compared with the fees that the developer would normally pay. If, instead of paying a fee, the developer elects to provide affordable housing units, it is also possible to estimate the value of these units by multiplying the number of affordable units to be provided by a current affordability gap estimate per unit. The value of alternative compliance measures needs to be calculated at the time a developer requests one.

Administrative Issues

When adopting or updating a commercial linkage fee, there are several administrative issues to consider. Similar to any impact fee, it will be necessary to adjust the commercial linkage fees on an annual basis. Adjustments will also be needed if conditions change and/or due to possible changes in the affordability gap.

It is advisable that the City adjusts its commercial linkage fee annually by using an annual adjustment mechanism. An adjustment mechanism updates the fees to compensate for inflation in development costs. To simplify annual adjustments, it is recommended that the City select a cost index that is routinely published. While there is no index that tracks changes in Santa Rosa's development costs, including land, specifically, there are a few options to consider.

- The first option is the Consumer Price Index (CPI) Shelter component. The shelter component of the CPI covers costs for rent of primary residence, lodging away from home, owner's equivalent rent of primary residence, and household insurance. Of the total shelter index, costs associated with the owner's equivalent rent of primary residence constitute 70 percent of total costs entered into the index.
- A second option to adjust the fee for annual inflation is the construction cost index published in the Engineering News Record (ENR). This index is routinely used to update other types of impact fees. Cost index information for the San Francisco region, the smallest geographical area available for this purpose, is available on an annual basis. The ENR cost index measures inflation in construction costs, but it does not incorporate changes in land costs or public fees charged on new development.

Because these indices are readily available, reliable, and relatively simple to use, it is recommended that Santa Rosa use one of them for annual adjustments. However, because both understate the magnitude of inflation, it is recommended that the City base its annual adjustment mechanism on the higher of the two indices (CPI or ENR), using a five-year moving average as the inflation factor.

In addition to revising the fee annually for inflation, the City is encouraged to update the commercial linkage study every five years, or at the very least, update the housing affordability gap used in the basic model. The purpose of these updates is to ensure that the fee is still based on a cost-revenue structure that remains applicable in the Santa Rosa housing market. In this way, the fee will more accurately reflect any potential structural changes in the relationships between affordable prices and rents, market-rate prices and rents, and development costs.

APPENDIX: INDUSTRY AND OCCUPATION DATA

FIGURE 35: DEFINITION OF INDUSTRIES FOR HOTEL PROTOTYPE

NAICS Code	Description	Percent of Total Employees in Prototype
721	Accommodation	100%
Total		100%

Sources: United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), 2015; Strategic Economics, 2019.

FIGURE 36: DEFINITION OF INDUSTRIES FOR RETAIL/RESTAURANTS/PERSONAL SERVICES PROTOTYPE

NAICS Code	Description	Percent of Total Employees in Prototype
7225	Restaurants	33.7%
4451	Grocery stores	13.8%
4521	Department stores	5.0%
4441	Building material and supplies dealers	4.5%
8111	Automotive repair and maintenance	3.7%
4411	Automobile dealers	3.6%
4481	Clothing stores	3.1%
4529	Other general merchandise stores	2.6%
4461	Health and personal care stores	2.3%
8121	Personal care services	2.2%
4511	Sporting goods and musical instrument stores	2.0%
4471	Gasoline stations	1.8%
4539	Other miscellaneous store retailers	1.5%
4413	Auto parts, accessories, and tire stores	1.5%
4431	Electronics and appliance stores	1.5%
4452	Specialty food stores	1.2%
8129	Other personal services	1.2%
4453	Beer, wine, and liquor stores	1.2%
4532	Office supplies, stationery, and gift stores	1.2%
4541	Electronic shopping and mail-order houses	1.0%
4422	Home furnishings stores	0.9%
8123	Drycleaning and laundry services	0.9%
7224	Drinking places, alcoholic beverages	0.9%
4442	Lawn and garden equipment and supplies stores	0.8%
4233	Lumber and const. supply merchant wholesalers	0.8%
4482	Shoe stores	0.8%
4533	Used merchandise stores	0.7%
4237	Hardware and plumbing merchant wholesalers	0.7%
5322	Consumer goods rental	0.6%
4421	Furniture stores	0.5%
5323	General rental centers	0.4%
5615	Travel arrangement and reservation services	0.4%
4231	Motor vehicle and parts merchant wholesalers	0.4%
4483	Jewelry, luggage, and leather goods stores	0.4%
4412	Other motor vehicle dealers	0.3%
4512	Book, periodical, and music stores	0.3%
5321	Automotive equipment rental and leasing	0.3%
8113	Commercial machinery repair and maintenance	0.3%
4543	Direct selling establishments	0.3%
5324	Machinery and equipment rental and leasing	0.2%
8112	Electronic equipment repair and maintenance	0.2%
8122	Death care services	0.2%
8114	Household goods repair and maintenance	0.2%
4531	Florists	0.1%
4542	Vending machine operators	0.1%
Total		100.0%

Sources: United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), 2015; Strategic Economics, 2017.

FIGURE 37: DEFINITION OF INDUSTRIES FOR BUSINESS PARK/LIGHT INDUSTRIAL PROTOTYPE

NAICS Code	Description	Percent of Total Employees in Prototype
3121	Beverage manufacturing	10.8%
5617	Services to buildings and dwellings	5.1%
6214	Outpatient care centers	5.1%
5613	Employment services	4.6%
6211	Offices of physicians	4.4%
2382	Building equipment contractors	3.8%
2361	Residential building construction	3.1%
2383	Building finishing contractors	3.0%
5511	Management of companies and enterprises	2.9%
5413	Architectural and engineering services	2.8%
6212	Offices of dentists	2.6%
3345	Electronic instrument manufacturing	2.5%
5221	Depository credit intermediation	2.4%
5416	Management and technical consulting services	2.1%
2381	Building foundation and exterior contractors	2.1%
3114	Fruit and vegetable preserving and specialty	1.8%
5242	Insurance agencies and brokerages	1.8%
2389	Other specialty trade contractors	1.7%
5415	Computer systems design and related services	1.6%
5419	Other professional and technical services	1.6%
3391	Medical equipment and supplies manufacturing	1.5%
5313	Activities related to real estate	1.5%
5412	Accounting and bookkeeping services	1.4%
3118	Bakeries and tortilla manufacturing	1.4%
517	Telecommunications	1.3%
5411	Legal services	1.3%
3344	Semiconductor and electronic component mfg.	1.2%
5311	Lessors of real estate	1.2%
5616	Investigation and security services	1.1%
6213	Offices of other health practitioners	1.1%
5111	Newspaper, book, and directory publishers	1.0%
7223	Special food services	1.0%
5417	Scientific research and development services	0.9%
3333	Commercial and service industry machinery	0.9%
2373	Highway, street, and bridge construction	0.9%
2362	Nonresidential building construction	0.9%
2213	Water, sewage and other systems	0.8%
3231	Printing and related support activities	0.7%
3116	Animal slaughtering and processing	0.7%
5222	Nondepository credit intermediation	0.7%
5312	Offices of real estate agents and brokers	0.7%
3115	Dairy product manufacturing	0.6%
5241	Insurance carriers	0.6%
3219	Other wood product manufacturing	0.5%
515	Broadcasting, except internet	0.5%
5611	Office administrative services	0.5%
2371	Utility system construction	0.5%
6215	Medical and diagnostic laboratories	0.5%
5191	Other information services	0.5%

NAICS Code	Description	Percent of Total Employees in Prototype
5223	Activities related to credit intermediation	0.5%
5614	Business support services	0.5%
3399	Other miscellaneous manufacturing	0.4%
3339	Other general purpose machinery manufacturing	0.4%
3119	Other food manufacturing	0.4%
3371	Household and institutional furniture mfg.	0.4%
5621	Waste collection	0.4%
3332	Industrial machinery manufacturing	0.4%
3335	Metalworking machinery manufacturing	0.3%
3327	Machine shops and threaded product mfg.	0.3%
5619	Other support services	0.3%
5418	Advertising, pr, and related services	0.3%
3211	Sawmills and wood preservation	0.2%
3343	Audio and video equipment manufacturing	0.2%
3254	Pharmaceutical and medicine manufacturing	0.2%
3271	Clay product and refractory manufacturing	0.2%
3323	Architectural and structural metals mfg.	0.2%
3273	Cement and concrete product manufacturing	0.2%
5414	Specialized design services	0.2%
2379	Other heavy construction	0.2%
3324	Boiler, tank, and shipping container mfg.	0.2%
5112	Software publishers	0.1%
3363	Motor vehicle parts manufacturing	0.1%
5182	Data processing, hosting and related services	0.1%
3329	Other fabricated metal product manufacturing	0.1%
3256	Soap, cleaning compound, and toiletry mfg.	0.1%
2372	Land subdivision	0.1%
3359	Other electrical equipment and component mfg.	0.1%
3149	Other textile product mills	0.1%
3322	Cutlery and handtool manufacturing	0.1%
3212	Plywood and engineered wood product mfg.	0.1%
3272	Glass and glass product manufacturing	0.1%
5612	Facilities support services	0.1%
3369	Other transportation equipment manufacturing	0.0%
3141	Textile furnishings mills	0.0%
Total		100.0%

Sources: United States Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), 2015; Strategic Economics, 2017.

FIGURE 38: OCCUPATIONAL MIX AND AVERAGE WAGES FOR HOTEL PROTOTYPE

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
11-0000	Management Occupations		
11-9081	Lodging Managers	\$59,324	1.759%
11-1021	General and Operations Managers	\$119,865	1.022%
11-9051	Food Service Managers	\$56,049	0.486%
11-2022	Sales Managers	\$119,026	0.351%
11-3031	Financial Managers	\$128,870	0.211%
11-3011	Administrative Services Managers	\$89,359	0.171%
11-9199	Managers, All Other	\$135,154	0.164%
11-3121	Human Resources Managers	\$124,337	0.096%
11-2021	Marketing Managers	\$151,640	0.072%
11-1011	Chief Executives	\$205,826	0.063%
11-9141	Property, Real Estate, and Community Association Managers	\$65,556	0.039%
11-2011	Advertising and Promotions Managers	\$115,618	0.037%
11-3021	Computer and Information Systems Managers	\$139,094	0.024%
11-3061	Purchasing Managers	\$110,941	0.019%
11-2031	Public Relations and Fundraising Managers	\$78,532	0.010%
11-9151	Social and Community Service Managers	\$81,131	0.005%
11-3131	Training and Development Managers	\$121,042	0.004%
11-3071	Transportation, Storage, and Distribution Managers	\$117,614	0.004%
11-9021	Construction Managers	\$102,427	0.004%
11-9041	Architectural and Engineering Managers	\$146,646	0.003%
	Weighted Mean Annual Wage	\$90,595	4.543%
13-0000	Business and Financial Operations Occupations		
13-1121	Meeting, Convention, and Event Planners	\$54,626	0.501%
13-2011	Accountants and Auditors	\$78,082	0.452%
13-1071	Human Resources Specialists	\$72,740	0.218%
13-1161	Market Research Analysts and Marketing Specialists	\$87,681	0.098%
13-1199	Business Operations Specialists, All Other	\$71,860	0.095%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$68,513	0.078%
13-1151	Training and Development Specialists	\$77,938	0.032%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
13-1141	Compensation, Benefits, and Job Analysis Specialists	\$73,476	0.019%
13-1131	Fundraisers	\$53,716	0.012%
13-1041	Compliance Officers	\$73,763	0.012%
13-2051	Financial Analysts	\$76,229	0.011%
13-2099	Financial Specialists, All Other	\$61,073	0.009%
13-1075	Labor Relations Specialists	\$77,723	0.008%
13-1022	Wholesale and Retail Buyers, Except Farm Products	\$49,315	0.004%
13-2041	Credit Analysts	\$73,139	0.003%
13-2031	Budget Analysts	\$78,777	0.002%
	Weighted Mean Annual Wage	\$69,023	1.554%
15-0000	Computer and Mathematical Occupations		
15-1151	Computer User Support Specialists	\$60,728	0.040%
15-1199	Computer Occupations, All Other	\$93,242	0.039%
15-1152	Computer Network Support Specialists	\$57,593	0.012%
15-1134	Web Developers	\$75,296	0.006%
15-1141	Database Administrators	\$81,778	0.006%
15-1131	Computer Programmers	\$80,480	0.003%
15-1143	Computer Network Architects	\$113,633	0.003%
15-1133	Software Developers, Systems Software	\$131,032	0.002%
	Weighted Mean Annual Wage	\$76,766	0.111%
17-0000	Architecture and Engineering Occupations		
17-2141	Mechanical Engineers	\$97,686	0.005%
17-2051	Civil Engineers	\$103,448	0.005%
17-3023	Electrical and Electronics Engineering Technicians	\$66,743	0.004%
	Weighted Mean Annual Wage	\$90,438	0.014%
19-0000	Life, Physical, and Social Science Occupations		
	Weighted Mean Annual Wage	\$79,688	0.006%
21-0000	Community and Social Service Occupations		
21-1019	Counselors, All Other	\$45,287	0.003%
	Weighted Mean Annual Wage	\$45,287	0.003%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
23-0000	Legal Occupations		
23-1011	Lawyers	\$148,420	0.003%
	Weighted Mean Annual Wage	\$148,420	0.003%
25-0000	Education, Training, and Library Occupations		
25-3021	Self-Enrichment Education Teachers	\$47,478	0.029%
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	\$53,930	0.011%
25-9031	Instructional Coordinators	\$67,890	0.002%
	Weighted Mean Annual Wage	\$49,968	0.042%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations		
27-4011	Audio and Video Equipment Technicians	\$49,578	0.133%
27-2022	Coaches and Scouts	\$48,249	0.054%
27-3031	Public Relations Specialists	\$61,275	0.053%
27-3099	Media and Communication Workers, All Other	\$70,284	0.021%
27-1024	Graphic Designers	\$61,559	0.013%
27-1023	Floral Designers	\$32,109	0.009%
27-2012	Producers and Directors	\$72,303	0.005%
27-1025	Interior Designers	\$65,810	0.003%
27-1014	Multimedia Artists and Animators	\$72,668	0.002%
27-3043	Writers and Authors	\$46,251	0.002%
	Weighted Mean Annual Wage	\$53,645	0.294%
29-0000	Healthcare Practitioners and Technical Occupations		
29-2041	Emergency Medical Technicians and Paramedics	\$37,567	0.011%
29-1141	Registered Nurses	\$101,571	0.008%
29-2061	Licensed Practical and Licensed Vocational Nurses	\$54,529	0.002%
29-9011	Occupational Health and Safety Specialists	\$81,657	0.002%
	Weighted Mean Annual Wage	\$64,937	0.024%
31-0000	Healthcare Support Occupations		
31-9011	Massage Therapists	\$59,135	0.485%
31-9099	Healthcare Support Workers, All Other	\$47,071	0.002%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
Weighted Mean Annual Wage		\$59,095	0.486%
33-0000	Protective Service Occupations		
33-9032	Security Guards	\$30,480	1.675%
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	\$26,717	0.429%
33-1099	First-Line Supervisors of Protective Service Workers, All Other	\$64,814	0.167%
33-9099	Protective Service Workers, All Other	\$44,787	0.020%
Weighted Mean Annual Wage		\$32,409	2.292%
35-0000	Food Preparation and Serving Related Occupations		
35-3031	Waiters and Waitresses	\$31,245	7.610%
35-2014	Cooks, Restaurant	\$29,266	3.686%
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	\$27,635	2.783%
35-3011	Bartenders	\$31,224	2.175%
35-9021	Dishwashers	\$22,679	1.780%
35-3041	Food Servers, Nonrestaurant	\$29,012	1.764%
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	\$36,201	1.379%
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	\$22,424	0.916%
35-2021	Food Preparation Workers	\$24,831	0.880%
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	\$21,935	0.869%
35-1011	Chefs and Head Cooks	\$47,958	0.784%
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	\$25,748	0.583%
35-2012	Cooks, Institution and Cafeteria	\$29,868	0.322%
35-9099	Food Preparation and Serving Related Workers, All Other	\$33,519	0.269%
35-2015	Cooks, Short Order	\$24,402	0.251%
35-2019	Cooks, All Other	\$39,362	0.103%
35-2011	Cooks, Fast Food	\$22,077	0.097%
Weighted Mean Annual Wage		\$29,597	26.249%
37-0000	Building and Grounds Cleaning and Maintenance Occupations		
37-2012	Maids and Housekeeping Cleaners	\$27,737	24.064%
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	\$29,817	2.547%
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	\$45,470	1.785%
37-3011	Landscaping and Groundskeeping Workers	\$33,458	1.051%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	\$41,361	0.128%
	Weighted Mean Annual Wage	\$29,249	29.574%
39-0000	Personal Care and Service Occupations		
39-6011	Baggage Porters and Bellhops	\$24,698	1.349%
39-6012	Concierges	\$29,654	0.652%
39-3091	Amusement and Recreation Attendants	\$23,831	0.626%
39-9032	Recreation Workers	\$27,839	0.584%
39-1021	First-Line Supervisors of Personal Service Workers	\$44,532	0.257%
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	\$28,124	0.164%
39-9031	Fitness Trainers and Aerobics Instructors	\$57,166	0.130%
39-5094	Skincare Specialists	\$36,721	0.111%
39-3031	Ushers, Lobby Attendants, and Ticket Takers	\$20,854	0.110%
39-9041	Residential Advisors	\$35,212	0.091%
39-7011	Tour Guides and Escorts	\$31,897	0.065%
39-5092	Manicurists and Pedicurists	\$23,627	0.064%
39-5012	Hairdressers, Hairstylists, and Cosmetologists	\$27,084	0.057%
39-9011	Childcare Workers	\$29,807	0.042%
39-2021	Nonfarm Animal Caretakers	\$30,449	0.021%
39-9021	Personal Care Aides	\$24,984	0.016%
39-2011	Animal Trainers	\$59,746	0.004%
	Weighted Mean Annual Wage	\$28,673	4.343%
41-0000	Sales and Related Occupations		
41-3099	Sales Representatives, Services, All Other	\$64,271	1.091%
41-2011	Cashiers	\$25,383	0.809%
41-2031	Retail Salespersons	\$28,688	0.341%
41-1011	First-Line Supervisors of Retail Sales Workers	\$44,660	0.146%
41-1012	First-Line Supervisors of Non-Retail Sales Workers	\$68,557	0.086%
41-9099	Sales and Related Workers, All Other	\$46,803	0.036%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$68,506	0.026%
41-9041	Telemarketers	\$27,202	0.025%
41-9022	Real Estate Sales Agents	\$65,019	0.010%
41-3011	Advertising Sales Agents	\$60,419	0.005%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
41-9011	Demonstrators and Product Promoters	\$30,397	0.003%
	Weighted Mean Annual Wage	\$45,789	2.579%
43-0000	Office and Administrative Support Occupations		
43-4081	Hotel, Motel, and Resort Desk Clerks	\$30,813	12.538%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$60,746	1.526%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$47,698	1.091%
43-9061	Office Clerks, General	\$38,191	0.627%
43-4051	Customer Service Representatives	\$42,264	0.526%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$42,060	0.504%
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	\$40,985	0.462%
43-2011	Switchboard Operators, Including Answering Service	\$42,817	0.347%
43-4171	Receptionists and Information Clerks	\$34,559	0.250%
43-5081	Stock Clerks and Order Fillers	\$28,715	0.215%
43-6011	Executive Secretaries and Executive Administrative Assistants	\$58,955	0.173%
43-5071	Shipping, Receiving, and Traffic Clerks	\$34,538	0.138%
43-9199	Office and Administrative Support Workers, All Other	\$27,610	0.093%
43-3051	Payroll and Timekeeping Clerks	\$48,384	0.085%
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	\$41,906	0.077%
43-5032	Dispatchers, Except Police, Fire, and Ambulance	\$52,784	0.076%
43-3021	Billing and Posting Clerks	\$43,359	0.057%
43-3061	Procurement Clerks	\$43,216	0.038%
43-5061	Production, Planning, and Expediting Clerks	\$57,256	0.033%
43-5021	Couriers and Messengers	\$32,890	0.016%
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	\$32,430	0.010%
43-4041	Credit Authorizers, Checkers, and Clerks	\$47,299	0.009%
43-4151	Order Clerks	\$43,779	0.009%
43-3011	Bill and Account Collectors	\$50,983	0.008%
43-4199	Information and Record Clerks, All Other	\$35,674	0.008%
43-9021	Data Entry Keyers	\$32,665	0.005%
43-9011	Computer Operators	\$53,583	0.005%
43-9071	Office Machine Operators, Except Computer	\$35,398	0.004%
43-3099	Financial Clerks, All Other	\$41,077	0.004%
43-4071	File Clerks	\$29,943	0.004%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	\$31,591	0.004%
	Weighted Mean Annual Wage	\$36,177	18.941%
45-0000	Farming, Fishing, and Forestry Occupations		
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$31,955	0.028%
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$25,989	0.004%
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$43,888	0.003%
	Weighted Mean Annual Wage	\$32,230	0.035%
47-0000	Construction and Extraction Occupations		
47-2141	Painters, Construction and Maintenance	\$58,036	0.076%
47-2031	Carpenters	\$64,876	0.058%
47-2111	Electricians	\$74,156	0.026%
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$89,412	0.011%
47-2152	Plumbers, Pipefitters, and Steamfitters	\$57,335	0.011%
47-2073	Operating Engineers and Other Construction Equipment Operators	\$64,836	0.009%
47-2061	Construction Laborers	\$45,778	0.008%
47-4051	Highway Maintenance Workers	\$56,166	0.002%
	Weighted Mean Annual Wage	\$63,618	0.201%
49-0000	Installation, Maintenance, and Repair Occupations		
49-9071	Maintenance and Repair Workers, General	\$47,655	4.614%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$83,042	0.412%
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	\$39,402	0.144%
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$36,044	0.042%
49-9099	Installation, Maintenance, and Repair Workers, All Other	\$44,995	0.035%
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$62,997	0.029%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	\$47,149	0.011%
49-9041	Industrial Machinery Mechanics	\$51,771	0.010%
49-3023	Automotive Service Technicians and Mechanics	\$49,586	0.009%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$64,959	0.006%
49-9094	Locksmiths and Safe Repairers	\$41,738	0.006%
49-9043	Maintenance Workers, Machinery	\$50,658	0.003%
	Weighted Mean Annual Wage	\$50,174	5.321%

Occupation Code	Occupation Name	Average Annual Wage	% of Total Hotel Workers
51-0000	Production Occupations		
51-6011	Laundry and Dry-Cleaning Workers	\$24,498	1.679%
51-3011	Bakers	\$30,490	0.199%
51-1011	First-Line Supervisors of Production and Operating Workers	\$61,929	0.060%
51-8021	Stationary Engineers and Boiler Operators	\$69,094	0.060%
51-6052	Tailors, Dressmakers, and Custom Sewers	\$33,317	0.018%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$47,046	0.017%
51-6031	Sewing Machine Operators	\$30,255	0.010%
51-3021	Butchers and Meat Cutters	\$28,938	0.009%
51-9198	Helpers--Production Workers	\$27,285	0.005%
51-6021	Pressers, Textile, Garment, and Related Materials	\$24,712	0.003%
51-8031	Water and Wastewater Treatment Plant and System Operators	\$77,771	0.003%
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	\$40,963	0.003%
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	\$29,030	0.002%
51-9199	Production Workers, All Other	\$30,571	0.002%
	Weighted Mean Annual Wage	\$27,884	2.070%
53-0000	Transportation and Material Moving Occupations		
53-6021	Parking Lot Attendants	\$24,674	0.470%
53-3041	Taxi Drivers and Chauffeurs	\$35,442	0.446%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$30,236	0.294%
53-3033	Light Truck or Delivery Services Drivers	\$37,785	0.028%
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	\$56,346	0.027%
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	\$49,093	0.019%
53-6031	Automotive and Watercraft Service Attendants	\$24,786	0.007%
53-7081	Refuse and Recyclable Material Collectors	\$46,515	0.006%
53-3021	Bus Drivers, Transit and Intercity	\$40,596	0.005%
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,829	0.005%
53-7061	Cleaners of Vehicles and Equipment	\$25,112	0.005%
53-3099	Motor Vehicle Operators, All Other	\$30,674	0.003%
	Weighted Mean Annual Wage	\$31,116	1.315%

Sources: Bureau of Labor Statistics, Occupational Employment Statistics, 2015 and Quarterly Census of Employment and Wages (QCEW), 2015; California Economic Development Department, OES Employment and Wages by Occupation, Santa Rosa-Petaluma Metropolitan Statistical Area, 2015.

FIGURE 39: OCCUPATIONAL MIX AND AVERAGE WAGES FOR RETAIL/RESTAURANTS/SERVICES PROTOTYPE

Occupation Code	Occupation Name	Average Annual Wage	% of Total
11-0000	Management Occupations		
11-9051	Food Service Managers	\$56,049	1.176%
11-1021	General and Operations Managers	\$119,865	0.850%
11-2022	Sales Managers	\$119,026	0.070%
11-1011	Chief Executives	\$205,826	0.024%
11-3011	Administrative Services Managers	\$89,359	0.020%
11-3031	Financial Managers	\$128,870	0.014%
11-9199	Managers, All Other	\$135,154	0.008%
11-2011	Advertising and Promotions Managers	\$115,618	0.008%
11-3061	Purchasing Managers	\$110,941	0.004%
11-3121	Human Resources Managers	\$124,337	0.003%
11-3071	Transportation, Storage, and Distribution Managers	\$117,614	0.002%
11-2021	Marketing Managers	\$151,640	0.002%
11-3131	Training and Development Managers	\$121,042	0.002%
11-3021	Computer and Information Systems Managers	\$139,094	0.002%
11-9111	Medical and Health Services Managers	\$117,399	0.001%
11-3051	Industrial Production Managers	\$105,538	0.000%
11-9021	Construction Managers	\$102,427	0.000%
11-9041	Architectural and Engineering Managers	\$146,646	0.000%
11-2031	Public Relations and Fundraising Managers	\$78,532	0.000%
11-9151	Social and Community Service Managers	\$81,131	0.000%
11-9141	Property, Real Estate, and Community Association Managers	\$65,556	0.000%
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$116,733	0.000%
11-9081	Lodging Managers	\$59,324	0.000%
	Weighted Mean Annual Wage	\$86,307	2.186%
13-0000	Business and Financial Operations Occupations		
13-1022	Wholesale and Retail Buyers, Except Farm Products	\$49,315	0.040%
13-1151	Training and Development Specialists	\$77,938	0.030%
13-1071	Human Resources Specialists	\$72,740	0.027%
13-1199	Business Operations Specialists, All Other	\$71,860	0.022%
13-1121	Meeting, Convention, and Event Planners	\$54,626	0.021%
13-2011	Accountants and Auditors	\$78,082	0.019%
13-1051	Cost Estimators	\$70,795	0.019%
13-1161	Market Research Analysts and Marketing Specialists	\$87,681	0.017%
	Purchasing Agents, Except Wholesale, Retail, and Farm		
13-1023	Products	\$68,513	0.012%
13-2072	Loan Officers	\$74,981	0.011%
13-1021	Buyers and Purchasing Agents, Farm Products	\$70,846	0.003%
13-1141	Compensation, Benefits, and Job Analysis Specialists	\$73,476	0.002%
13-2099	Financial Specialists, All Other	\$61,073	0.002%
13-1111	Management Analysts	\$90,045	0.001%
13-1075	Labor Relations Specialists	\$77,723	0.001%
13-2041	Credit Analysts	\$73,139	0.001%
13-1081	Logisticians	\$78,880	0.000%
13-1041	Compliance Officers	\$73,763	0.000%
13-2051	Financial Analysts	\$76,229	0.000%
13-1031	Claims Adjusters, Examiners, and Investigators	\$65,433	0.000%
13-2071	Credit Counselors	\$40,893	0.000%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
13-1131	Fundraisers	\$53,716	0.000%
13-2031	Budget Analysts	\$78,777	0.000%
	Weighted Mean Annual Wage	\$68,906	0.229%
15-0000	Computer and Mathematical Occupations		
15-1151	Computer User Support Specialists	\$60,728	0.008%
15-1134	Web Developers	\$75,296	0.002%
15-1152	Computer Network Support Specialists	\$57,593	0.002%
15-1131	Computer Programmers	\$80,480	0.001%
15-1132	Software Developers, Applications	\$114,364	0.001%
15-1121	Computer Systems Analysts	\$83,878	0.001%
15-1133	Software Developers, Systems Software	\$131,032	0.001%
15-1199	Computer Occupations, All Other	\$93,242	0.001%
15-1141	Database Administrators	\$81,778	0.000%
15-1143	Computer Network Architects	\$113,633	0.000%
15-2031	Operations Research Analysts	\$71,938	0.000%
15-2041	Statisticians	\$96,681	0.000%
	Weighted Mean Annual Wage	\$74,161	0.019%
17-0000	Architecture and Engineering Occupations		
17-3011	Architectural and Civil Drafters	\$61,113	0.001%
17-2141	Mechanical Engineers	\$97,686	0.000%
17-2071	Electrical Engineers	\$111,026	0.000%
17-3023	Electrical and Electronics Engineering Technicians	\$66,743	0.000%
17-2112	Industrial Engineers	\$94,520	0.000%
17-2072	Electronics Engineers, Except Computer	\$113,014	0.000%
17-3019	Drafters, All Other	\$57,157	0.000%
17-2199	Engineers, All Other	\$98,538	0.000%
17-1012	Landscape Architects	\$87,825	0.000%
17-3013	Mechanical Drafters	\$68,935	0.000%
17-3027	Mechanical Engineering Technicians	\$59,723	0.000%
17-2061	Computer Hardware Engineers	\$122,236	0.000%
17-2031	Biomedical Engineers	\$115,246	0.000%
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	\$95,048	0.000%
17-2131	Materials Engineers	\$94,551	0.000%
17-3029	Engineering Technicians, Except Drafters, All Other	\$53,961	0.000%
17-3024	Electro-Mechanical Technicians	\$56,761	0.000%
17-3026	Industrial Engineering Technicians	\$67,687	0.000%
17-3012	Electrical and Electronics Drafters	\$75,357	0.000%
	Weighted Mean Annual Wage	\$81,868	0.002%
19-0000	Life, Physical, and Social Science Occupations		
19-4099	Life, Physical, and Social Science Technicians, All Other	\$58,455	0.000%
	Weighted Mean Annual Wage	\$58,455	0.000%
21-0000	Community and Social Service Occupations		
21-1019	Counselors, All Other	\$45,287	0.000%
21-1091	Health Educators	\$56,903	0.000%
21-1093	Social and Human Service Assistants	\$36,238	0.000%
21-1099	Community and Social Service Specialists, All Other	\$50,258	0.000%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
21-1012	Educational, Guidance, School, and Vocational Counselors	\$62,401	0.000%
21-1022	Healthcare Social Workers	\$73,358	0.000%
21-1015	Rehabilitation Counselors	\$48,259	0.000%
21-2011	Clergy	\$53,890	0.000%
	Weighted Mean Annual Wage	\$47,101	0.001%
23-0000	Legal Occupations		
23-2093	Title Examiners, Abstractors, and Searchers	\$72,272	0.001%
23-1011	Lawyers	\$148,420	0.000%
23-2011	Paralegals and Legal Assistants	\$52,977	0.000%
	Weighted Mean Annual Wage	\$81,793	0.001%
25-0000	Education, Training, and Library Occupations		
25-3021	Self-Enrichment Education Teachers	\$47,478	0.004%
25-4012	Curators	\$56,781	0.000%
25-1194	Vocational Education Teachers, Postsecondary	\$62,584	0.000%
	Weighted Mean Annual Wage	\$47,515	0.004%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations		
27-1026	Merchandise Displayers and Window Trimmers	\$40,133	0.046%
27-1023	Floral Designers	\$32,109	0.027%
27-3031	Public Relations Specialists	\$61,275	0.012%
27-1024	Graphic Designers	\$61,559	0.007%
27-1025	Interior Designers	\$65,810	0.003%
27-4011	Audio and Video Equipment Technicians	\$49,578	0.001%
27-4021	Photographers	\$35,203	0.001%
27-3043	Writers and Authors	\$46,251	0.000%
27-1011	Art Directors	\$98,801	0.000%
27-3041	Editors	\$66,601	0.000%
27-2022	Coaches and Scouts	\$48,249	0.000%
27-1021	Commercial and Industrial Designers	\$75,478	0.000%
27-2012	Producers and Directors	\$72,303	0.000%
27-3099	Media and Communication Workers, All Other	\$70,284	0.000%
27-3042	Technical Writers	\$78,167	0.000%
27-1014	Multimedia Artists and Animators	\$72,668	0.000%
27-3011	Radio and Television Announcers	\$58,059	0.000%
	Weighted Mean Annual Wage	\$43,094	0.098%
29-0000	Healthcare Practitioners and Technical Occupations		
29-2052	Pharmacy Technicians	\$45,997	0.244%
29-1051	Pharmacists	\$143,814	0.175%
29-2081	Opticians, Dispensing	\$43,968	0.022%
29-1041	Optometrists	\$116,788	0.003%
29-1031	Dietitians and Nutritionists	\$78,339	0.002%
29-1141	Registered Nurses	\$101,571	0.002%
29-1126	Respiratory Therapists	\$82,570	0.001%
29-9099	Healthcare Practitioners and Technical Workers, All Other	\$55,736	0.000%
29-2071	Medical Records and Health Information Technicians	\$43,877	0.000%
29-1171	Nurse Practitioners	\$108,987	0.000%
29-1199	Health Diagnosing and Treating Practitioners, All Other	\$93,374	0.000%
29-2099	Health Technologists and Technicians, All Other	\$57,593	0.000%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
29-2061	Licensed Practical and Licensed Vocational Nurses	\$54,529	0.000%
29-2056	Veterinary Technologists and Technicians	\$45,601	0.000%
29-1131	Veterinarians	\$125,168	0.000%
29-9011	Occupational Health and Safety Specialists	\$81,657	0.000%
29-2034	Radiologic Technologists	\$73,510	0.000%
29-1069	Physicians and Surgeons, All Other	\$155,187	0.000%
	Weighted Mean Annual Wage	\$84,825	0.452%
31-0000	Healthcare Support Occupations		
31-9095	Pharmacy Aides	\$34,753	0.032%
31-9011	Massage Therapists	\$59,135	0.023%
31-9099	Healthcare Support Workers, All Other	\$47,071	0.002%
31-9092	Medical Assistants	\$41,279	0.001%
31-9093	Medical Equipment Preparers	\$42,870	0.000%
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	\$27,951	0.000%
31-1011	Home Health Aides	\$25,340	0.000%
	Weighted Mean Annual Wage	\$45,043	0.058%
33-0000	Protective Service Occupations		
33-9032	Security Guards	\$30,480	0.143%
33-1099	First-Line Supervisors of Protective Service Workers, All Other	\$64,814	0.007%
33-9099	Protective Service Workers, All Other	\$44,787	0.001%
33-9091	Crossing Guards	\$28,298	0.000%
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	\$26,717	0.000%
	Weighted Mean Annual Wage	\$32,091	0.150%
35-0000	Food Preparation and Serving Related Occupations		
	Combined Food Preparation and Serving Workers, Including		
35-3021	Fast Food	\$21,935	21.537%
35-3031	Waiters and Waitresses	\$31,245	16.938%
35-2014	Cooks, Restaurant	\$29,266	8.137%
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	\$36,201	5.372%
35-2021	Food Preparation Workers	\$24,831	4.116%
35-2011	Cooks, Fast Food	\$22,077	4.104%
35-9021	Dishwashers	\$22,679	3.093%
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	\$22,424	2.875%
35-3022	Shop	\$25,748	2.344%
35-3011	Bartenders	\$31,224	2.209%
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	\$27,635	2.176%
35-2015	Cooks, Short Order	\$24,402	1.103%
35-1011	Chefs and Head Cooks	\$47,958	0.613%
35-3041	Food Servers, Nonrestaurant	\$29,012	0.251%
35-9099	Food Preparation and Serving Related Workers, All Other	\$33,519	0.229%
35-2012	Cooks, Institution and Cafeteria	\$29,868	0.081%
35-2019	Cooks, All Other	\$39,362	0.007%
	Weighted Mean Annual Wage	\$26,935	75.185%
37-0000	Building and Grounds Cleaning and Maintenance Occupations		

Occupation Code	Occupation Name	Average Annual Wage	% of Total
	Janitors and Cleaners, Except Maids and Housekeeping		
37-2011	Cleaners	\$29,817	0.429%
37-2012	Maids and Housekeeping Cleaners	\$27,737	0.014%
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	\$45,470	0.005%
37-3011	Landscaping and Groundskeeping Workers	\$33,458	0.004%
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	\$41,361	0.000%
	Weighted Mean Annual Wage	\$29,950	0.453%
39-0000	Personal Care and Service Occupations		
39-5012	Hairdressers, Hairstylists, and Cosmetologists	\$27,084	0.195%
39-5092	Manicurists and Pedicurists	\$23,627	0.044%
39-2021	Nonfarm Animal Caretakers	\$30,449	0.032%
39-3091	Amusement and Recreation Attendants	\$23,831	0.031%
39-1021	First-Line Supervisors of Personal Service Workers	\$44,532	0.019%
39-5094	Skincare Specialists	\$36,721	0.017%
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	\$28,124	0.004%
39-2011	Animal Trainers	\$59,746	0.002%
39-9031	Fitness Trainers and Aerobics Instructors	\$57,166	0.002%
39-9011	Childcare Workers	\$29,807	0.001%
39-6012	Concierges	\$29,654	0.001%
39-6011	Baggage Porters and Bellhops	\$24,698	0.001%
39-7011	Tour Guides and Escorts	\$31,897	0.001%
39-9021	Personal Care Aides	\$24,984	0.001%
39-9032	Recreation Workers	\$27,839	0.000%
39-3031	Ushers, Lobby Attendants, and Ticket Takers	\$20,854	0.000%
	Weighted Mean Annual Wage	\$28,474	0.351%
41-0000	Sales and Related Occupations		
41-2011	Cashiers	\$25,383	6.644%
41-2031	Retail Salespersons	\$28,688	3.062%
41-1011	First-Line Supervisors of Retail Sales Workers	\$44,660	1.113%
41-2021	Counter and Rental Clerks	\$31,023	0.134%
41-2022	Parts Salespersons	\$30,376	0.098%
41-3099	Sales Representatives, Services, All Other	\$64,271	0.066%
	Sales Representatives, Wholesale and Manufacturing, Except		
41-4012	Technical and Scientific Products	\$68,506	0.058%
41-9099	Sales and Related Workers, All Other	\$46,803	0.038%
41-9011	Demonstrators and Product Promoters	\$30,397	0.015%
41-1012	First-Line Supervisors of Non-Retail Sales Workers	\$68,557	0.012%
41-3041	Travel Agents	\$41,193	0.006%
41-9041	Telemarketers	\$27,202	0.006%
	Sales Representatives, Wholesale and Manufacturing, Technical		
41-4011	and Scientific Products	\$103,927	0.004%
41-3031	Securities, Commodities, and Financial Services Sales Agents	\$94,091	0.002%
41-3011	Advertising Sales Agents	\$60,419	0.001%
41-9031	Sales Engineers	\$96,062	0.001%
41-3021	Insurance Sales Agents	\$72,893	0.000%
	Weighted Mean Annual Wage	\$28,932	11.260%
43-0000	Office and Administrative Support Occupations		

Occupation Code	Occupation Name	Average Annual Wage	% of Total
43-5081	Stock Clerks and Order Fillers	\$28,715	2.375%
43-4051	Customer Service Representatives	\$42,264	0.499%
43-9061	Office Clerks, General	\$38,191	0.330%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$47,698	0.325%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$60,746	0.278%
43-5071	Shipping, Receiving, and Traffic Clerks	\$34,538	0.143%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$42,060	0.116%
43-4171	Receptionists and Information Clerks	\$34,559	0.071%
43-4151	Order Clerks	\$43,779	0.037%
43-3051	Payroll and Timekeeping Clerks	\$48,384	0.031%
43-3021	Billing and Posting Clerks	\$43,359	0.024%
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	\$41,906	0.022%
43-6011	Executive Secretaries and Executive Administrative Assistants	\$58,955	0.017%
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	\$31,591	0.015%
43-5061	Production, Planning, and Expediting Clerks	\$57,256	0.012%
43-4071	File Clerks	\$29,943	0.011%
43-3061	Procurement Clerks	\$43,216	0.011%
43-2011	Switchboard Operators, Including Answering Service	\$42,817	0.009%
43-9021	Data Entry Keyers	\$32,665	0.008%
43-3011	Bill and Account Collectors	\$50,983	0.008%
43-4199	Information and Record Clerks, All Other	\$35,674	0.007%
43-9199	Office and Administrative Support Workers, All Other	\$27,610	0.007%
43-5032	Dispatchers, Except Police, Fire, and Ambulance	\$52,784	0.006%
43-9011	Computer Operators	\$53,583	0.006%
43-9071	Office Machine Operators, Except Computer	\$35,398	0.006%
43-4131	Loan Interviewers and Clerks	\$39,286	0.003%
43-4041	Credit Authorizers, Checkers, and Clerks	\$47,299	0.003%
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	\$40,985	0.002%
43-5021	Couriers and Messengers	\$32,890	0.001%
43-3099	Financial Clerks, All Other	\$41,077	0.001%
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	\$32,430	0.000%
43-9041	Insurance Claims and Policy Processing Clerks	\$39,481	0.000%
43-6013	Medical Secretaries	\$44,158	0.000%
43-4111	Interviewers, Except Eligibility and Loan	\$43,871	0.000%
43-4031	Court, Municipal, and License Clerks	\$45,324	0.000%
43-4081	Hotel, Motel, and Resort Desk Clerks	\$30,813	0.000%
43-5011	Cargo and Freight Agents	\$53,050	0.000%
	Weighted Mean Annual Wage	\$35,894	4.385%
45-0000	Farming, Fishing, and Forestry Occupations		
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$25,989	0.003%
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$43,888	0.000%
45-2091	Agricultural Equipment Operators	\$31,610	0.000%
	Weighted Mean Annual Wage	\$27,700	0.004%
47-0000	Construction and Extraction Occupations		
47-2121	Glaziers	\$49,397	0.008%
47-2031	Carpenters	\$64,876	0.007%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$89,412	0.002%
47-2061	Construction Laborers	\$45,778	0.001%
47-2111	Electricians	\$74,156	0.000%
47-2152	Plumbers, Pipefitters, and Steamfitters	\$57,335	0.000%
47-3012	Helpers--Carpenters	\$45,362	0.000%
47-2073	Operating Engineers and Other Construction Equipment Operators	\$64,836	0.000%
47-2044	Tile and Marble Setters	\$49,244	0.000%
47-2051	Cement Masons and Concrete Finishers	\$47,923	0.000%
47-2211	Sheet Metal Workers	\$73,190	0.000%
47-2231	Solar Photovoltaic Installers	\$44,508	0.000%
47-2221	Structural Iron and Steel Workers	\$63,494	0.000%
47-2141	Painters, Construction and Maintenance	\$58,036	0.000%
47-3013	Helpers--Electricians	\$40,493	0.000%
47-2071	Paving, Surfacing, and Tamping Equipment Operators	\$58,463	0.000%
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$34,781	0.000%
	Weighted Mean Annual Wage	\$59,640	0.020%
49-0000	Installation, Maintenance, and Repair Occupations		
49-3023	Automotive Service Technicians and Mechanics	\$49,586	0.439%
49-9071	Maintenance and Repair Workers, General	\$47,655	0.119%
49-3021	Automotive Body and Related Repairers	\$57,161	0.117%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$83,042	0.078%
49-3093	Tire Repairers and Changers	\$28,399	0.044%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$54,795	0.029%
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$36,044	0.027%
49-9099	Installation, Maintenance, and Repair Workers, All Other	\$44,995	0.012%
49-2011	Computer, Automated Teller, and Office Machine Repairers	\$39,756	0.011%
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	\$39,402	0.007%
49-9031	Home Appliance Repairers	\$48,565	0.006%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	\$47,149	0.005%
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$62,997	0.004%
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	\$37,733	0.003%
49-9041	Industrial Machinery Mechanics	\$51,771	0.003%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$64,959	0.002%
49-9043	Maintenance Workers, Machinery	\$50,658	0.001%
49-3041	Farm Equipment Mechanics and Service Technicians	\$54,420	0.001%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$63,462	0.000%
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$54,178	0.000%
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$62,400	0.000%
49-9094	Locksmiths and Safe Repairers	\$41,738	0.000%
49-2098	Security and Fire Alarm Systems Installers	\$46,856	0.000%
	Weighted Mean Annual Wage	\$51,734	0.908%
51-0000	Production Occupations		

Occupation Code	Occupation Name	Average Annual Wage	% of Total
51-3011	Bakers	\$30,490	0.445%
51-3021	Butchers and Meat Cutters	\$28,938	0.354%
51-1011	First-Line Supervisors of Production and Operating Workers	\$61,929	0.080%
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	\$29,030	0.068%
51-3092	Food Batchmakers	\$27,958	0.057%
51-3093	Food Cooking Machine Operators and Tenders	\$32,664	0.034%
51-9122	Painters, Transportation Equipment	\$49,670	0.026%
51-6011	Laundry and Dry-Cleaning Workers	\$24,498	0.026%
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	\$40,963	0.012%
51-6021	Pressers, Textile, Garment, and Related Materials	\$24,712	0.010%
51-2099	Assemblers and Fabricators, All Other	\$30,816	0.009%
51-9151	Photographic Process Workers and Processing Machine Operators	\$48,812	0.008%
51-2092	Team Assemblers	\$36,767	0.007%
51-6052	Tailors, Dressmakers, and Custom Sewers	\$33,317	0.007%
51-9198	Helpers--Production Workers	\$27,285	0.006%
51-9111	Packaging and Filling Machine Operators and Tenders	\$33,103	0.006%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$47,046	0.005%
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	\$27,060	0.005%
51-4121	Welders, Cutters, Solderers, and Brazers	\$45,321	0.004%
51-6031	Sewing Machine Operators	\$30,255	0.003%
51-4041	Machinists	\$51,680	0.002%
51-7011	Cabinetmakers and Bench Carpenters	\$48,710	0.002%
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	\$32,950	0.002%
51-9199	Production Workers, All Other	\$30,571	0.001%
51-9071	Jewelers and Precious Stone and Metal Workers	\$67,951	0.001%
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	\$34,369	0.001%
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	\$35,287	0.001%
51-5112	Printing Press Operators	\$39,176	0.001%
51-9082	Medical Appliance Technicians	\$54,110	0.001%
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	\$37,563	0.000%
51-6041	Shoe and Leather Workers and Repairers	\$30,112	0.000%
51-9022	Grinding and Polishing Workers, Hand	\$43,984	0.000%
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	\$38,635	0.000%
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	\$33,889	0.000%
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$42,586	0.000%
51-5111	Prepress Technicians and Workers	\$49,578	0.000%
51-2041	Structural Metal Fabricators and Fitters	\$52,058	0.000%
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	\$37,768	0.000%
51-2022	Electrical and Electronic Equipment Assemblers	\$43,892	0.000%
51-8031	Water and Wastewater Treatment Plant and System Operators	\$77,771	0.000%
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	\$33,225	0.000%
51-8021	Stationary Engineers and Boiler Operators	\$69,094	0.000%
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	\$34,654	0.000%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	\$30,857	0.000%
51-4111	Tool and Die Makers	\$69,799	0.000%
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$50,517	0.000%
	Weighted Mean Annual Wage	\$32,785	1.188%
53-0000	Transportation and Material Moving Occupations		
53-3031	Driver/Sales Workers	\$35,075	1.408%
53-7064	Packers and Packagers, Hand	\$24,714	0.500%
53-3033	Light Truck or Delivery Services Drivers	\$37,785	0.356%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$30,236	0.319%
53-7061	Cleaners of Vehicles and Equipment	\$25,112	0.202%
53-6031	Automotive and Watercraft Service Attendants	\$24,786	0.082%
53-6021	Parking Lot Attendants	\$24,674	0.044%
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,829	0.036%
53-7051	Industrial Truck and Tractor Operators	\$36,155	0.028%
	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand		
53-1021		\$49,093	0.027%
53-3041	Taxi Drivers and Chauffeurs	\$35,442	0.016%
	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators		
53-1031		\$56,346	0.014%
53-3099	Motor Vehicle Operators, All Other	\$30,674	0.010%
53-7199	Material Moving Workers, All Other	\$40,342	0.002%
53-3021	Bus Drivers, Transit and Intercity	\$40,596	0.001%
53-7032	Excavating and Loading Machine and Dragline Operators	\$70,730	0.000%
53-7063	Machine Feeders and Offbearers	\$29,706	0.000%
53-2012	Commercial Pilots	\$138,364	0.000%
	Weighted Mean Annual Wage	\$32,481	3.047%

Sources: Bureau of Labor Statistics, Occupational Employment Statistics, 2015 and Quarterly Census of Employment and Wages (QCEW), 2015; California Economic Development Department, OES Employment and Wages by Occupation, Santa Rosa-Petaluma Metropolitan Statistical Area, 2015.

FIGURE 40: OCCUPATIONAL MIX AND AVERAGE WAGES FOR BUSINESS PARK/LIGHT INDUSTRIAL PROTOTYPE

Occupation Code	Occupation Name	Average Annual Wage	% of Total
11-0000	Management Occupations		
11-1021	General and Operations Managers	\$119,865	1.827%
11-3031	Financial Managers	\$128,870	0.670%
11-9021	Construction Managers	\$102,427	0.466%
11-3021	Computer and Information Systems Managers	\$139,094	0.393%
11-9111	Medical and Health Services Managers	\$117,399	0.341%
11-9199	Managers, All Other	\$135,154	0.295%
11-2022	Sales Managers	\$119,026	0.248%
11-9041	Architectural and Engineering Managers	\$146,646	0.247%
11-2021	Marketing Managers	\$151,640	0.239%
11-1011	Chief Executives	\$205,826	0.221%
11-3011	Administrative Services Managers	\$89,359	0.220%
11-9141	Property, Real Estate, and Community Association Managers	\$65,556	0.217%
11-3121	Human Resources Managers	\$124,337	0.144%
11-3051	Industrial Production Managers	\$105,538	0.095%
11-3061	Purchasing Managers	\$110,941	0.069%
11-3071	Transportation, Storage, and Distribution Managers	\$117,614	0.049%
11-9121	Natural Sciences Managers	\$170,633	0.045%
11-9051	Food Service Managers	\$56,049	0.042%
11-9151	Social and Community Service Managers	\$81,131	0.036%
11-3131	Training and Development Managers	\$121,042	0.036%
11-2031	Public Relations and Fundraising Managers	\$78,532	0.034%
11-2011	Advertising and Promotions Managers	\$115,618	0.014%
11-9081	Lodging Managers	\$59,324	0.004%
	Education Administrators, Preschool and Childcare Center/Program	\$56,427	0.003%
11-9031	Education Administrators, All Other	\$90,403	0.002%
11-9032	Education Administrators, Elementary and Secondary School	\$93,657	0.002%
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$116,733	0.002%
11-9033	Education Administrators, Postsecondary	\$104,525	0.001%
	Weighted Mean Annual Wage	\$122,964	5.963%
13-0000	Business and Financial Operations Occupations		
13-2011	Accountants and Auditors	\$78,082	1.406%
13-1071	Human Resources Specialists	\$72,740	0.775%
13-1111	Management Analysts	\$90,045	0.774%
13-1199	Business Operations Specialists, All Other	\$71,860	0.740%
13-1161	Market Research Analysts and Marketing Specialists	\$87,681	0.580%
13-2072	Loan Officers	\$74,981	0.480%
13-1051	Cost Estimators	\$70,795	0.398%
13-2051	Financial Analysts	\$76,229	0.302%
13-1151	Training and Development Specialists	\$77,938	0.223%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$68,513	0.222%
13-1031	Claims Adjusters, Examiners, and Investigators	\$65,433	0.182%
13-1041	Compliance Officers	\$73,763	0.169%
13-2052	Personal Financial Advisors	\$96,758	0.130%
13-1081	Logisticians	\$78,880	0.120%
13-2099	Financial Specialists, All Other	\$61,073	0.112%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
13-2041	Credit Analysts	\$73,139	0.111%
13-2082	Tax Preparers	\$46,235	0.111%
13-1141	Compensation, Benefits, and Job Analysis Specialists	\$73,476	0.095%
13-1022	Wholesale and Retail Buyers, Except Farm Products	\$49,315	0.078%
13-2053	Insurance Underwriters	\$62,649	0.063%
13-2021	Appraisers and Assessors of Real Estate	\$78,614	0.054%
13-2061	Financial Examiners	\$68,503	0.048%
13-2031	Budget Analysts	\$78,777	0.035%
13-1121	Meeting, Convention, and Event Planners	\$54,626	0.034%
13-2071	Credit Counselors	\$40,893	0.026%
13-1075	Labor Relations Specialists	\$77,723	0.012%
13-1131	Fundraisers	\$53,716	0.011%
13-1021	Buyers and Purchasing Agents, Farm Products	\$70,846	0.007%
	Weighted Mean Annual Wage	\$76,205	7.297%
15-0000	Computer and Mathematical Occupations		
15-1132	Software Developers, Applications	\$114,364	0.913%
15-1121	Computer Systems Analysts	\$83,878	0.734%
15-1151	Computer User Support Specialists	\$60,728	0.668%
15-1133	Software Developers, Systems Software	\$131,032	0.506%
15-1131	Computer Programmers	\$80,480	0.377%
15-1152	Computer Network Support Specialists	\$57,593	0.206%
15-1143	Computer Network Architects	\$113,633	0.199%
15-1199	Computer Occupations, All Other	\$93,242	0.146%
15-1134	Web Developers	\$75,296	0.127%
15-1141	Database Administrators	\$81,778	0.126%
15-2031	Operations Research Analysts	\$71,938	0.099%
15-2041	Statisticians	\$96,681	0.023%
	Weighted Mean Annual Wage	\$92,265	4.125%
17-0000	Architecture and Engineering Occupations		
17-2051	Civil Engineers	\$103,448	0.507%
17-2141	Mechanical Engineers	\$97,686	0.331%
17-1011	Architects, Except Landscape and Naval	\$89,154	0.256%
17-3011	Architectural and Civil Drafters	\$61,113	0.247%
17-2071	Electrical Engineers	\$111,026	0.247%
17-2112	Industrial Engineers	\$94,520	0.215%
17-2072	Electronics Engineers, Except Computer	\$113,014	0.177%
17-3023	Electrical and Electronics Engineering Technicians	\$66,743	0.156%
17-2199	Engineers, All Other	\$98,538	0.139%
17-3022	Civil Engineering Technicians	\$65,110	0.107%
17-3031	Surveying and Mapping Technicians	\$67,971	0.102%
17-1022	Surveyors	\$74,616	0.101%
17-2061	Computer Hardware Engineers	\$122,236	0.086%
17-3013	Mechanical Drafters	\$68,935	0.085%
17-2081	Environmental Engineers	\$108,774	0.078%
17-3029	Engineering Technicians, Except Drafters, All Other	\$53,961	0.077%
17-3012	Electrical and Electronics Drafters	\$75,357	0.064%
17-3027	Mechanical Engineering Technicians	\$59,723	0.063%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
17-1012	Landscape Architects	\$87,825	0.059%
17-3026	Industrial Engineering Technicians	\$67,687	0.046%
17-3025	Environmental Engineering Technicians	\$46,829	0.026%
17-2031	Biomedical Engineers	\$115,246	0.024%
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	\$95,048	0.023%
17-2131	Materials Engineers	\$94,551	0.023%
17-3019	Drafters, All Other	\$57,157	0.022%
17-3024	Electro-Mechanical Technicians	\$56,761	0.016%
17-1021	Cartographers and Photogrammetrists	\$80,693	0.016%
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	\$85,420	0.008%
	Weighted Mean Annual Wage	\$89,177	3.301%
19-0000	Life, Physical, and Social Science Occupations		
19-2041	Environmental Scientists and Specialists, Including Health	\$88,372	0.093%
19-2031	Chemists	\$89,732	0.083%
19-4099	Life, Physical, and Social Science Technicians, All Other	\$58,455	0.081%
19-1042	Medical Scientists, Except Epidemiologists	\$97,584	0.079%
19-3031	Clinical, Counseling, and School Psychologists	\$74,859	0.073%
19-4031	Chemical Technicians	\$46,697	0.072%
19-4091	Environmental Science and Protection Technicians, Including Health	\$58,820	0.050%
19-4021	Biological Technicians	\$42,243	0.044%
19-4061	Social Science Research Assistants	\$44,059	0.020%
19-4011	Agricultural and Food Science Technicians	\$46,981	0.018%
19-1012	Food Scientists and Technologists	\$65,425	0.016%
19-3051	Urban and Regional Planners	\$88,799	0.016%
19-1023	Zoologists and Wildlife Biologists	\$81,575	0.007%
19-1031	Conservation Scientists	\$73,388	0.003%
19-1032	Foresters	\$80,480	0.002%
19-4093	Forest and Conservation Technicians	\$31,784	0.002%
19-4092	Forensic Science Technicians	\$75,600	0.002%
	Weighted Mean Annual Wage	\$71,245	0.659%
21-0000	Community and Social Service Occupations		
21-1014	Mental Health Counselors	\$45,886	0.184%
21-1023	Mental Health and Substance Abuse Social Workers	\$44,536	0.166%
21-1093	Social and Human Service Assistants	\$36,238	0.149%
21-1011	Substance Abuse and Behavioral Disorder Counselors	\$51,922	0.128%
21-1022	Healthcare Social Workers	\$73,358	0.093%
21-1021	Child, Family, and School Social Workers	\$45,723	0.070%
21-1094	Community Health Workers	\$39,849	0.047%
21-1091	Health Educators	\$56,903	0.044%
21-1015	Rehabilitation Counselors	\$48,259	0.039%
21-1013	Marriage and Family Therapists	\$75,164	0.039%
21-1099	Community and Social Service Specialists, All Other	\$50,258	0.026%
21-1012	Educational, Guidance, School, and Vocational Counselors	\$62,401	0.011%
21-1029	Social Workers, All Other	\$76,949	0.011%
21-1019	Counselors, All Other	\$45,287	0.010%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
21-2011	Clergy	\$53,890	0.004%
	Weighted Mean Annual Wage	\$49,561	1.019%
23-0000	Legal Occupations		
23-1011	Lawyers	\$148,420	0.687%
23-2011	Paralegals and Legal Assistants	\$52,977	0.340%
23-2093	Title Examiners, Abstractors, and Searchers	\$72,272	0.050%
	Weighted Mean Annual Wage	\$114,781	1.077%
25-0000	Education, Training, and Library Occupations		
25-3098	Substitute Teachers	\$36,430	0.237%
25-3097	Teachers and Instructors, All Other, Except Substitute Teachers	\$53,930	0.051%
25-9041	Teacher Assistants	\$30,729	0.037%
25-9099	Education, Training, and Library Workers, All Other	\$36,836	0.016%
25-2021	Elementary School Teachers, Except Special Education	\$59,226	0.015%
	Middle School Teachers, Except Special and Career/Technical		
25-2022	Education	\$65,506	0.013%
	Secondary School Teachers, Except Special and		
25-2031	Career/Technical Education	\$68,894	0.012%
25-9031	Instructional Coordinators	\$67,890	0.011%
25-2011	Preschool Teachers, Except Special Education	\$36,339	0.009%
25-3021	Self-Enrichment Education Teachers	\$47,478	0.007%
25-4021	Librarians	\$68,630	0.006%
	Special Education Teachers, Kindergarten and Elementary		
25-2052	School	\$61,904	0.003%
25-2059	Special Education Teachers, All Other	\$28,517	0.002%
25-1194	Vocational Education Teachers, Postsecondary	\$62,584	0.001%
	Adult Basic and Secondary Education and Literacy Teachers and		
25-3011	Instructors	\$73,916	0.001%
25-4031	Library Technicians	\$43,461	0.001%
25-4012	Curators	\$56,781	0.000%
	Weighted Mean Annual Wage	\$42,490	0.422%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations		
27-1024	Graphic Designers	\$61,559	0.137%
27-3031	Public Relations Specialists	\$61,275	0.098%
27-3041	Editors	\$66,601	0.080%
27-3042	Technical Writers	\$78,167	0.072%
27-4021	Photographers	\$35,203	0.061%
27-1026	Merchandise Displayers and Window Trimmers	\$40,133	0.057%
27-1025	Interior Designers	\$65,810	0.044%
27-3091	Interpreters and Translators	\$43,846	0.041%
27-3043	Writers and Authors	\$46,251	0.024%
27-1021	Commercial and Industrial Designers	\$75,478	0.021%
27-4011	Audio and Video Equipment Technicians	\$49,578	0.018%
27-1011	Art Directors	\$98,801	0.017%
27-1014	Multimedia Artists and Animators	\$72,668	0.012%
27-2012	Producers and Directors	\$72,303	0.011%
27-3099	Media and Communication Workers, All Other	\$70,284	0.004%
27-4031	Camera Operators, Television, Video, and Motion Picture	\$30,780	0.004%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
27-1023	Floral Designers	\$32,109	0.002%
27-3011	Radio and Television Announcers	\$58,059	0.001%
	Weighted Mean Annual Wage	\$59,694	0.704%
29-0000	Healthcare Practitioners and Technical Occupations		
29-1141	Registered Nurses	\$101,571	1.847%
29-1069	Physicians and Surgeons, All Other	\$155,187	0.775%
29-2061	Licensed Practical and Licensed Vocational Nurses	\$54,529	0.711%
29-2021	Dental Hygienists	\$90,422	0.555%
29-1062	Family and General Practitioners	\$222,945	0.434%
29-1171	Nurse Practitioners	\$108,987	0.374%
29-1071	Physician Assistants	\$142,851	0.326%
29-2071	Medical Records and Health Information Technicians	\$43,877	0.284%
29-1021	Dentists, General	\$161,193	0.277%
29-2034	Radiologic Technologists	\$73,510	0.261%
29-2099	Health Technologists and Technicians, All Other	\$57,593	0.205%
29-1123	Physical Therapists	\$97,797	0.187%
29-1063	Internists, General	\$270,099	0.170%
29-2012	Medical and Clinical Laboratory Technicians	\$45,774	0.163%
29-1067	Surgeons	\$269,662	0.163%
29-2056	Veterinary Technologists and Technicians	\$45,601	0.152%
29-2055	Surgical Technologists	\$56,396	0.130%
29-1065	Pediatricians, General	\$242,200	0.109%
29-1131	Veterinarians	\$125,168	0.103%
29-2011	Medical and Clinical Laboratory Technologists	\$77,304	0.083%
29-2052	Pharmacy Technicians	\$45,997	0.082%
29-2032	Diagnostic Medical Sonographers	\$98,183	0.079%
29-2081	Opticians, Dispensing	\$43,968	0.072%
29-1051	Pharmacists	\$143,814	0.069%
29-1122	Occupational Therapists	\$89,610	0.068%
29-1041	Optometrists	\$116,788	0.059%
29-1031	Dietitians and Nutritionists	\$78,339	0.057%
29-1127	Speech-Language Pathologists	\$79,435	0.053%
29-9011	Occupational Health and Safety Specialists	\$81,657	0.045%
29-1011	Chiropractors	\$74,474	0.042%
29-2031	Cardiovascular Technologists and Technicians	\$72,171	0.041%
29-1126	Respiratory Therapists	\$82,570	0.033%
29-1199	Health Diagnosing and Treating Practitioners, All Other	\$93,374	0.029%
29-9099	Healthcare Practitioners and Technical Workers, All Other	\$55,736	0.028%
29-2035	Magnetic Resonance Imaging Technologists	\$86,090	0.028%
29-2041	Emergency Medical Technicians and Paramedics	\$37,567	0.025%
29-1124	Radiation Therapists	\$112,771	0.025%
29-2053	Psychiatric Technicians	\$51,668	0.023%
29-2033	Nuclear Medicine Technologists	\$91,984	0.020%
29-9091	Athletic Trainers	\$46,504	0.016%
29-2051	Dietetic Technicians	\$42,649	0.004%
	Weighted Mean Annual Wage	\$111,840	8.205%
31-0000	Healthcare Support Occupations		

Occupation Code	Occupation Name	Average Annual Wage	% of Total
31-9092	Medical Assistants	\$41,279	2.044%
31-9091	Dental Assistants	\$44,879	0.884%
31-1014	Nursing Assistants	\$31,438	0.372%
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	\$27,951	0.116%
31-1011	Home Health Aides	\$25,340	0.111%
31-9094	Medical Transcriptionists	\$52,455	0.091%
31-9097	Phlebotomists	\$36,333	0.078%
31-2021	Physical Therapist Assistants	\$55,820	0.072%
31-2022	Physical Therapist Aides	\$32,876	0.058%
31-9099	Healthcare Support Workers, All Other	\$47,071	0.049%
31-9093	Medical Equipment Preparers	\$42,870	0.044%
31-9011	Massage Therapists	\$59,135	0.036%
31-1015	Orderlies	\$42,299	0.012%
31-9095	Pharmacy Aides	\$34,753	0.010%
31-2012	Occupational Therapy Aides	\$58,298	0.005%
	Weighted Mean Annual Wage	\$40,888	3.983%
33-0000	Protective Service Occupations		
33-9032	Security Guards	\$30,480	0.941%
33-1099	First-Line Supervisors of Protective Service Workers, All Other	\$64,814	0.042%
33-9099	Protective Service Workers, All Other	\$44,787	0.017%
33-9091	Crossing Guards	\$28,298	0.008%
33-2011	Firefighters	\$60,022	0.002%
	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	\$26,717	0.002%
33-2021	Fire Inspectors and Investigators	\$88,656	0.001%
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	\$114,404	0.000%
	Weighted Mean Annual Wage	\$32,264	1.014%
35-0000	Food Preparation and Serving Related Occupations		
35-1011	Chefs and Head Cooks	\$47,958	0.024%
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	\$36,201	0.077%
35-2011	Cooks, Fast Food	\$22,077	0.006%
35-2012	Cooks, Institution and Cafeteria	\$29,868	0.078%
35-2014	Cooks, Restaurant	\$29,266	0.055%
35-2015	Cooks, Short Order	\$24,402	0.012%
35-2019	Cooks, All Other	\$39,362	0.008%
35-2021	Food Preparation Workers	\$24,831	0.103%
35-3011	Bartenders	\$31,224	0.069%
	Combined Food Preparation and Serving Workers, Including Fast Food	\$21,935	0.207%
35-3021	Food Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	\$25,748	0.070%
35-3022	Waiters and Waitresses	\$31,245	0.239%
35-3031	Food Servers, Nonrestaurant	\$29,012	0.064%
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	\$27,635	0.061%
35-9021	Dishwashers	\$22,679	0.061%
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	\$22,424	0.020%
35-9099	Food Preparation and Serving Related Workers, All Other	\$33,519	0.014%
	Weighted Mean Annual Wage	\$28,229	1.167%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
37-0000	Building and Grounds Cleaning and Maintenance Occupations		
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	\$29,817	5.097%
37-3011	Landscaping and Groundskeeping Workers	\$33,458	3.046%
37-2012	Maids and Housekeeping Cleaners	\$27,737	0.865%
37-2021	Pest Control Workers	\$42,207	0.369%
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	\$41,361	0.354%
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	\$45,470	0.323%
37-3013	Tree Trimmers and Pruners	\$45,195	0.192%
	Weighted Mean Annual Wage	\$32,351	10.246%
39-0000	Personal Care and Service Occupations		
39-9021	Personal Care Aides	\$24,984	0.232%
39-2021	Nonfarm Animal Caretakers	\$30,449	0.050%
39-9011	Childcare Workers	\$29,807	0.036%
39-3031	Ushers, Lobby Attendants, and Ticket Takers	\$20,854	0.033%
39-5094	Skincare Specialists	\$36,721	0.024%
39-9032	Recreation Workers	\$27,839	0.022%
39-6012	Concierges	\$29,654	0.017%
39-9031	Fitness Trainers and Aerobics Instructors	\$57,166	0.014%
39-1021	First-Line Supervisors of Personal Service Workers	\$44,532	0.014%
39-3091	Amusement and Recreation Attendants	\$23,831	0.014%
39-9041	Residential Advisors	\$35,212	0.012%
39-7011	Tour Guides and Escorts	\$31,897	0.009%
39-5012	Hairdressers, Hairstylists, and Cosmetologists	\$27,084	0.005%
39-6011	Baggage Porters and Bellhops	\$24,698	0.004%
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	\$28,124	0.001%
39-2011	Animal Trainers	\$59,746	0.001%
39-5092	Manicurists and Pedicurists	\$23,627	0.000%
	Weighted Mean Annual Wage	\$28,382	0.490%
41-0000	Sales and Related Occupations		
41-3099	Sales Representatives, Services, All Other	\$64,271	1.088%
41-3021	Insurance Sales Agents	\$72,893	0.555%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$68,506	0.447%
41-3031	Securities, Commodities, and Financial Services Sales Agents	\$94,091	0.359%
41-2031	Retail Salespersons	\$28,688	0.359%
41-2011	Cashiers	\$25,383	0.170%
41-2021	Counter and Rental Clerks	\$31,023	0.158%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$103,927	0.154%
41-1012	First-Line Supervisors of Non-Retail Sales Workers	\$68,557	0.152%
41-9022	Real Estate Sales Agents	\$65,019	0.124%
41-9041	Telemarketers	\$27,202	0.123%
41-9011	Demonstrators and Product Promoters	\$30,397	0.119%
41-9031	Sales Engineers	\$96,062	0.060%
41-3011	Advertising Sales Agents	\$60,419	0.060%
41-1011	First-Line Supervisors of Retail Sales Workers	\$44,660	0.059%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
41-9099	Sales and Related Workers, All Other	\$46,803	0.042%
41-9021	Real Estate Brokers	\$73,247	0.021%
41-2022	Parts Salespersons	\$30,376	0.007%
41-3041	Travel Agents	\$41,193	0.004%
	Weighted Mean Annual Wage	\$61,956	4.063%
43-0000	Office and Administrative Support Occupations		
43-9061	Office Clerks, General	\$38,191	3.170%
43-4051	Customer Service Representatives	\$42,264	2.349%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$42,060	2.271%
43-4171	Receptionists and Information Clerks	\$34,559	1.819%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$47,698	1.619%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	\$60,746	1.454%
43-6013	Medical Secretaries	\$44,158	1.299%
43-3071	Tellers	\$33,719	1.201%
43-3021	Billing and Posting Clerks	\$43,359	0.851%
43-6011	Executive Secretaries and Executive Administrative Assistants	\$58,955	0.635%
43-5081	Stock Clerks and Order Fillers	\$28,715	0.468%
43-4131	Loan Interviewers and Clerks	\$39,286	0.340%
43-3011	Bill and Account Collectors	\$50,983	0.335%
43-5071	Shipping, Receiving, and Traffic Clerks	\$34,538	0.284%
43-9021	Data Entry Keyers	\$32,665	0.279%
43-9041	Insurance Claims and Policy Processing Clerks	\$39,481	0.274%
43-6012	Legal Secretaries	\$50,983	0.264%
43-5061	Production, Planning, and Expediting Clerks	\$57,256	0.252%
43-4071	File Clerks	\$29,943	0.242%
43-3051	Payroll and Timekeeping Clerks	\$48,384	0.194%
43-4111	Interviewers, Except Eligibility and Loan	\$43,871	0.165%
43-9199	Office and Administrative Support Workers, All Other	\$27,610	0.147%
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	\$41,906	0.135%
43-4141	New Accounts Clerks	\$38,867	0.123%
43-5032	Dispatchers, Except Police, Fire, and Ambulance	\$52,784	0.110%
43-2011	Switchboard Operators, Including Answering Service	\$42,817	0.092%
43-4199	Information and Record Clerks, All Other	\$35,674	0.079%
43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	\$32,430	0.076%
43-5021	Couriers and Messengers	\$32,890	0.061%
43-4151	Order Clerks	\$43,779	0.053%
43-9011	Computer Operators	\$53,583	0.051%
43-9071	Office Machine Operators, Except Computer	\$35,398	0.051%
43-3099	Financial Clerks, All Other	\$41,077	0.043%
43-3061	Procurement Clerks	\$43,216	0.042%
43-4041	Credit Authorizers, Checkers, and Clerks	\$47,299	0.039%
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	\$31,591	0.029%
43-4011	Brokerage Clerks	\$59,743	0.026%
43-5011	Cargo and Freight Agents	\$53,050	0.018%
43-4081	Hotel, Motel, and Resort Desk Clerks	\$30,813	0.011%
43-4061	Eligibility Interviewers, Government Programs	\$53,838	0.007%
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	\$40,985	0.006%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
43-5031	Police, Fire, and Ambulance Dispatchers	\$56,816	0.002%
43-4121	Library Assistants, Clerical	\$35,674	0.001%
43-4031	Court, Municipal, and License Clerks	\$45,324	0.000%
	Weighted Mean Annual Wage	\$42,456	20.968%
45-0000	Farming, Fishing, and Forestry Occupations		
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$25,989	0.103%
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$43,888	0.009%
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	\$31,955	0.004%
45-4022	Logging Equipment Operators	\$45,453	0.001%
45-2091	Agricultural Equipment Operators	\$31,610	0.000%
	Weighted Mean Annual Wage	\$27,853	0.118%
47-0000	Construction and Extraction Occupations		
47-2111	Electricians	\$74,156	1.862%
47-2061	Construction Laborers	\$45,778	1.633%
47-2031	Carpenters	\$64,876	1.390%
47-2152	Plumbers, Pipefitters, and Steamfitters	\$57,335	1.215%
	First-Line Supervisors of Construction Trades and Extraction		
47-1011	Workers	\$89,412	0.882%
47-2141	Painters, Construction and Maintenance	\$58,036	0.552%
47-2211	Sheet Metal Workers	\$73,190	0.335%
47-2051	Cement Masons and Concrete Finishers	\$47,923	0.312%
	Operating Engineers and Other Construction Equipment		
47-2073	Operators	\$64,836	0.294%
47-3013	Helpers--Electricians	\$40,493	0.273%
47-2081	Drywall and Ceiling Tile Installers	\$63,870	0.268%
47-2181	Roofers	\$50,921	0.250%
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$34,781	0.187%
47-2021	Brickmasons and Blockmasons	\$64,490	0.130%
47-4011	Construction and Building Inspectors	\$72,205	0.112%
47-2221	Structural Iron and Steel Workers	\$63,494	0.112%
47-2044	Tile and Marble Setters	\$49,244	0.095%
47-3012	Helpers--Carpenters	\$45,362	0.089%
47-2121	Glaziers	\$49,397	0.080%
47-2161	Plasterers and Stucco Masons	\$54,651	0.059%
	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and		
47-3011	Marble Setters	\$38,237	0.054%
47-2082	Tapers	\$70,355	0.053%
47-2071	Paving, Surfacing, and Tamping Equipment Operators	\$58,463	0.050%
47-2231	Solar Photovoltaic Installers	\$44,508	0.021%
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	\$48,157	0.012%
47-4041	Hazardous Materials Removal Workers	\$32,504	0.011%
47-5021	Earth Drillers, Except Oil and Gas	\$69,521	0.011%
47-4051	Highway Maintenance Workers	\$56,166	0.007%
	Weighted Mean Annual Wage	\$61,908	10.352%
49-0000	Installation, Maintenance, and Repair Occupations		
49-9071	Maintenance and Repair Workers, General	\$47,655	0.886%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$62,997	0.840%
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$54,178	0.339%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$83,042	0.248%
49-9099	Installation, Maintenance, and Repair Workers, All Other	\$44,995	0.178%
49-9041	Industrial Machinery Mechanics	\$51,771	0.137%
49-2098	Security and Fire Alarm Systems Installers	\$46,856	0.125%
49-9098	Helpers--Installation, Maintenance, and Repair Workers	\$36,044	0.111%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$54,795	0.044%
49-9043	Maintenance Workers, Machinery	\$50,658	0.044%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$63,462	0.044%
49-2011	Computer, Automated Teller, and Office Machine Repairers	\$39,756	0.042%
49-3023	Automotive Service Technicians and Mechanics	\$49,586	0.038%
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	\$37,733	0.038%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$64,959	0.037%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	\$47,149	0.021%
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	\$39,402	0.018%
49-9094	Locksmiths and Safe Repairers	\$41,738	0.016%
49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	\$62,400	0.014%
49-9031	Home Appliance Repairers	\$48,565	0.005%
49-3021	Automotive Body and Related Repairers	\$57,161	0.005%
49-3041	Farm Equipment Mechanics and Service Technicians	\$54,420	0.002%
49-3093	Tire Repairers and Changers	\$28,399	0.002%
	Weighted Mean Annual Wage	\$54,990	3.235%
51-0000	Production Occupations		
51-2092	Team Assemblers	\$36,767	1.045%
51-9198	Helpers--Production Workers	\$27,285	0.770%
51-9111	Packaging and Filling Machine Operators and Tenders	\$33,103	0.711%
51-9199	Production Workers, All Other	\$30,571	0.514%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$47,046	0.464%
51-2099	Assemblers and Fabricators, All Other	\$30,816	0.403%
51-2022	Electrical and Electronic Equipment Assemblers	\$43,892	0.274%
51-1011	First-Line Supervisors of Production and Operating Workers	\$61,929	0.245%
51-4121	Welders, Cutters, Solderers, and Brazers	\$45,321	0.186%
51-4041	Machinists	\$51,680	0.172%
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	\$40,963	0.164%
51-3092	Food Batchmakers	\$27,958	0.126%
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$42,586	0.120%
51-5112	Printing Press Operators	\$39,176	0.117%
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	\$29,030	0.092%
51-3011	Bakers	\$30,490	0.091%
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	\$34,369	0.074%
51-9081	Dental Laboratory Technicians	\$44,188	0.066%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
51-6011	Laundry and Dry-Cleaning Workers	\$24,498	0.049%
51-5113	Print Binding and Finishing Workers	\$31,827	0.046%
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	\$33,225	0.046%
51-2023	Electromechanical Equipment Assemblers	\$30,633	0.044%
51-2041	Structural Metal Fabricators and Fitters	\$52,058	0.033%
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$33,327	0.030%
51-7011	Cabinetmakers and Bench Carpenters	\$48,710	0.029%
51-5111	Prepress Technicians and Workers	\$49,578	0.027%
51-3093	Food Cooking Machine Operators and Tenders	\$32,664	0.025%
51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	\$33,889	0.022%
51-9082	Medical Appliance Technicians	\$54,110	0.020%
51-8031	Water and Wastewater Treatment Plant and System Operators	\$77,771	0.017%
51-6031	Sewing Machine Operators	\$30,255	0.017%
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	\$30,857	0.016%
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	\$27,060	0.016%
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	\$34,654	0.012%
51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	\$37,563	0.012%
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	\$37,768	0.012%
51-8021	Stationary Engineers and Boiler Operators	\$69,094	0.011%
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	\$38,635	0.010%
51-3021	Butchers and Meat Cutters	\$28,938	0.010%
51-4111	Tool and Die Makers	\$69,799	0.009%
51-9151	Photographic Process Workers and Processing Machine Operators	\$48,812	0.008%
51-6021	Pressers, Textile, Garment, and Related Materials	\$24,712	0.005%
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$50,517	0.005%
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	\$32,950	0.004%
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood	\$35,287	0.004%
51-9122	Painters, Transportation Equipment	\$49,670	0.004%
51-9022	Grinding and Polishing Workers, Hand	\$43,984	0.003%
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	\$39,758	0.002%
51-6052	Tailors, Dressmakers, and Custom Sewers	\$33,317	0.002%
51-9071	Jewelers and Precious Stone and Metal Workers	\$67,951	0.002%
	Weighted Mean Annual Wage	\$37,135	6.183%
53-0000	Transportation and Material Moving Occupations		
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$30,236	2.938%
53-7064	Packers and Packagers, Hand	\$24,714	0.831%
53-7051	Industrial Truck and Tractor Operators	\$36,155	0.472%
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$47,829	0.409%
53-3033	Light Truck or Delivery Services Drivers	\$37,785	0.243%
53-3031	Driver/Sales Workers	\$35,075	0.099%

Occupation Code	Occupation Name	Average Annual Wage	% of Total
53-7061	Cleaners of Vehicles and Equipment	\$25,112	0.079%
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	\$49,093	0.048%
53-7063	Machine Feeders and Offbearers	\$29,706	0.047%
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	\$56,346	0.043%
53-3099	Motor Vehicle Operators, All Other	\$30,674	0.042%
53-3041	Taxi Drivers and Chauffeurs	\$35,442	0.037%
53-7032	Excavating and Loading Machine and Dragline Operators	\$70,730	0.031%
53-6021	Parking Lot Attendants	\$24,674	0.026%
53-7199	Material Moving Workers, All Other	\$40,342	0.025%
53-7081	Refuse and Recyclable Material Collectors	\$46,515	0.014%
53-2012	Commercial Pilots	\$138,364	0.008%
53-3022	Bus Drivers, School or Special Client	\$34,056	0.006%
53-6031	Automotive and Watercraft Service Attendants	\$24,786	0.005%
53-3021	Bus Drivers, Transit and Intercity	\$40,596	0.004%
Weighted Mean Annual Wage		\$32,469	5.409%

Sources: Bureau of Labor Statistics, Occupational Employment Statistics, 2015 and Quarterly Census of Employment and Wages (QCEW), 2015; California Economic Development Department, OES Employment and Wages by Occupation, Santa Rosa-Petaluma Metropolitan Statistical Area, 2015.

GLOSSARY OF TERMS AND ACRONYMS

Glossary of Terms

Affordable Housing: Under state and federal statutes, housing is defined as affordable if housing costs do not exceed 30 to 35 percent of gross household income.

Annual Adjustment Mechanism: Due to inflation in housing construction costs, it is frequently necessary to adjust impact fees. An index, such as the Consumer Price Index (CPI) or a published construction cost index (for example, from the Engineering News Record) is used to revise housing fees to reflect inflation in housing construction costs.

Assisted Housing: Housing that has received public subsidies (such as low interest loans, density bonuses, direct financial assistance, etc.) from federal, state, or local housing programs in exchange for restrictions requiring a certain number of housing units to be affordable to very low-, low-, and moderate-income households.

Consumer price index (CPI): Index that measures changes in the price level of a market basket of consumer goods and services purchased by households.

Employment Densities: The amount of square feet per employee is calculated for each property use that is subject to a commercial development housing linkage fee. Employment densities are used to estimate the number of employees that will work in a new commercial development.

Household: The US Census Bureau defines a household as all persons living in a housing unit whether or not they are related. A single person living in an apartment as well as a family living in a house is considered a household. Households do not include individuals living in dormitories, prisons, convalescent homes, or other group quarters.

Household Income: The total income of all the persons living in a household. Household income is commonly grouped into income categories based upon household size and income, relative to the regional median family income.

Housing Affordability Gap: The affordability gap is defined as the difference between what a household can afford to spend on housing and the market rate cost of housing. Affordable rents and sales prices are defined as a percentage of gross household income, generally between 30 percent and 35 percent of income.

For renters, rental costs are assumed to include the contract rent as well as the cost of utilities, excluding cable and telephone service. The difference between these gross rents and affordable rents is the housing affordability gap for renters. This calculation assumes that 30% of income is paid for gross rent.

For owners, costs include mortgage payments, mortgage insurance, property taxes, property insurance, and homeowner association dues.¹² The difference between these housing expenses and affordable ownership costs is the housing affordability gap for owners. This calculation assumes that 35% of income is paid for housing costs.

Housing Subsidy: Housing subsidies refer to government assistance aimed at reducing housing sales prices or rents to more affordable levels.

Housing Unit: A housing unit can be a room or group of rooms used by one or more individuals living separately from others in the structure, with direct access to the outside or to a public hall and containing separate toilet and kitchen facilities.

IMPLAN3: A software model that is used to provide a quantitative assessment of the interdependencies between different branches of a regional (or national) economy. The latest model, IMPLAN3, was used in the nexus studies. The major input is household income, and the major output is direct and induced employment reported by industries

Inclusionary Zoning: Inclusionary zoning, also known as inclusionary housing, refers to a planning ordinance that requires that a given percentage of new construction be affordable to households with very low, low, moderate, or workforce incomes.

In-Lieu Fee: A literal definition for an in-lieu fee for inclusionary units would be a fee adopted “in place of” providing affordable units. For the purposes of operating an inclusionary housing program, a public jurisdiction may adopt a fee option for developers that prefer paying fees over providing housing units on- or off-site. A fee study is frequently undertaken to establish the maximum fee that can be charged as an in-lieu fee. This fee study must show that there is a reasonable relationship between the fee and the cost of providing affordable housing.

Market-Rate Housing: Housing which is available on the open market without any public subsidy. The price for housing is determined by the market forces of supply and demand and varies by location.

Nexus Study: In order to adopt a residential housing impact fee or a commercial linkage fee, a nexus study is required. A nexus requires local agencies proposing a 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 type of development project on which the fee is imposed.” A nexus study establishes and quantifies a causal link or “nexus” between new residential and commercial development and the need for additional housing affordable to new employees.

Prototypes: Prototypes are used for residential and commercial developments in order to define housing impact fees. The prototypes generally represent new development projects built in a community and are used to estimate affordable housing impacts associated with new market rate commercial and residential developments. While the prototypes should be “typical” of what is built,

¹² Mortgage terms for first-time homebuyers typically allow down payment of five percent; these terms require private mortgage insurance.

for ease of mathematical computation, they are often expressed as larger developments in order to avoid awkward fractions.

Residential or Housing Impact Fee: A fee imposed on residential development to pay for a development's impact on the need for affordable housing. The fee is based on projected incomes of new employees associated with the expansion of market rate developments. Two steps are needed to define the fees. The first step is the completion of a nexus study, and the second step entails selection of the actual fee amount, which can be below the amount justified by the fee study, but not above that amount.

RS Means: Data source of information for construction cost data.

Definition of Acronyms

AMI:	Area Median Income
GBA:	Gross Building Area
HCD:	Department of Housing and Community Development (State of California)
NSF:	Net Square Feet
SF:	Square Feet
TDC:	Total Development Costs