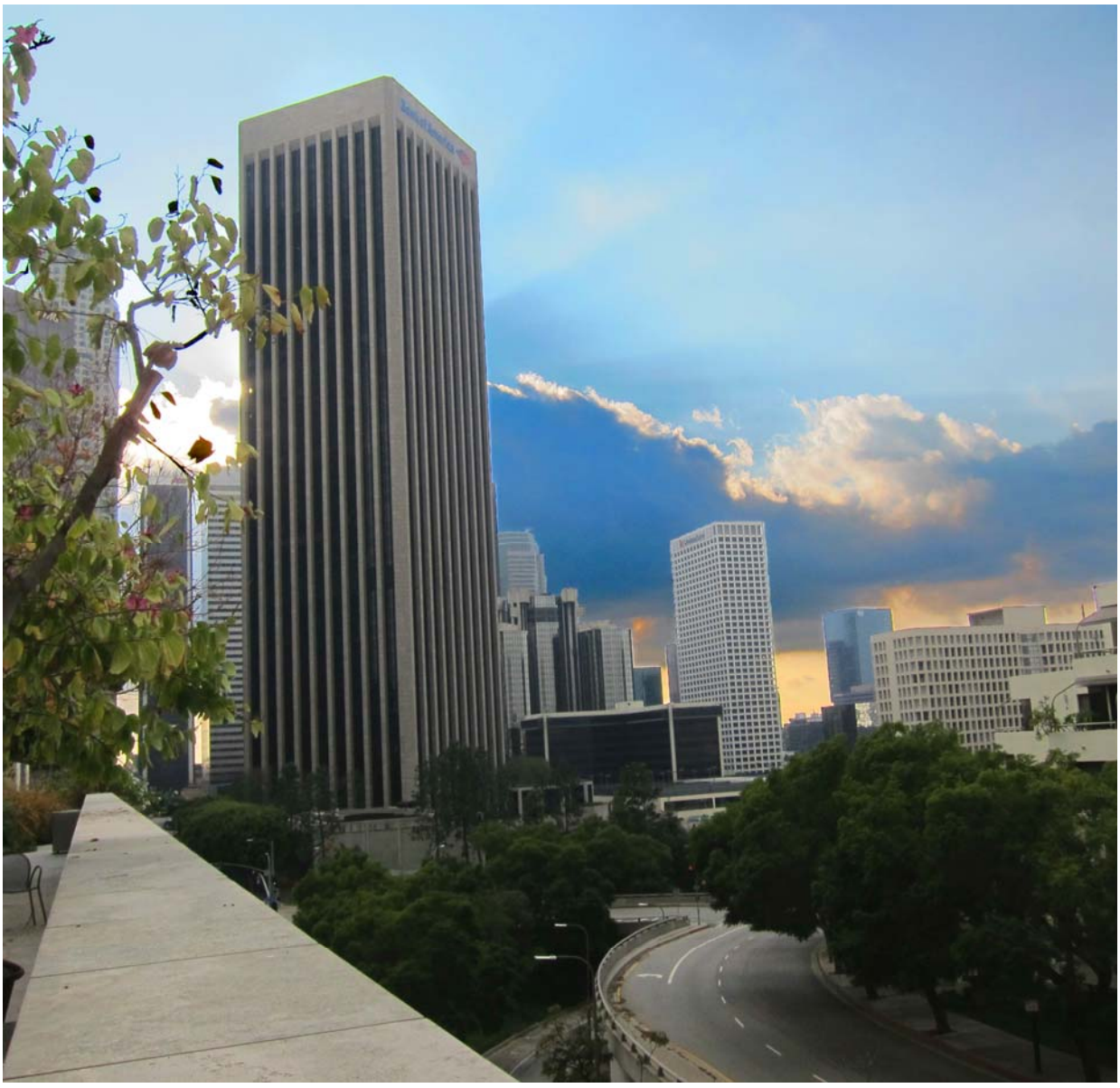
Affordable Housing Benefit Fee Study



City of Los Angeles
2011

Affordable Housing Benefit Fee Study

The Nexus between New Market-Rate Development and
the Subsequent Increase in Demand for Affordable Housing
in the City of Los Angeles

2011

Underwritten by the City of Los Angeles
Housing Department (LAHD) and the Department of City Planning (DCP)

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Contents

Executive Summary

Linkage between New Development and Affordable Housing Demand

New development creates additional demand for affordable housing because some of the workers who will be employed will not earn enough money to afford market-rate rental housing in the City of Los Angeles. In 2010, the City's Housing Department and Community Redevelopment Agency provided over 53,000 units of affordable housing and there were over 530,000 households that needed affordable housing, leaving over 475,000 low-income households without housing they could afford. In the absence of additional resources to build affordable housing, this gap is projected to grow to 493,000 households by 2020.

This report analyzes a possible a*ffordable housing benefit fee* for new development in Los Angeles. If approved, this fee would recover a portion of the public cost for meeting the demand for affordable housing that results from new development. An affordable housing benefit fee is subject to California's Mitigation Fee Act, which requires: 1) that the purpose of the fee be identified; 2) the use of the fee be identified; 3) a reasonable relationship between the fee's use and the type of development project on which the fee is imposed be determined; and 4) a reasonable relationship be established between the amount of the fee and the cost of the public facility (i.e., affordable housing) attributable to the development on which the fee is imposed.

The *nexus* between property development and demand for affordable housing is the deficit between the mean rent for an apartment in the City and the amount of earned income that workers who fill jobs created by these developments can pay for rent without becoming rent burdened. Workers are considered rent-burdened when they pay more than 30 percent of their household's earned income for rent. Residential rental costs, rather than residential construction costs for new housing, are used because the results are more conservative and stable. The nexus provides the basis for identifying development categories and determining the housing benefit fee level for each category.

Households of workers living in Los Angeles with incomes that are 80 percent or less of the Area Median Income (AMI) typically cannot afford market-rate rent with only 30 percent of their earned income, and thus have an *earned income deficit*. The mean annual earned income deficits for worker households in the three lowest AMI bands are:

- $10,455 for extremely-low income households (0 to 30 percent of AMI)
- $5,994 for very-low income households (31 percent to 50 percent of AMI)
- $1,235 for low-income (51 to 80 percent of AMI)

The process used by the City of Los Angeles to classify building permits makes it possible to differentiate 29 development categories for different types of buildings that will house different types of industries. Every industry has some workers whose earnings put them into one of the three lowest AMI bands, ranging from 11 percent of utility workers to 67 percent of restaurant workers. Citywide, the average for all development categories is 45 percent. The earnings distribution among workers in each development category enables us to estimate the mean earned income deficit for the labor force in that sector.

Two adjustment factors were taken into consideration before converting the mean annual earned income deficit per worker into a deficit per square foot. First, the demand for affordable housing is based on households and not on individual workers. There is an average of 1.6 workers per worker household in the City, which means that a worker requiring affordable housing typically must pay only 62.5 percent of the cost for a housing unit. Second, the life span of a building determines the total housing impact per worker. Based on Internal Revenue Service depreciation schedules this lifespan is 39 years for commercial buildings and 27.5 years for residential buildings.

Businesses in the City of Los Angeles occupy an average of 746 square feet of improved building space per job, with this amount varying from 233 square feet for gas service stations to 1,871 square feet for utilities. When the income deficit is projected over the life of buildings, we get the *earned income deficit per square foot* of new development. The average deficit for commercial development is $69 per square foot, although it varies widely among different types of development. Examples of the deficit per square foot include:

- Renter-occupied apartments $7
- Owner-occupied condominiums $10
- Office buildings $38
- Hotels $46
- Hospitals $63
- Restaurants $274
- Gas service stations $369

New residential development also creates jobs as a result of household consumption, and some of these jobs do not pay enough for workers to afford housing. Residential development generates less demand for affordable housing than commercial development on a square foot basis, but the overall volume of market-rate housing development in Los Angeles makes it a significant contributor to the demand for affordable housing.

Fees, Policy Options and Best Practices

In practice, a linkage fee ordinance would apply to new construction and existing properties that increase building floor area, but not to the rehabilitation of existing properties as long as the land use and pre- and post-rehab square footage remain the same. The linkage fee would apply when new building floor area is permitted that generates affordable housing demand.

The potential impacts of an affordable housing benefit fee may be borne by landowners, developers, investors, or end users, depending on whether a development is sold to an investor or held by the developer, and whether market conditions will allow the fees to be passed on to end users. However, the impacts are relatively low in almost all scenarios because the potential affordable housing benefit fee comprises a small portion of total development costs in every category.

Only 4 percent of the property sales in the City involve vacant parcels, but in those cases, it is most likely that the impact of affordable housing benefit fees would be absorbed by landowners who would experience a diminution in the prices that developers and investors would be willing to pay for their properties. This dynamic is less likely to occur when the

current use of land approaches the value of potential new uses, for example, when the density of development on a property approaches the maximum permissible density. Other actors in the development process will absorb the fees to the extent that their profit margins can withstand the additional cost of the fee or that all comparable sites also require absorption of this cost.

It is difficult to identify the tipping point for affordable housing benefit fees that will make development infeasible. This is due to project-by-project variability in financing, land and building costs, market vacancy, rent, profit margins, threshold rates of return, and developer financial capacity. However, the impact of a hypothetical affordable housing benefit fee can be measured in terms of the ratio of fee to development cost. This study establishes a benchmark for the tipping point – the point at which development is potentially deterred by the housing benefit fee – at five percent of development cost.

As such, the potential tipping point for a housing benefit fee ranges from $8.50 per square foot to more than $80 per square foot, depending on the development category. As long as the fee represents a relatively low proportion of total development costs (i.e., up to five percent of total costs), the fee's impact on development should be nominal. The fee scenarios developed for this analysis range from $1 to $20 per square foot, and these amounts, in turn, range from less than one percent to 11.76 percent of assumed total development costs per square foot. The actual fee range that emerges from analyzing these scenarios is slightly lower than the hypothetical range – $0.32 to $18.09 per square foot. The upper limit of $20 per square foot was used in the scenarios because none of the cities surveyed had fee levels in excess of this amount.

Based on historic development volume in the City of Los Angeles, an affordable housing benefit fee can potentially be a significant revenue source for the Affordable Housing Trust Fund. If a fee had been in place from 1997 to 2007, it could have generated an average of $35 to $110 million a year in revenue, depending on the level of the fee.

A review of fee programs in other jurisdictions identified best practices for optimizing revenue for local housing programs and withstanding legal challenges. These practices include:

- Allow fees to be used for a broad range of affordable housing purposes
- Maximize the potential for generating revenue by applying the fee broadly to many classes of properties
- Be cautious about requiring a geographic link between where fees are generated and where they are spent
- Create a mechanism for periodic adjustments to the fee schedule as market conditions change
- Collect fees at project stages that minimize adverse impacts on developers
- Provide developers with alternatives to paying fees, including donating land and building affordable housing themselves
- Establish criteria for fee exceptions that are clear, objective, and simple to administer
- Enforce compliance with fees through effective administrative measures such as withholding building or occupancy permits for noncompliance
- Provide flexibility in the linkage fee program – to enable fee adjustments or suspend the fee during severe recessions – and enable timely responses by delegating authority to an administrative level of city government to oversee fee adjustments

Benefits of Affordable Housing

Increasing the supply of affordable housing throughout the City can strengthen the jobs-housing balance and lead to mutually beneficial outcomes for low- and moderate-income residents and their employers. The benefits accruing to employers of low- and moderate-income workers include having increased access to workers within a convenient commuting radius to their work site and to workers with longer-term, more stable connections to their homes. This increased residential permanency and predictability means fewer turnovers of workers and greater labor force stability for employers.

Housing that is very difficult for workers to afford and sometimes overcrowded, and work commutes that are time-consuming – sometimes without a large enough mobility radius to reach higher-paying jobs, all increase the likelihood of worker turnover. Workers can find themselves forced to quit their jobs when they are displaced from housing because they cannot afford the rent, when overcrowding results in untenable living conditions, or when time-consuming commutes conflict with family needs.

Stable, affordable housing that workers can afford and that is not overcrowded is a strong incentive to remain in the same place, which is likely to reduce worker turnover. Reduced turnover creates significant cost savings for employers. It costs an estimated 30 percent of a worker's annual salary to replace that worker. Stable, decent and affordable housing located near workers' jobs is likely to reduce the frequency of worker turnover and result in significant cost savings for employers.

Transit oriented districts (TODs) provide particularly advantageous sites for affordable housing. These districts comprise the area within a half-mile radius of subway and light-rail stations, affording a comfortable walking distance for accessing public transit. Thirty-two percent of the affordable housing inventory created by the Housing Department and Community Redevelopment Agency is in TODs, as are 18 percent of the City's rent stabilized units. There are strong arguments for preserving and expanding the affordable housing inventory in TODs.

Los Angeles' poorest households have fewer cars, making it more difficult for their employed members to get to their jobs. Among Los Angeles households whose incomes are 80 percent or less of the Area Median Income, 20 percent have no vehicle, while another 46 percent have access to just one vehicle. Given that many of the City's working poor families rely on more than one income earner, and that buying, maintaining and using a private vehicle is expensive, locating affordable housing in TODs where there is ready access to public transit creates efficiencies for these households, reducing the disadvantage of not having access to cars.

Workers who use public transit to commute to their jobs save an estimated $831 per month, or $9,967 per year, in transportation costs tied to automobile use, including operating and workplace parking costs. When the savings from using public transit are combined with the gap between the cost of affordable housing and the cost of market rate housing, the annual value of affordable housing in a TOD is:

- $20,422 for extremely-low income households (0 to 30 percent of AMI)
- $15,961 for very-low income households (31 to 50 percent of AMI)
- $11,202 for low-income households (51 to 80 percent of AMI)

Estimates of Future Demand for Affordable Housing

Population growth and composition will determine the amount and type of affordable housing needed in the next decade. Since 2000, increasing shares of households headed by seniors, people with disabilities and low-income single parents have not been able to secure affordable housing. Currently, only 34 percent of households headed by a senior, 32 percent of households headed by a person with a disability, and 17 percent of households headed by a low-income single parent are able to secure housing with rent they can afford.

The number of households headed by seniors is projected to increase 45 percent over the next decade, compared to 3 percent growth in renter households headed by persons under 65. Nearly 85 percent of all renter households headed by seniors fall in the three lowest AMI bands.

Job growth will lead to population growth and to additional demand for affordable housing. Forty-five percent of new jobs that will be created over the next decade are projected to be in the 3 lowest AMI bands, paying workers insufficient wages to afford rent in the City of Los Angeles. The number of workers in the three lowest AMI bands is projected to increase 11 percent by 2020. In addition, low-income workers who provide the goods and services consumed by occupants of new market rate housing built in the City over the coming decade are projected to need 3,639 units of affordable housing.

In the face of this growing demand for affordable housing, the City is projected to add 33,514 new units of affordable housing by 2020 with existing financial tools, with some of this progress offset by the possible loss of current affordable housing and rent-stabilized units. The City is projected to lose as many as 20,487 affordability-restricted units when the agreements for those units expire, and 3,463 rent-stabilized housing units after they are converted to other uses. This adds up to a projected total of 23,950 housing units lost. The City's progress towards meeting the large demand for affordable housing will be substantially augmented if additional funding becomes available through an affordable housing benefit fee.

Conclusions and Recommendations

The information analyzed in this study establishes a nexus between property development and demand for affordable housing. The recommended fee levels are proportional to the demand for affordable housing that results from different categories of development, taking into account the tipping point for each category. The recommended affordable housing benefit fees will partially offset the public cost for meeting the additional demand for affordable housing.

If an affordable housing benefit fee is enacted, it will provide a revenue stream to finance construction of additional affordable housing units. Three scenarios, with the fee pegged to different shares of the demand for affordable housing created by new development illustrate the potential contribution of a fee to building affordable housing:

- A fee equal to 5 percent of the demand created by new development (low fee scenario) will finance an estimated 3,760 additional affordable units in the next decade.
- A fee equal to 10 percent of the demand created by new development (medium fee scenario) will finance an estimated 7,521 affordable units in the next decade.
- A fee equal to 15 percent of the demand created by new development (high fee scenario) will finance an estimated 11,281 additional affordable units in the next decade.

These projected impacts of fee revenue on affordable housing production are based on the assumption that the City's Affordable Housing Trust Fund dollars will be leveraged with loans and grants from Federal and State agencies as well as the capital markets, and that the average Trust Fund investment will be $100,000 per unit.

Since its inception in 2003 through 2007, the Affordable Housing Trust Fund's annual budget has ranged from $23 million to $119 million. A fee equal to 5 percent of the demand generated by new development will generate approximately $37 million annually, an amount well above the low-end range of the Trust Fund budget. A fee equal to 15 percent of demand generated by new development will add about $112 million annually to the Trust Fund budget, doubling the current production level of affordable housing units. These projected levels of potential revenue are based on an annual average of 24 million square feet of new commercial and market rate residential development in the City over the past decade.

Investment of fee revenue in building affordable housing would create new jobs in the City of Los Angeles. Every one million dollars spent on housing construction would generate 10.6 person years of employment. Depending on the fee level approved by the City, 400 to 1,200 new jobs would be created in a typical year, with actual levels ranging lower and higher depending on the amount of new development.

Information from this study shows that there is an acute demand for affordable housing in the City of Los Angeles and that it is feasible to impose a fee to pay a portion of the public cost for meeting the additional demand for affordable housing that is generated by new development without deterring further new development. Policy decisions for the City of Los Angeles in deciding whether and how to implement an affordable housing benefit fee are summarized below.

1. *Should a fee be imposed* on new development to offset some of the demand for affordable housing that will be generated by that development?
2. Should there be a *threshold size* for development that is subject to the fee? Should small projects, for example, under 10,000 square feet, be excluded?
3. What *level of fee* should be imposed? Should the fee be based on the different tipping point for different types of development? Should the fee be a uniform percent of the earned income deficit for all development categories?
4. What is the *adjustment mechanism* for the fee? Should it be adjusted annually based on an index of construction costs in the Los Angeles region?

There is wide variation in the earned income deficit generated by different types of development, as well as the level of fee that different types of development can afford to pay. This study establishes a clear nexus between property development and demand for affordable housing based on the deficit between the mean rent for an apartment in the City and the amount of earned income that workers who fill jobs created by new development can pay for rent without becoming rent burdened. The fee levels recommended in this study will ensure the feasibility of continued development in the City while also obtaining equitable payments from developers to offset some of the demand for affordable housing generated by new projects.

Chapter 1

Relationship between Demand for Affordable Housing and Different Categories of New Development in the City of Los Angeles

LINKAGE BETWEEN NEW COMMERCIAL DEVELOPMENT AND AFFORDABLE HOUSING DEMAND – THE JOBS-HOUSING NEXUS

Introduction

This section documents the impact of new commercial development in creating additional demand for affordable housing. More specifically, it establishes: 1) the extent to which different types of commercial development contribute to affordable housing demand, and 2) that the impact on affordable housing demand is scalable to the size and type of commercial development such that a proportional fee can be identified to mitigate its impact and support affordable housing development. The methodology used to establish the linkage between commercial development and affordable housing demand is based on the wages of workers employed in different types of development and workers' ability to afford market-rate rental housing in the City of Los Angeles. This linkage supports a "linkage program" under which a fee may be assessed Citywide on commercial developments that create jobs with wages that are insufficient to pay the cost of rental housing.

An affordable housing benefit fee is subject to California's Mitigation Fee Act, which requires: 1) that the purpose of the fee be identified; 2) the use of the fee be identified; 3) a reasonable relationship between the fee's use and the type of development project on which the fee is imposed be determined; and 4) a reasonable relationship be established between the amount of the fee and the cost of the public facility (i.e., affordable housing) attributable to the development on which the fee is imposed. This study provides this required information.

Overview of Approach

The link between new commercial development and affordable housing demand is based on the earned income of workers in jobs created by developments relative to the cost of market-rate rental housing. The analysis excludes owner-occupied housing and strictly focuses on rental housing to develop conservative estimates of the impact that commercial development has on affordable housing demand. Incorporating the for-sale housing market into this analysis would have resulted in a larger gap between levels of earned income and the ability to afford housing and greater volatility in the gap between earnings and the cost of housing. Using only rental housing costs produced results that are more conservative and stable.[1]

An alternative approach that was considered but not used for establishing the link between new commercial development and subsequent demand for affordable housing was property valuation. This approach was not used because property valuation does not demonstrate

the linkage between development and demand for affordable housing. Many of the variables influencing property valuation (e.g. location, zoning, availability of financing, hazardous materials, etc.) have no bearing on the subsequent demand for affordable housing generated by the development.[2] In addition, property valuation does not establish a clear quantitative relationship between the impact being mitigated and the fee charged.[3]

The approach that best captures the nexus or relationship between new development and the demand for affordable housing it generates is a linkage fee based on the square footage of a development – differentiated by the types of businesses that will occupy it and the wages that will be paid to employees of those businesses.

In order to establish the linkage between new commercial development and affordable housing demand using this approach, the Economic Roundtable carried out the following seven analytic steps:

- Step 1: Defined income bands and assessed the ability of households in each band to pay for rental housing.
- Step 2: Defined commercial development categories based on building permit classifications and determined the distribution of industries that occupy space in each development category.
- Step 3: Determined the share of workers in each development category that fall within each income band.
- Step 4: Quantified the extent to which workers in each income band and development category can or cannot afford rental housing in the City of Los Angeles.
- Step 5: Identified adjustment factors that impact the demand for affordable housing.
- Step 6: Determined the mean number of square feet of building space per worker in each development category.
- Step 7: Determined the final earned income deficit per square foot of building space in each development category.

Step 1: Assessing the Ability to Pay for Housing

Worker Households

In order to understand households' ability to afford market-rate rental housing in the City of Los Angeles, the Economic Roundtable established parameters for analyzing Census data that: 1) look specifically at households in which workers reside and 2) most closely resemble the social unit described in the U.S. Housing and Urban Development's (HUD) breakout of Area Median Income (AMI) by family size. This universe is referred to as "worker households."[4] Households must meet the following criteria to be included in the worker household universe:

- At least one member of the worker household is age 16 to 64 and employed (full- or part-time) in the civilian workforce

- Household earnings are greater than $0[5]
- Household is not living in group quarters
- Household resides in the City of Los Angeles

Census data shows that workers reside in households that are diverse in size and structure. In the City of Los Angeles, over 70 percent of worker households are family households, nearly a quarter are households in which workers live alone, and almost five percent are households in which workers live in shared residences with partners. The size of households and the number of workers earning income to support their households vary, with the average worker household in the City of Los Angeles being composed of 2.9 persons and 1.6 workers.[6] We use these ratios later in this chapter to properly account for how many workers contribute their income to support a single household and pay the rent for a single housing unit.

AMI Bands

The Economic Roundtable examined worker households using HUD-defined income limits, which are published yearly and are used by federal, state and local agencies to assess households' ability to pay for housing and determine eligibility in a variety of housing programs. HUD estimates the median family income for an area and adjusts that amount for different family sizes and housing costs[7] so that family incomes may be expressed as a percentage of the Area Median Income (AMI). We refer to these income breakouts as AMI bands.

The Roundtable used seven AMI bands based on HUD's fiscal year 2007 breakout of income limits by family size for the Los Angeles area.[8] An abridged version of this breakout is shown in Table 1-1. Given the level of income earned[9] by worker households in different AMI bands and the average cost of rental housing in the City, analysis in this report focuses on worker households that fall in the three lowest income bands – extremely-low-income (0 percent to 30 percent of AMI), very-low-income (31 percent to 50 percent of AMI) and low-income (51 percent to 80 percent of AMI). As detailed in a subsequent section, worker households in these three AMI bands typically spend more than 30 percent of their earned income on housing, the

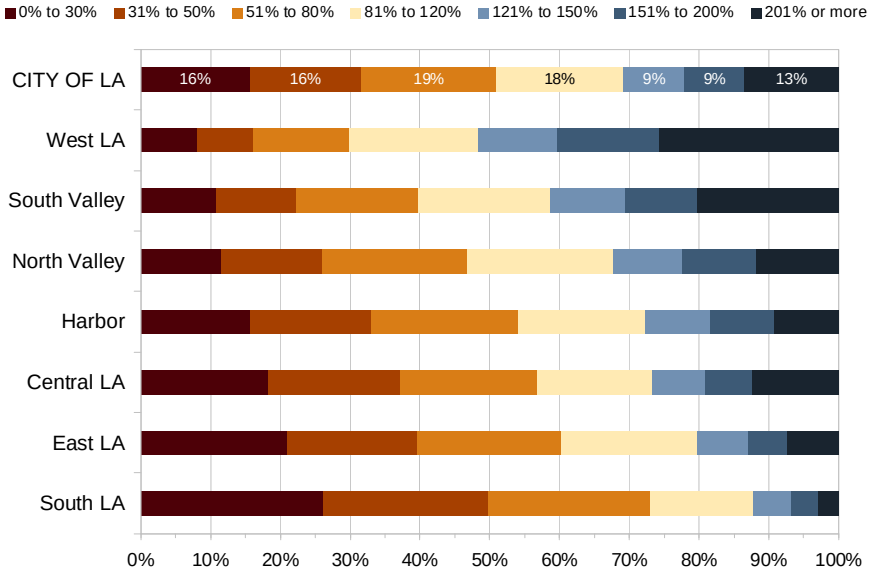
Table 1-1
U.S. Department of Housing and Urban Development AMI Bands, 2007 Fiscal Year

AMI Bands	Income Limits by Family Size (2007$)									
	1		2		3		4		5	
	Low	High	Low	High	Low	High	Low	High	Low	High
0% to 30%	$0	$15,550	$0	$17,750	$0	$20,000	$0	$22,200	$0	$24,000
31% to 50%	$15,551	$25,900	$17,751	$29,600	$20,001	$33,300	$22,201	$37,000	$24,001	$39,950
51% to 80%	$25,901	$41,450	$29,601	$47,350	$33,301	$53,300	$37,001	$59,200	$39,951	$63,950
61% to 80%	$31,101	$41,450	$35,501	$47,350	$39,951	$53,300	$44,401	$59,200	$47,951	$63,950
81% to 120%	$41,451	$62,150	$47,351	$71,050	$53,301	$79,900	$59,201	$88,800	$63,951	$95,900
121% to 150%	$62,151	$77,700	$71,051	$88,800	$79,901	$99,900	$88,801	$111,000	$95,901	$119,900
151% to 200%	$77,701	$103,600	$88,801	$118,400	$99,901	$133,200	$111,001	$148,000	$119,901	$159,850

Source: U.S. Department of Housing and Urban Development; Economic Roundtable Analysis.

federal standard for housing affordability.

Figure 1-1
Worker Households by AMI Bands and Area Planning Commission



Source: U.S. Census Bureau, 2005-2007 American Community Survey, PUMS data; Economic Roundtable Analysis.

Distribution of Worker Households by AMI Bands

In the City of Los Angeles, just over half of all worker households fall in the three lowest income bands (Figure 1-1).[10] Given household size and household earned income, 16 percent of all worker households fall in the extremely-low-income band (0 percent to 30 percent of AMI), another 16 percent fall in the very-low-income band (31 percent to 50 percent of AMI), and 19 percent fall in the low-income band (51 percent to 80 percent of AMI).

A disproportionately high share of lower income worker households is found in the City's poorest regions. Nearly three-quarters of worker households in the South Los Angeles Area Planning Commission (APC)[11] region have earned incomes that place them in the three lowest AMI bands (Figure 1-1). Sixty percent and 57 percent of worker households in the East Los Angeles and Central Los Angeles regions, respectively, fall in the three lowest AMI bands. West Los Angeles, the City's wealthiest region, has the smallest share of worker households in the three lowest AMI bands, at just under 30 percent. (For additional information about the socioeconomic structure of worker households and overcrowding and rent burden rates for worker households see Appendix 1-1.)

Earned Income and Housing Affordability by AMI Bands

The mean annual earned incomes for worker households in the seven AMI bands are shown in Table 1-2. The figure for each AMI band represents the mean earned income for worker households that meet the size and income limits set forth by HUD (shown in Table 1-1) and are used to determine whether the typical worker household in each AMI band can afford rental housing in the City of Los Angeles.

The Economic Roundtable used the same 30 percent housing cost-to-income ratio mentioned in the previous section as the threshold for determining the extent to which worker households in different AMI bands are able to afford housing in the City of Los Angeles. If the mean rent in the City is more than 30 percent of the mean annual earned income for worker

households in an AMI band, then housing is deemed unaffordable for households in that AMI band.

The mean rent for an apartment in the City of Los Angeles is $1,191 per month or $14,297 per year (Table 1-2).[12] Based on the 30 percent affordability ceiling and the mean annual earned income for worker households in different AMI bands, apartments are generally unaffordable to worker households that fall in the three lowest AMI bands. The typical worker household in the extremely-low-income (0 percent to 30 percent of AMI) band earns less income than the mean rent for an apartment in the City of Los Angeles. Typical worker households in the very-low-income (31 percent to 50 percent of AMI) and low-income (51 percent to 80 percent of AMI) bands would spend, respectively, just over half and a third of their earned income on the average apartment in the City. Average worker households in the 81 percent and above AMI bands, on the other hand, typically earn sufficient income to afford rent in the City, spending less than 30 percent of their earned income on rent. Consequently, this linkage study focuses on the affordable housing demand generated by new commercial developments that create jobs that place workers in the following three AMI bands:

- Extremely low-income: Worker households earning 0 percent to 30 percent of AMI
- Very low income: Worker households earning 31 percent to 50 percent of AMI
- Low income: Worker households earning 51 percent to 80 percent of AMI

Step 2: Development Categories

This section delineates 29 categories of new commercial real estate development in Los Angeles that we use to determine the types of jobs each building will house. These categories of new buildings (Table 1-3) describe the 'workplaces' for the spectrum of industries and job occupations found in the City.[13] They are the offices, shops, warehouses, markets, retail malls and other buildings where jobs are 'housed.' These development categories allow us to

Table 1-2
Mean Annual Earned Income, Mean Rent and Mean Rent as a Percent of Mean Annual Earned Income for Worker Households by AMI Bands

AMI Bands	Mean Annual Earned Income (2009$)	Mean Rent in City of LA (2009$)	Mean Rent as a Percent of Mean Annual Earned Income
0% to 30%	$12,806		112%
31% to 50%	$27,674	Monthly $1,191	52%
51% to 80%	$43,538		33%
61% to 80%	$46,987	Annual $14,297	30%
81% to 120%	$65,158		22%
121% to 150%	$88,055		16%
151% to 200%	$112,496		13%

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis.
Universe used to compute average rent: Renter households in apartment buildings that moved in within the last 12 months.

differentiate between, for example, general hospitals and convalescent homes, or between merchant wholesalers and retail stores.

The 29 development categories used in this chapter are derived from the codes applied to all building permits issued by the Los Angeles Department of Building and Safety (LADBS), including all commercial real estate development projects. Because these categories are based on actual construction plans, they provide reliable information about the type of structure that will be built as well as the likely future occupants of the structure. The permit data collected by the Los Angeles Department of Building and Safety includes *Use Codes* and *Occupancy Classifications*, which we use to determine each building's likely tenant(s).[14] We use this information about future occupants to estimate the wages of employees expected to work in each type of building, the ratio of workers to square feet of building space, and the housing deficit that is likely to result from the development.

Our correspondence table between these 29 development categories and over a thousand different industry classifications found in Los Angeles appears in Appendix 1-2, with our matches based on:

1 *Use category*: This names the type of business tenants that are likely to locate in several types of specialized commercial buildings, assigned by the Los Angeles Department of Building and Safety. Examples of new development use categories include "hotels," "restaurants," and "theatres." Thus, we assign industry employment characteristics for "hotels," "restaurants," and "theatres" to buildings with these use categories, respectively.

2. *Occupancy groups*, also found in building permits, provide further clues about the likely tenants of new developments, since they reflect construction standards. For example, manufacturing (a use category) can be divided into three occupancy groups: "moderate-hazard," "low-hazard" and "high-hazard." The International Building Code, from which occupancy groups are taken, identifies the distinct manufacturing activities that define these three occupancy groups, providing clear links to specific manufacturing industries.

3. The development categories that best fit a small *residual* group of industries are based on the Economic Roundtable's case-by-case analysis.

This bridge from development category to industry classification enables us to use building permit data to estimate the employment characteristics that will be found within each new building. The method for analyzing industry employment characteristics through the framework of the 29 development types is reviewed next.

Table 1-3
Types of Commercial Real Estate Property Developments

Development Category	LADBS Use Codes	Occupancy Classifications	NAICS	Establishments
Airports	Airport (3)	(All Occupancy Classifications)	8	194
Amusement – Spectator sports	Amusement (4)	Assembly Group A:– Viewing of indoor/outdoor sports (A4 & A5)	4	122
Amusement – Recreation or amusement	Amusement (4)	Assembly for worship, recreation or amusement and other assembly uses not otherwise classified (A3)	13	269
Churches	Church (6)	(All Occupancy Classifications)	1	243
Gas Service Stations	Gas Service Station (9)	(All Occupancy Classifications)	2	564
Hospitals (General)	Hospital (10)	Other (Use Codes not used elsewhere)	3	118
Hospitals (Convalescent)	Hospital (10)	Institutional Group (I)	6	708
Hotels	Hotel (11)	(All Occupancy Classifications)	7	419
Manufacturing (Moderate Hazard)	Manufacturing (12)	Factory Industrial, Moderate Hazard (F1)	338	5,966
Manufacturing (Low Hazard)	Manufacturing (12)	Factory Industrial, Low Hazard (F2)	109	1,002
Manufacturing (High Hazard)	Manufacturing (12)	High-Hazard Group (H)	30	118
Misc. Bldg or Structure (High Hazard)	Misc Bldg or Structure (23)	High-Hazard Group (H)	11	133
Misc. Bldg or Structure (Moderate Hazard)	Misc Bldg or Structure (23)	Factory Industrial, Moderate Hazard (F1)	31	5,241
Misc. Bldg or Structure (Low Hazard)	Misc Bldg or Structure (23)	Low-Hazard storage (S2)	93	145
Office Buildings (Finance, Insurance, Real Estate (F.I.R.E.); Business)	Office (13)	Business spaces for offices, transactions and storage (B)	207	43,136
Offices (Couriers and Delivery Services)	Office (13)	Storage Group (S)	2	203
Public Administration (Government)	Public Administration (14)	(All Occupancy Classifications)	29	324
Public Garage (Parking Lots & Garages)	Public Garage (8)	Other	1	694
Public Garage (Auto Repair, etc.)	Public Garage (8)	Storage Group (S)	9	1,888
Public and Private Utilities	Public Utilities (15)	(All Occupancy Classifications)	10	50
Restaurants	Restaurant (17)	(All Occupancy Classifications)	8	6,367
Retail B (Rental & Leasing Centers)	Retail (16)	Business spaces for offices, transactions and storage (B)	38	3,285
Retail M (Grocery, Office Supplies, Florists)	Retail (16)	M Mercantile Group	73	10,972
Schools	School (18)	(All Occupancy Classifications)	4	999
Swimming Pools/Spas	Swimming Pool or Spa (20)	(All Occupancy Classifications)	1	255
Theatres	Theater (21)	(All Occupancy Classifications)	4	467
Warehouse B (e.g. Motion Picture & Video)	Warehouse (22)	Business spaces for offices, transactions and storage (B)	7	3,180
Warehouse M (Merchant Wholesalers)	Warehouse (22)	Mercantile Group (M)	71	8,985
Warehouse S (Transportation)	Warehouse (22)	Storage Group (S)	54	2,897

Source: Economic Roundtable. Note: "NAICS" is the number of 6-digit NAICS categories assigned to this development category; "Establishments" is the number of business establishments contained in this development category in the 3rd quarter of 2007.

Step 3: Employment in Development Categories

Measuring Employment – Data Source

To understand what share of workers in each development category fall into the different AMI bands, particularly the extremely-low, very-low and low-income bands, the Economic Roundtable explored several data sources. Multiple government agencies produce data that can be used for this type of labor market research. Federal agencies, such as the Bureau of Economic Analysis, Bureau of Labor Statistics and the Census Bureau, as well as the California Employment Development Department produce data that can be used to estimate total employment as well as the subset of workers in wage and salary jobs in various industries. These agencies use a range of methods and data sources to produce employment figures, resulting in strengths as well as limitations for analyzing employment dynamics in various geographic regions and for different segments of the workforce. This analysis called for a data set that could be used to determine:

- Informal employment (often not captured in employer-reported data)
- Employment in the City of Los Angeles
- Industry and occupational classifications
- Household size
- Household earned income
- Number of workers in households

To analyze employment and characteristics of workers and their households, the Economic Roundtable used the Public Use Microdata Sample (PUMS) files from the U.S. Census American Community Survey (ACS).[15] The degree of individual and household level detail captured in the ACS PUMS file – including data on household size, earned income, the number of workers per household, and industries and occupations in which workers are employed – provided information about the following questions that are essential to this study:

- In what industries and development categories are workers employed?
- How much income do workers earn in different industries and development categories?
- How does the employment situation for an individual worker translate into the economic situation for a household?
- What share of workers in each development category fall within each AMI band?

In addition to the range of information found in the data, another major reason for using the ACS is that the data is representative of all workers. In other words, it captures the entire economy – formal workers who show up in employment data produced by government agencies as well as informal workers who frequently do not show up in these reports. This is particularly important in analyzing the Los Angeles economy because of the prevalence of the informal segment of the economy, a segment that we estimate to account for over a fifth of wage and salary jobs.

Brief Discussion about the Informal Economy

In 2005, the Economic Roundtable presented a methodology for measuring informal employment or what is often referred to as under-the-table, off-the-books employment in a report entitle *Hopeful Workers, Marginal Jobs.*[16] This report showed evidence of a growing informal labor force in Los Angeles City and County, stagnant employment in the formal labor market, and significant labor market polarization with widespread informal employment in low-skill jobs at the low-wage end of the income distribution. Growth in the informal sector of the economy can be attributed to a combination of factors that include economic restructuring, deregulation of the economy, and globalization of economic activity including immigration and increasing international flows of goods and capital.

In that report, the Economic Roundtable estimated that in 2004, 16.4 percent of the City's total wage and salary labor force was employed in the informal economy. This was a mid-range estimate produced by using two main approaches: 1) analyzing anomalies in employment data sets that indicate unreported employment and 2) identifying individuals in public use data sets based on employment characteristics associated with informality such as self-employment or industries with a high proportion of non-citizen immigrants. While these approaches rely on arguable assumptions regarding the

Table 1-4
Estimated Share of Informal Workers by Area Planning Commission (APC) and Development Category, 2007

Geographic Area and Development Category	Estimated Share of Workers in the Informal Economy
CITY OF LA	**22%**
AREA PLANNING COMMISSION (APC)	
North Valley	19%
South Valley	16%
West LA	11%
Central LA	27%
East LA	24%
South LA	30%
Harbor	19%
DEVELOPMENT CATEGORY	
Airports	11%
Amusement – Spectator sports	(s)
Amusement – Recreation or amusement	14%
Churches	18%
Gas Service Stations	31%
Hospitals (General)	11%
Hospitals (Convalescent)	22%
Hotels	28%
Manufacturing (Moderate Hazard)	35%
Manufacturing (Low Hazard)	34%
Manufacturing (High Hazard)	24%
Misc. Bldg or Structure (High Hazard)	32%
Misc. Bldg or Structure (Moderate Hazard)	40%
Misc. Bldg or Structure (Low Hazard)	24%
Office Buildings (F.I.R.E. businesses)	11%
Offices (Couriers and Delivery Services)	19%
Public Garage (Parking Lots & Garages)	(s)
Public Garage (Auto Repair, etc.)	38%
Public and Private Utilities	7%
Restaurants	35%
Retail B (Rental & Leasing Centers)	25%
Retail M (Grocery, Office Supplies, Florists)	21%
Schools	8%
Swimming Pools/Spas	(s)
Theatres	9%
Warehouse B (e.g. Motion Picture & Video)	5%
Warehouse M (Merchant Wholesalers)	27%
Warehouse S (Transportation)	36%

Notes: (s) Suppressed data – development category could not be specified.
Sources: Bureau of Economic Analysis, REIS data; Bureau of Labor Statistics, QCEW data; U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis.

characteristics of informal employment, together they provide our best estimate of the prevalence of informal labor in the City.

Using methodologies similar to those in the 2005 study, the Economic Roundtable produced updated estimates for informal employment in the City of Los Angeles. The Roundtable estimates that in 2007, up to 22 percent of all workers in the City of Los Angeles are now employed in informal jobs.[17] Table 1-4 shows the estimated share of informal workers broken out by sub-regions (APC) of the City and by development categories.[18] With respect to geography, the South Los Angeles (30 percent), Central Los Angeles (27 percent) and East Los Angeles (24 percent) regions of the City all have above-average shares of informal workers compared to the City as a whole. These three regions, as mentioned in an earlier section of the chapter, also have the largest shares of lower-income worker households in the City.

The breakout by development category shows larger than average shares of informal workers in developments linked to low-skill, low-wage jobs. Examples include service oriented developments like gas service stations, hotels, public garages (auto repair) and restaurants, and industrial uses like nondurable manufacturing and warehousing. The preponderance of informal employment in low-skill, low-wage jobs throughout the City and the impact that informal employment has on affordable housing demand, again, warrants the use of a data source, such as the American Community Survey, that captures all workers as well as provides a breadth of information about individuals and households.

Distribution of Workers in Development Categories by AMI Bands

The purpose of this step of the study is to estimate the share of workers in each development category that fall into the different AMI bands, particularly the three lowest AMI bands. These are the AMI bands in which the average worker household cannot afford the average rent for an apartment in the City of Los Angeles. In order to complete this task, the Economic Roundtable analyzed the 2005-2007 ACS 3-year PUMS file, the most recent dataset available at the time of this analysis. It is important to note that the 2005-2007 pre-recession time period from which this data was collected was characterized by a healthy local economy, thriving development, low unemployment rates, more hours of employment per week for workers, and more fully occupied commercial buildings.[19] The end result is that the outcomes produced in this analysis are likely to be conservative estimates, showing worker households at a high point in the economic cycle.[20]

The distribution of full-time workers across AMI bands in each category of development is shown in Table 1-5. Using the 2005-2007 ACS 3-year PUMS file, the Economic Roundtable completed the following steps to create the distribution of workers by AMI bands:

1. Flagged all full-time workers in worker households in the City of Los Angeles.
2. Used an industry-development category matrix to code these workers into a development category based on the primary industry in which they worked.
3. Coded all workers into the appropriate AMI band, which is based not on their personal earnings, but on their household size and the total earned income of their household.

Table 1-5
Distribution of Full-time Workers in Each Development Category by AMI Band, City of Los Angeles

Development Category	AMI Band								
	0% to 30%	31% to 50%	51% to 80%	61% to 80%	81% to 120%	121% to 150%	151% to 200%	Greater than 200%	Total
Airports	6%	8%	20%	16%	27%	8%	15%	16%	100%
Amusement – Spectator sports[1]	6%	7%	13%	8%	18%	10%	14%	33%	100%
Amusement – Recreation or amusement	11%	10%	22%	16%	20%	11%	11%	15%	100%
Churches	4%	19%	19%	12%	28%	12%	8%	11%	100%
Gas Service Stations	26%	9%	22%	14%	20%	6%	14%	4%	100%
Hospitals (General)	4%	9%	17%	13%	24%	14%	12%	20%	100%
Hospitals (Convalescent)	13%	17%	21%	15%	24%	14%	4%	8%	100%
Hotels	13%	23%	26%	15%	20%	8%	5%	7%	100%
Manufacturing (Moderate Hazard)	13%	18%	25%	15%	20%	8%	6%	9%	100%
Manufacturing (Low Hazard)	8%	17%	31%	21%	22%	10%	7%	5%	100%
Manufacturing (High Hazard)	5%	15%	23%	16%	20%	9%	13%	15%	100%
Misc. Bldg or Structure (High Hazard)	12%	23%	19%	18%	28%	7%	6%	6%	100%
Misc. Bldg or Structure (Moderate Hazard)	16%	22%	24%	15%	19%	8%	6%	5%	100%
Misc. Bldg or Structure (Low Hazard)	13%	16%	18%	12%	30%	14%	4%	6%	100%
Office Buildings (F.I.R.E., Business)	5%	9%	16%	11%	20%	12%	14%	24%	100%
Offices (Couriers and Delivery Services)	9%	18%	24%	19%	16%	9%	19%	5%	100%
Public Garage (Parking Lots & Garages)[2]	13%	19%	24%	15%	22%	7%	7%	9%	100%
Public Garage (Auto Repair, etc.)	15%	25%	26%	16%	18%	7%	5%	5%	100%
Public and Private Utilities	5%	1%	5%	4%	28%	18%	21%	21%	100%
Restaurants	18%	23%	26%	16%	18%	8%	3%	5%	100%
Retail B (Rental & Leasing Centers)	13%	19%	24%	15%	22%	7%	7%	9%	100%
Retail M (Grocery, Office Supplies, Florists)	11%	17%	24%	16%	20%	10%	8%	10%	100%
Schools	3%	8%	15%	10%	24%	16%	15%	18%	100%
Swimming Pools/Spas[3]	11%	10%	22%	16%	20%	11%	11%	15%	100%
Theatres	6%	7%	13%	8%	18%	10%	14%	33%	100%
Warehouse B (e.g. Motion Picture & Video)	3%	4%	13%	9%	18%	11%	14%	37%	100%
Warehouse M (Merchant Wholesalers)	8%	18%	25%	16%	20%	9%	8%	12%	100%
Warehouse S (Transportation)	15%	24%	25%	16%	18%	7%	6%	4%	100%
Total	**9%**	**15%**	**21%**	**14%**	**20%**	**10%**	**10%**	**15%**	**100%**

Source: 2005-2007 American Community Survey, Economic Roundtable Analysis.
Universe: Employed civilian full-time workers age 16 years and over who live in the City of LA in a worker household.
Notes: [1] Development category could not be specified as a discrete category using Census data. It is included in the "Theatre" development category and uses the same distribution by AMI bands. [2] Development category could not be specified as a discrete category using Census data. It is included in the "Retail (16) Business Group B" development category and uses the same distribution by AMI bands. [3] Development category could not be specified as a discrete category using Census data. It is included in the "Amusement (4), Assembly Group A3" development category and uses the same distribution by AMI bands.

This methodology makes it possible to provide a realistic picture of how workers are distributed across AMI bands, allowing us to take into consideration the array of factors that determine the AMI band in which a worker will fall. The distribution found in Table 1-5 takes into account that: occupations and wage levels vary among the industries that comprise each development category, workers belong to households that vary in size, and there are often multiple workers who contribute to household earned income.

Citywide, 45 percent of full-time workers fall into the 3 lowest AMI bands – 9 percent in the extremely-low-income band (0 percent to 30 percent of AMI), 15 percent in the very-low-income band (31 percent to 50 percent of AMI), and 21 percent in the low-income band (51 percent to 80 percent of AMI). The distribution of workers across AMI bands varies greatly by development category. The largest shares of workers falling in the 3 lowest AMI bands tend to be in development categories linked to low-wage, low-skill jobs; examples include:

- Restaurants 67 percent
- Public Garage (Auto Repair, etc.) 66 percent
- Warehouse S (Transportation) 64 percent
- Misc. Building (Moderate Hazard) 62 percent
- Hotels 62 percent

Step 4: Earned Income Deficit per Worker

Earned Income Deficit

In this step we quantify the extent to which the average worker household in each AMI band can or cannot afford rental housing in the City of Los Angeles. We do this by measuring the gap between the mean annual rent for an apartment in the City of Los Angeles and the amount of earned income that households can pay for an affordable rent, which is no more than 30 percent of their household's earned income. The difference between these two amounts is referred to as the "earned income deficit" and represents the deficit or surplus of earned income that households have for paying rent at the 30 percent affordability level. This is the *nexus* between commercial property development and demand for affordable housing.

The earned income deficit for the average worker household in each AMI band is shown in Table 1-6. Since the mean rent for an apartment in the City costs more than 30 percent of the average worker household's earned income in the three lowest AMI bands, there is an earned income deficit for these households. Average worker households in the 81 percent and above AMI bands, on the other hand, earn sufficient income that the average rent in the City is not more than 30 percent of their earned income. The earned income deficits for extremely-low-income (0 percent to 30 percent of AMI), very-low-income (31 percent to 50 percent of AMI), and low-income (51 percent to 80 percent of AMI) worker households are used to calculate the earned income deficit per worker in each development category. The mean annual earned income deficit for worker households in the three lowest AMI bands are:

- Extremely low income (0 percent to 30 percent AMI): $10,455

- Very low income (31 percent to 50 percent AMI): $5,994
- Low income (51 percent to 80 percent AMI): $1,235

Table 1-6
Mean Annual Earned Income Deficit by AMI Bands

	AMI Bands					
	0% to 30%	31% to 50%	51% to 80%	81% to 120%	121% to 150%	151% to 200%
Mean Annual Earned Income for Worker Households (2009$)	$12,805	$27,674	$43,538	$65,158	$88,055	$112,497
Mean Annual Rent for an Apartment in City of LA (2009$)	$14,297	$14,297	$14,297	$14,297	$14,297	$14,297
30% of Mean Annual Earned Income (2009$)	$3,842	$8,302	$13,061	$19,547	$26,416	$33,749
Mean Annual Earned Income Deficit (2009$)	**$10,455**	**$5,994**	**$1,235**	**-$5,251**	**-$12,120**	**-$19,452**

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis.

Earned Income Deficit per Worker

As established in previous steps, only a portion of the workers in each development category fall into the three lowest AMI bands. This step establishes that the earned income deficit for each development category is based on and proportional to the share of workers in the three lowest AMI bands who earn less than sufficient income to afford rental housing in the City of Los Angeles. An example of this calculation for developments that house office workers is as follows:

AMI Band	Mean Annual Earned Income Deficit	X	Share of Workers in AMI Band for Office Buildings	=	Mean Annual Earned Income Deficit per Worker
Extremely-Low-Income (0%-30% of AMI)	$10,455	x	5% (5.46%)	=	$571
Very-Low-Income (31%-50% of AMI)	$5,994	x	9% (8.83%)	=	$529
Low-Income (51%-80% AMI)	$1,235	x	16% (16.42%)	=	$203
Mean Annual Earned Income Deficit per Worker in Office Buildings					**$1,302**

Note: Totals may differ due to rounding. The same methodology used in this example is used to calculate figures in Table 7.

The earned income deficit per worker in each development category is calculated by multiplying the earned income deficit for each of the three AMI bands by the share of workers

that fall in corresponding AMI bands. This process averages the earned income deficit across all workers in each development category and identifies the mean deficit per worker. The mean annual earned income deficit per worker for all development categories is shown in Table 1-7. The previous example showing how the mean annual earned income deficit per worker is calculated for office buildings is replicated to produce the results in Table 1-7, which show the mean annual earned income deficit per worker in each development category.

Table 1- 7
Earned Income Deficit per Worker by Development Category

Development Category	Share of Workers in AMI Bands (City of Los Angeles)			Mean Annual Earned Income Deficit per Worker (2009$)			
	0% to 30%	31% to 50%	51% to 80%	0% to 30%	31% to 50%	51% to 80%	**Total**
Airports	6%	8%	20%	$622	$462	$245	$1,329
Amusement – Spectator sports	6%	7%	13%	$643	$397	$161	$1,201
Amusement – Recreation or amusement	11%	10%	22%	$1,169	$570	$275	$2,014
Churches	4%	19%	19%	$464	$1,115	$235	$1,813
Gas Service Stations	26%	9%	22%	$2,731	$519	$270	$3,520
Hospitals (General)	4%	9%	17%	$369	$561	$213	$1,143
Hospitals (Convalescent)	13%	17%	21%	$1,395	$1,009	$263	$2,667
Hotels	13%	23%	26%	$1,355	$1,350	$318	$3,023
Manufacturing (Moderate Hazard)	13%	18%	25%	$1,336	$1,093	$307	$2,736
Manufacturing (Low Hazard)	8%	17%	31%	$856	$1,036	$384	$2,276
Manufacturing (High Hazard)	5%	15%	23%	$534	$878	$282	$1,694
Misc. Bldg or Structure (High Hazard)	12%	23%	19%	$1,212	$1,349	$237	$2,799
Misc. Bldg or Structure (Moderate Hazard)	16%	22%	24%	$1,696	$1,333	$297	$3,326
Misc. Bldg or Structure (Low Hazard)	13%	16%	18%	$1,392	$956	$225	$2,574
Office Buildings (F.I.R.E., Business)	5%	9%	16%	$571	$529	$203	$1,302
Offices (Couriers and Delivery Services)	9%	18%	24%	$894	$1,084	$297	$2,276
Public Garage (Parking Lots & Garages)	13%	19%	24%	$1,347	$1,121	$293	$2,761
Public Garage (Auto Repair, etc.)	15%	25%	26%	$1,540	$1,491	$319	$3,350
Public and Private Utilities	5%	1%	5%	$555	$31	$67	$653
Restaurants	18%	23%	26%	$1,839	$1,350	$316	$3,505
Retail B (Rental & Leasing Centers)	13%	19%	24%	$1,347	$1,121	$293	$2,761
Retail M (Grocery, Office Supplies, Florists)	11%	17%	24%	$1,127	$1,043	$301	$2,470
Schools	3%	8%	15%	$263	$477	$187	$927
Swimming Pools/Spas	11%	10%	22%	$1,169	$570	$275	$2,014
Theatres	6%	7%	13%	$643	$397	$161	$1,201
Warehouse B (e.g. Motion Picture & Video)	3%	4%	13%	$308	$254	$156	$718
Warehouse M (Merchant Wholesalers)	8%	18%	25%	$833	$1,065	$303	$2,200
Warehouse S (Transportation)	15%	24%	25%	$1,553	$1,446	$313	$3,312
Total	**9%**	**15%**	**21%**	**$976**	**$873**	**$256**	**$2,105**

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis.
Notes: Mean annual earned income deficit per job calculations may be impacted by the rounding off of the percent of workers in AMI bands. Figures in this table are calculated by using the same methodology outlined in the "office building" example in this section.

Step 5: Adjustment Factors

Before converting the mean annual earned income deficit per worker into a deficit per square foot, several factors that affect the demand for affordable housing must be taken into consideration. This ensures that the final deficit per square foot is based on and proportional to the impact that each type of development will have on the demand for affordable housing. In this section, we present two adjustment factors that are used in calculating the final deficit per square foot as well as four other factors that are considered, but not used, in the final calculation.

Adjustment Factor #1: Converting Workers to Worker Households (utilized)

Since the demand for affordable housing is based on households and not on individual workers, the share of workers who demonstrate a need for affordable housing must be converted into households. This adjustment recognizes that there is typically more than one worker per household, thus warranting a reduction in affordable housing demand. The Economic Roundtable uses the mean number of workers per worker household in the City of Los Angeles to convert workers to worker households. Based on Census data, there is an average of 1.6 workers per worker household in the City.[21] This means that each worker requiring affordable housing will need only 62.5 percent of a housing unit.

Adjustment Factor #2: Impact over Lifespan of Building (utilized)

The projected life span of a building is an important factor for determining the total housing impact per worker. To account for the long-term impacts of developments that increase the demand for affordable housing, the Economic Roundtable uses the depreciation schedule set forth by the Internal Revenue Service (Form 4562) of 39 years for commercial buildings. A factor of 39 is incorporated into the final per square foot impact calculation.

Adjustment Factor #3: Work-Residence Flows (not utilized)

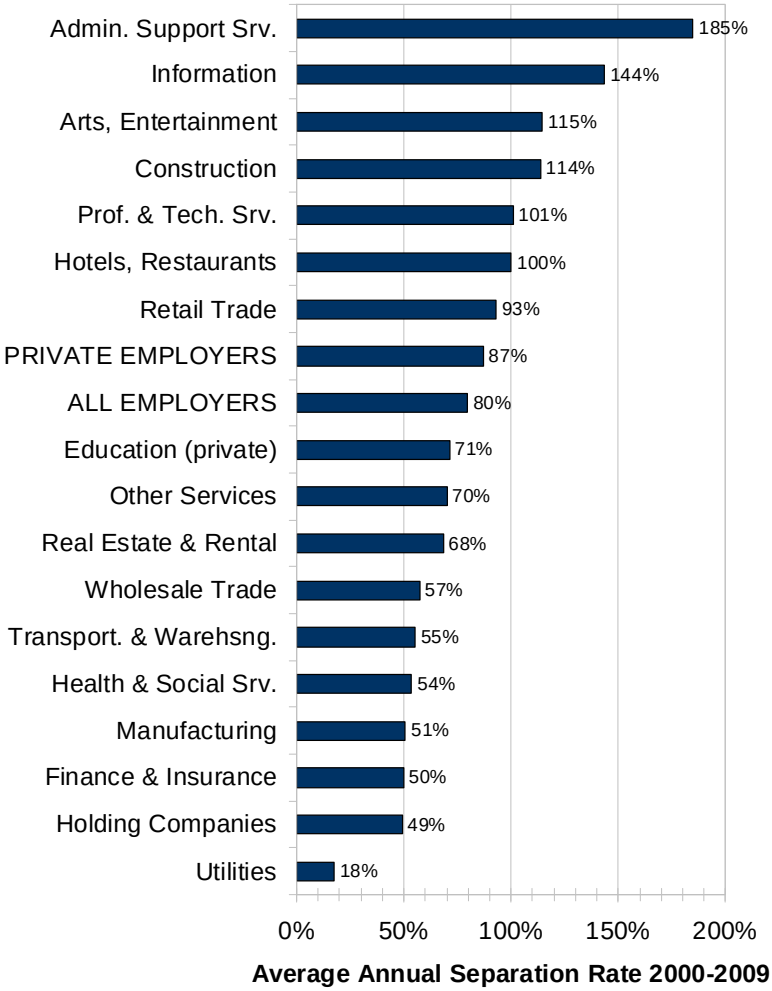
The reality of work-residence dynamics in the regional economy is that not all workers live in the same city where they work. At a given point in time, roughly half of workers employed in the City of Los Angeles are estimated to live outside of City boundaries.[22] Some linkage studies have incorporated an adjustment factor for work-residence flows, reducing the estimated affordable housing demand created by new development proportionate to the share of workers living outside the city; other studies have not made this adjustment.[23] To assess how development of new employment sites affects housing outcomes for workers employed at those sites over the life of the building, we examine information about employment and housing turnover among workers over the life of a building, and the likely future housing conditions of workers living outside the City when they are employed at work sites in new developments.[24]

Job Separation Rate for All Workers

New developments can house many generations of business tenants and workers over the projected 39-year life span of commercial buildings. This has effects that extend far beyond the initial pool of workers who fill jobs in a newly opened building. The wage levels of jobs offered in a building will determine the housing options available to many generations of workers over the entire life of the building.

The California Employment Development Department provides county-level data about separation rates for different industry sectors (Figure 1-2). This shows the number of workers who were employed by a business in one quarter of a year, but not employed in the subsequent quarter.[25] The average annual separation rate for all private sector jobs in Los Angeles County over the past decade was 87 percent. Industry sectors with project-specific employment cycles or work forces comprised predominantly of lower-skilled workers have above-average separation rates.

Figure 1-2
Annual Average Rate of Job Separation by Industry Sector
Los Angeles County *2000-2009*



Source: California Employment Development Department, Quarterly Workforce Indicators (QWI). Industry sectors are drawn from the 2007 NAICS.

Six sectors have annual separation rates equivalent to more than 100 percent of the point-in-time labor force. Five of those sectors employ workers on a project-specific basis: Administrative support services (largely comprised of temporary employment agencies), Information (which includes the movie industry), Arts, entertainment and recreation, Construction, and Professional and technical services. This is followed by Hotels and restaurants, which employ many lower-skilled workers.

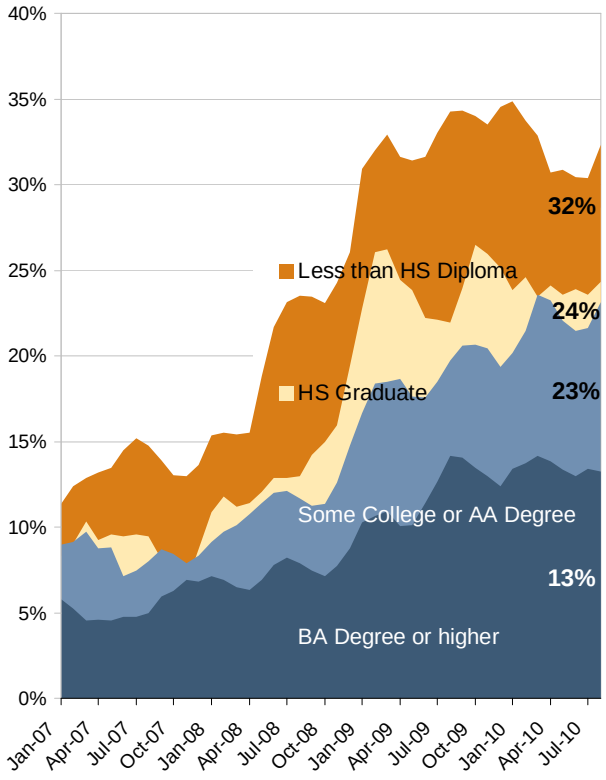
What this means is that *the average workspace for a single private sector employee is likely to be occupied by 34 different workers over the 39-year life of the building.*[26] If it is a work space for a low-wage job (i.e., paying wages 80 percent or less of AMI), it will perpetuate inadequate housing choices for many workers over decades to come. Workers in jobs paying

near-median or higher wages are likely to be able to find adequate housing that they can afford, and to support development of market-rate housing. Low-wage workers, that is, workers earning 80 percent or less of the Area Median Income, are likely to need housing that is subsidized to make it affordable, or, in the absence of such housing, are likely to be rent-burdened and/or live in overcrowded housing, either inside or outside of the City.

Job Separation Differential for Lower-Skilled Workers

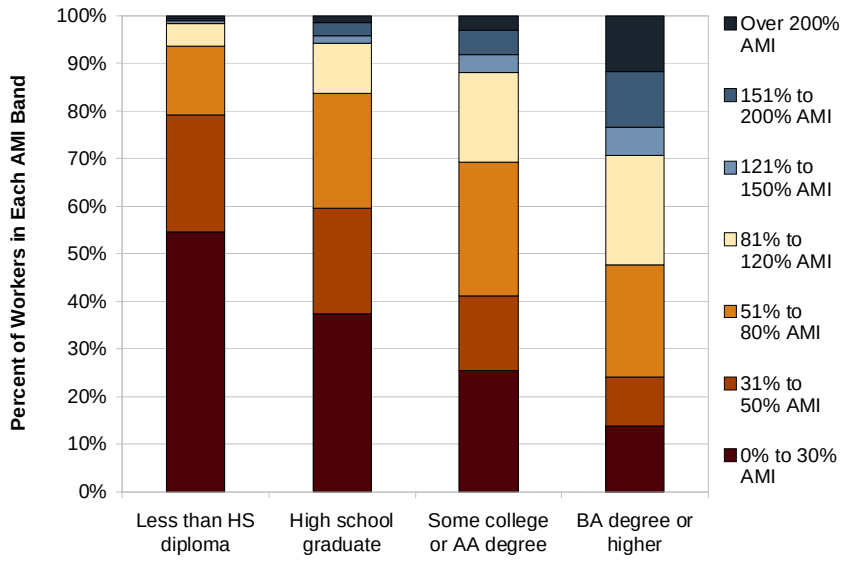
When we look at the under-employment rate, which includes discouraged workers as well as unemployed workers who are actively looking for a job, we see that workers with lower levels of education, who typically also have lower wages, have above-average rates of joblessness (Figure 1-3).[27] Under-employment rates are roughly one-half higher than average (32 vs. 24 percent) for workers without a high school diploma, average for high school graduates, and one-half lower than average (13 vs. 24 percent) for workers with a B.A. degree or higher.

Figure 1-3
Los Angeles County Under-Employment Rate by Level of Education



Source: Economic Roundtable analysis of Bureau of Labor Statistics (BLS) Current Population Survey (CPS) data, using a 3-month moving average and are not seasonally adjusted.

Figure 1-4
Education Level by AMI Band among Los Angeles Workers



Source: U.S. Census Bureau, ACS PUMS 2005-2009

There is a direct correlation between lower-skilled workers and lower-paid workers, as shown in Figure 1-4.[28] Among worker with less than a high school diploma, 55 percent are in the lowest AMI band (0 to 30 percent of AMI), and a total of 94 percent are in the bottom three AMI bands, with incomes that are 80 percent or less of AMI.

Among workers who have just a high school diploma, 84 percent are in the bottom three AMI bands.

In contrast, among workers with a B.A. degree or higher, 52 percent have earnings in the top four AMI bands (incomes above 80 percent of AMI).

The jobless rate among lower-skilled, lower-paid workers that is twice as high as average indicates that job separations are roughly twice as frequent among these workers. Job separation data and the higher turnover rate for low-wage workers indicate that *the typical workspace for a private sector employee earning 80 percent or less of AMI will be occupied by 68 different workers over the 39-year life of the building. These 68 individuals will include workers who live both outside and inside the City.*

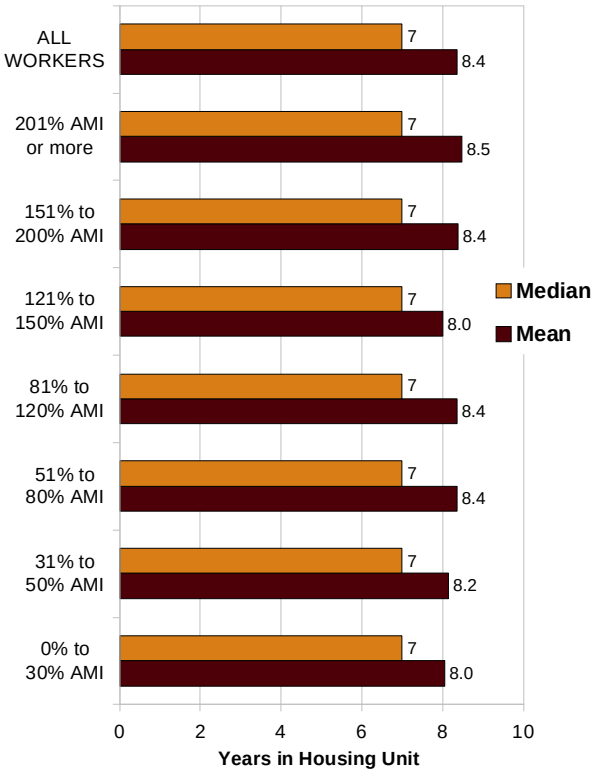
Low-wage workspaces are likely to affect wages and housing options for a large pool of low-wage workers over the course of a building's useful life. In the absence of affordable housing, many of these workers are likely to remain inadequately housed throughout the housing market for Los Angeles workers, both inside and outside the City.

Housing Turnover

There is a reasonable likelihood that a worker who holds a job inside the City but lives outside the City will move into housing located within the City at some point in his or her working career. Across all income levels, the typical (median) worker has been in the same housing unit for approximately seven years, with an average length of occupancy for all workers of approximately 8 years, as shown in Figure 1-5.[29] This suggests that *over an individual's working career, and over the useful life span of a commercial building, a worker may live in roughly five different housing units, with some inside and others outside the City.*

Given the rate of job turnover and the rate of housing turnover, it seems most accurate to think of commercial workspaces as affecting a pool of workers in the greater Los Angeles housing market, with both place of work and place of residence changing multiple times for a typical worker.

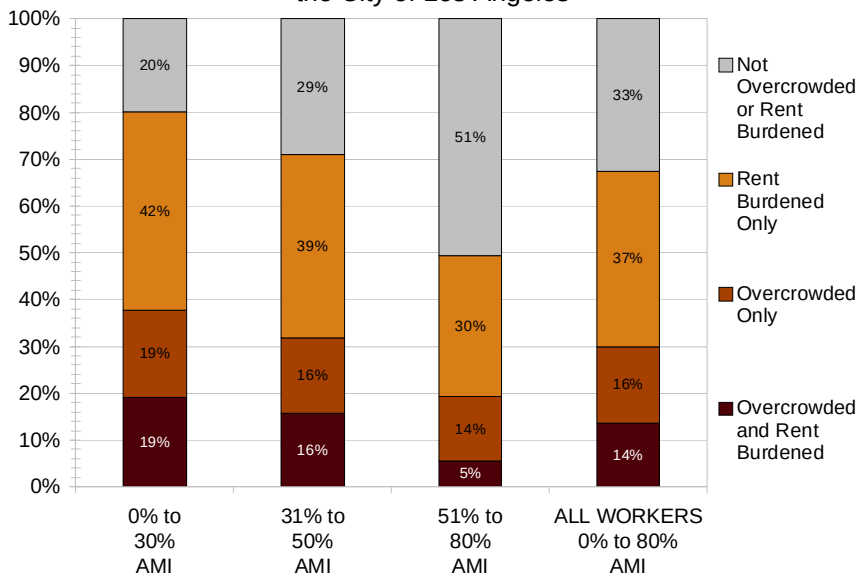
Figure 1-5
Length of Time in Same Housing Unit



Source: U.S. Census Bureau, ACS PUMS 2005-2009, data for City of Los Angeles working age (18-64) residents with earned income in the past year.

Housing Outcomes for Workers Living Outside of Los Angeles

Figure 1-6
Housing Conditions of Workers Employed Inside, but Living Outside, the City of Los Angeles



Source: U.S. Census Bureau, ACS PUMS 2005-2009

We do not have a precise data source for determining the housing conditions of workers with jobs located in the City and homes outside of the City, but we are able to identify workers who live outside Los Angeles and likely work in the City.[30] Out of this population of workers living outside the City and likely commuting into the City, *over two-thirds of workers with earnings in the bottom three AMI bands are rent burdened, overcrowded or both*, as shown in Figure 1-6. This includes 80 percent of workers with earnings 30 percent or less of AMI ($1 to $16,712 annually in 2007 dollars), 71 percent of workers with earning 31 to 50 percent of AMI ($16,713 to $24,711 annually), and 49 percent of workers with earnings 51 to 80 percent of AMI ($24,712 to $39,292 annually).

Adverse housing impacts for this imprecisely drawn population of workers commuting into the City are not quite as pervasive as those for workers in the same AMI bands living in the City of Los Angeles (see Figure 1-9 later). In particular, there appears to be a 7 percent lower rate of inadequate housing among workers in the 51 to 80 percent of AMI earnings band who commute into the City. However, these slightly better housing outcomes come at the cost of both money and time for longer commutes.

The additional time spent traveling to work by workers who we estimate to be commuting to jobs in the City of Los Angeles compared workers who have jobs closer to their homes is similar across all AMI bands but varies by mode of transportation. The estimated average additional commuting time for workers living outside the City and going to jobs in Los Angeles is broken out in Table 1-8 by mode of transportation.[31] *Workers traveling by private vehicle to jobs in the City spend an additional 121 hours a year commuting, if they travel by bus they spend an additional 192 hours a year. This is the equivalent of over three workweeks for drivers and nearly five workweeks for public transit passengers.*

Table 1-8
Estimated Average Increase in Commuting Time for Workers Living Outside and Working Inside Los Angeles

	Additional Minutes for 1-Way Trip	Additional Minutes for Round Trip	Additional Weekly Minutes	Additional Monthly Minutes	Additional Annual Minutes	Additional Annual Hours
Car, truck, or van	28	56	140	606	7,277	121
Bus	44	89	222	961	11,531	192

Source: Economic Roundtable Analysis of U.S. Census Bureau 2005-2009 American Community Survey Public Use Microdata Sample

Summary

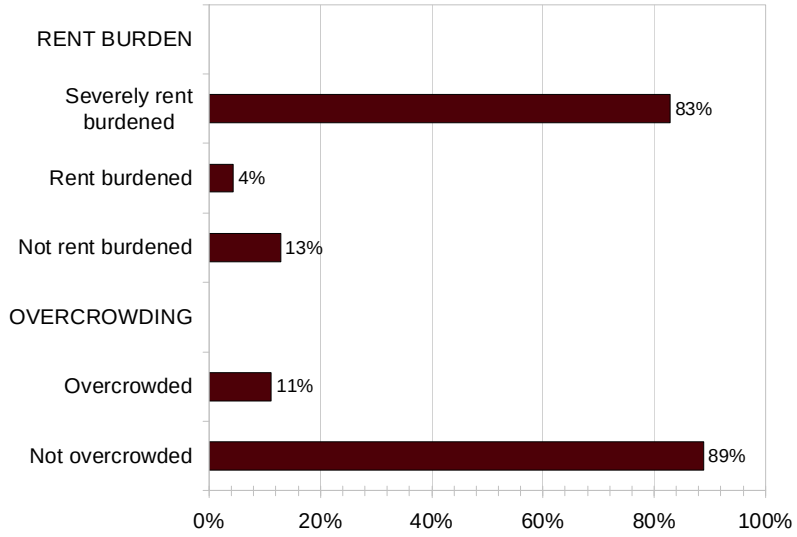
There is a direct connection between low-wage jobs in the City of Los Angeles and future housing outcomes throughout the greater Los Angeles housing market for workers who hold those jobs. A key fact demonstrating this connection is that commercial buildings affect large numbers of workers, and the various housing units each worker lives in over his or her working years are likely to include units located both inside and outside City boundaries. The workspace for a single low-wage worker is likely to house 68 different employees over the life of a commercial building, and each of those employees typically occupies five different housing units over their working career. The changing identities of workers who occupy a particular workspace and the changing location of workers' housing undermine the idea that workers living outside the City are clearly differentiated from those living in the City.

Adjustment Factor #4: New Labor Force Entrants and Re-entrants (not utilized)

A portion of jobs created by new commercial development will be filled by persons already housed in the City, but that were not previously working (not in labor force or unemployed). At least one linkage study used an adjustment factor based on an estimated percent of new jobs that will be filled by already-housed workers; other studies have not done this.[32]

In essence, this is an argument that the current housing conditions of these labor force entrants will avert future demand for affordable housing. We evaluate this argument by examining information about the housing conditions of workers who have been out of the labor force and recently begun new jobs, and their future prospects for being able to afford housing.

Figure 1-7
Housing Conditions of New Labor Force Entrants and Re-Entrants



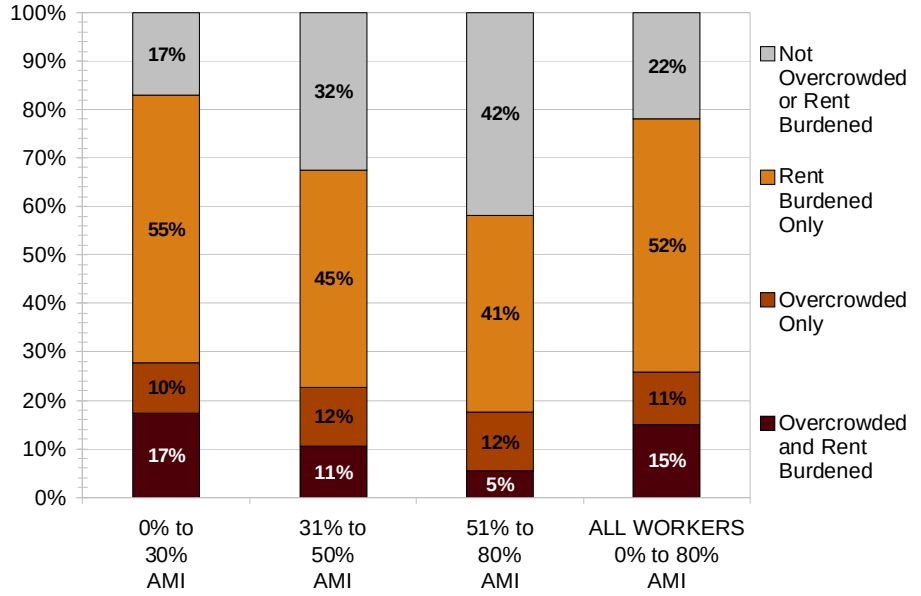
Source: U.S. Census Bureau, ACS PUMS 2005-2009

Workers who have been out of the labor force are typically very poorly housed when they entered new jobs (Figure 1-7), and if their new job pays 80 percent or less of the median income, their inadequate housing conditions will be perpetuated because of their low wages.[33]

Eighty-seven percent of unemployed workers are rent burdened when they enter new jobs, including 83 percent who are severely rent burdened. Moreover, 11 percent are also overcrowded because of being unable to find affordable housing. If the wages earned once a worker is participating in the labor force are not high enough to afford housing, he or she will require affordable housing, or else their inadequate housing conditions will continue because of their low wages.

In addition to being rent burdened, unemployed workers are inadequately housed when they enter a new job, as shown in Figure 1-8.[34] *Seventy eight percent of workers whose earnings in the previous year put them in one of the three lowest AMI bands and who are currently unemployed are rent burdened and/or overcrowded.* Thirty nine percent of these workers are severely rent burdened. Among workers in the lowest AMI band, 83 percent are rent burdened and/or overcrowded.

Figure 1-8
Housing Conditions of Unemployed Workers



Source: U.S. Census Bureau, ACS PUMS 2005-2009

In summary, there is a connection between low-wages for workers moving from unemployment into new jobs and their future housing outcomes. This is because nearly all of these workers are inadequately housed when they begin work and if their new job pays 80 percent or less of the median income, their inadequate housing conditions will be perpetuated because of their low wages. They will require affordable housing, or without such housing will continue to be inadequately housed.

Adjustment Factor #5: Job Substitution vs. New Jobs (not utilized)

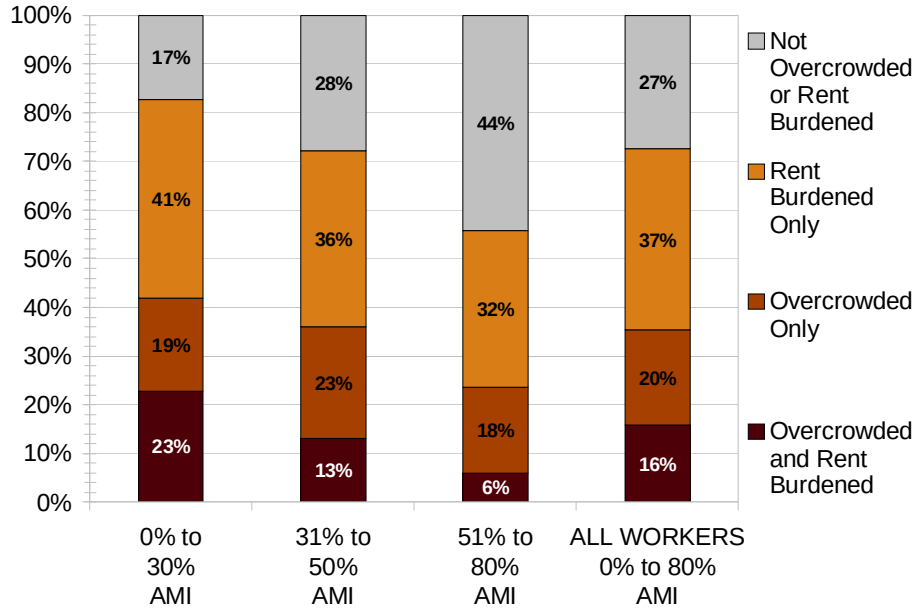
At least one linkage study has taken into account that new commercial development is not always equivalent to net job gain, other studies have not done this.[35] Based on the assumption that workers who are moving between jobs are already housed, they have made a proportionate reduction in the estimated affordable housing demand by discounting demand from already-housed workers.

Again, this is an argument that the current housing conditions of a group of workers will avert future demand for affordable housing. We evaluate this argument by examining information about the current housing conditions of employed workers, since this is the best available representation of workers who have changed jobs but remained continuously employed, and their future prospects for being able to afford housing.

Seventy-three percent of currently employed workers in the bottom three AMI bands are rent burdened and/or overcrowded, as shown in Figure 1-9.[36] This includes 16 percent who are both overcrowded and rent burdened, 20 percent who are overcrowded only, and 37 percent who are rent burdened only.

There is a connection between low-wage jobs in the City of Los Angeles and housing outcomes for workers moving between jobs. This is because most workers in low-wage jobs are inadequately housed when they move into a new job, and if their new job pays 80 percent or less of the median income, their inadequate housing conditions will be perpetuated because of their low wages. They will require affordable housing, or without such housing will continue to be inadequately housed.

Figure 1-9
Housing Conditions of Workers Moving Between Jobs



Source: U.S. Census Bureau, ACS PUMS 2005-2009

Adjustment Factor #6: Employment Multipliers – Indirect and Induced Employment Growth (not utilized)

In addition to creating direct employment, new commercial development creates multiplier effects that ripple throughout the economy, causing indirect and induced employment growth. The Economic Roundtable, however, includes only direct employment impacts of commercial development on affordable housing demand. Indirect and induced employment growth is not included in the analysis because doing so would double-count the employment growth that occurs when suppliers expand. Indirect and induced employment growth is captured when it leads to new commercial development, which in turn is identified in the building permit process.

Step 6: Square Feet per Job

The Economic Roundtable created new, industry-specific ratios of square feet per job for the City of Los Angeles, using current employment and property data.[37] Businesses in the City of Los Angeles occupy a mean of 746 square feet of improved building space per job, with this amount varying significantly by industry. For use in this study, square feet per job ratios are aggregated by development category (Table 1-9, Figure 1-10). Development categories with the highest ratios of square feet per job – those providing more space per worker – include public and private utilities, public garages (parking lots & garages), hotels, churches and theatres. Development categories with the lowest ratios of square feet per job include gas service stations, public administration (government) and restaurants.

Table 1-9
Average Square Feet per Job in the City of Los Angeles, by Development Category

Development Category	Mean S.F. per Job
Airports	909
Amusement - Spectator sports	639
Amusement - Recreation or amusement	478
Churches	1,241
Gas Service Stations	233
Hospitals (General)	440
Hospitals (Convalescent)	409
Hotels	1,589
Manufacturing (Moderate Hazard)	758
Manufacturing (Low Hazard)	606
Manufacturing (High Hazard)	668
Misc. Bldg or Structure (High Hazard)	319
Misc. Bldg or Structure (Moderate Hazard)	421
Misc. Bldg or Structure (Low Hazard)	457
Office Buildings (F.I.R.E., Business)	836
Offices (Couriers and Delivery Services)	359
Public Administration (Government)	238
Public Garage (Parking Lots & Garages)	1,631
Public Garage (Auto Repair, etc.)	713
Public and Private Utilities	1,871
Restaurants	312
Retail B (Rental & Leasing Centers)	694
Retail M (Grocery, Office Supplies, Florists)	737
Schools	435
Swimming Pools/Spas	546
Theatres	1,087
Warehouse B (e.g. Motion Picture & Video)	915
Warehouse M (Merchant Wholesalers)	948
Warehouse S (Transportation)	498
Total, All Employers	746

Source: Economic Roundtable; California Employment Development Department. Quarterly Census of Employment and Wages, 3rd Quarter 2007; Los Angeles County Assessor's Office, 2009 Secured Basic File Abstract (DS04). Universe: Formal sector employers with 2+ employees located in the City of Los Angeles.

Methodology

Square feet per job ratios produced by this study reflect the *real* universe of Los Angeles businesses and the workplaces they occupy. This includes businesses housed in structures typical for their industry and others occupying atypical developments.[38] The ratios are based on linking two data sets:

- Quarterly Census of Employment and Wages (QCEW) records that include numbers of employees and industry classification (NAICS).
- County assessor's property records that provide data on square footage of improvements and number of units per parcel.

Matches between these two datasets – employers and the space they occupy – were made using two methods:

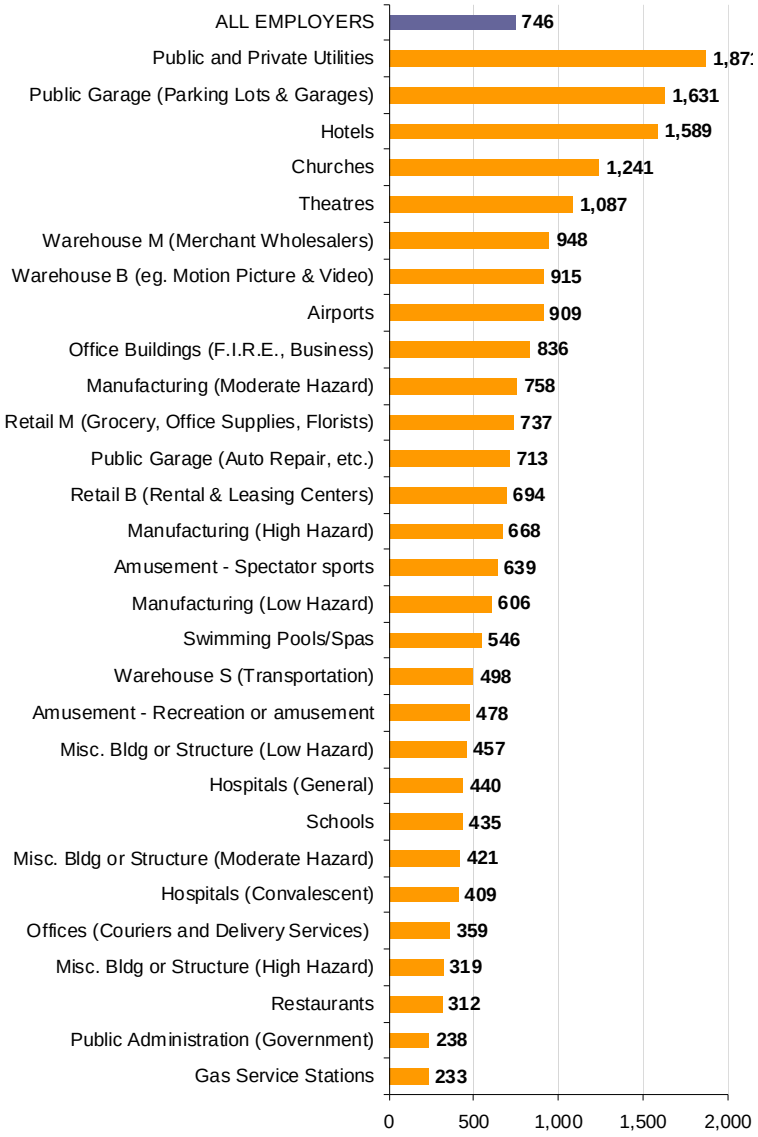
1. Probabilistic matching based upon address components: street address, suite/unit, city and ZIP code
2. Geographic proximity matching between parcel polygons and geocoded address points using GIS software. Matches established by this method also had to have street

number and ZIP code matches, or else they were rejected.

This dual methodology created over 36,000 successful matches for business establishments located in the City of Los Angeles, a strong sample upon which to estimate square feet per job ratios. In order to ensure that the matches used represented the most typical ratios of square feet per job, only the middle half of the overall distribution (the middle two quartiles) of square feet per job ratios in each development category were kept (Table 1-10). This serves to eliminate the influence of outliers among the ratio values, where the space occupied by an employer is atypical compared to other employers in the same industry.[39]

This new data on square feet per job in the City of Los Angeles is used to determine the demand for affordable housing generated by various types of new commercial development, since a building can accommodate different numbers of workers depending on which industry upon occupies it; for example, business services providers versus manufacturers.

Figure 1-10
Mean Square Feet per Job by Development Category, City of Los Angeles



Source: Economic Roundtable; California Employment Development Department. Quarterly Census of Employment and Wages, 3rd Quarter 2007; Los Angeles County Assessor's Office, 2009 Secured Basic File Abstract (DS04). Universe: Formal sector employers with 2+ employees located in the City of Los Angeles.

Table 1-10
Square Feet per Job Matches between Employer and Parcel Records: Included versus Excluded Matches

Excluded	**Included**		Excluded	All Cases
Below 25th percentile	Between 25th & 50th percentile	Between 50th & 75th percentile	Above 75th percentile	
N=9,025	N=9,042	N=9,042	N=9,033	N=36,142

Source: Economic Roundtable.

Step 7: Earned Income Deficit per Square Foot

The final step in the process of calculating the per-square-foot impact of commercial development on affordable housing demand is to apply adjustment factors to the earned income deficit per worker and dividing it by the mean square feet per job in each development category. The impact identified through this calculation can be scaled to the size of each type of development and is proportional to the new affordable housing demand created by each type of development. The following formula was used to calculate the final per square foot impact:

Earned Income Deficit per Sq. Ft. = (Earned Income Deficit per Worker / Mean Workers per Worker Household (1.6) x Life Span of Building (39)) / Mean Sq. Ft. per Worker

The earned income deficit per square foot for each development category is shown in Table 1-11. This is the cumulative impact per square foot that each development type has on affordable housing demand over the life of the building. In the City of Los Angeles, the mean earned income deficit per square foot for all development types is $69. Across all commercial development types, the earned income deficit per square foot ranges from as low as $9 (public and private utilities) to as high as $369 (gasoline service stations) over the life of a building.

This is the final quantified measure of the *nexus* between commercial property development and demand for affordable housing.

Table 1-11
Total Earned Income Deficit per Square Foot

Development Category	Total Mean Annual Earned Income Deficit per Worker (2009$)	Adjustment Factors		Mean Square Feet per Job	Total Earned Income Deficit per Square Foot (2009$)
		Mean Workers per Worker Household	Life Span of Building (Years)		
		1.6	39		
Airports	$1,329	$831	$32,405	909	$36
Amusement – Spectator sports	$1,201	$751	$29,280	639	$46
Amusement – Recreation or amusement	$2,014	$1,259	$49,092	478	$103
Churches	$1,813	$1,133	$44,204	1,241	$36
Gas Service Stations	$3,520	$2,200	$85,808	233	$369
Hospitals (General)	$1,143	$714	$27,862	440	$63
Hospitals (Convalescent)	$2,667	$1,667	$65,014	409	$159
Hotels	$3,023	$1,889	$73,686	1,589	$46
Manufacturing (Moderate Hazard)	$2,736	$1,710	$66,686	758	$88
Manufacturing (Low Hazard)	$2,276	$1,423	$55,486	606	$92
Manufacturing (High Hazard)	$1,694	$1,059	$41,290	668	$62
Misc. Bldg or Structure (High Hazard)	$2,799	$1,749	$68,214	319	$214
Misc. Bldg or Structure (Moderate Hazard)	$3,326	$2,079	$81,075	421	$192
Misc. Bldg or Structure (Low Hazard)	$2,574	$1,609	$62,738	457	$137
Office Buildings (F.I.R.E., Business)	$1,302	$814	$31,747	836	$38
Offices (Couriers and Delivery Services)	$2,276	$1,422	$55,467	359	$155
Public Garage (Parking Lots & Garages)	$2,761	$1,726	$67,295	1,631	$41
Public Garage (Auto Repair, etc.)	$3,350	$2,094	$81,667	713	$115
Public and Private Utilities	$653	$408	$15,916	1,871	$9
Restaurants	$3,505	$2,191	$85,444	312	$274
Retail B (Rental & Leasing Centers)	$2,761	$1,726	$67,295	694	$97
Retail M (Grocery, Office Supplies, Florists)	$2,470	$1,544	$60,218	737	$82
Schools	$927	$579	$22,593	435	$52
Swimming Pools/Spas	$2,014	$1,259	$49,092	546	$90
Theatres	$1,201	$751	$29,280	1,087	$27
Warehouse B (e.g. Motion Picture & Video)	$718	$449	$17,500	915	$19
Warehouse M (Merchant Wholesalers)	$2,200	$1,375	$53,628	948	$57
Warehouse S (Transportation)	$3,312	$2,070	$80,732	498	$162
Total	$2,105	$1,315	$51,298	746	$69

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis.

LINKAGE BETWEEN MARKET-RATE HOUSING DEVELOPMENT AND AFFORDABLE HOUSING DEMAND – THE HOUSING-HOUSING NEXUS

Introduction

New market-rate housing development contributes to the demand for affordable housing in ways similar to new commercial development. The occupants of both spend money that supports new employment, some of which contributes to the demand for affordable housing. However, while commercial development does so based upon the wages and salaries paid to workers employed directly by those businesses, the job impacts of residential development are attributable to the employment induced by *household spending of residents* who occupy market-rate housing units. Residents' aggregate household spending on goods and services induces local economic ripple effects that include the demand for labor – jobs that employ local workers who in turn must find housing they can afford. Examples of local goods and services consumed by households include:

- Grocery Food Stores
- Eating and Drinking Places
- Retail Stores
- Amusement and Recreation
- Hospitals and Doctors' Offices
- Nursing and Protective Care
- Automotive Dealers and Repair
- Real Estate Services

Market-rate housing development generates less demand for affordable housing than commercial development per square foot, but the overall volume of new market-rate housing development in Los Angeles generates demand for affordable housing. This section analyzes the amount of demand for affordable housing that different types and sizes of households in the City of Los Angeles generate and describes the methods for calculating these data.

Housing developments come in many types and sizes: single-family versus multi-family

Table 1-12
Number of Housing Properties, Units, Bedrooms and Square Feet of Improvements by Building Type in the City of Los Angeles

	Properties		Units		Bedrooms		SF of Improvements	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Single Family Residential	486,694	67%	457,806	34%	1,422,717	55%	824,254,704	50%
Condominiums	120,923	17%	119,983	9%	260,753	10%	164,832,501	10%
Multi-Family Rental	64,002	9%	650,974	49%	710,023	28%	537,864,605	33%
Duplex Residential	44,923	6%	89,110	7%	172,249	7%	90,507,107	5%
Mixed Use	4,448	1%	29	<1%	8,087	<1%	23,228,717	1%
Mobile Home	102	<1%	9,293	1%	-	-	10,222,300	1%
Artists-in-Residence	24	<1%	29	<1%	29	<1%	136,025	<1%
Total	721,116	100%	1,327,224	100%	2,573,858	100%	1,651,045,959	100%

Source: Economic Roundtable; Los Angeles County Assessor's Office, 2009 Secured Basic File Abstract (DS04). Notes: City of Los Angeles properties defined by Tax Rate Area. Mobile Homes data drawn from the US Census (Units) and LA County Assessor (Properties, aka 'Mobile Home Parks'); Square footage of improvements of mobile homes is estimated based upon average size of units being 1100 square feet.

versus mobile homes, owner-occupied versus rented, and with varying numbers of bedrooms and square footage. In the City of Los Angeles, single-family homes make up the largest category of housing based upon the number of properties, the number of bedrooms and the amount of square footage (Table 1-12). Multi-family rental properties provide a majority of housing units in the City. The household spending of these different sizes and types of housing units vary, and so their impacts on the City's overall demand for affordable housing vary as well.

Using data from several detailed sources specific to the City of Los Angeles[40] and a multi-step analysis, we have created estimates of the affordable housing demand generated by new market-rate housing developments in the City. This includes a calculation of the impact per square foot of different types and sizes of new housing (Table 1-13).

Households that spend more money create more impacts. Owner-occupied housing units generate more demand for affordable housing than renter-occupied units. In addition, larger homes (with more bedrooms and floor area) generate higher demand for affordable housing than smaller homes, although not on a per square foot basis. For example, a five bedroom single-family home creates $6.31 of demand for affordable housing per square foot, while a one bedroom rented apartment generates $8.22 per square foot, based on their relative household spending. This

Table 1-13
Demand for Affordable Housing that is Generated by Market-Rate Residential Housing Units

	Single Family Homes					
	Owned			Rented		
	Mean SF per Unit	Demand per SF	Demand per Avg. Sized Unit	Mean SF per Unit	Demand per SF	Demand per Avg. Sized Unit
No bedrooms						
1 Bedroom	838	$11.27	$9,444	838	$7.48	$6,270
2 Bedrooms	1,427	$8.94	$12,763	1,427	$5.82	$8,314
3 Bedrooms	2,247	$7.14	$16,039	2,247	$4.53	$10,175
4 Bedrooms	3,209	$7.07	$22,684	3,209	$3.88	$12,455
5+ bedrooms	4,949	$6.31	$31,213	4,949	$2.92	$14,429
Average	3,394	$5.28	$17,928	3,394	$2.47	$8,383

	Multi-Family Buildings					
	Owned (Condo)			Rented (Apartment)		
	Mean SF per Unit	Demand per SF	Demand per Avg. Sized Unit	Mean SF per Unit	Demand per SF	Demand per Avg. Sized Unit
No bedrooms				947	$4.91	$4,647
1 Bedroom	1,093	$11.25	$12,288	813	$8.22	$6,686
2 Bedrooms	1,390	$11.42	$15,863	1,156	$7.42	$8,573
3 Bedrooms	1,710	$9.97	$17,051	1,397	$6.45	$9,010
4 Bedrooms	2,237	$9.56	$21,376	1,491	$5.34	$7,959
5+ bedrooms				3,963	$1.87	$7,397
Average	1,549	$10.33	$15,998	1,128	$6.65	$7,499

	Mobile Homes					
	Owned			Rented		
	Mean SF per Unit*	Demand per SF	Demand per Avg. Sized Unit	Mean SF per Unit*	Demand per SF	Demand per Avg. Sized Unit
All Sizes	1,099	$7.69	$8,446.17	866	$6.03	$5,217.68

Source: Economic Roundtable; Los Angeles County Assessor's Office, 2009 Secured Basic File Abstract (DS04); U.S. Census Bureau, 2005-2007. American Community Survey. Public Use Microdata Sample; Minnesota IMPLAN Group, Inc., IMPLAN System (2007 data and software). Note: Shaded cells indicate too few records to be statistically representative for the City of Los Angeles as a whole, and thus are omitted.

may seem counter-intuitive, but is attributable to variations in occupant density. The higher household expenditures of the larger owner-occupied home are distributed over a larger building, and as a result are overshadowed by the lower household expenditures of the rental unit when impacts are calculated on a square foot basis. However, when impact per square foot is multiplied by actual number of square feet in the different unit types, the five bedroom owner-occupied unit has a $14,429 impact and the one bedroom renter-occupied unit has a $6,686 impact.

Overview of Approach for Calculating Impacts of Residential Development

The nexus between new, market-rate housing development and the demand for affordable housing is based on the earned income deficit experienced by workers (relative to the cost of rental housing) whose jobs are supported by the household expenditures of occupants of the new housing developments. In order to establish this nexus, the Economic Roundtable carried out the following six steps:

- Step 1: Determine the types of new, market-rate housing development that can be identified in the building permit process.
- Step 2: Determine the mean household income for different types and sizes of housing units.
- Step 3: Determine the mean square feet found in different types of housing units.
- Step 4: Estimate household spending patterns and calculate the number of jobs created using input/output modeling.
- Step 5: Apply Adjustment Factors.
- Step 6: Convert the Annual Number of Jobs Generated by Household Spending into the Earned Income Deficit Created by One Unit of New Market-Rate Housing.

The methods we use to quantify the linkage between the development of new, market-rate housing and its contribution to earned income deficit of workers seeking rental housing differ from the methods used for commercial developments. We utilize an estimation of households spending patterns, which vary by annual household income amounts, to quantify household spending on local goods and services. These household spending patterns trace the flow of money to 432 different industries, enabling us to calculate the induced impacts of spending by occupants of new, market rate housing, including how many local jobs they support.

Step 1: New, Market-Rate Housing Types Identifiable in the Building Permit Process

When developers are seeking to build new, market-rate housing in the City of Los Angeles, they must apply for a building permit specifying the type of housing, number of units in the project, as well as the square footage of planned improvements. The City identifies the following different kinds of housing in its building permit process:

- Single-Family Residence
- Duplex
- Apartment
- Mobile Home
- Artists-in-Residence
- Condominium

The City also records the square feet of improvements for new housing.

Step 2: Mean Household Income for Different Types and Sizes of Housing Units

Household spending is based upon household income, minus savings and taxes paid. We obtain household income estimates from the American Community Survey, the most accurate and up-to-date data source on resident household characteristics. These data show household incomes for many of the housing types identifiable in the City's building permits (Table 1-14), except for Duplex and Artists-in-Residence housing units.[41] Mobile homes are not numerous enough to capture household incomes for units with varying numbers of bedrooms, therefore only the overall averages for owner- and renter-occupied mobile homes are analyzed with regard to their household spending.

Table 1-14
Mean Household Income by Housing Type and Number of Bedrooms
City of Los Angeles

	Household Type					
	Single Family Owned	Single Family Rented	Multi-Family Owned (Condo)	Multi-Family Rented (Apartment)	Mobile Home Owned	Mobile Home Rented
No bedrooms	$62,596	$26,723		$29,062		
1 Bedroom	$60,070	$37,368	$76,142	$39,844	$28,137	
2 Bedrooms	$79,672	$49,545	$99,730	$54,530	$38,143	
3 Bedrooms	$101,296	$64,721	$107,111	$57,308	$73,397	
4 Bedrooms	$143,263	$77,750	$120,397	$50,625		
5 or more bedrooms	$218,908	$90,076	$162,588	$44,085		
Total	$112,540	$52,970	$99,180	$44,358	$49,960	$32,389

*Source: Economic Roundtable; U.S. Census Bureau. American Community Survey, 2006-2008 3-Year Public Use Microdata Sample (PUMS). Note: Household income is adjusted to 2007 dollars [HINCP * ADJINC]. Shaded cells indicate too few sample records to be statistically representative for the City of Los Angeles as a whole, and thus are omitted.*

Overall, household incomes generally rise for households living in homes with more bedrooms. Owner-occupied housing units tend to have higher household incomes than renter-occupied housing units, and households living on single-family properties have higher incomes than those in multi-family properties. However, households in condominium (multi-family, owned) units of smaller size actually have higher household incomes than households living in smaller single-family homes.

Step 3: Determining the Mean Square Feet for Different Types of Housing Units

The mean square feet of housing units is not available from the US Census' American Community Survey, but this information is crucial in terms of estimating the per-square-foot impacts of new, market-rate housing on the demand for affordable housing. We turn instead to the Los Angeles County Assessor's Secured Basic File Abstract,[42] which contains comprehensive information on every parcel in the City of Los Angles. Using this data, we calculated the mean square footage for housing units broken out by building type and number of bedrooms (Table 1-15).

Table 1-15
Average Square Feet per Unit by Housing Type and Number of Bedrooms, City of Los Angeles

	Mean Square Feet per Unit				
	Single Family Home	Condo Unit	Apartment Unit	Mobile Home	
				Owned	Rented
No bedrooms		1,068	947	(Not available)	
1 Bedroom	838	1,093	813	(Not available)	
2 Bedrooms	1,427	1,390	1,156	(Not available)	
3 Bedrooms	2,247	1,710	1,397	(Not available)	
4 Bedrooms	3,209	2,237	1,491	(Not available)	
5+ bedrooms	4,949	3,094	3,963	(Not available)	
Overall	3,394	1,549	1,128	1,099	866

Source: Economic Roundtable; Los Angeles County Assessor's Office, 2009 Secured Basic File Abstract (DS04). Notes: City of Los Angeles properties defined by Tax Rate Area; Mobile Home Average Square Feet from U.S. Department of Energy, Energy Information Administration, 2005 Residential Energy Consumption Survey, Floorspace Tables - Housing Characteristics: All, Heated, and Cooled Floorspace (HC1.1.1); shaded cell indicates too few records are available to represent of the City of Los Angeles as a whole, so data is omitted.

Square footage data does not distinguish between owner- and renter-occupied single-family homes, so a single column of square footage figures in Table 1-15 are used for both. One exception to this is mobile homes, for which the mean square feet for owner- and renter-occupied units are obtained from a survey collected by the U.S. Energy Information Administration.[43]

Step 4: Estimating Household Spending Patterns and Calculating the Number of Jobs Created using Input/Output Modeling

What kinds of jobs are generated by household spending on goods and services? Answering this question not only reveals the number of workers whose jobs are supported by the

consumer spending of Los Angeles households, it also reveals the share of these workers earning wages that do not enable their own households to afford market-rate housing.

We use the IMPLAN economic impact modeling system, an input-output, local multiplier effects calculator,[44] to estimate household spending patterns, including all of the different goods and service that households consume. The IMPLAN system uses data covering the entire economy, both formal and informal.[45] Combined with 2007 Los Angeles County data, this software creates detailed, comprehensive multiplier models and social accounting matrices of the local economy. The household spending patterns estimated in the IMPLAN model are broken out into nine income categories, which differ in regards to the mix of goods and services consumed.[46] For example, higher income households tend to have a greater rate of savings than lower income households. Also, households spend different shares of their overall income on housing, groceries, restaurants and healthcare depending on their income.

The combined consumer spending of over 1.28 million households in the City of Los Angeles creates substantial demand for locally purchased goods and services, provided by businesses and individuals, creating employment for hundreds of thousands of workers.[47] The Economic Roundtable calculated the jobs supported by one household's spending for a year, based on type, tenure and number of bedrooms (Table 1-16). We derive household spending from annual household income, estimated from the 2005-2007 American Community Survey covering the City of Los Angeles, by linking the size and ownership status of housing units to the income of households occupying those units. Each figure in the table is the sum of many smaller fractions of jobs from across the entire local economy, in both the formal and informal sectors, from retail stores and restaurants to banks and doctors' offices that are supported by a single household. Even though each household supports a fraction of one job each year through its spending on local goods and services, the size of this fraction differs significantly by household type, tenure and number of bedrooms.

Table 1-16
Local Jobs Supported by the Household Spending of One Housing Unit,
by Housing Type, Tenure and Number of Bedrooms, City of Los Angeles

	Single Family Home		Condo Unit	Apartment Unit	Mobile Home or Trailer	
	Owned	Rented	Owned	Rented	Owned	Rented
No bedrooms	0.2838	0.1242		0.1350		
1 Bedroom	0.2723	0.1803	0.3470	0.1922		
2 Bedrooms	0.3590	0.2390	0.4479	0.2472		
3 Bedrooms	0.4442	0.2934	0.4738	0.2598		
4 Bedrooms	0.6282	0.3504	0.5940	0.2295		
5+ bedrooms	0.8783	0.4059		0.2127		
Overall	0.4935	0.2401	0.4404	0.2140	0.2410	0.1505

Source: Economic Roundtable; Minnesota IMPLAN Group, Inc., IMPLAN System (2007/2008 data and software). Note: Figures in this table represent the fractions of a jobs supported by one household; shaded cells indicate too few household income sample records to be statistically representative for the City of Los Angeles as a whole, and thus are omitted.

Table 1-17
Distribution of Full-time Workers by AMI Bands, City of Los Angeles

Development Category	AMI Bands								
	0% to 30%	31% to 50%	51% to 80%	61% to 80%	81% to 120%	121% to 150%	151% to 200%	Greater than 200%	Total
Airports	6%	8%	20%	16%	27%	8%	15%	16%	100%
Amusement – Spectator sports	6%	7%	13%	8%	18%	10%	14%	33%	100%
Amusement – Recreation or amusement	11%	10%	22%	16%	20%	11%	11%	15%	100%
Churches	4%	19%	19%	12%	28%	12%	8%	11%	100%
Gas Service Stations	26%	9%	22%	14%	20%	6%	14%	4%	100%
Hospitals (General)	4%	9%	17%	13%	24%	14%	12%	20%	100%
Hospitals (Convalescent)	13%	17%	21%	15%	24%	14%	4%	8%	100%
Hotels	13%	23%	26%	15%	20%	8%	5%	7%	100%
Manufacturing (Moderate Hazard)	13%	18%	25%	15%	20%	8%	6%	9%	100%
Manufacturing (Low Hazard)	8%	17%	31%	21%	22%	10%	7%	5%	100%
Manufacturing (High Hazard)	5%	15%	23%	16%	20%	9%	13%	15%	100%
Misc. Bldg or Structure (High Hazard)	12%	23%	19%	18%	28%	7%	6%	6%	100%
Misc. Bldg or Structure (Moderate Hazard)	16%	22%	24%	15%	19%	8%	6%	5%	100%
Misc. Bldg or Structure (Low Hazard)	13%	16%	18%	12%	30%	14%	4%	6%	100%
Office Buildings (F.I.R.E., Business)	5%	9%	16%	11%	20%	12%	14%	24%	100%
Offices (Couriers and Delivery Services)	9%	18%	24%	19%	16%	9%	19%	5%	100%
Public Administration (Government)	4%	5%	15%	9%	23%	15%	18%	20%	100%
Public Garage (Parking Lots & Garages)	13%	19%	24%	15%	22%	7%	7%	9%	100%
Public Garage (Auto Repair, etc.)	15%	25%	26%	16%	18%	7%	5%	5%	100%
Public Utility	5%	1%	5%	4%	28%	18%	21%	21%	100%
Restaurants	18%	23%	26%	16%	18%	8%	3%	5%	100%
Retail B (Rental & Leasing Centers)	13%	19%	24%	15%	22%	7%	7%	9%	100%
Retail M (Grocery, Office Supplies, Florists)	11%	17%	24%	16%	20%	10%	8%	10%	100%
Schools	3%	8%	15%	10%	24%	16%	15%	18%	100%
Swimming Pools/Spa	11%	10%	22%	16%	20%	11%	11%	15%	100%
Theatres	6%	7%	13%	8%	18%	10%	14%	33%	100%
Warehouse B (e.g. Motion Picture & Video)	3%	4%	13%	9%	18%	11%	14%	37%	100%
Warehouse M (Merchant Wholesalers)	8%	18%	25%	16%	20%	9%	8%	12%	100%
Warehouse S (Transportation)	15%	24%	25%	16%	18%	7%	6%	4%	100%
Private Household Operations*	23%	25%	27%	15%	14%	8%	2%	2%	100%
Total, Entire City Economy	**9%**	**14%**	**21%**	**13%**	**20%**	**11%**	**10%**	**15%**	**100%**

Source: Economic Roundtable; 2005-2007 American Community Survey. Note: AMI income for the City of Los Angeles is set forth by the US Department of Housing and Urban Development for different household sizes. The Economic Roundtable determined break points between the AMI bands shown.

** The 29 development categories listed above are the commercial building types in which all of the City's businesses reside. However, one additional category, "Private Household Operations," is added in order to describe workers such as cooks, maids, nannies, butlers, and outside workers, such as gardeners, caretakers, and other maintenance workers. These workers' job sites are new market-rate housing developments, and thus are shown here.*

An analysis of the job impacts summarized in Table 1-16 produced detailed information about job impacts of household spending distributed across this study's 29 development categories (plus "Public Administration (Government)" and "Private Household Operations," which altogether are aggregated from 440 IMPLAN industry sectors). This analysis identified the portion of employment generated by household expenditures that is in the lowest three AMI bands: 0 percent to 30 percent, 31 percent to 50 percent and 51 percent to 80 percent. The AMI distribution of workers in each development category is shown in Table 1-17, which augments the information shown earlier in Table 1-5 by showing job impacts in Public Administration (Government) and Private Household Operations. Worker households with earnings that put them into these three lowest AMI bands typically experience earned income deficits as they seek housing they can afford. The earned income deficit associated with each AMI band is used in the final step of our analysis to determine the affordable housing deficit created by a single household occupying market rate housing in the City of Los Angeles.

Step 5: Adjustment Factors

The adjustment factors applied to the job impacts of residential developments in this section are consistent with those applied earlier in this chapter to commercial developments. The earlier assessments of the applicability of different possible factors for adjusting the impacts of commercial developments apply also to residential developments. These are:

Adjustment Factor #1: Converting Workers to Worker Households (utilized)

The share of workers who demonstrate a demand for affordable housing must be converted into households because the demand for affordable housing is based on households and not on individual workers. More than one worker lives in a typical household, therefore we adjust downward our calculation of the demand the affordable housing generated by new market-rate housing. The Economic Roundtable uses the Census' mean number of workers per worker household in the City of Los Angeles to convert workers to worker households: 1.6 workers per worker household. This means that each worker requiring affordable housing would demand only 62.5 percent of a housing unit.

Adjustment Factor #2: Impact over Lifespan of Building (utilized)

The depreciable lifespan of new market-rate housing is an important factor for determining the earned income deficit per worker. To account for the long term impacts of developments that increase the demand for affordable housing, the Economic Roundtable uses the depreciation schedule set forth by the Internal Revenue Service (Form 4562) of 27.5 years for residential buildings. A factor of 27.5 is incorporated into the final per square foot impact calculation.

Step 6: Converting the Annual Number of Jobs Generated by Household Spending into the Earned Income Deficit Created by One Unit of New Market-Rate Housing

The local jobs supported by the household spending of one housing unit (Table 1-16) are fractions of individual workers employed during one year, but these data need to undergo several adjustments in order to identify the earned income deficit per square foot:

1. Fractions of workers supported by household spending – derived from the IMPLAN model – are converted into amounts of earned income deficit per worker.
2. The earned income deficit dollar amount per worker is adjusted into housing deficit dollar amounts per worker household, based on adjustment factor #1.
3. The earned income deficit dollar amount per worker household – which is the person-years of employment supported by a single year of household expenditures – is adjusted into the total earned income deficit dollar amount generated throughout each housing unit's useful, depreciable lifespan of 27.5 years.[48] This is based on adjustment factor #2.

The following formula further illustrates how Total Earned Income Deficit per Square Foot is calculated for housing units:

Total Earned Income Deficit per Square Foot = (Annual Mean Earned Income Deficit per Worker x Annual Jobs Created by One Household's Spending / Mean Workers per Worker Household (1.6) x Life Span of Housing Unit (27.5 years)) / Mean Square Feet per Housing Unit

Our calculations to make these conversions are shown in Table 1-18. The *Annual Mean Earned Income Deficit per Worker* distributes the impact of each type of household over the three AMI bands with income deficits.

The *Annual Mean Earned Income Deficit Created by Household Spending* is the fraction of a full-time-equivalent worker created by each household's spending multiplied by the total deficit that would result if that household did create a full time job, as shown in the *Annual Mean Earned Income Deficit per Job.*

The *Total Earned Income Deficit per Worker Household* is the housing deficit per worker household created by one market-rate household's spending during one year, and is calculated by dividing *Annual Mean Deficit Created by Household Spending* by 1.6, the mean number of workers in Los Angeles' worker households. (This step adjusts for the fact that more than one worker brings home earnings for the mean Los Angeles worker household.)

Next, the annual affordable housing deficit created per worker household is projected out over 27.5 years, the standard depreciable life of housing units. This produces the row entitled *Total Deficit per Worker's share of Household over 27.5 Years* (2007$), and represents the total affordable housing deficit for a single household over the life of the housing unit.

The last step is dividing the *Total Deficit per Worker's share of Household over 27.5 Years* (2007$) by the *Mean Square Feet per Household Type,* which produces the *Total Earned Income Deficit per Square Foot* (2007$). These data are all specific to the City of Los Angeles, including its household spending impacts, earned income deficits per worker, and the sizes of different housing types.

The next to last row of Table 1-18 shows the mean square feet of dwelling space for different types of housing units, allowing us to calculate total earned income deficit per square foot generated by the consumer spending of market-rate households throughout their 27.5 year appreciable lifespan.

This is the final quantified measure of the *nexus* between market-rate residential property development and demand for affordable housing.

Table 1-18
Total Earned Income Deficit per Square Foot Generated by One Housing Unit's Spending, by Housing Type, Tenure and Number of Bedrooms, City of Los Angeles

		Single Family Home		Condo Unit	Apartment Unit	Mobile Home or Trailer	
		Owned	Rented	Owned	Rented	Owned	Rented
Annual Mean Earned Income Deficit per Worker (2007$)	0% to 30% AMI	$958	$958	$958	$958	$958	$958
	31% to 50% AMI	$846	$846	$846	$846	$846	$846
	51% to 80% AMI	$248	$248	$248	$248	$248	$248
	Total	$2,051	$2,051	$2,051	$2,051	$2,051	$2,051
Annual Jobs Created by One Household (derived from IMPLAN, see Table 2-15)		0.49347	0.24012	0.44035	0.21401	0.24103	0.15050
Annual Mean Earned Income Deficit Created by Household Spending	0% to 30% AMI	$473	$230	$422	$205	$231	$144
	31% to 50% AMI	$417	$203	$373	$181	$204	$127
	51% to 80% AMI	$122	$60	$109	$53	$60	$37
	Total	$1,013	$493	$904	$439	$495	$309
Total Earned Income Deficit per Worker Household (2007$)	Mean # of Workers per Worker Family = 1.6	$652	$305	$582	$273	$307	$190
Total Earned Income Deficit per Worker's share of Household over 27.5 Years (2007$)	Typical life of housing structures (Years) = 27.5	$17,928	$8,383	$15,998	$7,499	$8,446	$5,218
Mean Square Feet per Household Type		3,394	3,394	1,549	1,128	1,099	866
Total Earned Income Deficit per Square Foot (2007$)		$5.28	$2.47	$10.33	$6.65	$7.69	$6.03

Source: Economic Roundtable; Source: 2005-2007 American Community Survey; Department of the Treasury, Internal Revenue Service, 2009 Form 4562 - Depreciation and Amortization. Note: For mobile homes, the demand for affordable housing generated by occupants likely will be determined on a per unit/pad basis, rather than a per square foot basis, so the per-square-foot figures are grayed out. Figures computed in this table vary due to rounding of decimal places not shown.

CHANGE IN AFFORDABLE HOUSING DEMAND CAUSED BY CONDOMINIUM CONVERSION

Introduction: Estimate of Household Income Before and After Condominium Conversions in the City of Los Angeles

This section analyzes recent US Census data and other sources of information to compare the household income of renters to that of owners to estimate household income before and after condominium conversions occur.[49] As discussed earlier, condominium conversions of rental properties were frequent during the housing bubble, peaking at 206 properties in 2006, although many conversion projects have slowed during the recent recession.

We do not have information about the incomes of renter occupants before conversion that we can use to compare the income of the owners after conversion to condominiums, but we are able to compare the incomes of renters and owners of similar housing units.[50] We control for three variable characteristics of housing units in order to achieve comparability:

1. *Moved In*: We only study households that moved into their current unit during the last four years. Since late 2005 is the earliest date of these ACS survey records, households must have moved into their housing unit by late 2001.
2. *Geography*: Given the variation in wealth, income and employment status of residents across the City of Los Angeles, we divide the households we study into seven Area Planning Commission regions, based upon Public Use Microdata Areas.[51] Thus, household incomes of apartment households in East Los Angeles are only compared against condominium housing units in that same region.
3. *Number of Bedrooms*: Because apartment and condominium housing units vary in size, we compare households with equal number of bedrooms. We present data for the most common-sized housing units, those with two bedrooms, since the un-weighted record count for all other sized housing units is too small to provide reliable data when broken-out by the City's Area Planning Commission regions.[52]

Table 1-19
Mean and Median Household Incomes of Apartment and Condominium Households, City of Los Angeles in 2008

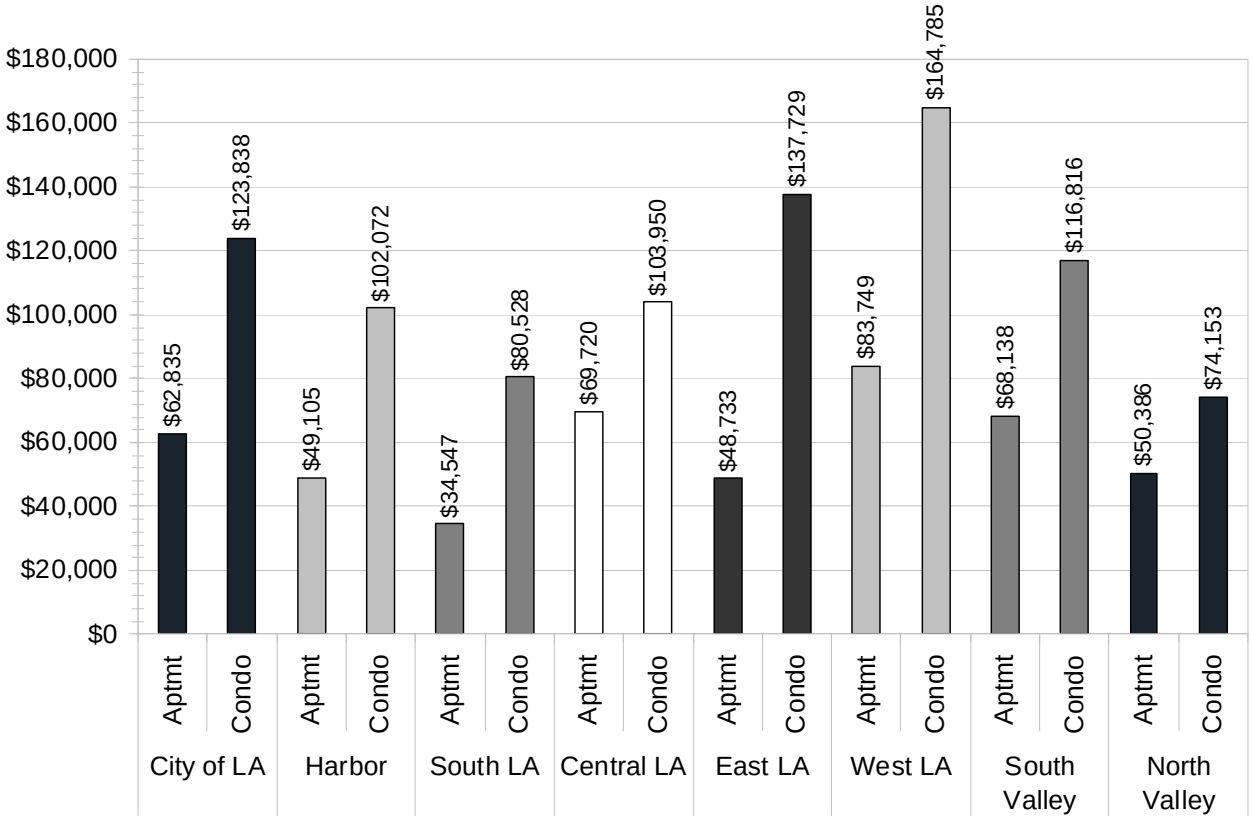
	Type of Housing Unit	Household Income	
		Mean	Median
City of Los Angeles	Apartment	$62,835	$47,619
	Condominium	$123,838	$95,525
Harbor	Apartment	$49,105	$42,551
	Condominium	$102,072	$71,287
South LA	Apartment	$34,547	$25,460
	Condominium	$80,528	$66,730
Central LA	Apartment	$69,720	$56,011
	Condominium	$103,950	$91,015
East LA	Apartment	$48,733	$36,662
	Condominium	$137,729	$87,854
West LA	Apartment	$83,749	$61,240
	Condominium	$164,785	$132,747
South Valley	Apartment	$68,138	$52,793
	Condominium	$116,816	$92,193
North Valley	Apartment	$50,386	$40,131
	Condominium	$74,153	$63,351

Source: U.S. Census Bureau, 2006-2008 American Community Survey, Public Use Microdata Sample, Housing Records for the City of Los Angeles. Data shown for housing units with two bedrooms only and only for households that moved into units in the past 4 years. Income is adjusted to 2008 dollars using ADJINC.

The mean and median incomes of households that own condominiums are considerably higher than the incomes of households renting comparable units, as can be seen in Table 1-19, which breaks-out income data for the City of Los Angeles and within its seven Area Planning Commission regions (APCs). When we control for when households moved in, where in the City they are located, and the number of bedrooms in the unit, households that own condominiums have incomes that are about double that of households renting comparable units (Figures 1-11).

The largest income difference between apartment and condominium households is found in East Los Angeles, where the latter households have 183 percent more annual income. The smallest gap is in Central Los Angeles, where condominium households have 49 percent higher annual income than their apartment dwelling neighbors. Citywide, the gap is almost double, with condominium households having 97 percent higher annual income than households living in apartments. The mean household income data broken-out by the City's seven Area Planning Commission regions are used in the next section to estimate the difference between the jobs generated by household income before and after apartments are converted to condominiums.

Figure 1-11
Mean Household Incomes of Apartment and Condominium Households, City of Los Angeles



Source: U.S. Census Bureau, 2006-2008 American Community Survey, Public Use Microdata Sample, Housing Records for the City of Los Angeles. Data shown only for housing units with two bedrooms and only for households that moved into the unit in the past 4 years.

Jobs Generated by Household Consumption Before and After Conversion

Input-Output Model for Los Angeles' Economy Used To Differentiate Jobs

We use the IMPLAN input-output model of the Los Angeles economy to estimate the annual jobs generated by household spending before and after condominium conversion. Often used to estimate the local economic impacts of companies' changing sales – differentiated by industry and geography, the IMPLAN model also estimates induced impacts of household expenditures as they ripple through the local economy.[53] Spending patterns in the IMPLAN model differ between households based on their income level, with different rates of saving and a slightly different mix of goods and services consumed.[54]

Citywide, jobs generated by household spending after condominium conversions are 91 percent greater than before conversion; 0.28 jobs per year per pre-conversion household versus 0.54 jobs per year per post-conversion household (Table 1-20). This difference varies by Area Planning Commission region, with the biggest percent change due to conversion in East Los Angeles (157 percent), while Central Los Angeles had the smallest increase (44 percent).

Table 1-20
Jobs Generated by Household Spending Before and After Condominium Conversion

	Jobs Generated Before Conversion (Apartment)		Jobs Generated After Conversion (Condo)		Percent Increase After Conversion
	One Household	100 Households	One Household	100 Households	
City of Los Angeles	0.28	28.48	0.54	54.30	91%
Harbor	0.24	23.69	0.45	44.76	89%
South LA	0.16	16.05	0.36	36.29	126%
Central LA	0.32	31.61	0.46	45.58	44%
East LA	0.24	23.51	0.60	60.39	157%
West LA	0.38	37.74	0.66	66.11	75%
South Valley	0.31	30.89	0.51	51.22	66%
North Valley	0.23	22.84	0.34	33.62	47%

Source: Economic Roundtable; U.S. Census Bureau, 2006-2008. American Community Survey. Public Use Microdata Sample; Minnesota IMPLAN Group, Inc., IMPLAN System (2007/2008 data and software). Note: Jobs generated by 100 households are shown to illustrate scale, since each household's spending supports less than one job per year.

Share of Post-Conversion Jobs That Pay Less than What Is Required to Afford Market-Rate Housing

Across the City of Los Angeles, the share of additional jobs created by condominium conversions that pay less than what is required to afford market-rate housing is 44 percent. This is the combined percentage of Los Angeles workers whose jobs were created by the additional expenditures of post-conversion households and who are in the lowest three AMI bands, and consequently are unable to afford market rate housing in the City without becoming rent-burdened (Table 1-21). This figure applies to the entire City because the impacts of household spending disperse widely throughout the urban economy, rather than being contained in one

neighborhood. Even if a household spends most or all of its income in its own neighborhood, the businesses where they spend their money employ workers from across the City, not just in that neighborhood. When those workers go home and spend their earnings, the economic impacts disperse further still. Therefore, we calculate and report one Citywide figure – 44 percent – for

Table 1-21
Distribution of All Workers by AMI Band Post Condo-Conversion, City of Los Angeles

Development Category	Percent of Workers by AMI Bands, City of Los Angeles								
	0% to 30%	31% to 50%	51% to 80%	61% to 80%	81% to 120%	121% to 150%	151% to 200%	Greater than 200%	Total
Airports	6%	8%	20%	16%	27%	8%	15%	16%	100%
Amusement – Spectator sports[1]	6%	7%	13%	8%	18%	10%	14%	33%	100%
Amusement – Recreation or amusement	11%	10%	22%	16%	20%	11%	11%	15%	100%
Churches	4%	19%	19%	12%	28%	12%	8%	11%	100%
Gas Service Stations	26%	9%	22%	14%	20%	6%	14%	4%	100%
Hospitals (General)	4%	9%	17%	13%	24%	14%	12%	20%	100%
Hospitals (Convalescent)	13%	17%	21%	15%	24%	14%	4%	8%	100%
Hotels	13%	23%	26%	15%	20%	8%	5%	7%	100%
Manufacturing (Moderate-Hazard)	13%	18%	25%	15%	20%	8%	6%	9%	100%
Manufacturing (Low-Hazard)	8%	17%	31%	21%	22%	10%	7%	5%	100%
Manufacturing (High-Hazard)	5%	15%	23%	16%	20%	9%	13%	15%	100%
Misc. Bldg or Structure (High-hazard)	12%	23%	19%	18%	28%	7%	6%	6%	100%
Misc. Bldg or Structure (Moderate-hazard)	16%	22%	24%	15%	19%	8%	6%	5%	100%
Misc. Bldg or Structure (Low Hazard)	13%	16%	18%	12%	30%	14%	4%	6%	100%
Office Buildings (F.I.R.E., Business)	5%	9%	16%	11%	20%	12%	14%	24%	100%
Offices (Couriers and Delivery Services)	9%	18%	24%	19%	16%	9%	19%	5%	100%
Public Administration (Government)	4%	5%	15%	9%	23%	15%	18%	20%	100%
Public Garage (Parking Lots & Garages)[2]	13%	19%	24%	15%	22%	7%	7%	9%	100%
Public Garage (Auto Repair, etc.)	15%	25%	26%	16%	18%	7%	5%	5%	100%
Public Utility	5%	1%	5%	4%	28%	18%	21%	21%	100%
Restaurants	18%	23%	26%	16%	18%	8%	3%	5%	100%
Retail B (Rental & Leasing Centers)	13%	19%	24%	15%	22%	7%	7%	9%	100%
Retail M (Grocery, Office Supplies)	11%	17%	24%	16%	20%	10%	8%	10%	100%
Schools	3%	8%	15%	10%	24%	16%	15%	18%	100%
Swimming Pools/Spas[3]	11%	10%	22%	16%	20%	11%	11%	15%	100%
Theatres	6%	7%	13%	8%	18%	10%	14%	33%	100%
Warehouse B (ex. Motion Picture & Video)	3%	4%	13%	9%	18%	11%	14%	37%	100%
Warehouse M (Merchant Wholesalers)	8%	18%	25%	16%	20%	9%	8%	12%	100%
Warehouse S (Transportation)	15%	24%	25%	16%	18%	7%	6%	4%	100%
Private Household Operations[4]	23%	25%	27%	15%	14%	8%	2%	2%	100%
Total	**9%**	**14%**	**21%**	**13%**	**20%**	**11%**	**10%**	**15%**	**100%**

Source: 2005-2007 American Community Survey, Economic Roundtable Analysis.
Universe: Employed civilian full-time workers age 16 years and over who live in the City of LA in a worker household.
Notes: [1] Development category could not be specified as a discrete category using Census data. It is included in the "Theatre" development category and uses the same distribution by AMI bands. [2] Development category could not be specified as a discrete category using Census data. It is included in the "Retail (16) Business Group B" development category and uses the same distribution by AMI bands. [3] Development category could not be specified as a discrete category using Census data. It is included in the "Amusement (4), Assembly Group A3" development category and uses the same distribution by AMI bands. [4] Distribution is based on household size and earned income.

the share of post-conversion jobs that pay less than what is required to afford market-rate housing.

Per-Housing-Unit-Average Impact of Condominium Conversions

The annual average earned income deficit generated per converted condominium unit Citywide, is $139.38 (Table 1-22). This is $66.27 greater than the annual per-housing-unit earned income deficit before conversion to condominiums.

The first step in calculating the pre- and post-conversion job impacts of household spending is to add up the local job creation impacts of households in different income ranges.[55]

The second step is to determine the share of workers in each industry that fall in the lowest three AMI bands, since these workers cannot afford to rent Los Angeles' market rate housing by paying just 30 percent of their earned income.[56]

The variations in the mean household earnings of renters and condominium owners in different areas of the City that are shown in Table 1-18 result in differing levels of increased household consumption after a condominium conversion occurs, and differing job impacts. Before and after figures are shown in Table 1-22, representing the income deficit generated by household spending *per household* before and after a condominium conversion occurs in different areas of the City.[57]

Table 1-22
Annual Average Earned Income Deficit Generated Per-Housing Unit and Per Square Foot

	Apartment		Condo	
	Per Housing Unit	Per Sq. Ft.	Per Housing Unit	Per Sq. Ft.
City of Los Angeles	$73.11	$0.06	$139.38	$0.10
Harbor	$60.81	$0.05	$114.88	$0.08
South LA	$41.20	$0.04	$93.15	$0.07
Central LA	$81.13	$0.07	$117.00	$0.08
East LA	$60.35	$0.05	$155.02	$0.11
West LA	$96.88	$0.08	$169.70	$0.12
South Valley	$79.29	$0.07	$131.48	$0.09
North Valley	$58.63	$0.05	$86.29	$0.06

Source: Economic Roundtable; U.S. Census Bureau, 2006-2008. American Community Survey. Public Use Microdata Sample; Minnesota IMPLAN Group, Inc., IMPLAN System (2007/2008 data and software).

In contrast to the total jobs supported by a single household's spending shown in Table 1-19 – *0.28 workers supported by the typical pre-conversion, apartment household and 0.54 workers supported by the typical post-conversion, condominium household* – these impact figures (Table 1-22) show the income deficit generated for the share of workers who cannot afford market-rate housing.

Conclusion

The impact of converting a housing unit from an apartment into a condominium in the City of Los Angeles is significant. The earned income deficit generated by the spending of Los Angeles apartment households is $73.11 ($0.06 per square foot), while the earned income deficit generated by the spending of condominium households is $139.38 ($0.10 per square foot); the conversion adds $66.27 of per-housing-unit-average impacts – a 91 percent increase. This increase is attributable to the greater incomes of condominium households compared to apartment households, and their greater household spending.

CHANGE IN AFFORDABLE HOUSING DEMAND CAUSED BY INDUSTRIAL TO RESIDENTIAL CONVERSIONS

This section analyzes the change in the earned income deficit per square foot at ten industrial properties that have been converted to 652 residential units. Seventy-one pre-conversion commercial tenants of these buildings were identified and analyzed, of which approximately one-third were apparel related: manufacturing, suppliers, design and wholesalers. The sample of industrial conversions includes completed for-sale and rental properties located in downtown, West Los Angeles, Hollywood, Koreatown, as well as Northeast Los Angeles. These properties were selected based on their geographic diversity, equal representation among rental and for-sale developments, and the availability of employment data for the post-conversion phase.

Conversions were completed between 2003 and 2008 for the ten properties studied. Of these, nine properties were originally zoned manufacturing. Only one property in the sample was originally zoned commercial, allowing light manufacturing and residential uses. Prior to conversion this commercially zoned property was occupied by a light manufacturing business; it is now a condominium. After undergoing substantial rehabilitation, almost all of the properties received an artist-in-residence or adaptive reuse designation that allowed both residential and commercial uses. Today these properties are predominantly used as residences, which has caused post-conversion employment totals to decline. There is still a significant amount of commercial activity at some of these properties, generating more employment and more demand for affordable housing than the residential uses. The following section describes the methodology for determining the change in affordable housing demand resulting from these conversions.

Methodology

To calculate the pre- and post-conversion earned income deficit per square foot we used Quarterly Census of Employment and Wages data to determine the industry classification, average number of employees, and wages reported from1996 to 2009 for each business. After identifying the industry categories and timeframes when payroll was reported, we applied

Table 1-23
Change in Affordable Housing Demand
Resulting from Industrial to Residential use Conversion

Industry Category	Pre-Conversion Deficit Per SF	Post-Conversion Deficit Per SF	Average Change in Deficit Per SF
Manufacturing High Hazard	$62	$10	($52)
Manufacturing Moderate Hazard	$92	$7	($85)
Manufacturing Low Hazard	$88	$7	($81)
Office (FIRE)	$38	$10	($28)
Retail M	$82	$10	($72)
Warehouse B (Motion Picture)	$19	$10	($9)
Warehouse M (Merchant Wholesale)	$57	$7	($51)

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis.

the Citywide income deficit per square foot for each development category identified in Table 1-10. The applicable post-conversion earned income deficit was then subtracted from the pre-conversion deficit and averaged across each development category as shown in Table 1-23.

The average pre- and post-conversion employment and estimated residential occupancy at the properties included in our sample are shown in Table 1-24. Properties 1 and 7 indicate no employment post-conversion even though commercial occupancy is permitted; the other properties evidenced from one to 65 employees. The typical post-conversion employers are small business, some home-based, with four to seven employees. Only four of the 41 post-conversion employers had more than 20 workers; meanwhile seven of the 35 pre-conversion employers had 10 workers or more. These results indicate that while the post-conversion number of employees has declined, a significant number of businesses still populate these properties with a mix of small businesses providing design and other professional services.

Table 1-24
Pre- and Post-Conversion Commercial and Residential Occupancy

Property #	Average Employment Pre-Conversion	Average Employment Post-Conversion	# of Residential and Commercial Units Post - Conversion	Number of Commercial Units Post-Conversion	Estimated # of Post-Conversion Units with Residential Occupancy
1	14	0	7	3	4
2	82	65	165	20	145
3	16	49	97	5	92
4	128	4	91	3	88
5	16	0	102	0	102
6	0	38	47	9	38
7	12	0	68	2	66
8	18	35	31	9	22
9	4	1	14	4	10
10	0	15	30	3	27
Total	**288**	**207**	**652**	**58**	**594**

Sources: Economic Roundtable; California Employment Development Department. Quarterly Census of Employment and Wages, 3rd Quarter 2007

Since two of the pre-conversion properties in our sample indicated no employers reporting wages, we concluded that those properties were either continuously vacant for long periods of time or used for warehouse storage prior to 1996.

Within the sample, the earned income deficit per square foot from the post-conversion residential uses was significantly lower than for the previous commercial uses in all categories. The change in deficit per square foot ranged from $9 per square foot in the Warehouse B category to $85 per square foot in the Manufacturing Moderate Hazard category. The earned income deficit per square foot decreased because households create fewer jobs per square foot than most businesses. Furthermore, for each unit resulting from the conversion we assume the unit is occupied by a commercial or residential use but not both.

As shown in Table 1-25, the conversion of industrial properties led to the production of for-sale and rental housing affordable to households with annual incomes ranging from $57,941

to $397,520. The conversion from industrial to primarily residential use generally reduces affordable housing demand by generating less employment, since the demand for affordable housing generated by the market-rate housing development is less than that generated by the earlier industrial land use.

Table 1-25
Annual Income Requirements to Support Post-Conversion Housing Cost

Property Type	Median Sales Price Per Unit for Post-Conversion Properties	Average Monthly Housing Cost	Annual Income Level Assuming 30% of gross Income is Housing Cost
For Sale	$1,605,391	$19,579	$397,520
For Sale	$379,687	$1,900	$73,980
For Sale	$453,388	$2,269	$86,175
For Sale	$512,449	$2,484	$142,884
For Sale*	$302,000	$1,449	$57,941
Rental	Not applicable	$2,092	$83,667
Rental	Not applicable	$1,825	$73,000
Rental	Not applicable	$2,413	$96,500
Rental	Not applicable	$2,800	$112,000
Rental	Not applicable	$4,942	$197,667

Source: LA County Assessor, Multiple Listing Service, and property marketing information.
**Reflects median list price since no records of unit sales were available.*

Monthly housing costs for the post-conversion units were calculated assuming 80 percent of the sales price was financed with a fixed 6.4 percent interest rate and 30-year amortization.[58] The income levels were calculated based on the HUD standard of no more than 30 percent of gross income for housing cost. Based on the year the property was sold, income levels were adjusted to 2009 levels by the annual change in the Consumer Price Index for All Urban Consumers in the Los Angeles region. Among the 10 properties included in the sample, a total of 652 units were developed, and of these 462 were for-sale and 190 were rentals.

While most of the properties in our sample were converted to residential use, eight of the ten have an artist-in-residence designation that permits residential and/or commercial use within the unit. Where such non-residential uses were evidenced in the converted units, the difference between pre- and post- conversion earned income deficit per square foot was adjusted pro rata, assuming one apartment or condominium per new business as shown in Table 1-26. The post-conversion deficit per square foot is reduced, but not as much as if there were strictly residential use. The artist-in-residence use created a higher demand for affordable housing than was generated by residential uses on-site. The share of units in converted properties that continued to be used for commercial purposes after conversion occurred ranged up to 42 percent.

Table 1-26
Post-Conversion Residential Deficit per Square Foot by Property

Property #	Number of Residential and Commercial Units Post-Conversion	Number of Commercial Units Post-Conversion	Estimated # of Post-Conversion Units with Residential Occupied as Residential	Earned Income Deficit Per Residential SF*	Pro Rata Adjusted Deficit Per SF
1	7	3	4	$10.33	$14.76
2	165	20	145	$10.33	$11.58
3	97	5	92	$10.33	$10.86
4	91	3	88	$10.33	$10.67
5	102	0	102	$10.33	$10.33
6	47	9	38	$6.65	$7.92
7	68	2	66	$6.65	$6.85
8	31	9	22	$6.65	$8.58
9	14	4	10	$6.65	$8.55
10	30	3	27	$6.65	$7.32

Sources: *Los Angeles County Assessor, City of Los Angeles Department of City Planning. * See Table 2-17.*

Conclusion

Industrial-to-residential conversions significantly reduce the overall and per-square-foot demand for affordable housing, on average by a factor of 85 percent. This is because of all the development categories presented in this study, market-rate residential construction generates the lowest earned income deficits. That said, the case-studies of conversion to residential use were affordable only to households with an average annual income of more than $179,000. Additionally, conversion to residential use did not completely eliminate the higher demand for affordable housing generated by commercial uses due to the artist-in-residence designation that allows both commercial and/or residential uses. Among the properties studied, up to 43 percent of the units continued to have commercial employment and to generate the higher level of demand for affordable housing that accompanies non-residential uses.

CHAPTER 2

Linkage Fee Program Best Practices

Introduction and Methodology

This chapter analyzes the best practices among housing linkage fee programs in the following 10 California jurisdictions: Berkeley, Cupertino, Menlo Park, Napa, Oakland, Palo Alto, Sacramento, San Diego, San Francisco, and Sunnyvale, and in three cities outside California: Seattle, Boston, and Cambridge.[1] The methodology for the analysis of best practices includes a comparison of linkage fee ordinances and interviews with city staff that oversee the administration of housing linkage fee programs. A copy of the survey instrument appears in Appendix 2-1. Key elements of the linkage fee ordinances are compared in a series of tables presented in this chapter. The final section of this chapter summarizes the lessons learned and best practices that contribute to effective linkage fee programs in these cities.

Purpose of the Housing Linkage Fee

The purpose of a linkage fee program is to address the demand for affordable housing generated by new development by imposing a fee on new development that specifically supports the development of affordable housing. See Table 2-1 for a summary of the 13 cities and the stated purpose of each city's linkage fee program.

Linkage Fee Threshold Requirements

The Mitigation Fee Act requires that local agencies imposing linkage fees meet the following conditions:

1. *Identify the purpose of the fee.*
2. *Identify the use to which the fee is to be put.*
3. *Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.*
4. *Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.*
5. *In any action imposing a fee as a condition of approval of a development project by a local agency, the local agency shall determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed. (Government Code Sec 66001(a) & (b)*

Table 2-1
Purpose of Housing Linkage Fees

Jurisdiction (Population)	**Program Purpose**
Berkeley (101,371)	Provide an appropriate offset to the impacts that large-scale office, retail, industrial and/or other commercial development projects cause with respect to needs for affordable housing.
Boston (609,023)	Mitigate impacts of large-scale development on the supply of low- and moderate-income housing. Developers mitigate by paying fees or creating or causing to be created housing units for low- or moderate-income residents.
Cambridge (105,596)	Encourage expansion and improvement of housing stock while accommodating expansion of housing and commercial opportunities.
Cupertino (53,637)	Address housing needs created by office and industrial development and provide nominal fees to support the development of affordable housing for families and individuals who work in Cupertino but live elsewhere.
Menlo Park (30,087)	Create actual housing units, either "rental" or "for purchase" units affordable to households at or below moderate-income.
Napa (74,547)	Mitigate the impacts caused by development projects on the additional demand for more affordable housing and rising land prices for limited supply of available residential land. The fees will be used to defray the costs of providing affordable housing for very low-, low-, and moderate-income households in the City of Napa.
Oakland (404,155)	Support the Affordable Housing Trust Fund. Assure that commercial development projects compensate and mitigate for the increased demand for affordable housing generated by such development projects.
Palo Alto (59,395)	Satisfy 10 percent of the demand for low- to moderate-income housing based on the need for affordable housing among low- to moderate- income employees generated by average commercial and industrial development. Lessen the shortage of low-income and moderate-income housing in Palo Alto by requiring developers of large commercial and industrial projects, as a condition of using land for the privilege of development, to contribute to programs that increase the city's low-income and moderate-income housing stock.
Sacramento (463,794)	Increase and improve the supply of housing affordable to households of low-income (80% AMI), with priority given to very low-income households (50% AMI).
San Diego (1,279,329)	Ensure that office, retail, research and development, manufacturing, warehouse and hotel developments pay a fair share of the costs of subsidies necessary to house the low and very low-income employees who occupy jobs new to the region related to such development. Create a permanent and annually renewable source of revenue to meet, in part, the housing needs of the City's very low-, low-, and median income households.
San Francisco (808,976)	Prevent overcrowding and deterioration of existing housing, preserve and increase the City's housing stock, establish a balance between new, large scale real estate development and housing needs of the City and to mitigate the impacts of large-scale development on the supply of low- and moderate-income housing.
Seattle (598,541)	Mitigate adverse impacts of bonus development, including increased need for low-income housing downtown and increased need for childcare.
Sunnyvale (132,109)	Offset the demands for affordable housing created by high intensity development in industrial zoning districts and improve the jobs/housing ratio. Impose fee on high intensity industrial development where density bonus is requested. Afford review and regulation of large-scale real estate development that directly or indirectly displaces low- or moderate-income residents from housing units or contributes to an increase in the costs of housing. Increase the availability of low- and moderate-income housing by requiring developers as a condition of the grant of deviations from the zoning code or the grant of an amendment to the zoning map or text to create low- and moderate-income housing to make a housing contribution grant to the Neighborhood Housing Trust. The fee formula calculates the number of affordable housing units that would be required for the employees for the portion of the development that exceeds the allowable floor area.

Source: Review of current Municipal Codes, October 2009; U.S. Census Bureau, 2008 Population Estimates.

In order to meet the conditions of the Act, California jurisdictions usually adopt an ordinance setting forth a specific formula for a fee after conducting a "nexus" study that demonstrates the relationship between the fee imposed and the use of the fees generated (rather than individually conducting a study of the impacts of each project).

Key Program Elements

The following section addresses income targets, use of funds, exemptions from linkage fee requirements and geographic linkage.

Income Targets for Beneficiaries of Fees

Nine of 13 cities surveyed set a maximum income eligibility level of 80 percent of AMI for beneficiaries of fees. Yet in practice, almost all of the jurisdictions confirmed that linkage fee revenues mainly targeted households at or below 60 percent of Area Median Income (AMI). Menlo Park and Sunnyvale had the highest income target of 110 percent of AMI while Oakland reported the lowest threshold at 60 percent of AMI. San Francisco's commercial linkage funds may be used for households at 80 percent of AMI; however, the housing trust fund had prioritized households from 30 percent to 60 percent of AMI in the past but now prioritizes households at or below 30 percent of AMI.

Use of Funds

Due to California regulatory requirements, a linkage fee collected for housing cannot be used for any purpose other than supporting affordable housing programs in the jurisdiction; however, because linkage fee ordinances are determined locally without the regulatory restrictions of federal or state housing programs, cities have established broad parameters for the uses of housing linkage fees, as described below.

Since housing linkage fees are free of the restrictions imposed by Federal or state funding sources, the jurisdictions surveyed confirmed that the revenue generated is used for a wide range of housing program activities. However, this flexibility may be constrained when linkage fees are combined with other subsidies that are more restrictive.

Among the jurisdictions cited, the housing linkage fee ordinances provide for one of two alternatives for the use of linkage fees. Either the locality deposits linkage fee revenues in a housing trust fund that establishes a maximum eligible area median income level to be targeted by the linkage fee, or the ordinance specifies the income level threshold and a wide range of alternative uses for housing linkage fees. For example, ordinances for Berkeley, Cupertino, Menlo Park, Sacramento, San Francisco, and Seattle state that the fees are deposited in the housing trust fund or used for housing programs.

The ordinances for the cities of Cambridge, Napa, San Diego, and Oakland specify that linkage fees may be used for new construction, rehabilitation, homeownership and rental assistance, preservation of existing affordable housing, historic preservation, as well as operating support for nonprofit housing development corporations and the administrative costs of the housing trust fund. Both approaches provide a locality with great flexibility in the use of

Table 2-2
Use of Linkage Fee Funds

Jurisdiction (Population)	**Use of Funds**	**Target AMI Benefiting from Linkage Fee**	**Fee Schedule in Effect**
Berkeley (101,371)	Funds housing trust fund. Create additional affordable housing units within Berkeley targeting households up to 80% AMI.	0%-80% AMI	Since 1993 fees are: $4.00/SF office or retail; $2.00/SF industrial
Boston (609,023)	Funds housing trust fund.	0%-80% AMI	Since October 1, 2009 fees are: $7.87/SF Commercial development needing zoning relief with more than 100,000 SF
Cambridge (105,596)	Funds housing trust fund, which provides financing to nonprofit affordable housing developers for acquisition and development, rehabilitation, preservation of existing affordable housing, and financial assistance to first time homebuyers. Monies may also be applied to reasonable administrative expense to support affordable housing trust fund.	0%-80% AMI	Since May 22, 2008 fees are: $4.25/SF for all commercial development seeking increase in density or intensity of use.
Cupertino (53,637)	Funds development of new affordable housing, conversion of existing market rate units to affordable, down payment assistance, and second mortgage programs.	0%-80% AMI	Since July 1, 2009, fees are $5.08/SF New office and industrial development.
Menlo Park (30,087)	Funds reduction of cost of housing to levels that are affordable to very low-, low- and moderate-income households, including below market financing for rental or ownership, property acquisition, interest rate reductions, rehabilitation, on-site and off-site improvements, and rent subsidies.	[0%-60% AMI rental. For-sale targets up to 110% AMI]	Since July 1, 2009 fees are: $14.01/ SF for commercial and $7.61/SF for all other commercial net new gross floor area that generates fewer employees than commercial, including industrial, office and R&D.
Napa (74,547)	Funds increase and improve the supply of housing affordable to low- and very low-income households; including, but not limited to acquisition of property and property rights, cost of construction including costs associated with planning, administration and design, as well as actual building or installation, as well as any other costs associated with the construction or financing of affordable housing; reimbursement to the City for such costs if funds were advanced by the City from other sources; and reimbursement of developers or property owners who have been required or permitted to install facilities that are beyond that which can be attributed to a specific development. Monies may also be used to cover reasonable administrative expenses not reimbursed through processing fees of the Housing Fund. No portion of the Housing Fund may be diverted to other purposes by way of loan or otherwise.	Rental targets 0%-80% AMI. For -sale targets up to 100% AMI.	Since 2000 fees are: $1/SF for office $1.40/SF for hotels, $0.80/SF for retail $0.50/SF for warehouses; warehouses less than 30,000 SF charged industrial rate.
Oakland (404,155)	Funds housing trust fund, which prioritizes housing for very low-income households, and includes administrative expense of City's housing program, homeownership and rental as well as operating support for nonprofit housing development corporations. Eligible uses include: assistance with staff costs or other administrative costs attributable to a specific affordable housing project, equity participation in affordable housing projects, loans and grants (including, predevelopment loans or grants) to affordable housing projects, or other public/private partnership arrangements. Monies from the housing trust fund may be used for rental housing, owner occupied housing, limited equity cooperatives, mutual housing developments, or other types of affordable housing projects.	0%-60%AMI	Since October 2009 fees are: Office $4.70/SF Warehouse Industrial $4.70/SF

Table 2-2 (cont.)
Linkage Fee Program Structure

Jurisdiction (Population)	**Use of Funds**	**Target AMI Benefiting from Linkage Fee**	**Fee Schedule in Effect**
Palo Alto (59,395)	Funds development of new affordable housing units.	0%-80% AMI	Since May 1, 2008 fees are: $17.06/SF for new commercial space with annual adjustments
Sacramento (463,794)	Funds only new construction of affordable housing.	0%-80% AMI	Since July 1, 2009 fees are: Office $ 2.11/SF Hotel $2.01/SF R&D $1.79/SF Commercial $1.69/SF Manufacturing $1.32/SF Warehouse/Office $.58/SF Other Fees: $1.06-$1.49/SF, including amusement/auto related.
San Diego (1,279,329)	Funds housing trust fund, which is used solely for programs and administrative support to meet the housing needs of very low-income, low-income and median income households. In addition, for homeownership purposes only, funds may be utilized to meet the housing needs of moderate-income households. These programs include providing assistance through production, acquisition, rehabilitation and preservation.	0%-80% AMI	Since March 1, 2009 fees are: $1.06/SF for office $0.80 for R&D $0.64 for hotels, retail and manufacturing $0.27 for warehouses
San Francisco (808,976)	Funds housing trust fund and is used solely to increase the supply of housing affordable to qualifying households. No portion of the trust fund may be used to pay any administrative, general overhead, or similar expense of any entity.	0%-80% AMI	Since July 1, 2008 fees are: Entertainment $18.75/SF Hotels $14.95/SF Office $19.96/SF R&D $13.30/SF Retail $18.62/SF
Seattle (598,541)	Funds Office of Housing's Notices of Funding Availability (NOFA) program.	0%-80% AMI for rental and up to 100% AMI for for-sale.	Since 2001 fees are: $18.75/SF for commercial and residential development requesting a density bonus.
Sunnyvale (132,109)	Funds Housing Mitigation Fund. The ordinance governs collection of the fee not the use of the funds.	0%-70% AMI for rental and 70%-120% AMI for for-sale	Since August 19, 2003 fees are: $8.00/SF applicable to properties that exceed allowable floor area in industrial zones

Source: Review of current Municipal Codes, October 2009; U.S. Census Bureau, 2008 Population Estimates, City of Menlo Park Below Market Rate Housing Program Guidelines 2009 and City of Sunnyvale Below Market Rate Housing Program Administrative Guidelines.

housing linkage funds (Table 2-2). However, in practice, most of the jurisdictions prioritized rental housing targeting households with lower incomes.

Generally, the ordinances do not state what group of households can be targeted for the affordable housing funded by the linkage fee (e.g., senior, special needs, family). However, specific housing types and uses of funds may be addressed in the guidelines governing the local housing trust fund, including administrative fees. For example, four of the 13 ordinances allow fees to be used for administrative expenses of the housing trust fund or of affordable housing

developers, as well as operating subsidies and capital expenses. Only San Francisco's ordinance specifically states that linkage fee revenues shall not be used for administrative expenses. Additional requirements under the Mitigation Fee Act include the segregation of linkage fee funds and accounting for the use of the funds. Linkage fee funds collected by a city but not disbursed within five years are subject to be refunded to the developer.

Exemptions from the Linkage Fee Requirement

A California city may design an ordinance that applies to all classes of residential and non-residential real estate. Property use, geography, ownership, and size of development are factors that have been used in designing exemptions to linkage fee ordinances. Among the California linkage fee ordinances reviewed, four exempted properties subject to development agreements, property owned by State or Federal government, ports and redevelopment agencies. Two jurisdictions exempted square footage attributable to amenities for employees such as on-site cafeterias, childcare or recreational facilities dedicated exclusively to employee use. Other commercial developments exempt from linkage fees were projects with few employees per square foot, such as lodges, or hazardous waste facilities (Table 2-3).

Categorical exemptions of specific classes of real estate and the scale of development are unique to the needs and circumstances of every jurisdiction. For example, Boston's linkage fee applies to commercial developments with more than 100,000 square feet; San Francisco exempted freestanding grocery stores with less than 75,000 square feet; meanwhile, Palo Alto exempted retail uses with less than 1,500 square feet, private schools, and childcare facilities.

Two jurisdictions provide for exemptions of certain geographic sub-areas within the jurisdiction, San Diego and San Francisco. In San Diego, one Enterprise Zone is exempt. In San Francisco, port and redevelopment agency properties are exempt. Seattle's linkage program is only applicable in the downtown area and thus exempts all other areas of the jurisdiction.

In conclusion, California housing linkage fee ordinances establish clear thresholds for the maximum income level eligible to be targeted with funds from housing linkage fees, and provide jurisdictions broad latitude in how the fee revenue can be utilized to support affordable housing. The fee levels currently in effect will be discussed later in this chapter.

Table 2-3
Overview of Exemptions from Linkage Fees

Jurisdiction (Population)	**Properties Subject to Fee**	**Exempt Properties***
Berkeley (101,371)	Net new constructed gross floor area for office, retail, commercial and industrial > 7,500 SF. Gross floor area undergoing change of use over 7,500 SF. Buildings that have been vacant more than 3 years and are office, commercial, or industrial use greater than 7,500 SF.	Residential properties and properties in Target Area.
Boston (609,023)	Commercial development needing zoning relief (de-fined as requiring a variance, conditional use permit, exception, or zoning map or other amendment) with more than 100,000 Square feet	Not Applicable.

Table 2-3 (cont.)
Overview of Exemptions from Linkage Fees

Jurisdiction	Properties Subject to Fee	Exempt Properties
Cambridge (105,596)	Applies to all commercial development seeking increase in gross floor area or height, waiver or reduction of parking requirement, or addition of uses that result in increase in density or intensity of use.	Projects < 30,000 SF of gross floor area.
Cupertino (53,637)	New office and industrial development.	Office and industrial with valid use permit at adoption of General Plan.
Menlo Park (30,087)	Commercial development, including industrial, office, and R&D	Private schools, churches, public facilities, commercial developments < 10,000 SF, projects generating few or no employees.
Napa (74,547)	Office, hotel, retail, industrial, warehouse (30,000 to 100,000 SF), wine production. Warehouses < 30,000 SF. For mixed uses, the appropriate fees are applied based on the applicable square footage of each type of use. When properties are categorized as "special", the fee is determined on a case-by-case calculation of employee density.	Projects with development agreements; the portion of nonresidential projects on land owned by State or Federal government, including any of its agencies with exception of property NOT used exclusively for governmental or educational purposes; nonprofits providing food storage, or temporary shelter to homeless. Projects with uses generating 1 or fewer employees. Schools, libraries, museums, art galleries public facilities, agricultural uses, childcare centers, Christmas tree sales lots, public parking, public utility lots. Buildings damaged by fire or natural catastrophes so long as the building square footage remains the same.
Oakland (404,155)	Office or warehouse/distribution > 25,000 SF. Office includes medical, retail, research and development facilities	Not Applicable.
Palo Alto (59,395)	New gross square footage of large commercial and industrial projects to satisfy 10% of the demand for low to moderate-income employees generated per average household by the average commercial and industrial development.	Residential uses, churches, colleges and universities, commercial recreation, hospitals/convalescent facilities, private clubs, lodges, private education facilities, public facilities. Retail < 1,500 SF. Also, new square footage for on-site cafeterias, recreational facilities or day care for employees and not general public is exempt, as are hazardous materials storage facilities.
Sacramento (463,794)	Nonresidential	Projects with development agreements; residential uses, projects on state or Federal property.
San Diego (1,279,329)	New office, retail, research and development, manufacturing, warehouse, hotel, mixed use, or other use as defined by the Planning Director.	Projects subject to development agreements, SRO development, residential uses, property owned by State or Federal government, nonresidential uses in specific Enterprise Zones. Projects approved prior to adoption of fee ordinance. Construction for general governmental purposes.
San Francisco (808,976)	Entertainment, hotel, office, research and development, retail projects with net addition of > 25,000 SFSF	Projects under jurisdiction of port and local redevelopment agency; nonresidential projects on state or federal land; pharmacies of < 50,000 SF, grocery stores of < 75,000 SF.
Seattle (598,541)	Any commercial or residential project in downtown requesting a density bonus.	Commercial projects taller than 85 feet may provide affordable housing or pay an in lieu fee. Projects below 85 feet must produce units.
Sunnyvale (132,109)	Industrial development exceeding threshold floor area ratios by 35%.	Fees do not apply to square footage attributable to recreational facilities, cafeterias, or design features not utilized for occupancy or storage, atria, auditoriums or special presentation rooms, childcare facilities, or hazardous material storage.

Source: Review of current Municipal Codes, October 2009; U.S. Census Bureau, 2008 Population Estimates.

Geographic Linkage

In some cities, linkage fee ordinances require a geographic linkage between the location of the development and the location where the linkage fees are spent (Table 2-4). While this approach may draw a tighter connection between the location of new development and affordable housing (jobs-housing balance), it may be difficult to implement due to the high cost of land and/or lack of availability of land within particular geographic areas. To address this issue, the geographic linkage can be required for a percentage of the fees generated in a given geographic area, or used in connection with public transit serving the development.

Table 2-4
Geographic Linkage

Jurisdiction (Population)	**Geographic Linkage Provisions**
Sacramento (463,794)	Fees collected shall support affordable housing within 7 miles of nonresidential development. At discretion of planning and redevelopment agencies directors, geographic linkage can be imposed to avoid over concentration of affordable housing and promote air quality.
San Diego (1,279,329)	Currently, funds may be used citywide. Discretion at administrative level to establish maximum distance for geographic linkage for where funds are spent.
Seattle (598,541)	Location of housing funded with cash payments will be prioritized in the following order: within the downtown urban center, within an urban center adjacent to the downtown urban center, in the city within 0.5 mile of a light rail or bus rapid transit station on a route serving the downtown urban center, in the city within 0.25 mile of a bus or streetcar stop on a route serving the downtown urban center.
Boston (609,023)	If feasible, 10% of linkage fees collected from downtown should support housing activity in same district. Twenty percent of fees collected outside of downtown should have geographic linkage with where the project is located.

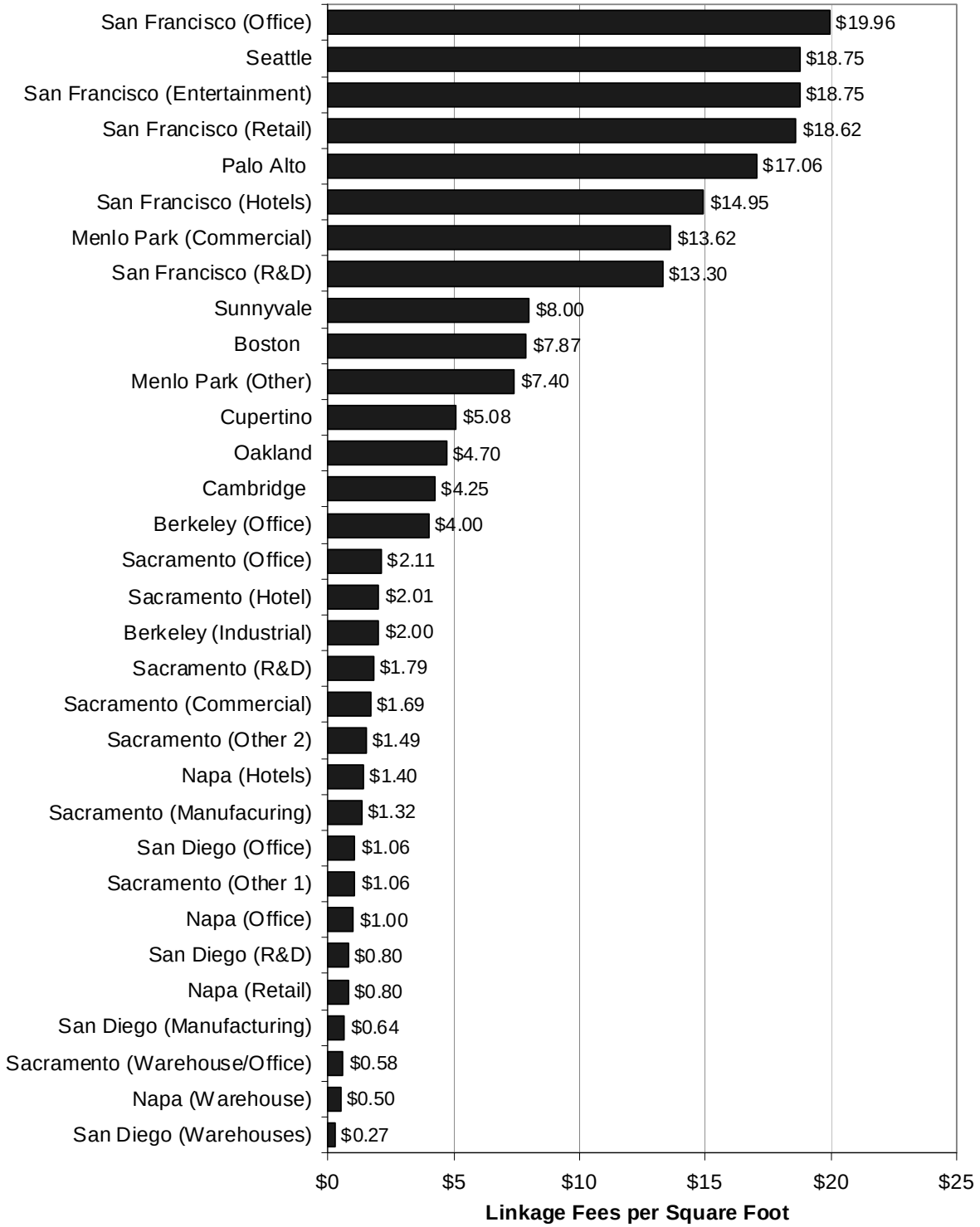
Source: Review of current Municipal Codes, October 2009; U.S. Census Bureau, 2008 Population Estimates. Note: Only these four jurisdictions require a geographic linkage between the location of development and where the linkage fees are spent.

For example, under Boston's linkage ordinance, 10 percent of its linkage fees from its downtown district are reserved to support affordable housing activity in the downtown district, and 20 percent of fees collected outside of the downtown district are to be reinvested in the area containing the development that generated the fee. The determination of the feasibility of these geographic linkage goals in Boston is at the discretion of the Director of the Neighborhood Housing Trust Fund, which administers the City's housing programs.

Similarly, Seattle's linkage program, which is only applicable to downtown development, was recently amended to address the geographic linkage by requiring linkage fees collected from downtown developments to be spent in the same downtown area or if outside of downtown, then within no more than a half mile radius of public transit that connects to downtown. It should be noted that of all the jurisdictions surveyed, Seattle was the only one that has applied linkage fees to a discreet geographic zone, and its city council recently passed resolutions seeking to expand the geographic boundaries of their linkage program.

Sacramento's ordinance imposes a seven-mile limit on the distance between the development generating the fee and the affordable housing, but that radius encompasses most of the city. Meanwhile, San Diego has the authority to impose geographic linkage but had not done so to date.

Figure 2-1
Linkage Fees per Square Foot as of October 2009, by Jurisdiction and Development Type



Source: Nexus Studies for Oakland, Sacramento, and San Diego and interviews with City staff, October 2009.

The potential outcomes for geographic linkage are not well known at this time because the few jurisdictions that incorporate this element into their local ordinances, have not documented the results, or the requirements are so new that no results have yet been measured.

Fee Schedules

Determining the Appropriate Fee Level

In California, one of the critical requirements for determining justifiable fee levels is a nexus study that correlates the affordable housing demand with earnings from different types of employment. While nexus studies have quantified the impact of new development on affordable housing demand, the fees that have been adopted have been a small fraction of the value of the impacts justified by the studies. Information on how particular levels of linkage fees were determined was not available because many of the housing linkage fee ordinances reviewed were adopted 20 or more years ago and most interview subjects had not been working with their respective cities at that time.

Linkage fees in effect as of October 2009, in the 13 cities reviewed in this chapter are summarized and compared in Figure 2-1 and Table 2-5. In addition, the affordable housing impacts quantified by recent nexus studies are shown in Table 2-5. This table has data for only four jurisdictions because many cities, especially those that have not restructured their fee schedules recently, do not have nexus studies available and cities outside of California (Boston, Cambridge and Seattle) were not required to conduct nexus studies.

The current fee schedules range from $0.50 to $19.96 per square foot, while of the jurisdictions with recent nexus studies, the studies quantified impacts ranging from $0.47 per square foot to more than $100 per square foot. In those cities, the fee schedule currently in effect is between 1 percent and 13 percent of the nexus study conclusion.

The adoption of Boston's linkage provides an example of the negotiation process among stakeholders that typically influences the housing linkage ordinance and the applicability of the fee. In 1983, Boston's linkage fee commission recommended a fee of $5 per square foot for all commercial development. However, according to a detailed case study published by Policylink.org, the fee ultimately adopted remained at the level of $5 per square foot while its scope was limited to commercial developments of greater than 100,000 square feet that required either a conditional use permit, a variance, or a zoning map or other amendment. Boston's linkage fee ordinance faced legal challenge and ultimately required action by the state legislature to be adopted in 1986.[2]

Additional research in other jurisdictions confirmed that the negotiation among stakeholders with competing interests in the housing linkage fee sometimes lasted several years and involved litigation, before a linkage fee ordinance was finally adopted.

Periodic Adjustments to the Linkage Fee

Linkage fee ordinances commonly provide for periodic adjustments to the fee to compensate for inflation. Jurisdictions typically tie linkage fee adjustments to the regional Consumer Price Index (CPI) or a construction cost index, but neither of these indices takes into

Table 2-5
Linkage Fees as of October 2009 (Per Square Foot), by Jurisdiction and Development Type

Jurisdiction Properties Subject to Fee	Year of Nexus Study	Justified Nexus Cost Per S.F	Linkage Fees as of October 2009 (Per Square Foot)					
			Hotels	R&D	Office	Ware-house/ Industrial	Retail	Entertain-ment
Berkeley Nonresidential development projects that increase demand for affordable housing	NA	Not available			$4.00	$2.00	$4.00	
Boston Commercial development needing zoning relief with more than 100,000 SF	No study completed	Not applicable	$7.87	$7.87	$7.87		$7.87	$7.87
Cambridge Residential and commercial projects	No study completed	Not applicable	$4.25	$4.25	$4.25	$4.25	$4.25	$4.25
Cupertino Commercial development, specifically all new office and industrial development	1992	Not available			$5.08	$5.08		
Menlo Park Commercial development, including industrial, office, and research and development	2000	Not available	$7.61	$14.01	$14.01	$7.61	$7.61	
Napa Any nonresidential development	1982 updated 2004	Not available	$1.40		$1.00	$0.50	$0.80	
Oakland Office or warehouse/distribution > 25,000 SF	2001	$0.47 to $35.11/SF			$4.70	$4.70		
Palo Alto New gross square footage of commercial and industrial projects and retail projects > 1500 SF	2002	Not available	$17.06	$17.06	$17.06	$17.06	$17.06	
Sacramento Nonresidential	2006	$5.15 to $100.92/SF	$2.01	$1.79	$2.11	$0.58	$1.69	
San Diego New office, retail, research and development, manufacturing, ware-house, hotel, mixed use or other use	1989, update 2004	$8.63 to $56.86/SF	$0.64	$0.80	$1.06	$0.27	$0.64	
San Francisco Entertainment, hotel, office, research & development, retail projects with net addition of > 25,000 SF	1997	Not available	$14.95	$13.30	$19.96		$18.62	$18.75
Seattle Any commercial or residential project in downtown requesting a density bonus	No study completed	Not available	$18.75	$18.75	$18.75		$18.75	$18.75
Sunnyvale Industrial development exceeding threshold floor area ratios	Updated in 2002	$17.63/SF in 2002 nexus study				$8.00		

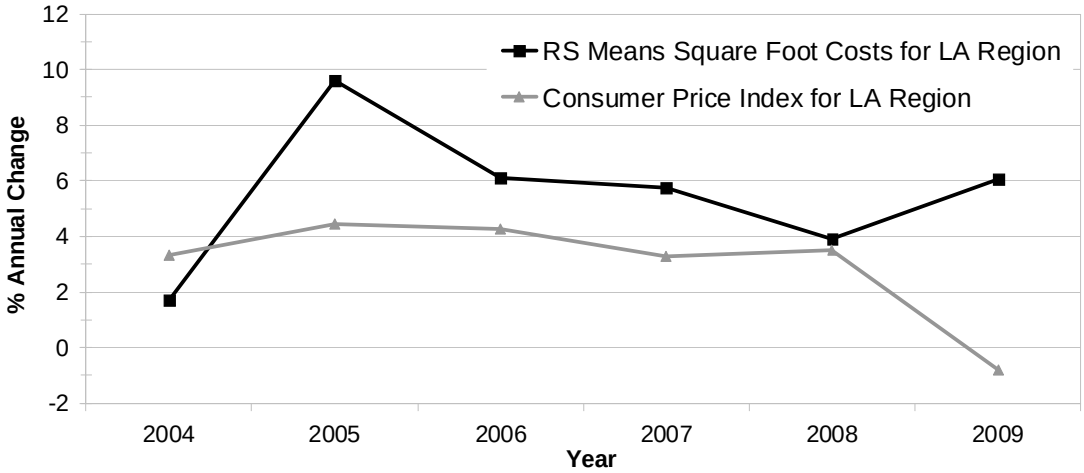
Source: Nexus Studies for Oakland, Sacramento, and San Diego and interviews with City staff, October 2009

account changes in land costs, which are a key determinant in the cost of housing development. As a result, California jurisdictions with seasoned linkage programs have undertaken periodic nexus studies in order to recalculate their linkage fees to bring them into alignment with the escalating costs of affordable housing development.

Jurisdictions will make significant adjustments to the fee as needed, but will generally seek an update or new nexus study to justify substantial amendments to the fee. While many jurisdictions reserve the right to adjust their linkage fee, in reality some do not exercise this authority due to political pressure or existing high fee levels that could potentially deter development (Table 2-6). Half of the cities surveyed have adjusted the fee schedule three times or less since adoption of the ordinance.

Housing linkage fee ordinances commonly contain automatic adjustment factors for the fee levels that reflect objective indices. Usually, these adjustments are applicable to fees for the provision of public services (e.g. sewer, park or street maintenance) and are based on the percentage increase in the Bureau of Labor Statistics' Consumer Price Index (CPI). The CPI measures changes in the price of a standard market basket of goods and services, and its use for adjustments in prices and fees has general legitimacy. However, the costs of providing affordable housing are particularly tied to land costs, construction costs, and changes in building requirements rather than household goods and services that are reflected in the CPI. As a result, the package of overall costs associated with developing housing may rise or fall in a manner widely divergent from CPI (Figure 2-2).[3]

Figure 2-2
Annual Change in Consumer Price Index Compared to Los Angeles Construction Costs



Sources: RS Means Square Foot Costs: Residential, Industrial, Commercial, Institutional 2010. Bureau of Labor Statistics, Consumer Price index for All Urban Consumers: Los Angeles-Riverside-Orange Counties, All Items.

From a conceptual point of view, a weighted index of selected factors might provide a more accurate reflection of changes in the cost of housing development. In practical terms, construction cost indices adjusted for regional differences are widely available from several private sources. However, there is no readily available index of fluctuations in land costs, which play a major role in development costs. Currently, in affordable housing development, land costs are approximately 10 to 15 percent of total development cost, and may be the most volatile factor.

Table 2-6
Fee Schedule Adjustments

Jurisdiction (Population)	**Adjustments Authorized by Linkage Fee Ordinance**	**Implementation of Adjustments**
Berkeley (101,371)	May update every 5 years to keep pace with changing market, social economic and funding conditions.	No adjustments documented.
Boston (609,023)	Schedule may adjust every three years subject to economic trends including review of development activity, commercial rents per square foot, employment growth, inflation rates as well as housing trends, including vacancy rates for low- and moderate-income housing.	Adjusts periodically.
Cambridge (105,596)	May review and recalculate every 3 years based on: development activity, commercial rents/SF, employment growth, vacancy rates, production statistics, and prices for dwelling units. Housing Trust Trustees may adjust annually based on Consumer Price Index.	Adjusts annually.
Cupertino (53,637)	Annually according to Consumer Price Index.	Adjusts annually.
Menlo Park (30,087)	No automatic annual adjustments are authorized in the ordinance.	No response.
Napa (74,547)	Fee levels are subject to an annual evaluation and recommendations of housing director and planning director.	No adjustments since 2000.
Oakland (404,155)	Adjusts annually according to Residential Building Cost Index. (1)	Adjusts annually.
Palo Alto (59,395)	Adjusts annually based on Consumer Price Index. (2)	In 2002, adopted increase from $4.21 to $15/SF and removed size limitations.
Sacramento (463,794)	Fee now automatically adjusts annually by a factor equal to the percentage increase, if any, of the San Francisco Construction Cost Index. (3)	In 2004, City Council adopted 84% increase to fee justified by nexus study.
San Diego (1,279,329)	Annual increase or decrease is permitted based on the building cost index. (4)	No adjustments since 1990 or 1996.
San Francisco (808,976)	Annually according to the San Francisco Construction Cost Index. (5)	Adjusts annually.
Seattle (598,541)	Annually according to Consumer Price Index.	Adjusted twice since 2001 without nexus study.
Sunnyvale (132,109)	No automatic annual adjustments are authorized in the ordinance.	Adjusted three times since inception.

Source: Interviews with city staff, October 2009; U.S. Census Bureau, 2008 Population Estimates. Data sources cited in the table are: (1) Marshall and Swift Residential Building Cost Index, (2) Consumer Price Index, for the San Francisco-Oakland Area, (3) Construction Cost Index for San Francisco, based on 1913 U.S. average = 100, (4) Building Cost Index, Engineering News-Record, McGraw Hill, (5) Construction Cost Index, Engineering News-Record, McGraw Hill.

For the purpose of setting future fee levels, the selection of a value or cost based index other than the CPI carries a substantial element of uncertainty since land and/or construction prices could increase or decrease by significant amounts in the coming years. Alternatively, a linkage fee ordinance could provide for a periodic review of the fee level. Even if the ordinance does not provide for a reevaluation of fee schedules, the levels are always open to readjustment by the legislative body, or the authority for determining adjustments can be delegated to the appropriate city department administrators.

We recommend that the linkage fee be adjusted annually based on changes in the construction cost index for the Los Angeles region. Land and construction costs are the most significant components of development costs, however, only construction cost data is readily available. Multiple California jurisdictions annually adjust the local linkage fee according to fluctuations in a construction cost index that tracks local construction cost data. These adjustments are automatic except in instances when the local jurisdiction exercises its discretion to suspend or waive the fee during times of extreme volatility of factors, such as the 2008 recession, that outweigh the construction cost index.

When the fee adjustments are determined locally, decision makers will want to consider the volume of development activity, rents and vacancy factors for commercial and residential development, unemployment rates, inflation, the production levels of housing affordable to low and very low-income households, and the breadth of rent burden relative to income levels. This should be done on an annual basis in order to balance maintaining the fee schedule's relevance to the impacts of development and the predictability of adjustments to the fee.

While this nexus study quantifies the income gap by industry as opposed to the financing gap between what working households can afford to pay and the cost of developing housing, this difference in methodology for determining the earned income deficit has no relation to periodic fee adjustments. To ensure that the exactions imposed on developers remain proportional to the costs incurred by the jurisdiction, the nexus study should be updated to account for inflation as often as every five years. In the interim, many California jurisdictions tie a periodic adjustment of local fee assessments to a construction cost index that tracks local cost data. As an example, if the index indicated that construction costs in Los Angeles rose by two percent from 2009 to 2010, then the linkage fee would increase by the same increment for the time period. The local jurisdiction determines when the adjustment takes effect and uses the cost index to reference adjustments to the fee. These construction cost indices are widely commercially available, market specific, and used to track construction costs for various building types in multiple jurisdictions.

When Fees Are Collected

California jurisdictions collect linkage fees at different points of the project approval and development process. Linkage fees can be collected at any time in the permitting process; however, there is a strong rationale to tying some, if not all, of the fee to the completion of a project so that the payments are linked to the occurrence of its impacts. Securing the developer's linkage fee obligation during construction and collecting a higher level of fees over time, starting when construction is completed, lowers the amount of construction financing needed by the developer. This approach also potentially provides the City with a more consistent stream of revenue, which facilitates longer range planning and budgeting.

The determination of the amount of the linkage fee for a new development occurs during the permitting process and is typically incorporated in the Planning Department's decision letter or the Building Department's calculation of fees that are paid prior to the issuance of a construction permit. The vast majority of linkage fee programs collect fees prior to the issuance of a building permit or certificate of occupancy; however, this is not required by state law.

Of the linkage fee programs reviewed, only Oakland, Palo Alto and Boston sequenced the collection of a portion of the housing linkage fee *after* completion of the development. Santa Monica (which was surveyed but excluded from this study) and Boston receive the first fee payment as a condition of issuing certificate of occupancy, and thereafter, payments are made on an annual basis. Oakland collects its fee in installments: 25 percent prior to issuance of building permit, 50 percent prior to issuance of the temporary certificate of occupancy, and the final 25 percent eighteen months after issuance of the temporary certificate of occupancy. Similarly, Palo Alto collects 50 percent of the fee at building permit issuance and the balance prior to issuance of the certificate of occupancy. Boston collects the fee over seven years and Santa Monica collects over four years.

Collecting fees over time as opposed to one lump sum payment diminishes the net present value of the fee. Using the Boston example, assuming a 10 percent discount rate, the net present value of the $7.87 per square foot fee amortized over seven years is $5.42. Commercial developers in Boston occasionally exercise the option of paying the housing trust fund the reduced present value of the fee ($5.42) all at once, but generally only when they are trying to build goodwill in a specific neighborhood.

As a practical matter, front-end financing is particularly difficult for developers, especially in times when overall economic conditions are adverse to development. Payment of fees at the completion of the development is beneficial to the developer because it reduces the amount of financing needed to start construction and allows the developer to rely on revenue from the completed development to cover the cost of the fee.

If payment of the fee is a precondition to actual occupancy and use of a new building (e.g., as a precedent to any type certificate of occupancy, temporary or permanent), there will be adequate surety, since a failure to pay the fee would have huge economic consequences for the developer relative to the size of the fee.

Collecting the fee at different intervals in the development process may be considered in order to mediate the costs incurred by the developer and the time when the development begins to generate income to pay for the fee. For example, collecting half of the fee as a condition to approving the building permit incentivizes the developer to pay the fee, and reduces the developer's cost to start construction by the amount of linkage fee deferred.

Alternatives to Paying Fees

Linkage fee ordinances for California jurisdictions follow a basic model that provides project sponsors with several options for mitigating the impacts of development, including:

1. *Payment of Fees***:** Payment is the simplest method for developers to address the affordable housing demand identified by a nexus study. However, some jurisdictions prioritize the production of affordable housing instead of the accumulation of a capital fund, and call for high fees to incentivize the production option. For smaller developments, a fee payment is likely to be the only practical option since land donation or affordable housing production options are difficult to undertake on a small scale.
2. *Land Donation***:** In lieu of paying linkage fees, a developer may contribute land, buildings, or air rights that are equal to or greater in value than the linkage fee and are

suitable for affordable housing. This option is more cumbersome for the city to administer unless the city department responsible for administering the dedicated property has specialized expertise in property management and disposition. Furthermore, to make this a practical mitigation for a jurisdiction, the donated land or building should be entitled or permitted for residential use, and suitably located near amenities such as schools, public transit and social services appropriate for residents. The housing linkage fee ordinances require that the donated property be zoned for affordable housing.

3. *Producing Affordable Housing:* When jurisdictions give the sponsor the option of developing the affordable housing units themselves or in a joint venture with an affordable housing developer, the number of units to be produced may be less than the value of the fees required by the linkage fee ordinance. The City may establish a factor, which when applied to the commercial square footage, translates into a number of units to be produced either on-site or off-site. If the developer fails to comply with the production option within a timeframe of typically two to three years, then the developer is responsible for paying the linkage fee.

4. *Hybrid Options:* Some jurisdictions offer developers combination options for paying fees and producing affordable housing (listed above in 2 and 3). However, the value of the donated affordable housing units or land or property under the production option must be at least equivalent to the fees that would have been paid (Table 2-7).

While it is desirable to provide developers with multiple options to satisfy a linkage fee assessment, in practicality, payment of fees is the most efficient option for a City to administer and for developers to meet their obligations. In some jurisdictions, a few market-rate developers have partnered with affordable housing developers to complete units, but no donations of land or building have occurred. Among the jurisdictions surveyed, none reported either receiving land contributions or having affordable housing produced in lieu of linkage fee payments.

Table 2-7
Alternatives to Paying Fees

Jurisdiction (Population)	**Alternatives to Paying Fees**
Berkeley (101,371)	For Office/Retail: for each 18,750 SF, applicant has option of creating additional residential units on-site or off-site within the City by creating one unit of housing (average size of 2 bedrooms) affordable to <= 50% AMI, and one unit affordable to <= 80% AMI. For industrial: For each 37,500 SF of gross floor area, applicant has same option as above.
Boston (609,023)	Applicants have alternative of creating or causing to be created housing units for low- and moderate-income residents at a cost at least equivalent to the amount of the linkage fee. Developers may also contribute Net Present Value of linkage fee with Housing Trust Fund, and then funds are reserved for an affordable housing.
Cambridge (105,596)	Developer may: 1) develop or cause to be developed affordable units for households at or below 80% AMI, or 2) donate land to be used exclusively for affordable housing development. Land or units must be of equivalent benefit toward addressing the City's housing need as the housing contribution otherwise required.
Cupertino (53,637)	None

Table 2-7 (cont.)
Alternatives to Paying Fees

Jurisdiction (Population)	**Alternatives to Paying Fees**
Menlo Park (30,087)	Provide affordable housing on site if allowed by zoning district or off-site. If not feasible, developer pays a linkage fee, which is $14.01/SF for office and research and development and $7.61/SF for all other commercial/industrial.
Napa (74,547)	As an alternative to payment of the Housing Impact Fee, a developer of a nonresidential development project may submit a request to mitigate the impacts of such development through the construction of residential units, the dedication of land, or mixed use or other resources. Such requests shall be approved by the city council.
Oakland (404,155)	An applicant choosing to produce affordable housing instead of paying fees must submit satisfactory evidence to the City Manager of site control and issuance of a use permit for the project intended to produce the affordable housing units, prior to receipt of the building permit for the development project. The applicant must obtain a building permit for the affordable housing project prior to the issuance of the certificate of occupancy (C of O) for the development project. The applicant must secure a C of O for all affordable housing units no later than eighteen months from the issuance of the C of O for the development.
Palo Alto (59,395)	Produce or cause to be produced affordable housing on-site or off-site equivalent to a formula that approximates 10 percent of the demand for low- to moderate-income housing.
Sacramento (463,794)	Pay 20% fee AND construct any value or tenure type of housing as determined by formula Housing construction must be completed within 2 years of nonresidential building permit issuance. Up to 2 years extension granted by planning director.
San Diego (1,279,329)	Applicant may dedicate air rights or land to the City that is suitable for affordable housing. Fair market value of land or air rights shall be greater than or equal to required fee.
San Francisco (808,976)	Applicants may comply with ordinance by acquiring or donating land equivalent in value to fee to affordable housing developer that can provide affordable housing; OR combination of paying fee and land donation. Land value determined by appraisal.
Seattle (598,541)	Applicant may provide housing serving low-income households that must equal [15.6%] of gross floor area, and must be within the development unless the Director of the Office of Housing approves an alternate location in an eligible area. Units provided must be affordable to households with incomes up to 80% AMI for rental and 100% AMI for owner-occupied units for at least 50 years beginning at issuance of final certificate of occupancy for the project using the bonus. Housing may be newly constructed, converted from nonresidential use or renovated. Agreement between housing owner and City must be executed and recorded prior to issuance of building permit for the housing.
Sunnyvale (132,109)	Applicant has option of 1) constructing residential units, or 2) dedicating land or other resources. Other resources need to be equal to or greater in value than linkage fee, as determined by community development director. The intent is to further affordable housing opportunities in the city to an equal or greater extent than would result from payment of the linkage fee.

Exceptions and Enforcement Methods

Exceptions

The linkage fee ordinances in California typically authorize exceptions, and the following conditions for approval are common among those ordinances (Table 2-8):

1. Special circumstances unique to the project;

2. The project is not feasible without the modification;
3. A specific and substantial financial hardship would occur if the variance were not granted;
4. There is no alternative means of compliance available that would be more effective in meeting the goals of the linkage fee program; and
5. The project will consist of low-density structures that will not have any impact on the demand for housing, such as a landfill or hazardous disposal facilities.

Interviews with staff of cities with linkage fee programs confirmed that no developers had sought exceptions on grounds of financial feasibility and that such requests were unlikely to be granted. However, cities had granted exceptions from linkage fees for developments with minimal employment impacts. An example would be a hazardous waste facility that may have significant square footage but only one or two employees.

Finally, California law sets forth procedures for challenging particular fees. Within 90 days after fees are imposed pursuant to a permit, a developer may pay any required fees to obtain a permit and proceed with the development, while reserving the right to challenge the fee. Generally, any change to a new land use that generates a higher employment level triggers an exaction of fees applicable at the time of the request for the change of use, even if a waiver of fees was granted previously under the old use.

In every jurisdiction, issuance of building permit was conditioned upon the city receiving housing linkage fees for the specific development. None of the jurisdictions surveyed reported any failures of developers to comply with the linkage fee requirements. There are legal instruments and procedures that can be used to compel compliance, which are listed in Table 2-9.

Table 2-8
Exceptions

Jurisdiction (Population)	**Threshold Conditions for Requesting Variances/Waivers**	**Conditions for Appeal**	**Number of Appeals Submitted**
Berkeley (101,371)	City may waive or limit fee when the applicant demonstrates 1) the project will not generate any additional need for affordable housing, 2) the mitigation fee or level shall not exceed the reasonable cost of satisfying the added affordable housing demand. The City shall not condition any permit in a way that deprives applicants of their constitutional rights. Hardship exceptions are granted under the following conditions: 1) The mitigation makes the development of project infeasible, and 2) the benefits to the City from the development outweigh its burdens in terms of increased demand for affordable housing.	Appeals may be heard by Zoning Appeals Board and ultimately by City Council according to local appeal procedure.	Not available*
Boston (609,023)	Not applicable	Not applicable	Not applicable**
Cambridge (105,596)	None stated in ordinance.	No conditions specific to incentive zoning ordinance, other than the standard process for appeals, waivers and variances applicable to all zoning cases.	Not available*

Table 2-8 (cont.)
Exceptions

Jurisdiction (Population)	Threshold Conditions for Requesting Variances/Waivers	Conditions for Appeal	Number of Appeals Submitted
Cupertino (53,637)	Any component of the linkage program can be appealed	Any part of the program can be appealed; appeals go to Housing Commission then City Council for final decision.	Not available*
Menlo Park (30,087)	None stated in ordinance.	None stated in ordinance.	Not available*
Napa (74,547)	Applicants may appeal to the city council for a reduction, adjustment, or waiver of the fee based upon the absence of any reasonable relationship or nexus between the impact of the development and either the amount of the fee charged or the housing offered in lieu of paying the fee.	The appeal shall set forth in detail the factual and legal basis for the claim of waiver, reduction, or adjustment.	Not available*
Oakland (404,155)	Variances are allowed if: 1) development project is infeasible by imposition of the fee or housing production measures, 2) there are demonstrated special circumstances unique to financing or economics not applicable to other projects, and 3) there is no alternative means of compliance are available, or, 4) the development will not generate any affordable housing need. Burden of proof is on the applicant. "Infeasible" means incapable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal and technological factors.	Appellant has burden of proof.	Not available*
Palo Alto (59,395)	The applicant has to provide public benefits, and appeals are heard through the Planning Department.	None stated in ordinance.	Not available*
Sacramento (463,794)	Variances are allowed if the applicant proves: 1) special circumstances unique to the project and not generally applicable to other projects justify the variance; 2) project is not otherwise feasible without the modification, 3) specific and substantial financial hardship, and 4) there is no other means of compliance. Low-density employment uses requiring specialized structures may be granted a variance if facilities involve few or no employees. Minimum fee that can be collected is 40% of required fee.	The applicant may appeal the planning director's determination. Any application for a building permit for any project where a special fee determination is requested shall be accompanied by information sufficient to enable the planning director to make a determination of employee density.	Not available*
San Diego (1,279,329)	Applicant must prove: 1) Special circumstances unique to the project that justify variance. (2) Project is infeasible without modification. (3) Financial hardship occurs if variance is not granted. AND (4) No alternative means of compliance are available.	None stated in ordinance.	Not available*
San Francisco (808,976)	Applicants may appeal the City's determination of eligible square feet subject to the ordinance, or appraisals of the contribution made by their plan for meeting their mitigation obligations. Applicants cannot appeal the amount of the fee.	Applicant has the right to request hearing, but their claims are limited only to compliance of the plan and appraisal and not the amount of fee.	Not available*
Seattle (598,541)	Exceptions to the fee are at the discretion of the Office of Housing when subsidies for affordable units disqualify the applicant from meeting the performance option requirements.	Not applicable	Not applicable**

Table 2-8 (cont.)
Exceptions

Jurisdiction (Population)	Threshold Conditions for Requesting Variances/Waivers	Conditions for Appeal	Number of Appeals Submitted
Sunnyvale (132,109)	An adjustment, reduction or waiver of the fee may be granted if: 1) Upon the remodeling of a building to add square footage, the appropriate housing mitigation fee shall be paid only on the additional square footage. (2) If the development project is in whole or part a replacement for space previously on the site, but vacated or demolished in the twelve months prior to the filing of the application for a use permit. (3) The director of community development finds that there is an absence of any nexus between the impact of the development and the need for housing, the project shall be eligible for a conditional waiver of the fees. The burden of proof shall be on the applicant.	None stated in ordinance.	Not available*

Source: Review of current Municipal Codes and Interviews with City staff, October 2009; U.S. Census Bureau, 2008 Population Estimates.
Notes: *Not available indicates subjects were asked to provide data but did not respond.
**Not applicable indicates no waivers or variances are granted under the ordinance.
Appeals processes for housing linkage fees may be included in other sections of the municipal code.

Table 2-9
Linkage Fee Enforcement Mechanisms

Jurisdiction	Enforcement
Berkeley	Building permit withheld.
Boston	Building permit withheld.
Cambridge	Building permit withheld.
Cupertino	Any construction permit withheld.
Menlo Park	Building permit or land use authorization withheld.
Napa	The Napa City Attorney's Office or the Napa County District Attorney, as appropriate, shall be authorized to abate violations and to enforce the provisions of the applicable municipal code.
Oakland	Building permit withheld unless the first installment of the impact fee is paid. Certificate of Occupancy (C of O) withheld unless the second installment of the impact fee is paid. Additional penalties include no release of utilities for nonresidential developments. If proposed units are not completed in a timely way, applicant will be charged 150% of the fee originally owed plus interest as of date first building permit was issued. If fee is not paid within 60 days, city may record special assessment lien against the development in the amount of the charge plus interest, or may suspend the C of O.
Palo Alto	Violation of the ordinance is a misdemeanor. Applicant may be liable civilly for up to $500 per day of violation. Building department officials may exercise authority to arrest.
Sacramento	Building permits or C of O withheld, and lien recorded against property to recover fee.
San Diego	Building permits or C of O withheld, and lien recorded against property to recover fee.
San Francisco	Building permits or C of O withheld, and lien recorded against property to recover fee. If the fee is not collected when due, interest of 1.5% per month applies to any unpaid balance of the fee from the date of issuance of the permit.
Seattle	Density bonus denied.
Sunnyvale	None stated in the ordinance.

Source: Review of current Municipal Codes, October 2009.

Outcomes

Fees Collected

All of the jurisdictions surveyed deposit linkage fees in a housing trust fund or equivalent where they are combined with other local or state and Federal revenues that are earmarked for affordable housing development. Consequently, most of the jurisdictions reported the total amount of funds generated by the housing linkage fee, but could not disaggregate the linkage fees from other funds in order to provide a detailed account of the number of units assisted by linkage fees or the types of units assisted. Table 2-10 (Outcomes) sets forth information on how linkage fees were used based on the respondents' best efforts to provide answers about how many units were assisted by the linkage fees and the income levels targeted.

Figure 2-3
Average Annual Fee Collected per Capita
Since Inception of Fee Program

Source: Review of current Municipal Codes, October 2009; U.S. Census Bureau, 2008 Population Estimates.

The application of the housing linkage fee varies widely among California jurisdictions. Of those surveyed, Sacramento and San Diego apply the fee most liberally to all non-residential property uses, with few exceptions. Meanwhile, other jurisdictions limit the applicability of the housing linkage fee by property type, square footage, properties requesting density bonuses or other forms of zoning exceptions, and or geographic location.

The five cities that have generated the most money through linkage fees are: Boston, San Francisco, San Diego, Seattle, and Sacramento, all of which have had linkage programs for at least 20 years (Table 2-10). In part, these results are connected to the age of the linkage programs and populations since these were the most populous jurisdictions considered in the study. On a per capita basis, the average annual fees collected ranged from $1.26 in Berkeley to $13.13 in Palo Alto, with an average annual per capita linkage fee of $4.16 among all cities reviewed (Figure 2-3).

Table 2-10
Jobs-Housing Linkage Fee Outcomes

Jurisdiction	Year Ordinance Adopted	Maximum AMI benefiting from Linkage Fee	Affordable Units Assisted by Linkage Fee	Fees Collected Since Inception	Average Annual Fee Collected in $1,000s	Average Fee Annual Fee Collected Per Capita
Berkeley	1988	80%	NR	$1.4M	$127	$1
Boston	1983	80%	6545	$99M	$3,807	$6
Cambridge	1988	80%	NA	NA	NA	NA
Cupertino	Amended 2002	80%	60	$3M	$428	$8
Menlo Park	NR	110% AMI or less	NR	NR	NA	NA
Napa	1999	Rental is 80% For -sale is 100%	400	$4.7M	$427	$6
Oakland	2005	60%	None	None	$0	$0
Palo Alto	1984	80%	506	$11.7M	$780	$2
Sacramento	1989	80%	2915	$24M	$1,214	$3
San Diego	1990	80%	5659	$41M	$3,494	$3
San Francisco	1981	80%	1262	$55M	$2,651	$3
Seattle	1989	Rental is 80% For -sale is 100%	906	$39M	$1,961	$3
Sunnyvale	1983	80%	127 as of 2003	Between $12M-$13M	$480	$4

NR is No Response
NA is Not Available

The most significant determinant of the volume of linkage fees is the volume of development subject to linkage fees as opposed to the level of the fee. San Diego is the newest of the five programs generating the most fees, but has collected the second highest average annual fees of those surveyed; yet the city has the lowest fee schedule among the thirteen surveyed, with fees ranging from $0.27 to $1.06 per square foot.

It is clear that the approach of applying the fee generally to broad classes of properties and limiting the properties exempted from the fee achieves the objective of generating a relatively high level of funding for the local affordable housing trust fund (Figure 2-3, Table 2-11). Sacramento and San Diego currently impose low fee levels ranging from .27 to $2.01 per square foot, and have collected revenue of $24.2 million and $41.9 million, respectively to date.

In 2008-09, due to the recession, California jurisdictions received virtually no fees. In 2009, the rate of residential construction in Los Angeles was exceptionally low, with 19,168 residential permits issued compared to 32,675 residential permits in 2006, according to City of Los Angeles Department of Building and Safety. Commercial development experienced a comparable 31 percent decline during the same timeframe with non-residential permits declining from 24,317 to 14,388.

Unlike the California jurisdictions that have experienced tremendous volatility in their housing linkage fee collections and have not received any fees in some years, Boston has

Table 2-11
Fees Generated

Jurisdiction	Average Annual Fee Collected in $1,000s	Average Annual Per SF Fee Collected Per Capita	Hotels	R&D	Office	Warehouse/ Industrial	Retail	Entertain-ment
Berkeley	$127	$1.26	$0.00	$0.00	$4.00	$2.00	$4.00	$0.00
Boston	$3,807	$6.25	$7.87	$7.87	$7.87	$0.00	$7.87	$7.87
Cambridge	NA	NA	$4.25	$4.25	$4.25	$4.25	$4.25	$4.25
Cupertino	$428	$7.99	$0.00	$0.00	$5.08	$5.08	$0.00	$0.00
Menlo Park	NA	NA	$7.61	$14.01	$14.01	$7.61	$7.61	$0.00
Napa	$427	$5.73	$1.40	$0.00	$1.00	$0.50	$0.80	$0.00
Oakland	$0	$0.00	$0.00	$0.00	$4.70	$4.70	$0.00	$0.00
Palo Alto	$780	$13.13	$17.06	$17.06	$17.06	$17.06	$17.06	$17.06
Sacramento	$1,214	$2.62	$2.01	$1.79	$2.11	$0.58	$1.69	$0.00
San Diego	$3,494	$2.73	$0.64	$0.80	$1.06	$0.27	$0.64	$0.00
San Francisco	$2,651	$3.28	$14.95	$13.30	$19.96	$0.00	$18.62	$18.75
Seattle	$1,961	$3.28	$18.75	$18.75	$18.75	$0.00	$18.75	$18.75
Sunnyvale	$480	$3.64	$0.00	$0.00	$0.00	$8.00	$0.00	$0.00

Source: Review of current Municipal Codes, October 2009; U.S. Census Bureau, 2008 Population Estimates; average annual fee is based on the cumulative fees collected in each jurisdiction since the inception of their linkage fee.

collected linkage fees in every single year that its linkage fee ordinance has been in effect because developers pay fees over a 7-year timeframe.

Strengths and Limitations of Linkage Fee Programs

As a tool for cities to generate revenue locally to support affordable housing programs, housing linkage fees have both strengths and weaknesses. Housing linkage fees alone cannot address a city's entire affordable housing demand, but they have generated millions of dollars for affordable housing with nominal administrative cost to cities. Many jurisdictions confirmed that linkage fees accounted for approximately 20 to 25 percent of the local housing budget.

Housing linkage fees are a flexible source of funding for which the eligible uses are determined locally by the jurisdiction; however, local determination may be a weakness as well since adopting a housing linkage fee is a lengthy process, as illustrated by the Boston case study. Other cities indicated that it can take years to obtain approval for the adoption of a linkage fee

ordinance or significant amendments to the ordinance because of the competing interests of diverse stakeholders.

The challenges surrounding ordinance adoption often result in the fee schedules being depressed well below the cost of the impact they are designed to mitigate. Anecdotal evidence and case studies from other jurisdictions reflect that the passage of linkage fee ordinances relied not only on leadership of either the business community or key decision makers in city hall but also a well-organized constituency with the resources and skill to launch a campaign.

Another inherent weakness of housing linkage fees is the volatile nature of this funding source as it is subject to economic cycles. Overall, the most effective tool for addressing that market volatility is scheduling the receipt of linkage fee payments over time.

Summary of Best Practices

1) Provide for a Broad Range of Permissible Purposes and Uses of Funds

Ordinances may be designed to allow great flexibility in how the housing linkage fees are used, and have allowed linkage fee revenues to be used for capital investment in affordable housing, rental subsidies, as well as administrative costs of the housing trust fund and affordable housing development organizations.

2) *Maximize the Potential for Generating Revenue from Housing Linkage Fees*

Due to the concentration of low-income households and relatively high housing costs in Los Angeles, it is not realistic for any proposed linkage fee to offset the entire cost of providing affordable housing. Thus, the linkage fee should represent a percentage of the earned income deficit per square foot. To optimize the potential for generating housing linkage fees, it is advisable to apply the linkage fee ordinance broadly to many classes of properties.

Those jurisdictions with narrowly focused housing linkage fee ordinances targeting specific property types or geographic zones have indicated a desire to expand the scope of the ordinance to generate more fees. Although the City of Santa Monica is not included in this review of best practices because of incomplete information about its linkage fee program, it is informative to note that because Santa Monica's commercial linkage fee applies only to office development with 15,000 SF or more, no revenue has been generated in some 20 years, as shown in Figure 2-3.

3) Apply Geographic Linkage with Discretion

Geographic linkage provides jurisdictions the opportunity to create a tighter nexus between the development generating the linkage fees and where the fees are spent. However, the implications of this policy are not well understood due to their relative newness and the resulting absence of data. Jurisdictions surveyed reserve the right to apply geographic linkage requirements with discretion in general, and allow for proximity to public transportation serving the targeted area in one instance. Highlights from information about geographic linkages in Table 2-4 include:

- *Sacramento* requires that fees support affordable housing within 7 miles of the development paying the fee.

- *San Diego* allows funds to be used citywide, although there is administrative discretion to establish a geographic linkage.
- *Seattle* prioritizes the use of fees in the following order: within the downtown urban center, within an urban center adjacent to the downtown urban center, in the city within 0.5 mile of a light rail or bus rapid transit station on a route serving the downtown urban center, in the city within 0.25 mile of a bus or streetcar stop on a route serving the downtown urban center.
- *Boston* earmarks 10 percent of fees from downtown for downtown housing activity, if feasible, and 25 percent of fees collected outside of downtown for housing activity near the project paying the fee.

4) Periodic Adjustments to the Fee Schedule

Most of the jurisdictions increased their fees over time by tying annual adjustments to consumer price or construction cost indices; however, these indices do not take into account fluctuations in land values, a critical component in development cost. As a result, over time the housing linkage fee may not keep pace with the cost of developing affordable housing. Several jurisdictions obtained a new nexus study to justify a significant increase to the housing linkage fees imposed.

5) Schedule Fee Collection to Counteract Market Volatility

Collecting fees in one lump sum prior to the start of construction maximizes the present value of the impact fee, but this practice increases a developer's construction financing requirements. Fees generated from development activity are subject to market volatility. Securing the developer's linkage fee obligation during construction and collecting a higher level of fees over time, starting when construction is completed, lowers the amount of construction financing needed by the developer, and provides a city with a more consistent stream of revenue, which facilitates longer range planning and budgeting.

6) *Provide Developers with Alternatives to Paying Fees*

While it is desirable to provide developers with multiple options to mitigate impacts, in practicality, payment of fees is the most efficient option for a city to administer and for developers to meet their mitigation obligations. If a city places a higher priority on having developers produce affordable housing than administering housing programs funded by linkage fees, providing alternatives to paying fees is essential.

California's linkage fee ordinances follow a set model granting developers multiple options to meet their obligations by paying fees, donating land or other resources equivalent in value, or producing units or causing units to be produced. These options allow for flexibility in the application of the linkage ordinance and the mitigation of the impacts, but in practice, the vast majority of developers pay fees unless significant public pressure is mounted for them to do otherwise.

7) *Criteria for Exceptions should be Clear, Objective, and Simple to Administer*

California jurisdictions have also exercised broad discretion in applying exceptions according to project scale, project type, and/or project location. To minimize the grounds for exceptions to linkage programs, jurisdictions have established clear and objective criteria for developers' claims. While there is little evidence that developers bring claims based on feasibility, such claims can be costly and time consuming for a city to address. Minimizing such claims through clear requirements and threshold conditions for presenting such requests with the burden of proof on the applicant, is imperative.

8) *Enforce Compliance with Effective Penalties*

Withholding the building permit is an effective deterrent to failures to comply with the linkage fee ordinance. In addition to withholding the building permit, other enforcement mechanisms may include:

b. Misdemeanor charges and fines up to 150 percent of the fee
c. Denial of utility connections
d. Liens filed against the property
e. Withholding certificate of occupancy

9) Delegate Authority for Amending the Linkage Fee Program

To provide flexibility in the implementation of the linkage fee program and enable timely response to economic or other conditions, grant authority to an administrative level of local government to oversee amendments to the implementation of the ordinance. Examples would include imposing geographic linkage requirements and periodic adjustments to the fee schedule.

Chapter 3

Fee Scenarios

Introduction

This section addresses the potential impacts of an affordable housing linkage fee on landowners, developers, and the end users of several classes of real estate, and explores policy considerations relating to the scope, amount, and criteria for setting fees.

Who Absorbs the Costs of Linkage Fees - Land Owners, Developers, or End Users?

For years, economists have analyzed the "incidence" of taxes and fees, trying to pinpoint who bears the actual costs of taxes or fees on land or land development: the landowner, the developer, or the end user. Initially, the issue was carefully framed in economic literature so as to examine whether increases in the property taxes on apartment buildings were passed through to renters or absorbed by the apartment owners. In recent years, as development fees have become substantial, there have been broader debates about where in the development process these impacts are incurred.[1]

One view is that land development fees and taxes do not raise rents or sales prices because rents and sale prices are already at market levels. Therefore, any increase in tax is borne by the landowner in the form of lower prices for the land or by the developer in the form of less profit. An alternate view is that taxes and development fees result in higher rents and higher prices because they increase the cost of production, increasing the price to the end user.

Another perspective is that the impact of land development varies among properties depending on their value in a current use. If land is vacant, the cost of an impact fee will be absorbed by the landowner. This occurs because developers will adjust their offering prices for land in order to offset the cost of public fees. At the same time, a landowner is left with no other option than to reduce the sale price of the land in order to be able to sell the land.

If a parcel of land is providing a return in its current use that is comparable to the value of the land based on its higher use potential, the landowner will not feel compelled to lower the land price in order to accommodate a purchaser considering developing the property to the higher use value. As a result, developers would have to accept a reduction in their profit levels equal to the linkage fee.

If both the landowner and the developer are selling land or completed development, respectively, and in a position that enables them to insist on their current price and profit levels, then the price (rent or sale price) will increase. In summary, the following analysis sets forth alternate projections of the impacts of linkage fees depending on whether they are absorbed by the landholder, developer, investor purchasing a completed development, or end user. The central issue is the point at which a fee might create a tipping point for development. This is followed by an analysis of possible fee levels, and then by an analysis of the need to reduce or waive fees in low-income communities within the City. Components include:

I. Tipping Point Analysis
    1. Methodology

2. Findings about Absorption of Linkage Fee

II. Fee Levels
   3. Fee Schedule and Fee Scenarios
   4. Potential for Bolstering the Affordable Housing Trust Fund
   5. Monitoring the Impacts of the Fee
   6. Findings about Fee Levels and Fee Scenarios

III. Geographic Boundaries
   7. Income Distribution by Area Planning Commission Region
   8. Change in Income
   9. Job Change and Wage Levels
   10. Commuting Radius around Sub-Regional Residential Nodes
   11. Recommendations about Geographic Boundaries for Fees

TIPPING POINT ANALYSIS

"Tipping points" are points at which linkage fee levels become so high that they make development infeasible. It is important to note that none of the cities surveyed for this study had linkage fee levels in excess of $20 per square foot for any development category. The linkage fee levels considered in financial scenarios developed for this analysis range from $1 to $20 per square foot, and these amounts, in turn, range from less than one percent to 11.76 percent of assumed total development costs per square foot. The actual fee range that emerges from analyzing these scenarios is slightly lower than the hypothetical range – $0.32 to $18.09 per square foot. The potential impact of fees on the volume of development is dependent on a multitude of factors. The primary factor is whether such fees would be "absorbed" in: the land value, the developer's profit, the investor's rate of return, or the consumer's costs.

Methodology

The tipping point scenarios that are analyzed here focus on the potential impact on development of hypothetical linkage fees ranging from $1 to $20[2] per square foot applied to real estate developments in ten distinct categories: residential, office, industrial, warehouse, hotel, retail, restaurant, entertainment, hospital, and auto-related, with a division of each category into projects of 10,000 square feet or less and of projects of 50,000 square feet or more. Tables illustrating the development categories for the potential impacts of a housing benefit fee are organized by project size and development type. These development categories consolidate the 28 categories of earned income deficit shown in Table 1-11. Five scenarios are presented for every commercial property type and each size class:

A) A *threshold rent analysis* which assumes that the developer can offset the linkage fee by passing on the cost to tenants or property purchasers who are end users.

B) An analysis of the *return on investment* of the developer if the developer absorbs the fee.

C) A *capitalization rate analysis* shows the potential impact of the linkage fee on the return of investors who leverage capital to purchase a completed property and offer it for rent.

D) A *land valuation analysis* reflects how a potential linkage fee could impact land values when developers will adjust their offering prices for land in order to offset the cost of public fees.

E) A subsequent analysis shows the *ratio of linkage fee to total development cost*.

Overall, financial feasibility for real estate development is a dynamic equation driven by an array of factors. Significant changes to any single variable or multiple variables will impact financial feasibility. In order to estimate the effect of a linkage fee on various actors in the development process, the following analysis assumes that interest rates, construction costs, vacancy factors, operating cost ratios, and risk remain constant for the investor purchasing a completed development and for the developer while a linkage fee is imposed. The investor's cost includes a 15 percent mark-up or profit over the developer's cost to compensate the developer for assuming development risk.

The scenarios in this analysis measure the impact of development fees on the rate of profit of different participants in the development process, rather than setting forth whether the market will support development if an impact fee is imposed. Current market conditions are not conducive to providing real estate developers with the threshold rate of return necessary to initiate new development. Threshold rents (rents sufficient to pay for operating expenses and mortgage payments on costs of new construction as well as absorb a market vacancy allowance) exceed market levels in almost all cases as rents have declined and vacancy rates have continued to rise across all classes of real estate locally and nationally.[3] Furthermore, the adverse impacts of declining rents on feasibility have been compounded by tightening credit terms. Consequently, new construction in Los Angeles has declined precipitously in almost all sectors.[4]

Linkage Fee Absorbed by End User – Threshold Rent Analysis

In the threshold rent analysis, we assume the linkage fee is absorbed by the renter in the form of higher rents. The threshold rent analysis calculates the increase in rent required to offset the fee assuming that the linkage fee can be passed through to tenants or other end users. This scenario also assumes that the value of the property remains constant while development cost increases by the amount of linkage fee imposed.

Linkage Fee Absorbed by Developer – Return on Investment Analysis

The analysis of return on investment assumes rents and the resulting net operating income remain constant while the linkage fee increases the required investment in the development. As a result, the return on investment (ratio of net operating income to total development cost) declines for the developer holding the property after completing construction.

Linkage Fee Absorbed by Developer – Developer's Profit Margin Analysis

In this scenario, when the developer sells the property to an investor upon completion, the property's sales price is assumed to remain constant while the developer absorbs the amount of

the linkage fee. To measure this impact, we analyze the developer's profit margin by calculating the profit-to-development cost ratio and this ratio declines as costs increase.

Linkage Fee Absorbed by Investor – Cap Rate Analysis

This scenario assumes the investor's equity requirement increases to pay for the fee while the net operating income is constant. Much like the return on investment analysis above, which measures the ratio of net operating income to total development cost for the developer, the capitalization rate (cap rate) measures the ratio of net operating income to sales price for the investor. This scenario assumes a ceiling on rents and net operating income that limits the investor's financing. As net operating income remains constant and development costs increase, the investor's rate of return (capitalization rate) declines.

Linkage Fee Absorbed by Land Owner – Land Price Analysis

A linkage fee could potentially impact land sellers when the developer can negotiate a land price that is reduced by the amount of the linkage fee. This could potentially occur when the landowner has no more profitable alternatives for the land because it is vacant or occupied with an obsolete use that generates relatively low income. In this scenario, the land price declines by the amount of the fee while the developer's 15 percent profit margin is maintained.

Assumptions

In all of the tipping point scenarios presented, an effort was made to use conditions and costs typical in the market place. Assumed land costs reflect per-square-foot costs in submarkets that would economically support the hypothetical uses at the lower end of the market. Land prices are based on actual land sales in the City of Los Angeles from 2005 to 2010.

Hypothetical financing terms reflect the prevailing underwriting parameters for commercial real estate loans (including apartment loans), which are currently underwritten at 65 to 70 percent loan to value ratios with a minimum debt service-coverage requirement (net operating income to mortgage payment ratio) of 1.30. Where appropriate, a more conservative debt service-cover ratio of 1.35 is applied. In considering hotel development, a 1.50 debt service-coverage ratio is used. Applicable commercial interest rates are currently in the 6.5 percent range; however, a 7.5 percent rate was applied to all properties except for-sale residential scenarios, and hospitals, which are subject to lower interest rates, 4.85 percent and 4.25 percent, respectively, when the study was drafted.

Construction cost projections for institutional, multifamily, hotel, retail, office, hospitality, and entertainment properties in Los Angeles are based on 2010 RS Means Square Foot Cost data, which tracks construction costs nationwide and provides adjustment factors for local markets, including Los Angeles. These construction costs include an additional 25 percent added for general conditions, (e.g. contractor's insurance, management of labor, equipment) and overhead and profit.

Construction costs, including the builder's profit, were assumed to be 65 percent of total development cost while other "soft" costs for financing, architecture and engineering, insurance, permits, consulting fees, and developer fees were assumed to be 35 percent of the development

costs, apart from land costs. The typical standard in real estate feasibility analysis assumes construction costs comprise 70 percent of development cost, and soft costs comprise 30 percent of total cost. However, to be conservative, soft costs were increased to 35 percent.

A conservative 15 percent profit margin was assumed across all property types even though the threshold for commercial developers interviewed in connection with this study was a 12 percent cash-on-cash return.

We assume developers and investors in completed properties can obtain the same financing terms except that the developer's financing is based on cost as opposed to value, which includes a 15 percent mark-up for developer profit.

Findings about Absorption of Linkage Fee

Table 3-1
Impact of Linkage Fee on Monthly Threshold Rent Per Square Foot

Fee Scenario Category	Development Cost Per SF	Monthly Threshold Rent per SF without Fee	Net Increase in Monthly Rent per SF per $1 of Linkage Fee
Entertainment – Recreation	$864	$9.81	$0.004
Entertainment – Theatre	$1,665	$19.70	$0.004
Hospitals (General)	$509	$8.52	$0.007
Hospitals (Convalescent)	$593	$6.44	$0.004
Hotel-20 Rooms	$243	$15.90	$0.012
Hotel-250 Rooms	$327	$13.37	$0.012
Factory >=50,000 SF	$242	$2.75	$0.004
Factory 8,000 SF	$257	$2.93	$0.004
Warehouse >= 50,000 SF	$170	$1.94	$0.004
Warehouse 8,000 SF	$243	$2.53	$0.004
Gas Service Stations	$517	$7.65	$0.005
Public Garage (Auto Repair, etc.)	$339	$5.01	$0.005
Public Garage (Parking Lots & Garages)	$226	$3.56	$0.009
Small Office- 2 story	$253	$4.58	$0.005
High Rise Office	$338	$6.10	$0.005
Quick Serve Restaurant	$864	$8.72	$0.005
Anchored Retail Strip Center >= 50,000 SF	$402	$4.36	$0.005
Unanchored Retail Strip Center < 10,000 SF	$290	$3.15	$0.005
Multifamily High Rise	$250	$3.15	$0.005
Multifamily 10 units	$243	$3.34	$0.006

Source: Costar, RS Means Square Foot Costs 2010.

Impact of Linkage Fee on Threshold Rent (Assuming that the Fee is Absorbed by the End User)

The linkage fee's potential impact on rents is based on the cost of financing the incremental increase in cost of the linkage fee. In other words, for every dollar of linkage fee, a developer will have to finance approximately 60 percent to 70 percent of that cost. At an interest rate of seven percent, the monthly rent necessary to offset $1.00 of linkage fee ranges from $0.004 (four tenths of one cent) to 1.2 cents per square foot in the commercial real estate categories. The range in threshold rent among the development categories in Table 3-1 results from variation in financing terms and costs for different development categories.[5] The impact on hotels was significantly higher than the other classes of real estate due to higher interest rates. Development size did not influence threshold rent because financing terms were assumed to be the same for large and small projects in the same use category. In this scenario, a potential linkage fee has a relatively low impact on renters and no impact on developers.

In the for-sale residential scenarios, the impact of the fee on mortgage costs potentially raises the qualifying income requirement for buyers. Every dollar per square foot of linkage fee imposed or a total of $1,500 for a 1,500 square foot condominium, for example, would raise the homeowner's monthly mortgage payment by $10, and on a 2000 square foot detached single-family dwelling, every dollar per square foot of fee imposed would raise monthly mortgage expense by $9, as shown in Table 3-2. The increase in a homebuyer's income required to qualify for each additional dollar per square foot of linkage fee is approximately $239 per year for a 1500 square foot condominium and $295 per year for a 2,000 square foot single-family dwelling.

Table 3-2
Potential Impact of Linkage Fee on Homebuyers

Fee Scenario Development Category	Development Cost per SF	Monthly Mortgage Payment Without Fee	Monthly Mortgage Payment with $1/SF Linkage Fee	Net Increase to Monthly Mortgage Payment per $1/SF Linkage Fee
Condominium 1500 SF	$268	$3,688	$3,698	$10
Single-Family Residence 2000 SF	$222	$3,068	$3,077	$9

Sources: Costar, RS Means Square Foot Costs 2010

Impact of Linkage Fee on Developer's Rate of Return

The return on investment analysis assumes that the market sets a ceiling on rents and the additional cost of a linkage fee cannot be passed on to the end user. In this scenario, the amount of financing available to the developer remains constant because there is no change to the net operating income. Thus, the developer is required to invest more equity as the development costs increase. The impact of any fee on a developer's return is greater than the impact of the fee if it were absorbed by the tenant or purchaser; but the impact is still small. In Table 3-3, among

the scenarios presented for commercial developments with less than 10,000 square feet, the greatest reduction in the return on investment was 0.55 percent for a linkage fee of $20 per square foot, which applied to a 10-unit apartment.

The greatest reduction to the return on investment among larger scale developments was 0.8 percent for a parking structure. The developer's rate of return on investment declined by less than one percent overall, thus a potential linkage fee has a relatively low impact on developers' return on investment.

Table 3-3
Impact of Linkage Fee on Developers and Investors when Rents are Constant

Development Category	Decrease in Developer Rate of Return with $20 per SF Fee	Decrease in Investor Cap Rate with $20 per SF Fee
Entertainment – Recreation	0.16%	0.14%
Entertainment – Theaters	0.09%	0.07%
Hospitals (General)	0.25%	0.22%
Hospitals (Convalescent)	0.22%	0.20%
Hotel-20 Rooms	0.46%	0.40%
Hotel-250 Rooms	0.54%	0.48%
Factory >=50,000 SF	0.55%	0.48%
Factory 8,000 SF	0.52%	0.45%
Warehouse >= 50,000 SF	0.75%	0.66%
Warehouse 8,000 SF	0.52%	0.45%
Gas Service Stations	0.32%	0.28%
Public Garage (Auto Repair, etc.)	0.47%	0.41%
Public Garage (Parking Lots & Garages)	0.80%	0.70%
Small Office- 2 story	0.54%	0.47%
High Rise Office	0.41%	0.36%
Restaurants	0.17%	0.15%
Anchored Retail Strip Center >= 50,000 SF	0.35%	0.31%
Unanchored Retail Strip Center < 10,000 SF	0.47%	0.42%
Multifamily High Rise	0.55%	0.55%
Multifamily 10 units	0.55%	0.55%

Source: Costar, RS Means Square Foot Costs 2010

Impact of Linkage Fee on Investor's Cap Rate

The capitalization rate, or cap rate, measures the rate at which a real estate investment's net operating income returns the cost of the development. This scenario assumes the fee is passed on to an investor through the sales price, but the value of the property remains the same while the cost escalates by the amount of the linkage fee. The investor's equity requirement increases while the investment produces the same net operating income and cash flow. As a result, the investor's cap rate declines as the cost of the development increases. The financial scenarios indicated rates of return ranging from 9.8 percent to 6.6 percent without a linkage fee. The highest fee level had to be assumed to achieve a measurable effect on cap rates. With a $20 per square foot linkage fee, the investor's cap rate declined between 0.07 percent and 0.66 percent, depending on the type of development (Table 3-3). The fee has a low impact on investors' cap rates since the highest level of the fee ($20 per square foot) reduced cap rates by less than 1 percent across all development categories.

Impact of Fee on Developer's Profit Margin

A developer's profit is potentially impacted by the linkage fee when the property is sold upon completion to an investor and the market sets a ceiling on the sales price. The profit margin of 15 percent was reduced from 0.01 percent to 0.67 percent per dollar of linkage fee, depending on the development category (Table 3-4). The fee has more potential impact on a developer's profit margin than on an investor's cap rate or developer's return on investment.

Table 3-4
Linkage Fee Impact on Developer Profit

Development Category	Decrease in Developer Profit per $1 of Linkage Fee
Entertainment Recreation	0.13%
Theatres	0.07%
Hospitals (General)	0.23%
Hospitals (Convalescent)	0.19%
Hotel-20 Rooms	0.29%
Hotel-250 Rooms	0.35%
Industrial >=50,000 SF	0.47%
Industrial 8,000 SF	0.44%
Warehouse >= 50,000 SF	0.67%
Warehouse 8,000 SF	0.48%
Gas Service Stations	0.22%
Public Garage (Auto Repair, etc.)	0.34%
Public Garage (Parking Lots & Garages)	0.51%
Small Office- 2 story	0.01%
High Rise Office	0.04%
Restaurants	0.13%
Anchored Retail Strip Center >= 50,000 SF	0.29%
Unanchored Retail Strip Center < 10,000 SF	0.39%
Multifamily High Rise	0.46%
Multifamily 10 units	0.47%

Source: RS Means Square Foot Costs, Costar

Impact on Land Price – Land Owner Absorbs Fee

Land costs are estimated to decrease from 0.22 to 4.76 percent for every dollar of linkage fee, depending on the ratio of the linkage fee to land cost per building square foot, as shown in Table 3-5. The lower the land cost per square foot, the greater the potential impact a linkage fee could have on landholders. When a property is vacant or otherwise generates relatively low income, the landowner may absorb the fee. This occurs because developers will adjust their offering price for the land by the amount of the fee to manage the cost of the development and maintain their target rate of return and profit margins. Consequently, land prices could potentially decrease by the amount of the fee.

An important factor in the land price analysis is the conversion of land cost into land cost per building square foot, which in effect, reduces the land cost for higher density uses. For example, if land costs $1,000 per square foot, the land cost per building square foot is lowered when the floor area ratio (FAR) allows denser development. When building square footage optimizes the FAR, the land cost per building square foot decreases to $333 for a 3:1 FAR and $167 per building square foot for a 6:1 FAR. As a result, denser development such as high-rise offices, apartments and condominiums is potentially more sensitive to the fee according to the

financial model. However, land zoned for higher density generally commands a higher price, which mitigates the potential impact on landowners. Owners of warehouse and industrial land, which has the lowest development cost per square foot of all the development types analyzed, are potentially the most impacted by a linkage fee due to the low cost per building square foot.

Another important factor is the scarcity of vacant land sales in the City of Los Angeles. According to Los Angeles County Assessor's data, the count of vacant land sales was less than 8,200 from 2003 to 2008 – of which 80 percent were zoned for single-family development, compared with an overall total of more than 217,000 property sales during that same period.

The annual number of vacant land sales declined 37 percent from 2003 to 2008. While landholders of obsolete or vacant parcels may potentially be the most impacted by a housing linkage fee. Due to the relatively small number of vacant parcels in Los Angeles, these properties make up a small share of the overall universe of landholders in the City.

Table 3-5
Percent Change in Land Cost with $1 per Square Foot Linkage Fee for Vacant or Obsolete Parcels

Development Category	Change in Land Price with $1 per SF Fee
Entertainment – Recreation	-0.53%
Theatre	-0.88%
Hospitals (General)	-2.70%
Hospitals (Convalescent)	-1.47%
Hotel-20 Rooms	-0.63%
Hotel-250 Rooms	-2.44%
Factory >=50,000 SF	-3.13%
Factory 8,000 SF	-2.38%
Warehouse >= 50,000 SF	-4.00%
Warehouse 8,000 SF	-2.38%
Gas Service Stations	-0.80%
Public Garage (Auto Repair, etc.)	-3.23%
Public Garage (Parking Lots & Garages)	-2.27%
Small Office- 2 story	-1.33%
High Rise Office	-4.76%
Restaurants	-0.22%
Anchored Retail Strip Center >= 50,000 SF	-1.20%
Unanchored Retail Strip Center < 10,000 SF	-0.93%
Multifamily High Rise	-3.70%
Multifamily 8 units	-2.70%

Source: Costar, RS Means Square Foot Cost

Examples of Potential Impacts of Linkage Fee

To illustrate the potential impacts of the fee, we highlight two scenarios, a 50,000 square foot warehouse and a quick service restaurant. The supporting data tables for these scenarios are provided in Appendix 3-11 and 3-17, respectively. (The Appendix for this chapter contains 23 scenarios for different development types in Los Angeles.)

Warehouse

The property is an 8,000 square foot warehouse with steel frame/precast concrete construction. The threshold rent is $97,000 per month or $1.94 per square foot without a linkage fee. Assuming the cost of the fee could be passed through to the tenant, rent would increase by $200 per month for every $1 of linkage fee imposed. When the developer holds the property after construction completion, and cannot pass on the linkage fee to renters, the amount of required equity to finance the development increases and the developer's return on investment declines. Without the linkage fee, the return on investment (net operating income divided by total cost) is 7.18 percent and with a $20 per square foot fee imposed, the return on investment is 6.43 percent, a decrease of 0.75 percent.

Assuming the developer can pass through the increased cost of the linkage fee to an investor purchasing a completed property, the investor's equity requirement increases resulting in a decrease in the cap rate (ratio of net income to sales price). When no fee is imposed, the investor's cap rate is 7.18 percent, but with a $20 per square foot fee imposed, the cap rate declines to 6.52 percent, a decrease of 0.65 percent.

In instances where a developer sells the property but cannot pass on the fee through the sales price, the developer's profit margin declines .67 percent for every $1.00 of linkage fee imposed. With no fee, the developer's profit margin is 14.94 percent, and with a one dollar per square foot fee, the profit margin is 14.27 percent.

The warehouse scenario is the most sensitive to the linkage fee because of its relatively low cost of development compared to the other categories considered in the study. Land values are potentially the most affected by the linkage fee. Assuming no fee, a developer would offer to purchase 50,000 square feet of land for $1 million. However, with a $20 per square foot linkage fee, the most the developer can pay without eroding his profit margin is $200,000, a potential 80 percent decrease in land prices.

Quick Serve Restaurant

The quick serve restaurant example demonstrates how a development type with higher development costs per square foot is less impacted by the linkage fee. The threshold rent for a 2,000 square foot restaurant would be $17,440 per month ($8.72 per square foot per month) without a linkage fee. Assuming the cost of the fee could be passed through to the tenant, monthly rent for the restaurant would increase by $.0045 for every $1 of fee imposed per square foot, or $8 per month.

When the developer holds the completed property, and cannot pass on the linkage fee to renters, the amount of required equity to finance the development increases and the developer's return on investment declines. Without the linkage fee, the return on investment is 7.36 percent and with a $20 per square foot fee imposed, the return on investment declines 0.16 percent to 7.22 percent.

When the developer can pass through the linkage fee cost to an investor, the investor's equity requirement increases resulting in a decreased cap rate. Without the linkage fee, the investor's cap rate is 7.36 percent, but with a $20 per square foot fee imposed, the cap rate is 7.22 percent

The developer's profit margin declines 0.13 percent for every $1.00 of linkage fee imposed when the investor will not absorb the fee. We assume a developer profit margin of 14.99 percent with no fee and a 14.86 percent profit margin with a one dollar per square foot fee.

Quick serve restaurants have relatively small building floor area in relation to lot size to allow for substantial parking and drive through amenities typical for this use. In Appendix 3-17, the land cost per building square foot is $450 or $900,000 with no linkage fee. With a $20 per square foot linkage fee imposed, the land price potentially declines only 4.5 percent to $860,000.

In practice, a linkage fee ordinance would apply to new construction and existing properties that increase building floor area but not to the rehabilitation of existing properties as long as the use and pre- and post-rehab square footage remain the same. The linkage fee would apply when new building floor area is permitted that generates affordable housing demand.

Tradeoffs between Basing Fee on Property Value vs. Property Square Footage

A key consideration for determining the basis for imposing a housing linkage fee is demonstrating the linkage between the impact being mitigated and the fee charged. Developing a housing linkage fee on the basis of property value would require a linkage study demonstrating the relationship between the value of new developments and the affordable housing impacts generated by that development. However, multiple variables influence valuation, (e.g. location, zoning, hazardous materials, availability of financing, etc.) that have no bearing on the impacts generated by the development. A gas station may have a higher value in Westwood than Wilmington, but the wages paid and resulting demand for affordable housing generated by gas stations in either location would be comparable, regardless of property value. The use of value as a measure for the fee either would require differentiation among geographic areas of the City or would be subject to criticism for failing to take such differences into account.

Fee Levels

Fee Schedule and Fee Scenarios

Establishing a Fee Schedule

As established earlier in the study, the demand for affordable housing generated by industries is reflected in the calculation of the earned income deficit per square foot for each development category. As such, the earned income deficit per square foot is used as the basis for establishing a fee schedule.

This establishes the basis for the fee schedule using the demand for affordable housing weighted by the frequency of demand across development categories. The actual fee levels are calculated as a percentage of the weighted average deficit per square foot, and consequently, the potential for revenue varies significantly depending on the weighted average earned income deficit per square foot.

In Table 3-6 the proposed fee schedule is organized according to development categories already recognized by the City of Los Angeles' Departments of Building and Safety and City

Table 3-6
Comparison of Affordable Housing Demand and Fee as a Percent of Weighted Average Deficit per Square Foot by Development Category

Development Category Name	Total Deficit per SF	Roll-Up of Development Category for Fee	Weighted Average Deficit per SF	Fee as % of Deficit per SF		
				5%	10%	15%
Multifamily Rental	$6.65	Residential	$6.46	$0.32	$0.65	$0.97
Condominium Owned	$10.33					
Single-Family Residence	$5.28					
Hotels	$46.38	Hotels	$46.37	$2.32	$4.64	$6.96
Office Buildings (F.I.R.E., Business)	$37.95	Office	$37.96	$1.90	$3.80	$5.69
Manufacturing (High Hazard)	$61.83	Industrial	$88.05	$4.40	$8.81	$13.21
Manufacturing (Moderate Hazard)	$91.50					
Manufacturing (Low Hazard)	$88.00					
Public Garage (Auto Repair, etc.)	$114.58					
Misc. Bldg or Structure (Low Hazard)	$138.00					
Offices (Couriers and Delivery Services)	$156.00					
Misc. Bldg or Structure (Moderate Hazard)	$194.00					
Misc. Bldg or Structure (High Hazard)	$213.68					
Gas Service Stations	$368.80					
Warehouse B (e.g. Motion Picture & Video)	$19.13	Warehouse	$68.96	$3.45	$6.90	$10.34
Warehouse M (Merchant Wholesalers)	$56.56					
Warehouse S (Transportation)	$162.03					
Theatres	$26.94	Entertainment	$102.70	$5.14	$10.27	$15.41
Amusement – Spectator sports	$45.82					
Swimming Pools/Spas	$89.91					
Amusement – Recreation	$102.79					
Restaurants	$273.76	Retail/Restaurant	$81.69	$4.08	$8.17	$12.25
Retail M (Grocery, Office Supplies, Florists)	$81.71					
Retail B (Rental & Leasing Centers)	$96.90					
Hospitals (General)	$63.36	Hospitals	$120.59	$6.03	$12.06	$18.09
Hospitals (Convalescent)	$158.87					
Public Utility	$8.51	Utilities	$8.56	$0.43	$0.86	$1.28
Public Garage (Parking Lots & Garages)	$41.26	Parking	$41.26	$2.06	$4.13	$6.19

Sources: Economic Roundtable, City of Los Angeles Department of Building and Safety permit data 1997-2009, Los Angeles Municipal Code 12.24

Note: Churches and government-owned facilities for public administration, schools, and airports are excluded from this schedule since the purpose of the fee is to lessen local government's burden of providing affordable housing. Weighted averages are calculated using total square footage of develop in the City of Los Angeles, 1997-2009.

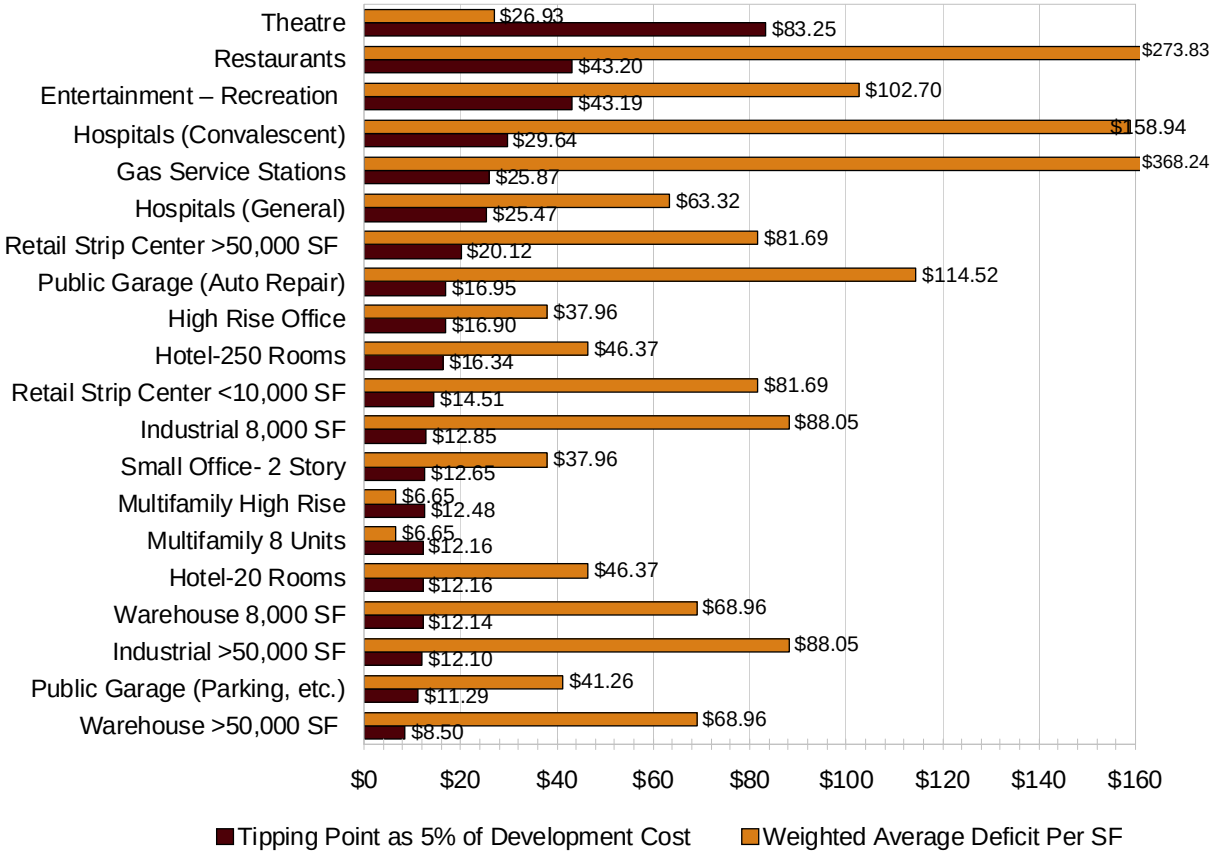
Planning: residential, hotels, office, industrial, warehouse, entertainment, retail, hospitals, utilities, and parking. Organizing the fee schedule into broad development categories results in variation in the earned income deficit per square foot for the more detailed categories, however, these roll-ups are feasible because they combine categories with similar tipping points. For example, the 'Industrial' category in Table 3-6 includes nine separate industrial uses with earned income deficits ranging from $61.83 to $368.80 per square foot, but with tipping points ranging only from $12.10 to $25.87 per square foot.

Fee Levels

The earned income deficit per square foot ranges from $19 to $371 per square foot for different types of commercial development. The earned income deficit per square foot for each category of development is shown together with a tipping point based on five percent of total development cost in Figure 3-1. In most cases, the deficit far exceeds the amount of fees that can be imposed on new development without reaching the tipping point at which development may become infeasible.

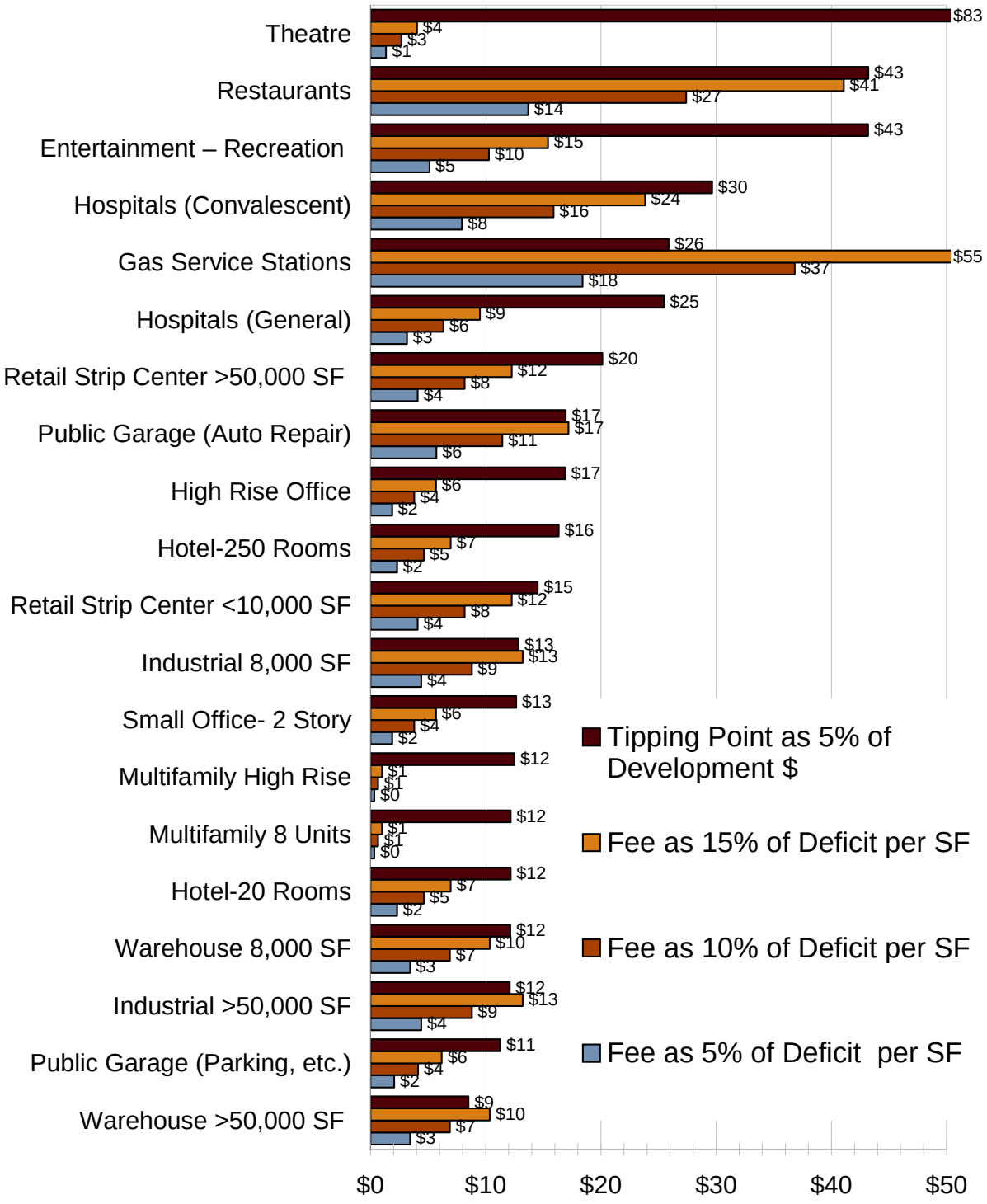
Establishing the linkage fee as a percentage of the earned income deficit per square foot is a methodology adopted by other California jurisdictions, including Oakland, Sacramento, San Diego and Sunnyvale. To prevent the fee from becoming a deterrent to development or a competitive disadvantage for a jurisdiction, the fee imposed should represent a relatively small percentage of total development cost. The fee scenarios in the Appendix for this chapter assume a maximum fee of $20 per square foot, which ranges from 2 percent to 10.2 percent of development cost depending on development category. However, the level of fee imposed may approach a tipping point for a small segment of development types if it exceeds five percent of

Figure 3-1
Comparison of Deficit per Square Foot to Tipping Point of 5% of Development Cost



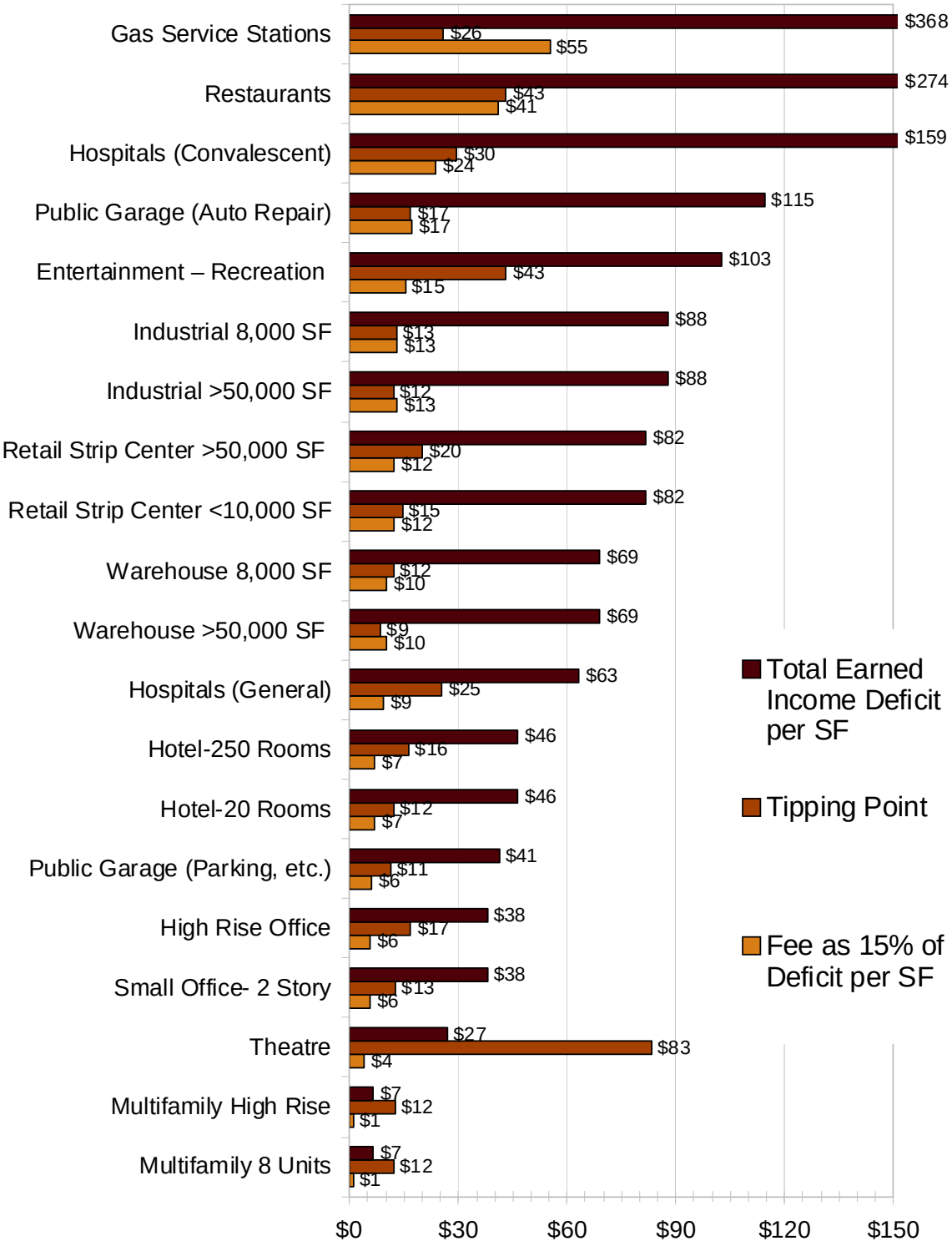
Sources: Economic Roundtable, City of Los Angeles Department of Building and Safety permit data 1997-2009, RS Means Square Foot Costs 2010, Costar

Figure 3-2
Comparison of Tipping Point and Fee Levels at 5%, 10% and 15%
of Weighted Average Deficit per Square Foot



Sources: Economic Roundtable, City of Los Angeles Department of Building and Safety permit data 1997-2009, RS Means Cost Per Square Foot and Costar

Figure 3-3
Total Earned Income Deficit per Square Foot, the Tipping Point , Fee as 15% of Deficit per SF



Sources: Economic Roundtable, City of Los Angeles Department of Building and Safety permit data 1997-2009, RS Means Cost Per Square Foot and Costar

total development cost. Since five percent is a fairly standard contingency factor for new construction development, any increase in cost exceeding that factor may potentially make some developments infeasible, assuming the additional cost will not be absorbed by investors, end users, or landholders.

Limiting the linkage fee to the benchmark of 5 percent of development cost for any category addresses only a percentage of the demand for affordable housing. If 5 percent of development cost were used as a benchmark for the tipping point, the linkage fee imposed could range from $8.50 to $83.25 per square foot without reaching the tipping point for the development categories analyzed. Figure 3-2 compares the tipping point to three different levels of fee expressed as a percentage of the weighted average deficit per square foot: a high fee of 15 percent, a medium fee of 10 percent, and a low fee of 5 percent. Figure 3-2 illustrates that, even at the highest fee schedule of 15 percent, the proposed linkage fee is below the tipping point in all development categories but warehouses greater than 50,000 square feet, industrial greater than 50,000 square feet, and gas service stations less than 10,000 square feet.

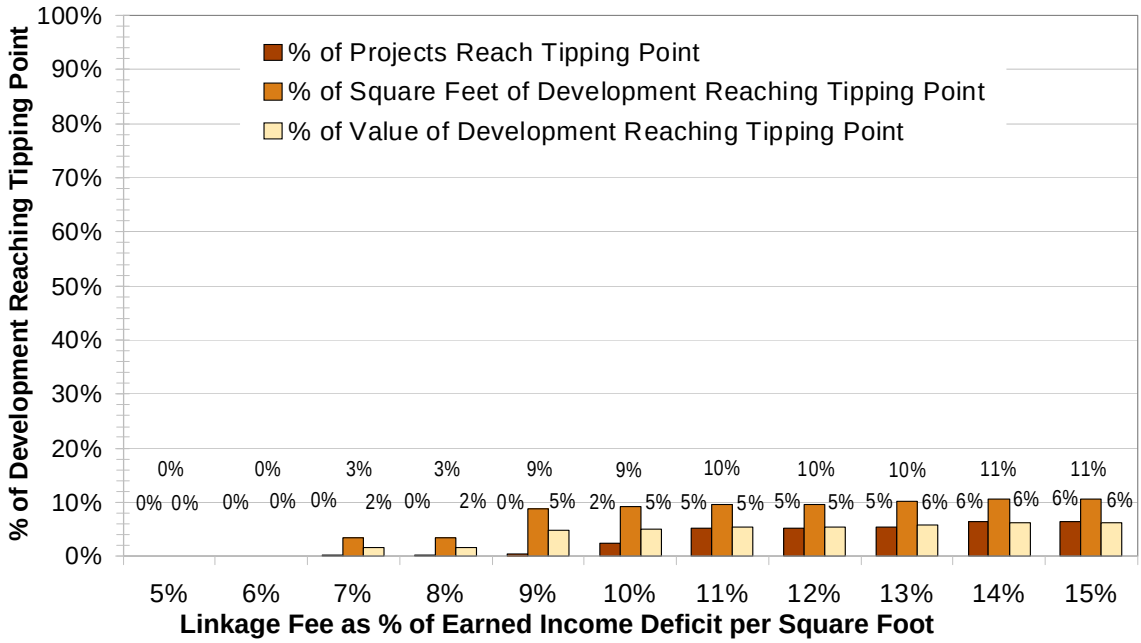
The tipping point is far less than the earned income deficit, except for theaters and multi-family housing, as can be seen in Figure 3-3. When the development categories are weighted by the total floor area of building permits issued from 1997 through 2009, the tipping point represents an average of 17 percent of the earned income deficit. This means that for most development categories, a fee representing 15 percent of the earned income deficit would not make development unfeasible. Weighting all development categories by the floor data cited above, a fee of 15 percent of the earned income deficit represents 86 percent of the tipping point amount, leaving an average margin of 14 percent before the tipping point is reached.

For warehouse and industrial properties with relatively low development costs per square foot compared to other real estate development categories, the tipping point occurs at seven to ten percent of the earned income deficit per square foot, regardless of size. Small retail strip centers with less than 10,000 square feet approached their tipping point at 14 percent and auto repair garages reached their tipping point at 13 percent of their deficit per square foot while all other development categories analyzed achieve their tipping points beyond 15 percent of the earned income deficit per square foot.

These findings suggest that to optimize the potential for fee revenue, and still avoid exceeding the tipping point, the City could establish a fee level at seven percent for the industrial and warehouse categories, and up to 14 percent of the earned income deficit per square foot for the small scale retail category, with all other development categories subject to a fee of 15 percent or more of the earned income deficit per square foot. An alternative approach would be to apply the same percentage of deficit per square foot across all categories, in which case, the maximum fee that could be imposed without crossing the tipping point of any development category would be seven percent of the earned income deficit per square foot.

Figure 3-4[6] shows the percent of total square feet of permitted building floor area from 1997 to 2007, as well as the percent of total value of that development, which would approach the tipping point with fee schedules ranging from 5 percent to 15 percent of the earned income deficit per square foot. With a fee schedule of 5 percent of the deficit per square foot, no development reaches the tipping point. With a fee schedule equivalent to seven percent of the deficit imposed, three percent of building floor area permitted in Los Angeles would have approached the tipping point. Less than 1 percent of all projects would have approached the

Figure 3-4
Percentage of Development Reaching Tipping Point with Different Fee Levels



Source: Economic Roundtable, City of Los Angeles Department of Building and Safety

tipping point and the value of development would be less than 2 percent of the total approved. Thus, only three percent of development in the decade from 1997 to 2007 would potentially approach the tipping point with the fee level equivalent to 7 percent of the earned income deficit.

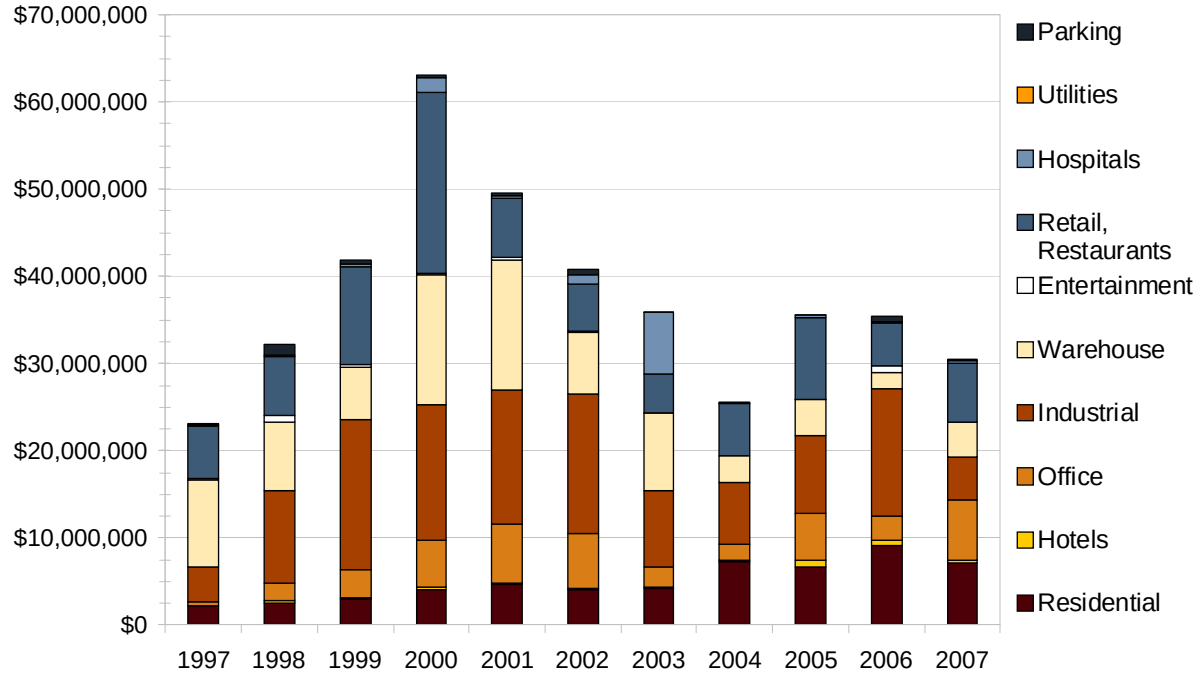
Defining Fee Categories

The method recommended for grouping developments into fee categories (Figures 3-5 to 3-7)[7] is based on parking categories identified in the City Zoning Code, which group together similar types of development.

Impacts by Size of Development

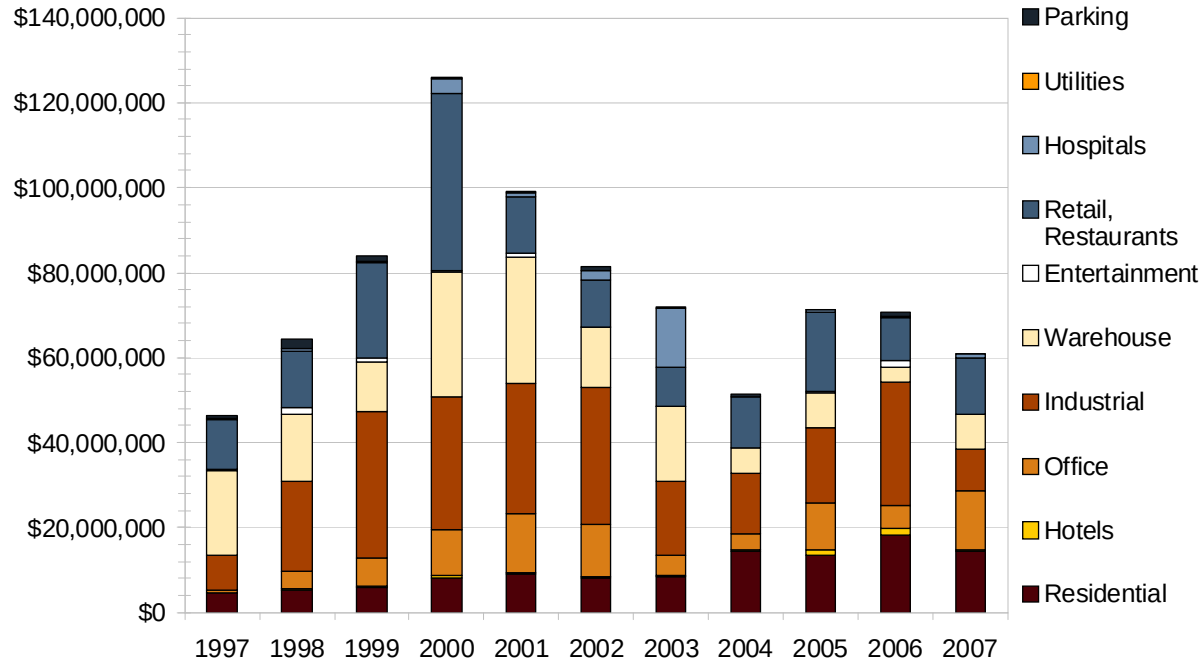
To explore the question of the threshold size of development subject to a hypothetical linkage fee, financial scenarios for the different use categories were divided into projects with 10,000 square feet or less and projects with 50,000 square feet or more. The determination of 10,000 square feet and 50,000 square feet breakpoints was based on the distribution of the sizes of projects approved for construction between 2006 and 2008 in the City of Los Angeles, a time frame that includes the peak and nadir of the latest real estate cycle. Of the 23,573 building permits approved in that time, more than 88.6 percent of building permits were for projects with less than 5,000 square feet; but 58.5 percent of building floor area permitted was in developments with 50,000 square feet or more. From 2006 to 2009, developments with 50,000

Figure 3-5
Low Fee Scenario - 5% of Earned Income Deficit
Fees Generated by Schedule based on *Type of Development*



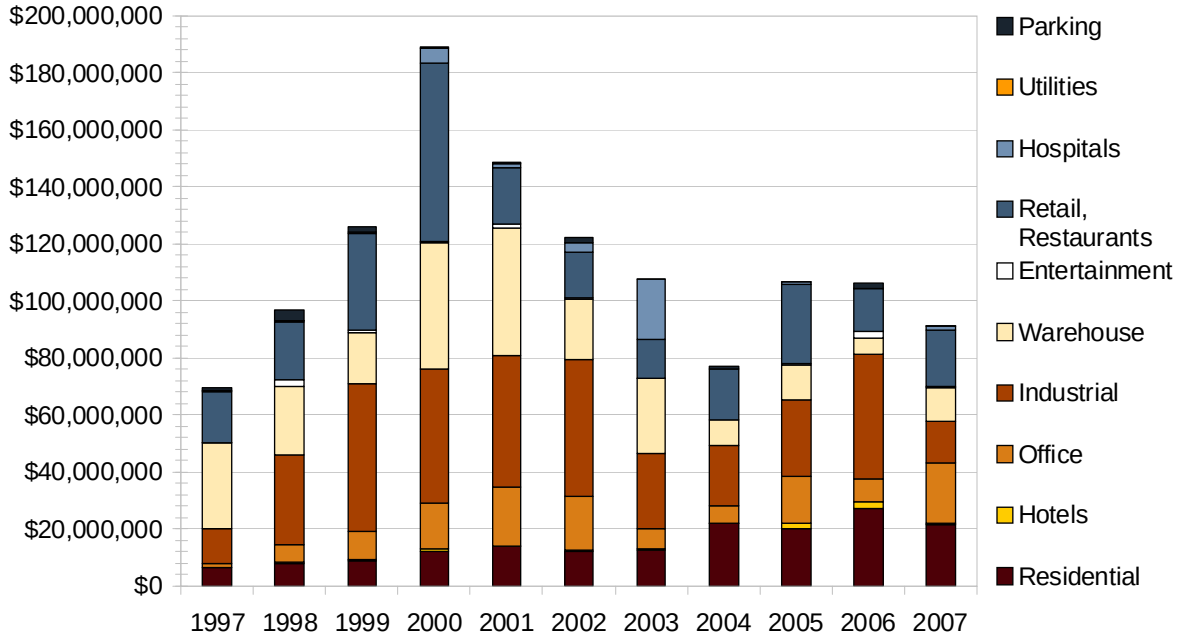
Source: Economic Roundtable, City of Los Angeles Department of Building and Safety

Figure 3-6
Medium Fee Scenario - 10% Earned Income Deficit
Fees Generated by Schedule based on *Type of Development*



Source: Economic Roundtable, City of Los Angeles Department of Building and Safety

Figure 3-7
High Fee Scenario - 15% of Earned Income Deficit
Fees Generated by Schedule based on *Type of Development*



Source: Economic Roundtable, City of Los Angeles Department of Building and Safety

square feet or more comprised the majority of new floor area added to the City of Los Angeles while properties smaller than 10,000 square feet comprised the largest proportion of projects.

The fee scenarios suggest that the housing linkage fee would have a similar impact on threshold rents, return on investment, and land values because it comprises a comparable proportion of total development cost regardless of project size. Thus, properties with 10,001 to 49,999 square feet were excluded from the analysis. In Table 3-7, at the $20 per square foot level, the linkage fee to total development cost ratio ranged from one percent to 11.76 percent depending on development category. For the developments with less than 10,000 square feet, a $20 per square foot linkage fee ranged from 3.7 percent to 8.2 percent of total development costs while the same fee level for development in excess of 50,000 square feet comprised as much as 11.76 percent of development costs. The difference is largely attributable to lower total development costs per square foot for larger scale developments achieved through efficiencies of scale.

In practice, a linkage fee ordinance would apply to new construction and existing properties that increase building floor area but not to the rehabilitation of existing properties as long as the use and pre- and post-rehab square footage remain the same. The linkage fee would apply when new building floor area is permitted that generates affordable housing demand.

Potential for Bolstering the Affordable Housing Trust Fund

The revenue generating potential of a housing linkage fee is illustrated in Figures 3-5 to 3-7 by applying three fee scenarios to annual development from 1997 to 2007. The low fee scenario applies a fee of 5 percent of the earned income deficit to each fee category; the medium fee scenario applies a fee of 10 percent of the deficit; and the high fee scenario applies a fee of 15 percent of the deficit. In each scenario, there is a minimum fee of $1 per square foot and a maximum fee of $20 per square foot. From 1997 to 2007, the Los Angeles Department of Building and Safety approved more than 269 million square feet of building floor area across all development categories.[8] The results of applying the different fee schedules to the average annual level of development from 1997 through 2007 area are shown in Table 3-8.

These results suggest that the potential for either schedule to generate fees for the City's Affordable Housing Trust Fund is significant. Since its inception in 2003, the Trust Fund's annual budget has ranged from $23 million to $119 million, and only until 2005 did the City make appropriations from the General Fund. Assuming comparable rates of development activity in the future, even under the low-fee schedule, the City's annual affordable housing budget of approximately $65 million could increase by more than 50 percent.[9]

Table 3-7
$20/SF Linkage Fee as Percentage of Total Development Cost

Development Category	$20/SF Fee as % of Total Development Cost
Entertainment – Recreation	2.32%
Theatre	1.20%
Hospitals (General)	3.93%
Hospitals (Convalescent)	3.37%
Hotel-20 Rooms	8.22%
Hotel-250 Rooms	6.12%
Factory >=50,000 SF	8.26%
Factory 8,000 SF	7.78%
Warehouse >= 50,000 SF	11.76%
Warehouse 8,000 SF	8.24%
Gas Service Stations	3.87%
Public Garage (Auto Repair, etc.)	5.90%
Public Garage (Parking Lots & Garages)	8.86%
Small Office- 2 story	7.91%
High Rise Office	5.92%
Restaurants	2.31%
Anchored Retail Strip Center >= 50,000 SF	4.97%
Unanchored Retail Strip Center < 10,000 SF	6.89%
Multifamily High Rise	8.01%
Multifamily 8 units	8.22%

Source: Costar, RS Means Square Foot Cost

Monitoring the Impacts of the Fee

To monitor the impacts of the fee, the locality may analyze activity in construction and the local labor market.

Due to the dynamic nature of the real estate market, the locality may want to consider monitoring the collection of fees as well as the completion of development on the basis of building square footage in each development category subject to the fee on a biannual basis. Additionally, there are three important considerations for future tipping

Table 3-8
Potential Average Annual Fees Generated by Fee Schedules

Fee Schedule	Fee Schedule Based on Grouping Industries by Parking Categories
Low Fee - 5% of deficit	$37.6 million
Medium Fee - 10% of deficit	$75 million
High Fee - 15% of deficit	$112 million

Sources: Economic Roundtable, City of Los Angeles Department of Building and Safety

point analyses. First, tracking local construction cost will quantify the relationship of the linkage fee to the cost of new construction. Second, monitoring vacancy rates for the development types subject to the fee will provide an indication of the absorption of new and existing building square footage by employers. Third, monitoring the wage impacts of new development will be difficult since data sets for the number of employees and wage levels of employers in new buildings that have been subject to the linkage reflect only employment in the formal economy, and pose significant confidentiality issues. Instead, the Economic Roundtable recommends using the U.S. Census Bureau's Public Use Microdata Sample from the American Community Survey for monitoring fluctuations in employment and wage levels within development categories, since it captures activity in both the formal and informal economies, with the limitation that it is based on where workers live.

Because a multitude of factors influence development activity and employment, measuring the impact of the fee on development will be difficult to quantify. Potentially the most quantifiable impact of the fee will be the number of affordable housing units assisted, income levels targeted, and types of households served.

Findings about Fee Levels and Fee Scenarios

The fee scenarios indicate that the potential impacts of an affordable housing linkage fee may be borne by developers, investors, and end users, depending on whether a development is sold to an investor or held by the developer, and whether market conditions will allow the fees to be passed on to end users. However, the impacts are relatively low in almost all scenarios because the potential linkage fee comprises such a small portion of total development costs in every category.

It is most likely that the impact of linkage fees would be absorbed by landowners who would experience a diminution in the prices that developers and investors would be willing to pay for their properties. This would occur except in cases where the current use value of land approaches the value associated with development in a more profitable use (e.g. land with an existing apartment building significant in size relative to highest use permitted.). Other actors in the development process are less likely to absorb the fees, because either their profit margins cannot withstand the additional cost of the fee or because as consumers in a buyer's market, they can choose sites that do not require absorption of this cost.

It is nearly impossible to define an absolute tipping point for linkage fees that will make development infeasible due to the variability in financing, land and building costs, market vacancy, rent, profit margins, threshold rates of return, and developer financial capacity.

However, the impact of a hypothetical linkage fee can be measured in terms of the ratio of linkage fee to development cost. As long as the linkage fee represents a relatively low proportion of total development costs (i.e., up to five percent of total costs), the fee's impact on development should be nominal.

Based on the financial scenarios included in the Appendix to this chapter, when the high fee scenario (15 percent of the earned income deficit per square foot) is applied, only the industrial, large warehouse (>50,000 SF) and public garage (auto repair) categories approach the tipping point benchmark of five percent of total development cost. Other development categories could be subjected this fee level without approaching the tipping point. Furthermore, the scenarios demonstrate that a linkage fee has comparable impacts on small-scale development with less than 10,000 square feet and development with 50,000 square feet or more. The tipping points per square foot for small versus large projects are as follows:

- *Retail Strip Center*: $15 for projects with less than 10,000 square feet vs. $20 for projects with more than 50,000 square feet
- *Hotel*: $12 for a 20 room project vs. $16 for a 250 room project
- *Industrial*: $13 for an 8,000 square foot project vs. $12 for projects with more than 50,000 square feet
- *Warehouse*: $12 for an 8,000 square foot project vs. $9 for a project with more that 50,000 square feet

To roll development projects up into a manageable number of fee categories, this study proposes using the *City Zoning Code's* parking categories, which group together similar types of development.

Public sector construction, churches and airports are recommended for exemption from fees. It is also recommended that affordable housing be exempted from fees, since the purpose of the proposed fee is to increase the supply of affordable housing.

Based on historic development volume in the City of Los Angeles, housing linkage fees can potentially be a significant revenue source for the Affordable Housing Trust Fund.

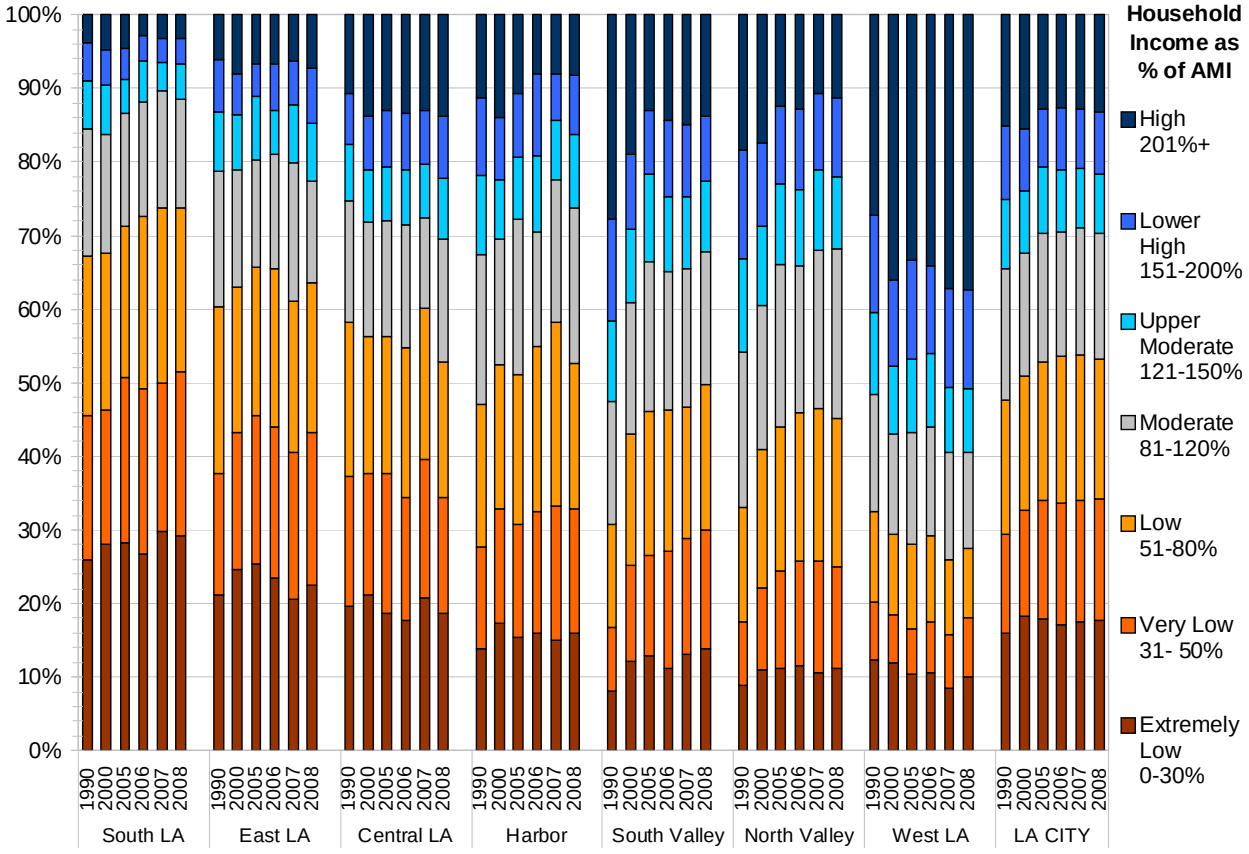
GEOGRAPHIC BOUNDARIES

This section analyzes whether any Affordable Housing Benefit Fee that the City may enact should be adjusted or waived in lower-income Community Planning Areas (CPA) or Area Planning Commission (APC) regions in order to minimize barriers to development in those areas. This issue arises because it is conceivable that the fee might adversely impact the low-income residents it is intended to help by slowing the creation of new jobs that might offer work for them.

Income Distribution by Area Planning Commission Region

Residents living in households with extremely-low- and very-low incomes, that is, incomes half or less of the area median income (AMI), make up the largest share of residents in the South Los Angeles Area Planning Commission (APC)[10] region (52 percent in 2008), followed by East Los Angeles (43 percent), Central Los Angeles (34 percent), the Harbor (33 percent), South Valley (30 percent), North Valley (25 percent), with West Los Angeles having the fewest extremely-low- and very-low income residents (18 percent). Citywide, 34 percent of

Figure 3-8
Distribution of City of Los Angeles Residents by Average Median Income Band of Household, 1990-2008



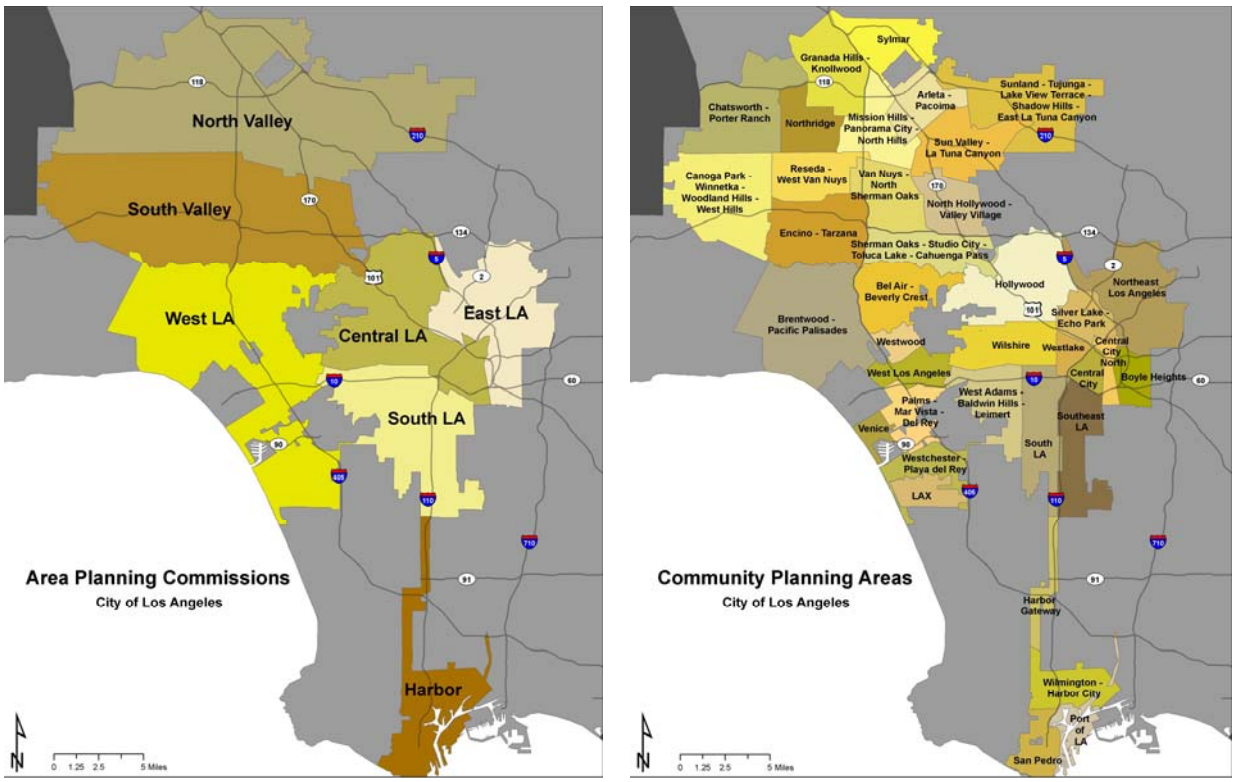
Sources: U.S. Census Bureau, 1990, 2000 Decennial Census, 2005-2008 American Community Survey, Public Use Microdata Sample

Los Angeles residents are part of households with incomes that put them in the extremely-low and very-low AMI bands, with incomes under half of the area median income. These income break-outs are shown in Figure 3-8 (supporting data is shown in the endnote).[11]

Residents living in households with low incomes in 2008, that is, incomes 51 percent to 80 percent of AMI, have a geographic distribution similar to that of very-low income residents. Low-income residents are most concentrated in South Los Angeles (22 percent), followed by East Los Angeles (20 Percent), the Harbor (20 percent), South Valley (20 percent), North Valley (20 percent), Central Los Angeles (18 percent), with West Los Angeles having the fewest very-low income residents (10 percent). Citywide, 19 percent of Los Angeles residents are part of households with incomes that put them in the low AMI band, with incomes 51 to 80 percent of area median income. Maps of Area Planning Commission regions and Community Planning Areas are shown in Figure 3-9.

Residents living in households with moderate incomes in 2008, that is incomes ranging from 81 to 120 percent of AMI, spanning the center of the income distribution, are most concentrated in the North Valley (23 percent), followed by the Harbor (21 percent), South Valley (18 percent), Central Los Angeles (17 percent), South Los Angeles (15 percent), East Los Angeles (14 percent), with West Los Angeles having the fewest moderate income residents (13 percent). Citywide, 17 percent of Los Angeles residents are part of households with incomes that put them in the moderate AMI band, with incomes 81 to 120 percent of AMI.

Figure 3-9
Community Planning Areas and Area Planning Commissions of the City of Los Angeles



Source: City of Los Angeles Department of City Planning

In Chapter 1 of this report, we established that households with incomes 80 percent or less of AMI typically have insufficient income to afford rent in the City of Los Angeles without becoming rent-burdened or overcrowded. The two regions with the highest concentrations of residents with low and very-low incomes in 2008, that is, incomes 80 percent or less of AMI, were in South Los Angeles (74 percent) and East Los Angeles (64 percent).

Table 3-9
Annual Change in Distribution of Los Angeles Residents by Area Planning Commission Region and Average Median Income (AMI) Band, 2005-2008

AREA	Annual Change in Number of Residents 2005-2008*			Annual Change as % of Number of Residents in Income Group in 2005*		
	0 to 50% of AMI	51 to 80% of AMI	81 to 120% of AMI	0 to 50% of AMI	51 to 80% of AMI	81 to 120% of AMI
Central Los Angeles	-7,526	-2,891	-2,704	-4%	-3%	-7%
East Los Angeles	-4,705	509	874	-2%	0%	2%
Harbor	2,604	1,014	1,582	5%	3%	11%
North Valley	230	808	2,257	0%	1%	3%
South Los Angeles	2,861	3,696	-781	1%	3%	-2%
South Valley	8,038	-863	-3,708	5%	-1%	-5%
West Los Angeles	2,489	-2,474	-2,002	3%	-5%	-4%
CITY OF LOS ANGELES	3,990	-202	-4,481	0%	0%	-1%

Sources: U.S. Census Bureau, 1990, 2000 Decennial Census, 2005-2008 American Community Survey, Public Use Microdata Sample. Note: *The annual change in the number of residents from 2005 to 2008 is the slope value for annual change in the number of residents in each income band in those four years.

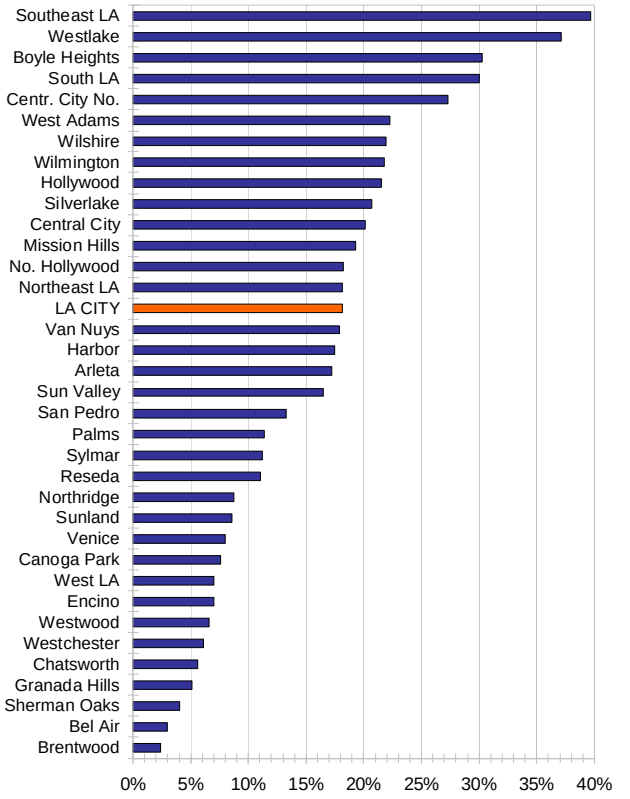
Changes in Income

Several regions of Los Angeles have clear-cut trajectories of growth or decline in particular income groups, but for the most part, there is not a clear direction of change for extremely-low, very-low, low- and moderate-income households when we look at the most recent four years of data, from 2005 through 2008. The direction and strength of these changes is laid out in Table 3-9, and can be seen visually in Figure 3-8. Patterns of recent change in each Area Planning Commission region can be summarized as follows:

- *Central Los Angeles* – Overall pattern of decline in the number of extremely-low, very-low, and low-income groups. This together with recent growth in the number of residents with moderate or higher incomes has nudged the income profile of residents upward.
- *East Los Angeles* – Slight decline in extremely-low and very-low income residents and slight growth in moderate-income residents.
- *Harbor* – Growth in extremely-low, very-low, low- and moderate-income groups, and decline in households with incomes that are 151 percent or more of the area median income.
- *North Valley* – Very little change in extremely-low, very-low and low-income residents, slight growth in moderate-income residents, and slight decline in high-income residents, that is, residents with incomes 201 percent or more of the area median income.

- *South Los Angeles* – Slight growth in extremely-low, very-low and low-income residents, and slight decline in residents with moderate or greater incomes.
- *South Valley* – Growth in extremely-low and very-low income residents and decline in residents with moderate or greater incomes.
- *West Los Angeles* – Growth in extremely-low and very-low income residents, decline in low and moderate-income residents, and growth in high-income residents.
- *City of Los Angeles* – Very little change from 2005 through 2008 in the overall income distribution of residents.

Figure 3-10
Percent of Families with Incomes below the Poverty Threshold in 1999, by CPA



Source: U.S. Census Bureau, 2000 decennial census, Table P90. Poverty Status in 1999 of Families

In summary, the most apparent patterns of change from 2005 through 2008 in the income distribution of residents is a decline in extremely-low, very-low, and low-income residents in Central Los Angeles; growth of extremely-low, very-low, low and moderate income residents in the Harbor area, growth of low-income residents in South Los Angeles; growth in extremely-low and very-low income residents in the South Valley and West Los Angeles, accompanied by decline in low and moderate income residents in West Los Angeles.

Job Change and Wage Levels

This section examines the relationship between earned income of residents in low-income communities, and employment rates, wage levels, job growth, and job availability.

Family Poverty

The percent of LA City families in poverty in 1999 (the most recent year with CPA-level data) ranged from 2 percent in Brentwood to 40 percent in Southeast Los Angeles.[12] The Citywide family poverty rate was 18 percent. As shown in Figure 3-10,[13] five Community Planning Areas had family poverty rates over 25 percent:

- Southeast LA 40 percent
- Westlake 37 percent

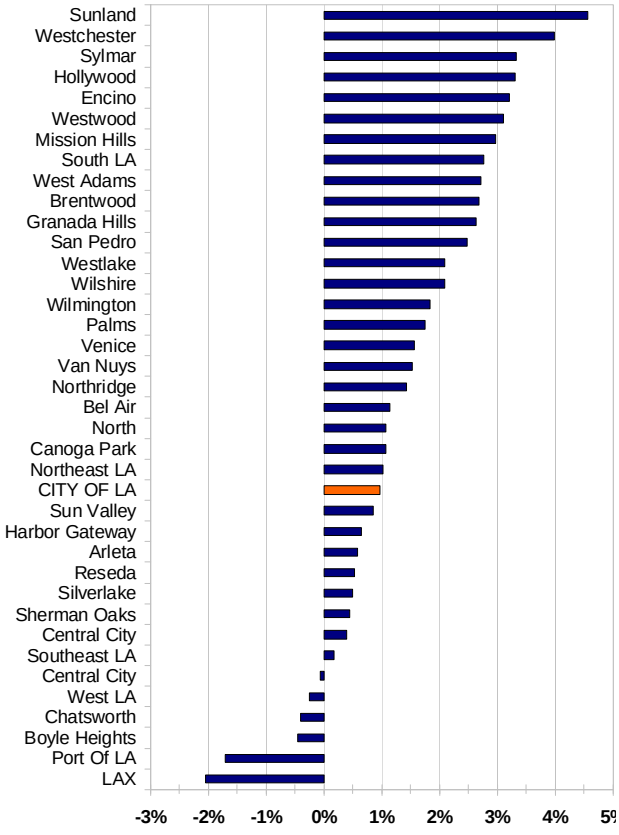
- Boyle Heights 30 percent
- South LA 30 percent
- Central City North 27 percent

Employment Rates among Adults

The percent of LA City residents age 16 and over who had earned income in 1999 ranged from 79 percent in Venice to 46 percent in Central City, as shown in Figure 3-11.[14] The five communities with the lowest employment rates among residents 16 years of age and older are similar to those with the highest poverty rates:

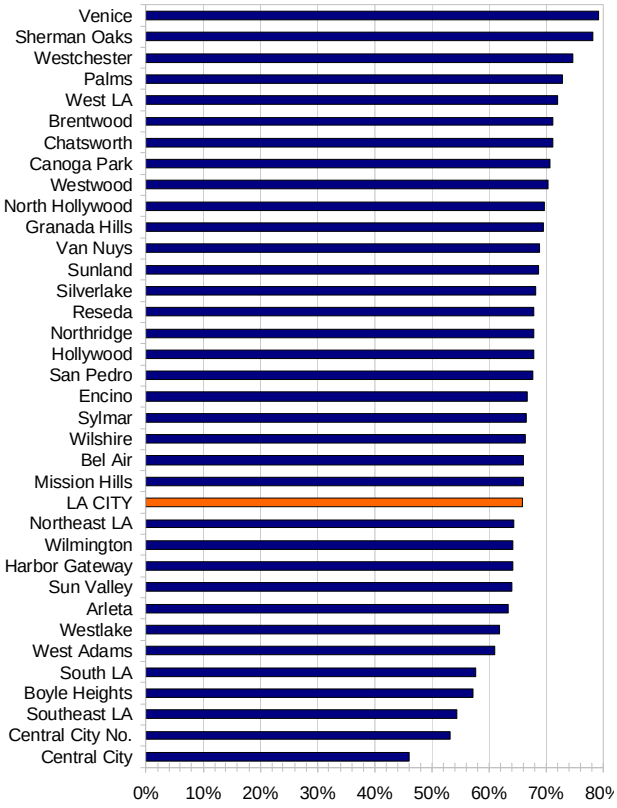
- Central City 46 percent
- Central City North 53 percent

Figure 3-12
Typical Annual Change by CPA in the Number of Jobs 1996-2008 as a Percent of 1996 Employment



Source: California Employment Development Department

Figure 3-11
Percent of Adults 16+ Years of Age with Earned Income in 1999, by CPA



Source: U.S. Census Bureau, 2000 decennial census, Table Pct46. Sex by Work Experience in 1999 by Earnings in 1999 for the Population 16 Years and over

- Southeast LA 54 percent
- Boyle Heights 57 percent
- South Los Angeles 58 percent

The co-occurrence of high rates of disconnection from the labor force and high rates of poverty supports the widely held perception that these two factors are linked.

Job Change

The typical annual rate of job change in each CPA over the past twelve years is shown in Figure 3-12.[15] This information about the formal economy (which excludes under-the-table jobs), shows job growth in

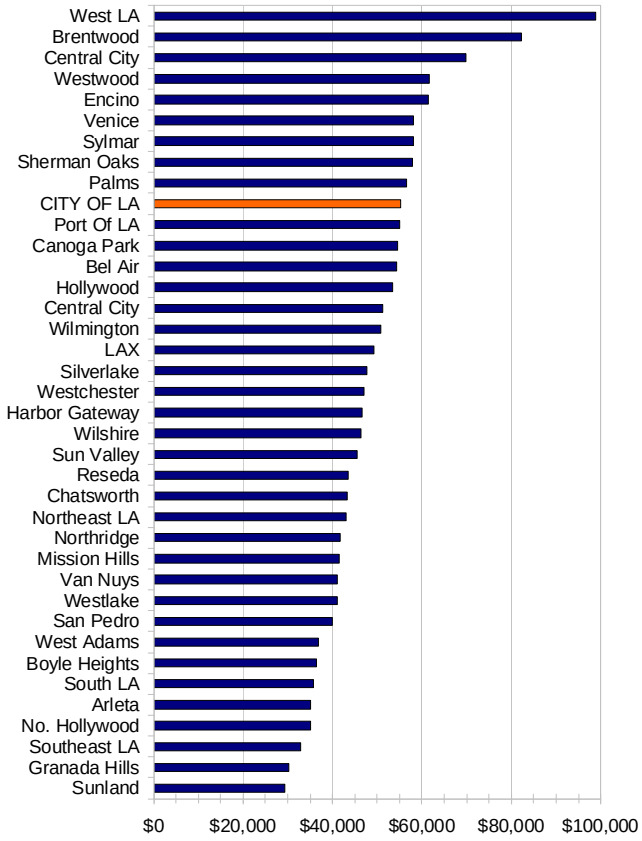
most of the City's Community Planning Areas from 1996 through 2008, with a typical Citywide annual growth rate of 1 percent. The annual job growth rates in the five communities with the highest rates of family poverty were mixed:

- Southeast LA 0 percent
- Boyle Heights 0 percent
- Central City North 0 percent
- Westlake 2 percent
- South Los Angeles 3 percent

There does not appear to be a clear relationship between job growth and poverty at the Community Planning Area level. Two of the poorest communities had above-average rates of job growth. At the other end of the income spectrum, West Los Angeles, an affluent community, had job losses.

The communities surrounding the City's two ports of entry had annual job loss rates of 2 percent – the greatest in the City. In the case of the Port of Los Angeles CPA, the greatest losses were in manufacturing jobs. In the case of the Los Angeles International Airport CPA, the greatest losses were in transportation and warehousing jobs.

Figure 3-13
Average Annual Wages in 2008, by CPA



Source: California Employment Development Department

Wage Levels

The ranking of communities based on the average wage paid to workers employed there overlaps partially with the earlier ranking of communities based on family poverty rates, as can be seen in Figure 3-13. Excluding the Sunland-Tujunga area, which is home to a payroll center for low-paid household workers employed throughout the City, resulting in artificially low average wages for the Sunland area because their wages are reported there, the five communities with the lowest average annual wages in 2008 were:

- Granada Hills $30,269
- Southeast LA $32,976
- North Hollywood 35,004
- Arleta $35,082
- South Los Angeles $35,869

Only two of these communities (Southeast LA and South LA) were on the earlier list of the five communities with the highest family poverty rates. Of the other three communities,

North Hollywood had the 13th highest poverty rate out of the 35 communities shown in Figure 3-10, Arleta had the 17th highest rate, and Granada Hills had the 32nd highest rate.

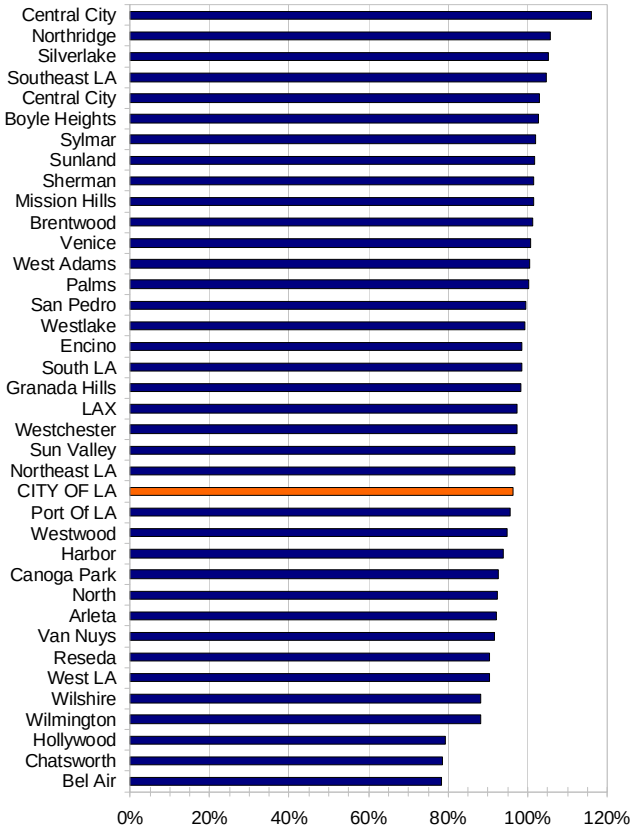
There does not appear to be a clear relationship between wages paid by employers in a community and the rate of poverty among families living there.

Wages in Growing Industries

Citywide, the average wage in industry sectors that are growing is slightly (4 percent) less than the overall average wage for the City ($53,200 vs. $55,189 in 2008), as shown in Figure 3-14. However, the average wage in growth industries as well the overall average wage are adequate to sustain families. Both are roughly two and a half times greater than the poverty threshold for a family of four.

In all of the CPAs, except for the 8 shown in Figure 3-13 that had average annual wages below $40,000 in 2008, workers earning wages at or above the average for growth industries in each CPA would likely be able to rent housing without becoming rent burdened.

Figure 3-14
Average Pay in Growing Sectors as a Percent of the Overall Average Wage for Each CPA in 2008



Source: California Employment Development Department

The five communities with the highest family poverty rates demonstrated stronger wage trends in growth industries. In three of these communities, the average wage paid by growth industries was higher than the overall average wage in the CPA, and in the other two, the average wage in growth industries was closer to the average wage than it is Citywide. Growth industry wages as a percent of average wages in each of the five poorest CPAs were as follows:

- Southeast Los Angeles 105 percent
- Boyle Heights 103 percent
- Central City North 103 percent
- Westlake 99 percent
- South Los Angeles 98 percent

Taken as a whole, industry growth sectors appear to be doing more to raise or sustain wage levels in communities with the highest family poverty rates than in the City as a whole. The above-average wages in growth industries in the poorest communities indicates that there is not a significant relationship between lack of wage improvement in communities and high rates of family poverty.

Number of Working-Age Adults per Job in the Formal Economy

An additional measure of the adequacy of employment opportunities is the ratio of working age adults to jobs. Population data for 2008 is available only at the Area Planning Commission level; this data is combined with jobs data for the formal economy in Table 3-10. Citywide in 2008, there were 1.5 working-age residents, 18 to 64 years of age, for every job in the City.

Table 3-10
Number of Working Age Adults per Job in City of Los Angeles Planning Areas in 2008

Planning Area	Residents 18-64 Years of Age 2008	Average Monthly Employment in 2008	Number of Working-age Adults per Job 2008	Percent of Families in Poverty 1999
North Valley	431,700	188,135	2.3	12%
South Valley	407,315	260,408	1.6	12%
West LA	341,749	274,644	1.2	7%
Central LA	353,386	643,870	0.5	24%
East LA	388,831	81,462	4.8	21%
South LA	432,556	122,197	3.5	31%
Harbor	117,483	32,981	3.6	17%
City of Los Angeles	2,473,020	1,603,698	1.5	18%

Sources: U.S. Census Bureau, 2008 American Community Survey, Public Use Microdata Sample, California Employment Development Department, and 2000 Decennial Census, Table P90. Poverty Status in 1999 of Families. Jobs data is for the formal economy and does not include jobs in the informal economy. Working age is defined as 18 to 64 years of age.

This ratio varies widely among Area Planning Commission regions. The greatest availability of jobs, both in absolute numbers and as a ratio to the number of residents was in *Central Los Angeles*, which had 40 percent of the City's jobs and two jobs for every working age resident. This makes Central Los Angeles a significant labor importer.

At the other extreme, there were 4.8 working-age adults for every job in *East Los Angeles*. This area includes Boyle Heights CPA, with a 30 percent family poverty rate in 1999, the third highest in the City. However, despite its predominantly residential land uses and internal scarcity of jobs, East LA is adjacent to job-rich areas such as Downtown, Vernon and City of Commerce, which provide nearby employment opportunities.

The *Harbor* region had the second highest ratio with 3.6 working-age adults for each job. Despite this apparent job deficit, CPAs in this region are not among those with the highest family poverty rates. Wilmington - Harbor City had the highest poverty rate among Harbor region CPAs, ranking eighth among the CPAs shown in Figure 2, with a family poverty rate of 22 percent in 1999. The next highest rate of poverty was in Harbor Gateway CPA, which ranked sixteenth with a family poverty rate of 17 percent, less than the Citywide average of 18 percent.

South Los Angeles had the third highest ratio with 3.5 working-age residents for every job. This planning region has the largest working-age population of any region in the City and contains some of the poorest communities. It includes the Southeast Los Angeles CPA with a 1999 family poverty rate of 40 percent and the South Los Angeles CPA with a poverty rate of 30 percent. Employment opportunities in South Los Angeles are affected by at least four factors:

1. Jobs on the Alameda Corridor were lost as part of de-industrialization of the region and the decline of Los Angeles' durable manufacturing sector.[16]
2. Service and retail jobs were lost as a result of the 1992 civil unrest[17]

3. South Los Angeles is predominantly zoned for residential land use, with opportunities for commercial development largely limited to strips along major transportation corridors, resulting in a scarcity of sites for developments that will create new jobs.
4. South Los Angeles is adjacent to a several cities that provide some employment opportunities for South LA residents including, Carson, Gardena, Hawthorne, Inglewood and Vernon.

North Valley had the fourth highest ratio with 2.3 working age residents for every job. This was well above the Citywide average of 1.5 working age residents for every job, however the North Valley had a family poverty rate of 12 percent in 1999, well below the Citywide average rate of 18 percent. The Mission Hills CPA had a highest family rate of 19 percent, the highest in the North Valley planning region, but just above the Citywide average of 18 percent.

South Valley had the fifth highest ratio with 1.6 working age residents for every job, very close to the Citywide ratio of 1.5. All of the South Valley CPAs had family poverty rates at or below the Citywide average.

West Los Angeles had the sixth highest ratio with 1.2 working age residents for every job. All of the West LA CPAs had family poverty rates that were well below the Citywide average.

Central Los Angeles had the most favorable ratio of workers to jobs, with two jobs for every working age resident. Despite the comparative abundance of employment opportunities, there were high rates of family poverty in some communities within Central Los Angeles. Westlake's family poverty rate of 37 percent was the second highest in the City, and Central City North's rate of 27 percent was the fifth highest in the City.

Overall, there is not a clear relationship between scarcity of nearby jobs and high rates of poverty among local families. Some regions such as Central LA have an abundance of jobs along with high rates of poverty in adjoining neighborhoods. Other regions such as the Harbor have a scarcity of jobs but not extreme poverty rates. It is likely that availability of jobs is an important factor along with other factors such as level of education and occupational skills in determining whether local residents are able to find employment.

Summary of Findings about Job Availability and Poverty

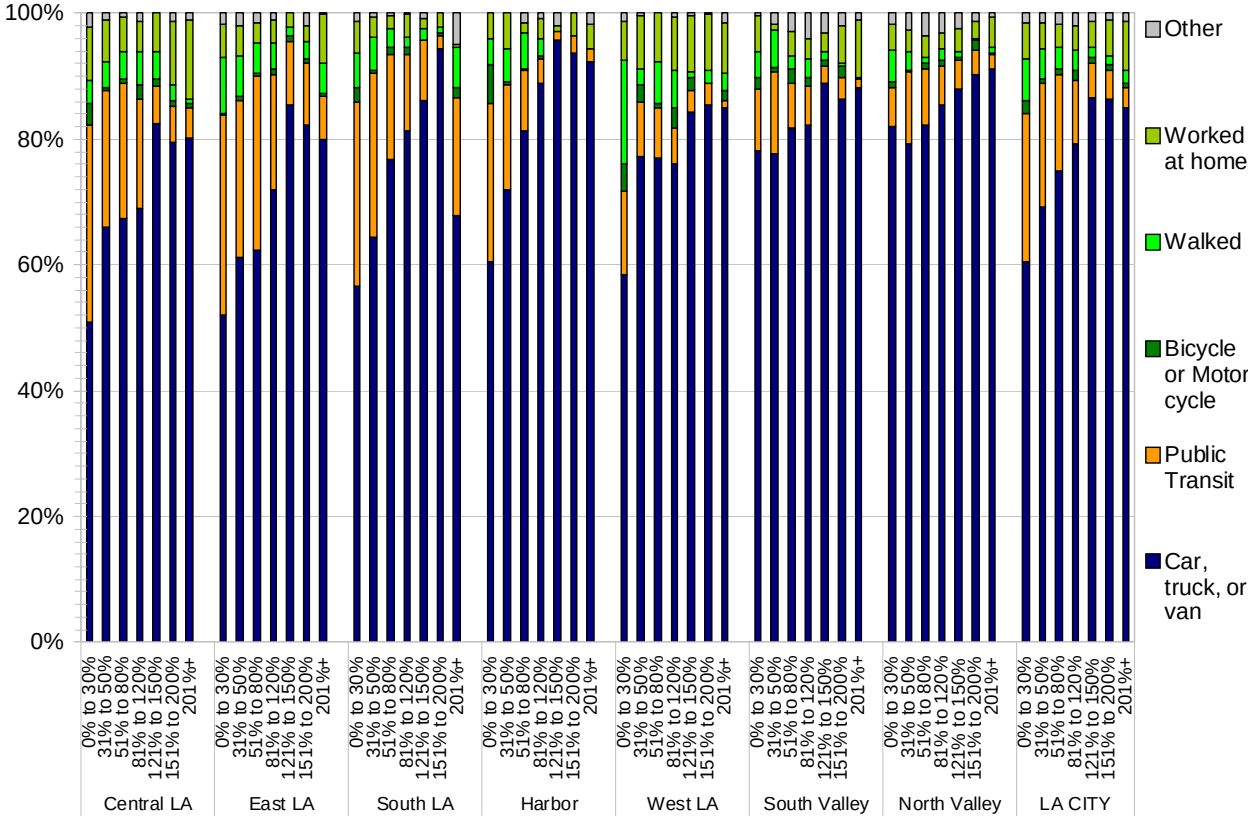
Findings about whether the City's poorest communities are particularly vulnerable to the possible effect of an Affordable Housing Benefit Fee on slowing job growth include:

1. Communities with the lowest employment rates have the highest poverty rates.
2. Some of Los Angeles' poorest communities have rates of job growth that are significantly above the City average. There does not appear to be a clear relationship between job growth, or lack there of, and poverty.
3. There does not appear to be a clear relationship between wages paid by employers in a community and the rate of poverty among families living there.
4. There does not appear to be a significant relationship between wages in growth industries and rates of family poverty in communities.
5. There is not a clear relationship between scarcity of nearby jobs and high rates of poverty among local families.

Unemployment is strongly linked to poverty, but indicators of job availability and job quality such rate of job growth, ratio of jobs to potential workers, wage levels, and wage change are not strongly linked to poverty rates. It is likely that multiple factors including both labor market conditions and worker attributes determine whether workers are able to find employment and rise out of poverty. Availability of jobs is likely an important factor along with other factors such as level of education, English language ability and occupational skills in determining whether local residents are able to find employment.

It does not appear that the City's poorest communities are especially vulnerable to adverse economic impacts should an Affordable Housing Benefit Fee be approved and should it result in slower rates of development during some points in the real estate cycle. Significant job growth is occurring in some of the City's poorest communities. However, the challenge of lifting the City's poorest families out of poverty entails more than local job creation. It also entails creating jobs that match the potential skill development range of aspiring workers and upgrading their skills to enable them to compete successfully for those jobs.

Figure 3-15
Mode of Transportation to Work by AMI Band and APC



Source: U.S. Census Bureau, 2008 American Community Survey, Public Use Microdata Sample. Other modes of transportation include the Census Bureau categories: Taxicab, Streetcar or trolley car, Ferryboat, and Other method.

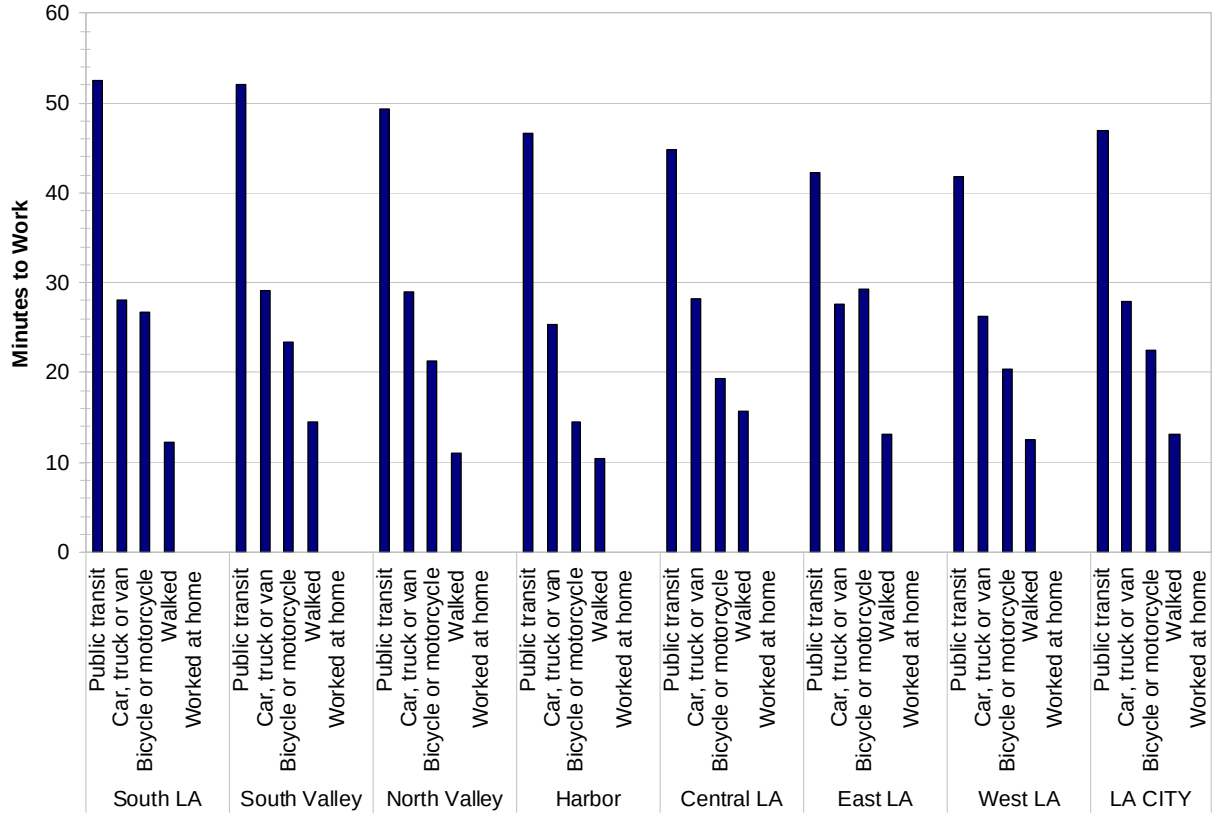
Commuting Radius around Sub-Regional Residential Nodes

It is helpful to understand the likely geographic size of the job market available to workers based on the distance they commute, and the extent to which lower-income workers need to be able to find jobs in or near the communities where they live. We approach this issue by breaking-out the modes of transportation for commuting to work that are used by workers in each AMI band living in each Area Planning Commission region. Then we look at the speed of travel by different modes of transportation to estimate average commuting distances for workers using different modes of transportation for their commutes.

What we see is that workers in lower income bands are more likely to commute by public transit than workers in higher bands, and workers in higher bands are more likely to commute by private vehicle than workers in lower bands, as shown in Figure 3-15.[18]

Private vehicles, public transit and walking account for 97 percent of the trips to work by people who work outside their homes. The Citywide breakout by AMI band for these three modes of transportation is shown in Table 3-11. Roughly two-thirds of workers in the lowest AMI band travel to work by private vehicle and a quarter take public transit. Roughly nine-tenths of worker in the highest band travel to work by private vehicle and a tenth use public transit.

Figure 3-16
Mean Minutes Spent Commuting to Work by Mode of Transportation and APC



Source: U.S. Census Bureau, 2008 American Community Survey, Public Use Microdata Sample

Workers who commute by public transit spend nearly twice as much time on their commute as workers who use private vehicles, as shown in Figure 3-16.[19] There is more variation in the amount of time spent commuting to work by public transit than by private vehicle, with South Los Angeles public transit commuters spending an average of 53 minutes and West Los Angeles commuters 42 minutes. Private vehicle commutes range from an average of 29 minutes in the South Valley to 25 minutes in the Harbor area.

The Citywide average amount of time spent commuting based on mode of transportation is shown in Table 3-12:[20] The average commuting speed in Los Angeles is estimated to be 20 miles per hour by private vehicle and 12 miles per hour by public transit.[21] When we divide commuting times by commuting speeds we find that workers commuting by private vehicle travel an average of 9.3 miles and workers traveling by public transit travel a nearly identical average of 9.4 miles.

Lower-income workers commuting by public transit have a commuting radius that is comparable to higher-income drivers commuting by private vehicle, but this mobility range comes at the cost of an additional 19 minutes spent commuting each way to and from work. This represents over three hours a week more time spent commuting.

Table 3-11
Citywide Mode of Commuting by AMI

AMI Band	Car, truck, or van	Public Transit	Walk
0% to 30%	64%	25%	7%
31% to 50%	72%	20%	5%
51% to 80%	78%	16%	4%
81% to 120%	82%	11%	4%
121% to 150%	90%	6%	2%
151% to 200%	92%	5%	1%
201%+	92%	3%	2%
Total	82%	12%	3%

Source: U.S. Census Bureau, 2008 ACS PUMS

Table 3-12
Modes of Transportation Used by Los Angeles Residents for Commuting to Work and Time Spent Commuting, 2006-2008

Mode of Transportation to Work	Percent of Workers	Mean Minutes Spent Commuting to Work
Car, truck, or van	78%	28
Bus or trolley bus	11%	47
Streetcar or trolley car	0.0%	49
Subway or elevated	0.4%	43
Railroad	0.1%	66
Taxicab	0.1%	24
Motorcycle	0.2%	24
Bicycle	1%	22
Walked	4%	13
Worked at home	5%	0
Other method	1%	29
All Workers	100%	30

Source: 2006-2008 American Community Survey, Public Use Microdata Sample

Summary of Findings about Income and Commuting

The geographic size of the job market available to workers commuting by public transit, who often are lower-income workers, appears to be comparable to the job market accessed by workers driving private vehicles, but this typically comes at the cost of spending over three additional hours a week commuting.

Recommendations about Geographic Boundaries for Fees

It is important to increase the opportunities for lower-income workers to find sustaining employment in or near the communities where they live. This would reduce the "time penalty" that many of these workers pay to travel to their jobs. However, as discussed earlier, creating these employment opportunities entails achieving industry growth that matches job requirements with worker capabilities and also strengthening the ability of low-income workers to compete for sustaining jobs.

Findings about job growth and wage levels in the City's Community Planning Areas support implementing any linkage fee program that the City may adopt in a consistent, undifferentiated manner throughout all areas of the City. Many lower-income communities in the City have above-average rates of job growth, so there does not appear to be a basis for waiving fees due to lack of job growth in low-income communities. In addition, industry growth appears to be doing more to raise or sustain wage levels in lower-income communities than in the City as a whole.

If a linkage fee were to influence the types of industries that locate in the City, the effect would likely be to incentivize higher-wage industries to locate, so there does not appear to be a basis for waiving fees in order to raise wage levels.

The overall income distribution among Los Angeles residents remained unchanged from 2005 through 2008, although there was change within some areas of the City.

Unemployment *is* strongly linked to poverty, but indicators of job availability and job quality such as rate of job growth, ratio of jobs to potential workers, wage levels, and wage change *are not* strongly linked to poverty rates. This is because jobs are growing and wages are increasing in some of City's poorest communities.

Low-income workers who commute to work on public transit appear to travel as far as their counterparts who use private vehicles, but this typically comes at the cost of spending over three additional hours a week commuting.

Based on the information analyzed, there is not a basis for reducing or waiving linkage fees in low-income areas of the City. It does not appear that the City's poorest communities are especially vulnerable to adverse economic impacts should an Affordable Housing Benefit Fee be approved. Significant job growth is occurring in some of the City's poorest communities.

Chapter 4

Benefits of Affordable Housing

BENEFITS OF AFFORDABLE HOUSING FOR EMPLOYERS AND COMMUTING WORKERS

Overview of Benefits for Employers when Workers have Affordable Housing

Housing that workers cannot afford and that is sometimes overcrowded, and time consuming commutes to work that conflict with family needs can make it necessary for workers to leave their jobs. This employee turnover creates significant costs for employers. Increasing the supply of affordable housing throughout the City can reduce these problems and produce cost savings for employers.

The benefits accruing to employers of low- and moderate-income workers include having increased access to workers within a convenient commuting radius to their work site[1] and to workers with longer-term, more stable connections to their home. This increased residential permanency and predictability means fewer turnovers of workers and greater labor force stability for employers.

The high cost of housing has left 62 percent of workers unable to afford rent, as shown in Figure A-2 in Appendix 1-1. Workers and their families must carefully balance costs for housing, healthcare, education, childcare and other critical needs with income from the jobs that sustain their lives. For some, this means longer and more time-consuming commutes to access jobs or secure desirable housing arrangements. For others, this means paying higher costs for housing or renting overcrowded or unrepaired apartments in order to be closer to employment opportunities. This balance is particularly difficult for low-income households to achieve, as lower levels of income limit their ability to obtain adequate and affordable housing and also limits their ability to access jobs.

This section examines the benefits accruing to employers by documenting 1) effects of rent-burden and overcrowding on attenuating the community connections of low- and moderate-income households, 2) transportation barriers to employment that workers in low- and moderate-income households face when finding and maintaining work, and 3) cost savings for employers from reduced employee turnover and retention of trained, productive workers.

Housing Situation: Rent-Burden and Overcrowding

The impacts of overcrowded housing conditions and high housing costs disproportionately fall on the shoulders of lower income households. HUD defines a housing unit as being overcrowded when there are 1.01 or more persons per room, a density that raises health and safety concerns for household members. This is equivalent to having 4 people occupying a typical one-bedroom apartment that has 3 rooms – a living room, bedroom and kitchen. Also, according to HUD definitions, renters spending more than 30 percent of their income on rent are considered to be rent-burdened. Households allocating such large shares of

their income towards rent may have difficulty affording other critical household necessities, such as healthcare and healthy food.

In the City of Los Angeles, 65 percent of all renter households are either overcrowded, rent-burdened, or both. Eleven percent are overcrowded and rent-burdened, 9 percent are only overcrowded and 45 percent are only rent-burdened, as shown in Figure 4-1. Disproportionate shares of renter households in the lower Area Median Income (AMI) bands are inadequately housed, facing extremely high rates of rent-burden or overcrowding.

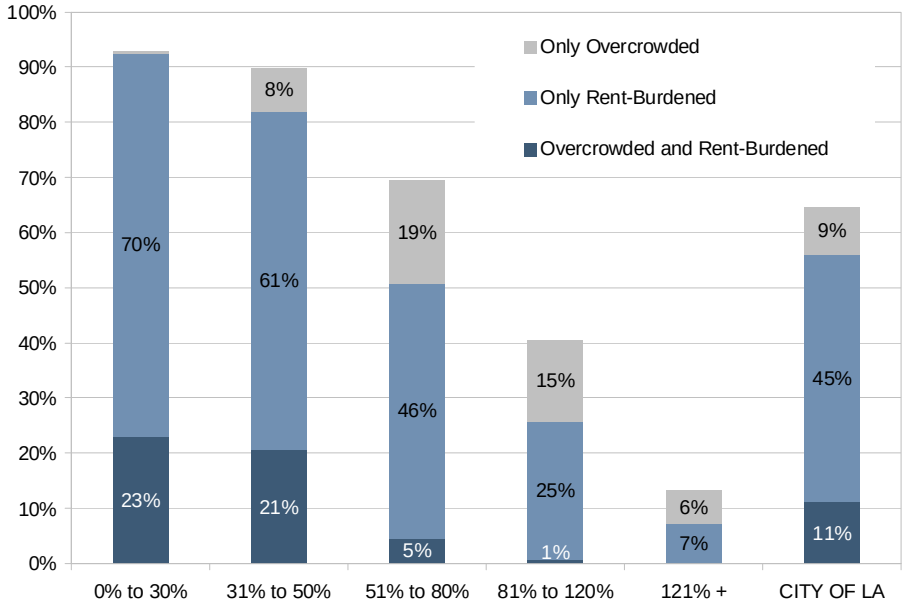
Ninety percent or more of renter households in the extremely-low AMI band (0 to 30 percent of AMI, with mean annual household incomes of $12,805 in 2009 dollars) and the very-low income AMI band (31 to 50 percent of AMI, with mean annual incomes of $27,674) are either rent-burdened or overcrowded. One out of five renter households in these AMI bands is both rent-burdened and overcrowded.

Seventy percent of low-income renter households (51 to 80 percent of AMI, with a mean annual income of $43,538) and a more modest 41 percent of moderate-income renter households (81 to 120 percent of AMI, with a mean annual income of $65,158) are rent-burdened or overcrowded. When households have income levels above 120 percent of AMI, rent-burden and overcrowding rates significantly decline; only 13 percent of these households are rent-burden or overcrowded.

Compared to renter households with incomes that are 121 percent or more of AMI, rent-burden and overcrowding rates are:

- 7-times higher for extremely-low- and very-low-income renter households
- 5-times higher for low-income renter households

Figure 4-1
Overcrowding and Rent Burden Rates for Renter Households by AMI Bands



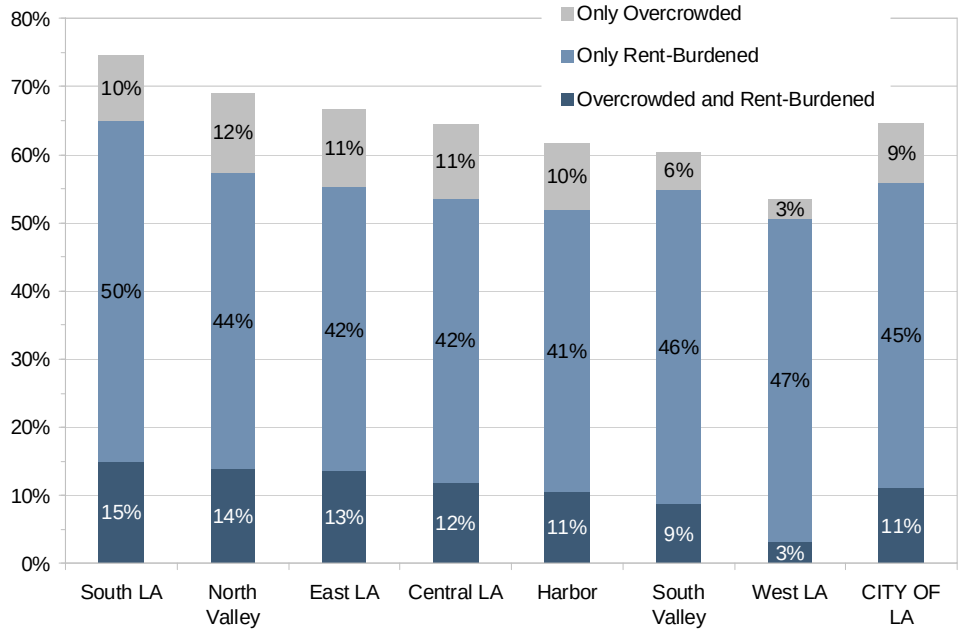
Source: 2006-2008 ACS 3-Year PUMS; Universe: Renter-occupied units for which rent-to-income ratio is calculated.

- 3-times higher for moderate-income renter households

All regions of the City are impacted by high rates of rent-burden and overcrowding, as shown in Figure 4-2 (detailed supporting data is provided in the endnote).[2] A majority of renters in all seven of the City's Area Planning Commission (APC) regions are either rent-burdened or overcrowded. The poorest areas of City are disproportionately impacted. The share of rent-burden or overcrowded renter households in each APC is:

- *South Los Angeles*: Three-quarter of renter households are rent-burdened or overcrowded (15 percent are overcrowded and rent-burdened, 10 percent are only overcrowded and 50 percent are only rent-burdened)
- *North Valley*: Seventy percent of renter households are rent-burdened or overcrowded (14 percent are overcrowded and rent-burdened, 12 percent are only overcrowded and 44 percent are only rent-burdened)
- *East Los Angeles*: Two-thirds of renter households are rent-burdened or overcrowded (13 percent are overcrowded and rent-burdened, 11 percent are only overcrowded and 42 percent are only rent-burdened)
- *Central Los Angeles*: Sixty-five percent of renter households are rent-burdened or overcrowded (12 percent are overcrowded and rent-burdened, 11 percent are only overcrowded and 42 percent are only rent-burdened)
- *Harbor*: Sixty-two percent of renter households are rent-burdened or overcrowded

Figure 4-2
Overcrowding and Rent Burden Rates for Renter Households by APC



Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year PUMS. Universe: Renter-occupied units for which rent-to-income ratio is calculated.

(11 percent are overcrowded and rent-burdened, 10 percent are only overcrowded and 41 percent are only rent-burdened)

- *South Valley*: Sixty-one percent of renter households are rent-burdened or overcrowded (9 percent are overcrowded and rent-burdened, 6 percent are only overcrowded and 46 percent are only rent-burdened)
- *West Los Angeles*: Fifty-three percent of renter households are rent-burdened or overcrowded (3 percent are overcrowded and rent-burdened, 3 percent are only overcrowded and 45 percent are only rent-burdened)

Low-income renters in all areas of the City are disproportionately impacted by high rates of rent-burden and/or overcrowding.

While these housing problems raise immediate economic, social and health concerns for low- and moderate-income households, employers of workers in these households also have a stake in the issue. Rent-burden and overcrowding are likely to result in tenuous community connections for many low- and moderate-income renters. A slight increase in rent may force rent-burden households to move in search of more affordable options, double- or triple-up in existing housing to minimize the burden of rent (but exacerbating unhealthy, overcrowded living arrangements), or simply endure the additional stress of higher rents. For employers, this translates into a labor force that:

- may have to unexpectedly move, uprooting their families and leaving their jobs
- has limited options to move into affordable housing close to their work site
- may be living in stressful, unhealthy or unsafe conditions

Increasing affordable housing options across the City can help alleviate some of the overcrowding and rent-burden that disproportionately impacts low- and moderate-income households. This will provide employers with access to workers who live in healthier, safer and more permanent housing that is closer to work sites and higher retention rates for trained, productive workers.

Transportation Barriers

In Los Angeles, having access to a vehicle is often the most practical way of finding and maintaining employment and managing personal and family needs. Transportation mobility, which is a function of time, distance, cost and mode of transportation for reaching desired destinations, is particularly critical for low-income households when they are trying to access employment, healthcare, childcare, food and other basic necessities. In the following subsections, we examine some of the transportation barriers that low- and moderate-income residents face in trying to secure employment that will sustain their lives.

Access to a Vehicle

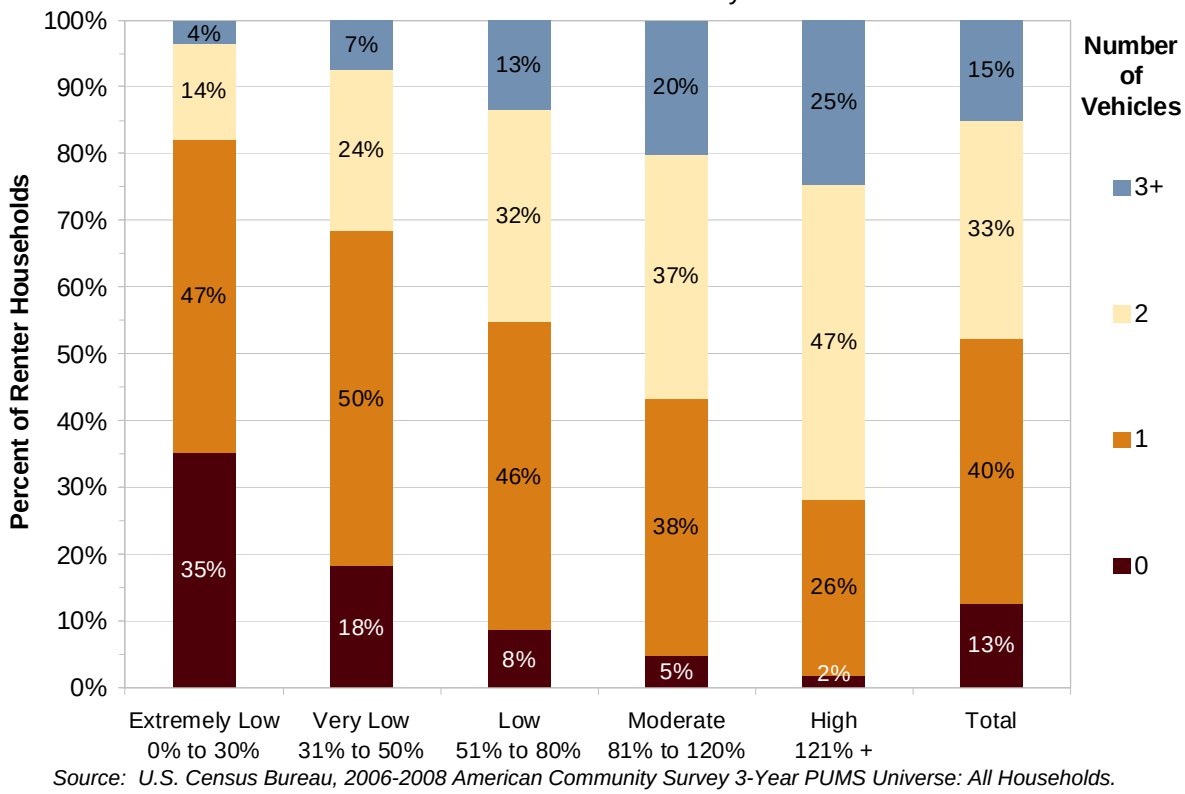
In the City of Los Angeles, 13 percent of households do not have access to a vehicle, and the share of households without a vehicle increases as income levels decrease, as shown in

Figure 4-3. Without a vehicle, employment searches and employment opportunities are often restricted to areas accessible by public transit, walking or bicycling. The following shares of households in each AMI band do not own a vehicle:

- 35 percent of extremely-low-income households (0 to 30 percent of AMI)
- 18 percent of very-low-income households (31 to 50 percent of AMI)
- 8 percent of low-income households (51 to 80 percent of AMI)
- 5 percent of moderate-income households (81 to 120 percent of AMI)
- 2 percent of households with incomes greater than 120 percent of AMI

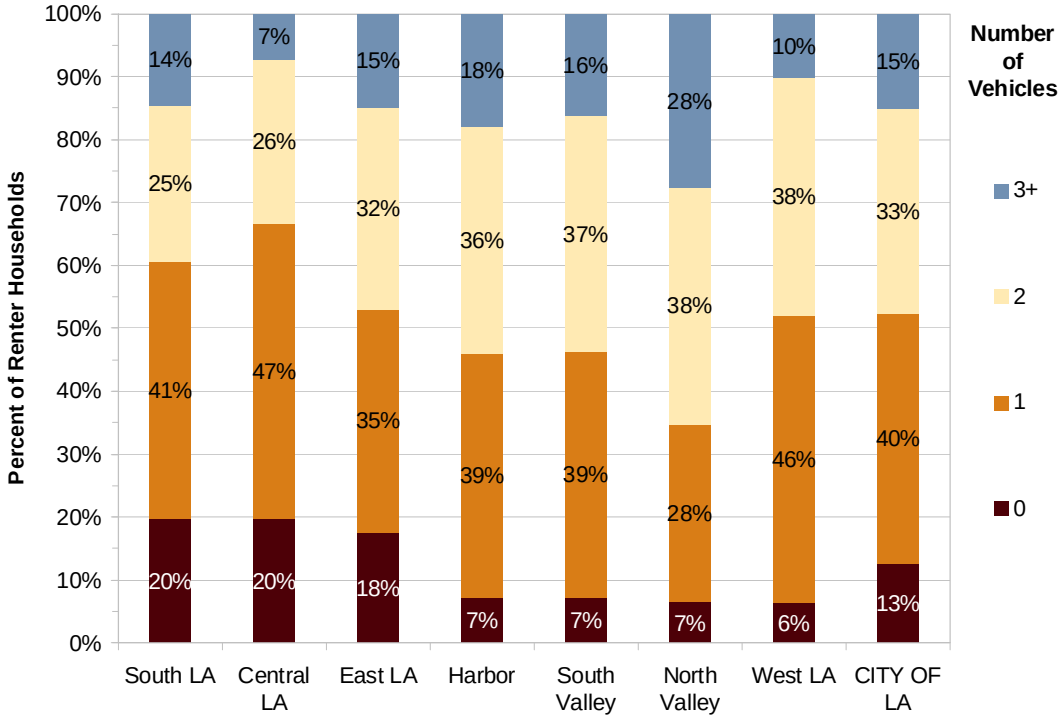
When we consider that the average household in the City has more than one worker and almost three household members, even a household with one vehicle will face considerable mobility barriers when trying to meet the varying needs of household members. Instead of having a vehicle readily or entirely available for the purpose of commuting to work, lower income households in particular will have to share a vehicle to meet all of their household needs. Citywide, 81 percent of extremely-low income households, two-thirds of very-low income households, over half of low-income households and 43 percent of moderate-income households have one or no vehicles in their household (Figure 4-3).[3]

Figure 4-3
Number of Vehicles in Household by AMI Bands



Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year PUMS Universe: All Households.

Figure 4-4
Number of Vehicles in Household by APC



Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year PUMS. Universe*: All Households*

When we look at this data across the City's seven APCs, the three regions with the largest concentrations of households in the three lowest AMI bands[4] have the largest shares of households without access to a vehicle. Roughly 1 out of 5 households in South Los Angeles, Central Los Angeles and East Los Angeles do not have access to a vehicle, as shown in Figure 4-4. In the four remaining Area Planning Commissions, 7 percent of households do not have a vehicle.

Mode of Transportation

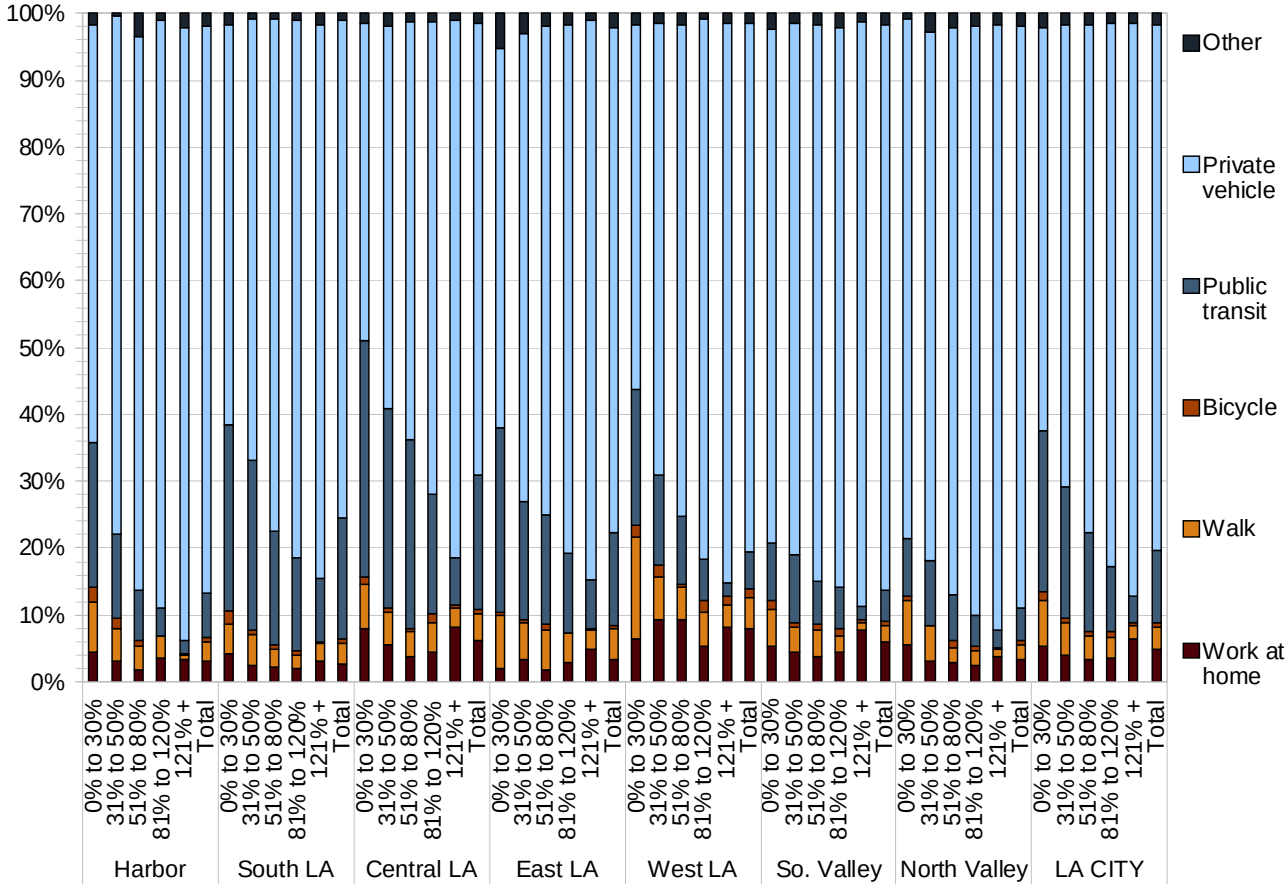
Consistent with the data showing that households in lower income AMI bands have less access to a vehicle, these workers are much more likely than workers in higher AMI band to rely on public transportation, walking or bicycling to get to work, as shown in Figure 4-5[5]. Workers in higher income AMI bands, on the other hand, are more likely to commute to work by private vehicle than workers in lower income AMI bands. Citywide, 79 percent of workers drive to work, 11 percent take public transportation, 5 percent work at home, 3 percent walk, 1 percent bicycle, and 2 percent use other modes of transportation. Citywide, public transit, walking and bicycling account for:

- 32 percent of trips to work by workers in the extremely-low income AMI band (0 to 30 percent of AMI)

- 26 percent of trips to work by workers in the very-low income AMI band (31 to 50 percent of AMI)
- 19 percent of trips to work by workers in the low-income AMI band (51 to 80 of AMI)
- 14 percent of trips to work by workers in the moderate-income AMI band (81 to 120 percent of AMI)
- 6 percent of trips to work by worker in the high-income AMI band (121 percent or more of AMI)

When we look at this data across the City's seven APCs, the poorest regions have the largest shares of workers who take public transportation or walk/bike to work (Figure 4-5). A quarter of workers in Central Los Angeles, 22 percent of workers in South Los Angeles and 19 percent of workers in East Los Angeles take public transportation, walk or bicycle to work.

Figure 4-5
Mode of Transportation to Work by APC and AMI Bands



Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year PUMS. Universe: Civilian employed at work. Other includes railroad, ferryboat, taxicab, motorcycle, and other method.

Commute Time

An examination of commuting times shows that workers in the City of Los Angeles spend, on average, 30 minutes commuting to work each day. Commute times, however, are significantly different depending on the mode of transportation used to get to work. The average commute to work by public transit (47 minutes) is 68 percent longer than the commute by car (28 minutes), as shown in Table 4-1. A detailed table breaking out commute time by transportation mode and AMI band is provided in the endnotes.[6]

Table 4-1
Mean Commute Time to Work by Mode of Transportation
City of Los Angeles

Mode of Transportation to Work	Mean Minutes
Private vehicle	28
Public transit	47
Bicycle	22
Walk	13
Work at home	0
Other	31
Total	30

Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year PUMS. Other includes railroad, ferryboat, taxicab, motorcycle, and other method. Universe: Civilians employed at work. Overall mean commute time excludes persons working at home.

A majority of workers in every AMI band commute to work by private vehicle, however the share dwindles as income declines. Overall, the lower the income band, the more likely workers are to commute by public transit, which typically lengthens the duration of workers' commutes by 68 percent compared to commuting by private vehicle. This time penalty for commuting by public transit falls most heavily on lower-income workers.

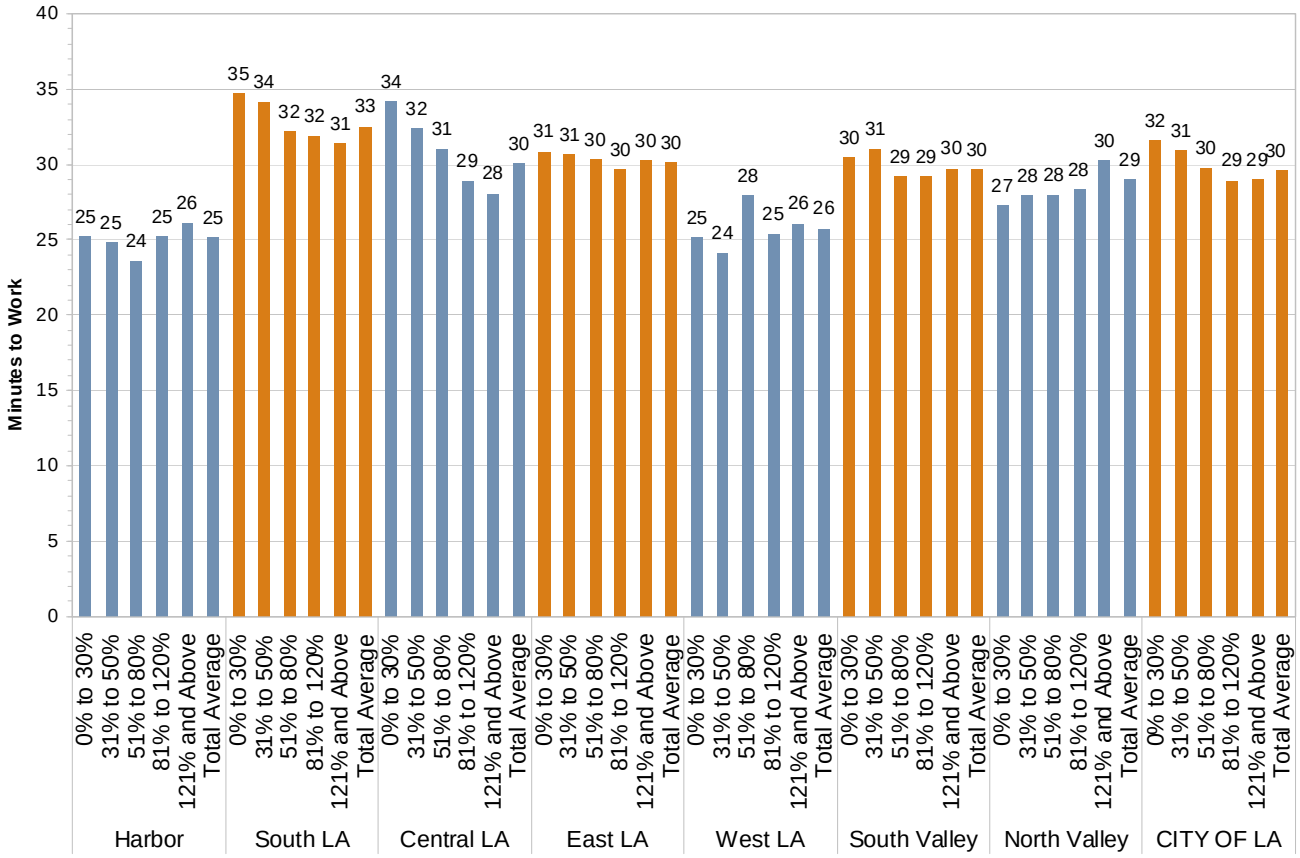
The average commute times to work are broken-out for workers by APC and AMI bands in Figure 4-6. The patterns of commute times broken out by geography and AMI rather than by mode of transportation can be summarized as follows:

- The shortest average commute times for all workers in different Area Planning Commissions are found in the Harbor (25 minutes) and West Los Angeles (26 minutes).
- The longest average commute time for all workers in different Area Planning Commissions is found in South Los Angeles (33 minutes).
- There is only small variation in the commute times for workers in different AMI bands. Average commute times range from 32 minutes for workers in extremely-low-income households (0 percent to 30 percent of AMI) to 29 minutes for workers in households in the 121 percent or above AMI band. This is because private vehicles outweigh other modes of transportation when these averages are computed.
- Similar to Citywide trends, there is very little variation in commute times for workers in different AMI bands in each region of the City. The largest differences in average commute times across workers in different AMI bands is 6 minutes in Central Los Angeles and 4 minutes in South Los Angeles.

Workers in lower income AMI bands are less likely to have access to a private vehicle (typically the fastest mode of transportation) and are more likely to be dependent upon public transportation (typically the most time-intensive mode of transportation). However, because a majority of workers in all income bands commute by private vehicle, and because some higher-

income workers commute by public transit, we do not see major disparities between commuting times within Planning areas when workers are broken out by AMI band (Figure 4-6).

Figure 4-6
Mean Commute Time to Work by APC and AMI Bands



Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year PUMS

Access to Jobs

A second commuting-related issue for workers is access to jobs. For example, in the North San Fernando Valley we see commute times increasing for workers as income increases despite the fact that use of private vehicles for commuting increases along with income. A likely explanation is that higher-income workers are commuting substantially greater distances, for example to Downtown Los Angeles, to work at jobs that pay substantially higher wages than those typically paid to workers whose jobs are closer to home.[7] The higher cost of longer commutes by private vehicles is offset by the higher pay that these workers receive from the jobs they reach at the end of their commute.

If lower-income workers take slower modes of transportation, but have commute times similar to higher income workers, this means that they are accessing jobs within a smaller

geographic area than higher income workers. This data suggests that many lower income workers are forced to accept sub-optimal employment, that is, jobs in nearby areas closer to their homes that do not pay enough to afford housing, in order to maintain relatively manageable commute times to if they travel to work by public transit, walking or bicycling. A study of working parents who are transitioning from welfare to work found that: "Inadequate transportation has emerged as a major barrier to employment for welfare recipients required to transition from public assistance to employment under welfare reform. Transportation is a particularly daunting barrier for single women without access to a household car. . . .[Workers] who use public transit face multiple problems, including overcrowding and infrequent [transit] service."[8]

With lower levels of educational attainment[9] and higher levels of unemployment,[10] lower income workers face more competition for a smaller pool of jobs for which they are qualified. With limited mobility, it is increasingly difficult for these workers to compete for and access jobs that pay sustaining wages, that is, wages that enable them to be affordably housed.

Employer Cost Savings

Housing that is very difficult for workers to afford and sometimes overcrowded, and work commutes that are time-consuming, sometimes without a large enough mobility radius to reach higher-paying jobs, all increase the likelihood of worker turnover. Increasing affordable housing options across the City will provide employers with access to workers who live in healthier, safer and more permanent housing that is closer to work sites and will increase retention rates for trained, productive workers. Reduced worker turnover will result in cost savings for employers.[11]

Stable, affordable housing that workers can afford and that is not overcrowded is a strong incentive to remain in the same place, which is likely to reduce worker turnover. Reduced turnover creates significant cost savings for employers. This includes:

- Reduced termination costs for separation processing, exit interviews and accrued vacation
- Reduced vacancy costs for temporary help, preparing and running job ads, screening and interviewing applicants, checking references and finalizing hiring agreements
- Reduced orientation and training costs for new hires
- Reduced indirect costs for lost productivity of experienced workers, increased time spent supervising new workers, and decreased satisfaction on the part of customers served by inexperienced workers

Examples of estimated direct and indirect turnover costs for entry-level workers in different industries include:[12]

- Supermarket cashiers $3,735
- Hotel workers $4,210
- Customer support $8,215

A report from the American Management Association estimates that it costs 30 percent of a worker's annual salary to replace that worker.[13]

Conclusion

Stable, decent and affordable housing located near workers' jobs is likely to reduce the frequency of worker turnover and result in significant cost savings for employers. Increasing affordable housing options across the City will provide employers with access to workers who live in healthier, safer and more permanent housing that is closer to work sites and will increase retention rates for trained, productive workers. Reduced worker turnover will result in cost savings for employers.

CO-LOCATION OF AFFORDABLE HOUSING AND TRANSIT ORIENTED DISTRICTS

Introduction: Transit Oriented Districts

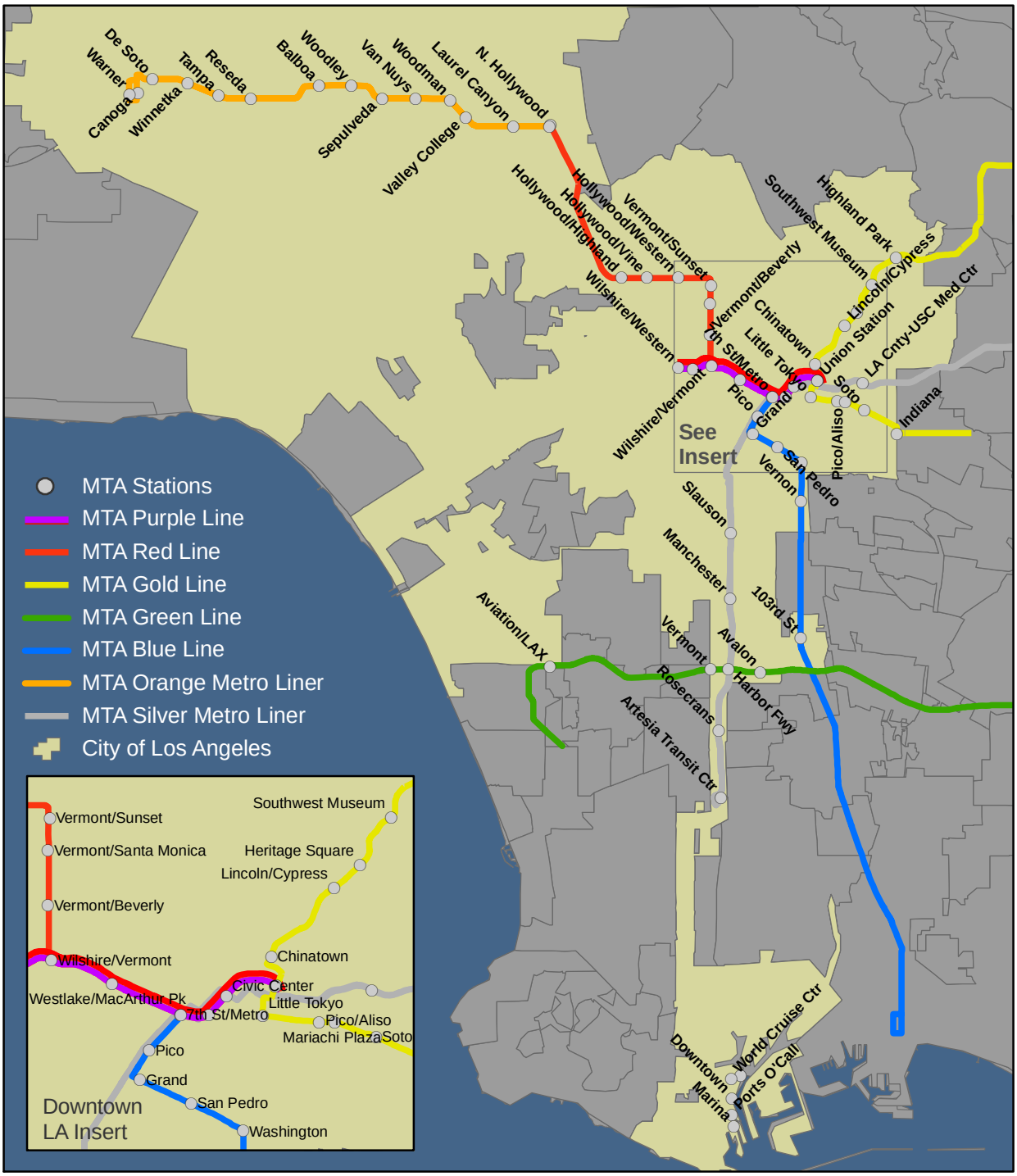
In the City of Los Angeles, Transit-Oriented *Districts* (hereafter "TODs"), integrate "land use, transportation and urban design, and prioritize walkable neighborhoods with well-integrated connections to the regional transit network."[14] They are compact developments of housing and employment in half-mile zones surrounding subway and light-rail stations, a comfortable walking distance for accessing the City's public transit.[15] Given Los Angeles' historically low population density relative to other large US cities[16] as well as its chronic housing shortage,[17] developing TODs is a strategy to bring residents closer to public transit system stations. The City encourages this type of development not just on properties adjacent to Metro stations, but throughout the half-mile zone surrounding each station.[18] This section analyzes the benefits of more efficient work-residence dynamics that result from locating affordable housing in TODs, as well as adverse impacts of displacing residents from affordable or rent stabilized housing located near public transit access points, and whether there is a greater demand for affordable housing in TODs than elsewhere.

Transit Oriented Districts and Affordable Housing

As Transit Oriented Districts develop, one concern is their potential for displacing lower-income residents due to rising rents and housing values in these districts.[19] Nationwide, transit use is more common among renter households in general and low-income households in particular,[20] groups that are susceptible to displacement. Preserving and expanding affordable rental housing within Transit Oriented Districts is therefore critical for enabling the income earners in these households to achieve more efficient work-residence transportation dynamics, that is, reducing the time and cost required for them to commute to work.

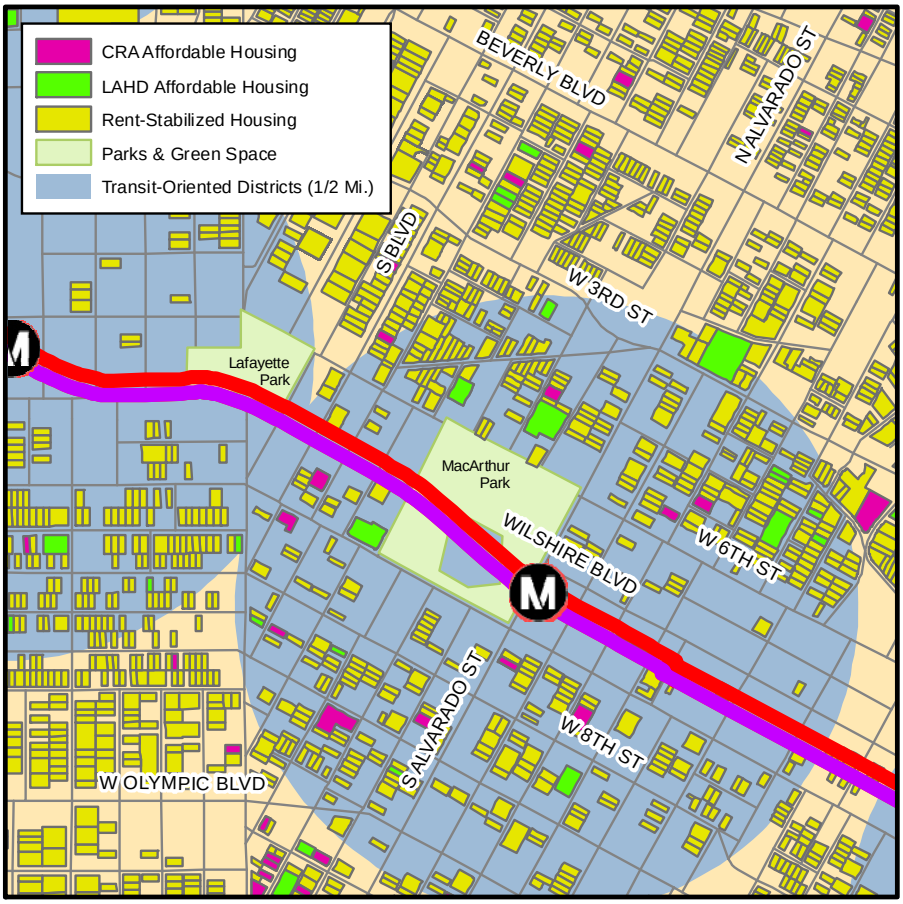
In Los Angeles, although Transit Oriented Districts are still emerging and under development, the City has prioritized the construction of affordable housing units near many Metropolitan Transportation Authority (MTA) transit system stations (Figures 4-7 and 4-8). The line routes and station locations were chosen in part to enable lower-income residents to access low-cost public transit – leveling the playing field for access to jobs, boosting their potential to make economic progress and maintain self-sustaining livelihoods. Preserving and expanding affordable housing in neighborhoods surrounding public transit stations will build on this opportunity.

Figure 4-7
LA Metro System Lines and Stations Located in the City of Los Angeles



Source: Economic Roundtable; Line and station shape files (and logo) courtesy of the Los Angeles Metropolitan Transit Authority.

Figure 4-8
Example: Affordable and RSO Housing Surrounding the MTA Red/Purple-Line Station at MacArthur Park



Source: Economic Roundtable; Red/Purple Line shape files and logo courtesy of the Los Angeles Metropolitan Transit Authority.

Benefits of More Efficient Work-Residence Dynamics that Result from Locating Affordable Housing in Transit Oriented Districts (TODs)

Los Angeles' poorest households have fewer cars, making it more difficult for their employed members to get to their jobs (Table 4-2). Among Los Angeles households whose incomes are 80 percent or less of the Area Median Income, 20 percent have no vehicle, while another 46 percent have access to just one vehicle. Given that many of the City's working poor families rely on more than one income earner[21], and that buying, maintaining and using a private vehicle is expensive, locating affordable housing in TODs creates efficiencies for these households, reducing the disadvantage of not having access to cars.

Public transit is the most efficient form of transportation for households in low AMI bands. By using public transit to commute to their jobs, workers can save an estimated $831 per month, or $9,967 per year, in transportation costs tied to automobile use, including operating and workplace parking costs.[22] Addressing the low-income housing shortage by incentivizing the

construction of more affordable housing units near MTA stations is a reasonable approach for enabling residents to realize the benefits of more efficient work-residence dynamics.

Table 4-2
Households by Number of Vehicles and AMI Band, City of Los Angeles

Households by AMI Band	Vehicles per Household							Total
	0	1	2	3	4	5	6	
0% to 30%	28%	47%	19%	4%	1%	0%	0%	100%
31% to 50%	13%	47%	29%	8%	2%	1%	0%	100%
51% to 80%	6%	43%	33%	13%	4%	1%	1%	100%
81% to 120%	4%	39%	35%	14%	5%	1%	1%	100%
121% to 150%	2%	36%	37%	16%	6%	2%	1%	100%
151% to 200%	1%	28%	45%	16%	6%	1%	1%	100%
201% or more	2%	23%	48%	18%	6%	2%	1%	100%
Total	13%	39%	33%	10%	3%	1%	1%	100%
Lowest 3 AMI bands	20%	46%	24%	7%	2%	0%	0%	100%

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis. Note: Households are assigned to HUD AMI bands by AU Family Size and AU Family Earnings.

Additional benefits that can result from locating affordable housing within TODs include:

- Improving access to public transit.[23]
- Reducing traffic congestions on roadways and freeways, as well as accompanying tailpipe emissions.[24]
- Supporting greater residential density, as housing around MTA stations is built upward, alleviating some of the need for land as the City's housing unit shortage is addressed.[25]
- Centralizing consumer-oriented businesses (grocery stores, doctors' offices) and public services (health clinics, public safety and assistance offices) near large numbers of residents.[26]
- Supporting land use patterns that make it efficient for employers to locate near transit stations and make Transit Oriented Districts the places of work for growing numbers of people.[27]

Adverse Impacts of Displacing Residents from Affordable or Rent Stabilized Housing Located Near Public Transit Access Points

Affordable Housing Located Near Public Transit Access Points

To achieve the City's goal of building more housing – especially more affordable housing – within walking distance of public transportation nodes, the City is encouraging [28] affordable housing units that low- and moderate-income residents can rent within Transit Oriented Districts.[29]

Monies not spent on rent due to living in subsidized housing with affordability restrictions can vary from resident to resident. But for the City as a whole, we draw upon our findings from Chapter 1, Mean Annual Earned Income Deficit by AMI Bands shown in Table 4-

3. Households in the three lowest AMI bands have earnings that typically require them to pay more than 30 percent of their income for market-rate rental housing. The three income bands that are highly vulnerable[30] to becoming rent burdened are:

- Extremely Low Income Households (maximum 30% AMI)
- Very Low Income Households (maximum 50% AMI)
- Lower Income Households (maximum 80% AMI)

For households in all six AMI bands, we calculate the financial impacts of displacing residents from affordable housing units located in Los Angeles' Transit Oriented Districts by adding up the value for households of:

1. *Housing costs* (rent), from being in affordable housing compared to market rate housing: Mean Annual Earned Income Deficit in Table 4-3.
2. *Transportation costs*, taking public transit (MTA metro and bus) compared to private transportation (private or pooled car), assuming that affordable housing residents living within Transit Oriented Districts rely solely on public transit. If one household that currently uses public transit for all its commuting, shopping and other public transit needs is displaced from RSO housing in a Transit-Oriented District, that household is likely to incur $9,967 in additional annual transportation costs from switching to private transportation.[31]

Table 4-3
Mean Annual Earned Income Deficit for Affording Market Rate Housing by AMI Bands

	AMI Band of Households					
	0% to 30%	31% to 50%	51% to 80%	81% to 120%	121% to 150%	151% to 200%
Mean Annual Earned Income for Worker Households (2009$)	$12,805	$27,674	$43,538	$65,158	$88,055	$112,497
Mean Annual Rent for an Apartment in City of LA (2009$)	$14,297	$14,297	$14,297	$14,297	$14,297	$14,297
30% of Mean Annual Earned Income (2009$)	$3,842	$8,302	$13,061	$19,547	$26,416	$33,749
Mean Annual Earned Income Deficit (2009$)	**-$10,455**	**-$5,994**	**-$1,235**	(No Deficit)	(No Deficit)	(No Deficit)

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis. This table is originally presented as Figure 2-6, Chapter 2.

The total estimated value accrued by households residing in housing units with affordability restrictions located within TODs are broken out by AMI bands in Table 4-4, showing the annual financial impact if residents are displaced from these housing units.

Table 4-4
Value to Households of Housing with Affordability Restrictions Located in Transit Oriented Developments

	AMI Bands					
	0% to 30%	31% to 50%	51% to 80%	81% to 120%	121% to 150%	151% to 200%
Mean Annual Earned Income Deficit (Housing Subsidy)	$10,455	$5,994	$1,235	$0	$0	$0
Cost of Private Transportation	$9,967	$9,967	$9,967	$9,967	$9,967	$9,967
Total Value	$20,422	$15,961	$11,202	$9,967	$9,967	$9,967

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable Analysis. The first row of this table originally appears in Figure 2-6, Chapter 2. Second row is cost of private transportation cost above and beyond public transit cost.

Households with incomes in the lowest three AMI bands accrue the greatest cost benefits from their access to affordable housing. This is because only households in the lowest three AMI bands are likely to have to pay more than 30 percent of their income for rent in order to afford market-rate housing. Households in the highest three AMI bands, if displaced, would pay more to rent an average market-rate, non-subsidized apartment in Los Angeles, but they probably would not become rent burdened. Households in all six AMI bands accrue benefits related to their transportation costs by virtue of living within Transit Oriented Districts. This assumes that all household members utilize public transportation for their commuting, shopping and leisure trips, and forego use of private automobiles.

Two agencies in particular, the Housing Department and the Community Redevelopment Agency, finance and monitor the majority of affordable housing units in the City.[32] There is a significant number of units with affordability restrictions located in Transit Oriented Districts (Table 4-5), and it is possible to project the per-household financial impact of displacement onto Los Angeles' overall affordable housing inventory. The Los Angeles Housing Department monitors 37,846 affordable housing units, of which 8,756 (23 percent) are located in TODs. The Community Redevelopment Agency monitors 15,999 affordable housing units, of which 6,881 (43 percent) are located in TODs. The residents of these 15,637 affordable housing units located in the City's TODs are at risk of displacement if the restrictions that make their units affordable expire, or if some other interruption of their tenancy occurs.

Table 4-5
LAHD Housing Units with Affordability Restrictions by Nearest MTA Station Group,
Within versus Outside Half-Mile Transit-Oriented Districts

	LAHD Afford. Housing Units & Transit Oriented Districts					
	Within TODs		Outside TODs		Total	
Nearest MTA Station Line	Units	Percent	Units	Percent	Units	Percent
Metro Blue Line	899	31%	2,041	69%	2,940	100%
Metro Red/Purple Line	5,490	34%	10,507	66%	15,997	100%
Metro Green Line	280	14%	1,692	86%	1,972	100%
Metro Orange Busway Line	402	4%	9,351	96%	9,753	100%
Metro Gold Line NE	602	40%	890	60%	1,492	100%
Metro Gold Line East LA	338	24%	1,070	76%	1,408	100%
Metro Silver Line NE	86	22%	300	78%	386	100%
Metro Silver Line South LA	337	11%	2,640	89%	2,977	100%
Metro Harbor Services	322	35%	599	65%	921	100%
Total	8,756	23%	29,090	77%	37,846	100%

CRA Housing Units with Affordability Restrictions by Nearest MTA Station Group,
Within versus Outside Half-Mile Transit-Oriented Districts

	CRA Afford. Housing Units & Transit Oriented Districts					
	Within TODs		Outside TODs		Total	
Nearest MTA Station Line	Units	Percent	Units	Percent	Units	Percent
Metro Blue Line	1,310	38%	2,175	62%	3,485	100%
Metro Red/Purple Line	4,000	47%	4,443	53%	8,443	100%
Metro Green Line	1	<1%	215	100%	216	100%
Metro Orange Busway Line	260	32%	560	68%	820	100%
Metro Gold Line NE	227	48%	244	52%	471	100%
Metro Gold Line East LA	871	54%	745	46%	1,616	100%
Metro Silver Line NE	14	23%	47	77%	61	100%
Metro Silver Line South LA	198	25%	590	75%	788	100%
Metro Harbor Services	0	0%	99	100%	99	100%
Total	6,881	43%	9,118	57%	15,999	100%

Sources: City of Los Angeles Housing Department: Affordable Housing Database, October 2010 (top table). Community Redevelopment Agency, Affordable Housing Database, October 2010 (bottom table). Note: Affordable housing units located outside of TODs are shown next to the MTA line to which they are closest. Affordable Housing units with confidential sites are not included in this geographic analysis, since their work sheltering abuse victims requires that their address be unlisted.

Rent Stabilized Housing Located Near Public Transit Access Points

Rent-stabilized housing can help low- and moderate-income residents afford to live in the City of Los Angeles.[33] The City's Rent Stabilization Ordinance (RSO) covers over 638,000 rental housing units,[34] with 18 percent of these located within a Transit Oriented District – the half-mile radius around MTA Stations (Table 4-6). Sixty percent of RSO housing units in TODs are close to MTA Red/Purple Line Stations, located in the Wilshire Corridor and Hollywood neighborhoods. The San Fernando Valley's Metro Orange Busway Line captures the next highest share, with 14,330 units, or 12 percent of the total located within a half-mile or MTA stations. The TODs with the fewest number of RSO housing units within them are along the Metro Silver Line (Northeast of Union Station section), the Metro Green Line and the Metro Harbor Services.

Table 4-6
Rent Stabilized (RSO) Units by Nearest MTA Station Group,
Within versus Outside Half-Mile Transit-Oriented Districts

	RSO Units & Transit Oriented Development					
	Within TODs		Outside TODs		Total	
MTA Station Line Group	Units	Percent	Units	Percent	Units	Percent
Metro Blue Line	7,611	23%	24,895	77%	32,506	100%
Metro Red/Purple Line	70,982	24%	218,749	76%	289,731	100%
Metro Green Line	2,375	5%	46,252	95%	48,627	100%
Metro Orange Busway Line	14,330	11%	120,601	89%	134,931	100%
Metro Gold Line NE	6,884	22%	24,935	78%	31,819	100%
Metro Gold Line East LA	7,142	44%	8,978	56%	16,120	100%
Metro Silver Line NE	1,224	17%	5,880	83%	7,104	100%
Metro Silver Line South LA	4,722	9%	49,576	91%	54,298	100%
Metro Harbor Services	2,261	10%	20,719	90%	22,980	100%
Total	117,531	18%	520,585	82%	638,116	100%

Sources: City of Los Angeles Housing Department: General RSO Property Data for Each Property with 2 or More Units; Economic Roundtable analysis. Note: Affordable housing units located "Outside TODs" are assigned to the MTA line which they are closest.

We measure the adverse impacts of displacing residents from rent stabilized housing located in Transit Oriented Districts using these housing unit figures, in combination with the $9,967 per year cost avoided using public transit in Los Angeles.[35] Further, if these households are displaced from RSO housing into newer, non-RSO rental housing at market-rate rents, their housing costs will also rise by $150-$199 per month, or $1,800-$2,388 annually.[36] If the households displaced from RSO housing in Transit-Oriented Districts do find RSO housing elsewhere, their new housing costs will not be much lower than it would be for market rate housing, since the rent for RSO housing unit can return to prevailing market levels whenever they become vacant. Thus, the adverse impacts of displacing residents from rent stabilized housing located in Transit Oriented Districts can amount to $11,767 to $12,355 annually[37] when considering households' transportation ($9,967) and rent costs. The cost avoided by all 117,531 RSO households located in Los Angeles' Transit Oriented Districts – assuming all rely solely on public transit – adds up to $1.38 - $1.45 billion annually.[38]

Conclusion: Need for Affordable Housing in TODs Due to the Potential for Displacement

There is a greater need for housing units with affordability restrictions or under rent control within TODs than outside of them, due to potentially severe impacts for low-income households if they are displaced from these districts. If more market-rate residential and commercial development occurs within Los Angeles' TODs, there is potential for displacing low- and moderate-income residents from existing housing units with expiring affordability restrictions or under rent control in those TODs. This displacement would add significantly to those households' transit costs, as documented earlier (Table 4-4), assuming those households use public transportation. Given that low- and moderate-income residents have less income with which to pay for commuting to work and other transportation needs, their potential displacement from housing in TOD's – especially from housing units with affordability restrictions or under rent control – represents a larger impact on their overall budgets than for higher income households. For this reason, the City is justified in preserving affordable housing in TODs. The value obtained from living in TODs is more significant for the budgets of low- and moderate-income households than for higher income households. In addition, ready access to public transit has a large impact on the ability of lower-income households to maintain employment and earnings.

As land values rise around MTA stations, TODs attract more market-rate residential and commercial redevelopment, resulting in a need to build and preserve affordable housing in these districts (Table 4-7).[39] Our comparison of affordable housing demand in Transit Oriented Districts with the demand in the balance of the City shows that:

1. Median household incomes in Transit Oriented Districts are significantly lower than the balance of the City or the overall County, with the exception of the incomes of

Table 4-7
Characteristics of Residents in Transit Oriented Districts in the City of Los Angeles

Metro Group	Median Household Income, in 2009 $	Rent Burden	Severe Rent Burden	Families in Poverty	Households in Poverty	Percent Renter Occupied
California	$60,392	56.6%	26.1%	9.8%	10.6%	38.6%
Los Angeles County	$54,828	57.8%	27.7%	12.5%	13.0%	48.5%
City of Los Angeles	$48,570	59.2%	28.8%	15.8%	15.8%	56.8%
Metro Blue Line	$25,896	68.5%	33.4%	39.6%	36.3%	68.1%
Metro Gold Line East LA	$31,898	57.8%	26.3%	24.9%	25.9%	70.7%
Metro Gold Line NE	$41,246	63.5%	30.6%	23.1%	22.3%	61.6%
Metro Green Line	$29,788	70.2%	42.4%	31.4%	30.7%	56.4%
Metro Harbor Services	$36,093	59.6%	28.1%	21.0%	18.2%	68.4%
Metro Orange Line	$54,927	55.5%	25.6%	10.4%	10.7%	57.2%
Metro Red Line	$36,317	59.1%	27.2%	21.6%	20.0%	81.1%
Metro Silver Line NE	$32,703	63.4%	31.3%	27.2%	26.9%	69.7%
Metro Silver Line South LA	$33,036	69.8%	42.6%	30.3%	30.1%	61.5%

Source: US Census. 2005-2009 American Community Survey, 5 Year Estimate, Census Tract-level data.

households around MTA Orange Line Stations in the San Fernando Valley.

2. The percent of rent-burdened and severely rent-burdened households living within TODs is comparable to or greater than for the City of Los Angeles as a whole, also with the exception of the MTA Orange Line Stations
3. The percent of families and households in poverty was much higher in Transit Oriented Districts than outside of them, again with the exception of those surrounding MTA Orange Line Stations.
4. Transit Oriented Districts have a higher proportion of renter-occupied households than the City or County of Los Angeles

These findings demonstrate a greater demand for affordable housing in TODs than outside of them, given the lower cost of transportation and better access to transportation in TODs. These assets provide the greatest benefit for lower-income residents. Locating affordable housing within TODs will reduce overall housing-plus-transportation costs for lower-income households, protect them from being rent burdened, and strengthen their prospects for maintaining employment.

Chapter 5

Future Demand for Affordable Housing

Estimated Future Demand for Affordable Housing will be Generated by Employment Growth over the Next 10 Years

Individuals, families, businesses, and communities have been hit by harsh economic conditions following the severe recession that began in December 2007, causing businesses to shutter or downsize, uprooting families from their homes, and leaving more than 1 in 10 workers unemployed. The employment recovery from this recession is likely to be a slow process. In this section, we review employment trends in the local economy over the last two decades and produce employment projections that take into account the recession and a recovery scenario. We then project the demand for affordable housing resulting from employment growth using the distribution of workers by AMI band that was developed in Chapter 1.

Employment Trends

The last time the City experienced similarly severe job losses was in the 1990s when Los Angeles underwent a prolonged, deep regional recession. The end of the Cold War after the fall of the Berlin Wall in 1989 led to large cutbacks in defense spending that precipitated the collapse of the Los Angeles aerospace industry and the region's durable manufacturing sector.[1] This decline pulled the region into its most severe economic downturn since the Great Depression. From 1990 to 1994, annual average total employment in the City of Los Angeles declined by over 8 percent,

Table 5-1
Employment – City of Los Angeles

Year	Period	Labor Force	Employed	Unemployed	Unemployment Rate
1990	Annual Avg.	1,812,933	1,692,706	120,227	6.6
1991	Annual Avg.	1,792,394	1,629,634	162,760	9.1
1992	Annual Avg.	1,792,160	1,592,150	200,010	11.2
1993	Annual Avg.	1,750,779	1,553,162	197,617	11.3
1994	Annual Avg.	1,730,788	1,549,230	181,558	10.5
1995	Annual Avg.	1,721,707	1,565,111	156,596	9.1
1996	Annual Avg.	1,739,228	1,576,724	162,504	9.3
1997	Annual Avg.	1,775,165	1,636,000	139,165	7.8
1998	Annual Avg.	1,823,745	1,687,317	136,428	7.5
1999	Annual Avg.	1,835,517	1,712,451	123,066	6.7
2000	Annual Avg.	1,819,887	1,710,743	109,144	6.0
2001	Annual Avg.	1,849,862	1,733,345	116,517	6.3
2002	Annual Avg.	1,859,029	1,719,334	139,695	7.5
2003	Annual Avg.	1,855,146	1,711,578	143,568	7.7
2004	Annual Avg.	1,856,265	1,722,038	134,227	7.2
2005	Annual Avg.	1,856,401	1,745,970	110,431	5.9
2006	Annual Avg.	1,865,261	1,766,138	99,123	5.3
2007	Annual Avg.	1,891,719	1,785,070	106,649	5.6
2008	Annual Avg.	1,920,713	1,761,928	158,785	8.3
2009	Annual Avg.	1,918,870	1,673,510	245,360	12.8
2010	Jan	1,896,302	1,622,872	273,430	14.4
2010	Feb	1,910,488	1,652,870	257,618	13.5
2010	Mar	1,916,011	1,658,055	257,956	13.5
2010	Apr	1,909,382	1,659,485	249,897	13.1
2010	May	1,898,875	1,644,639	254,236	13.4

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

dropping from 1,692,700 in 1990 to 1,549,200 in 1994 (Table 5-1).[2] The annual average unemployment rate climbed from 6.6 percent in 1990 to over 11 percent by 1992 and stayed above 10 percent through 1994. After employment figures hit a low point in 1994, it took 4 years for employment to return to 1990 levels.[3]

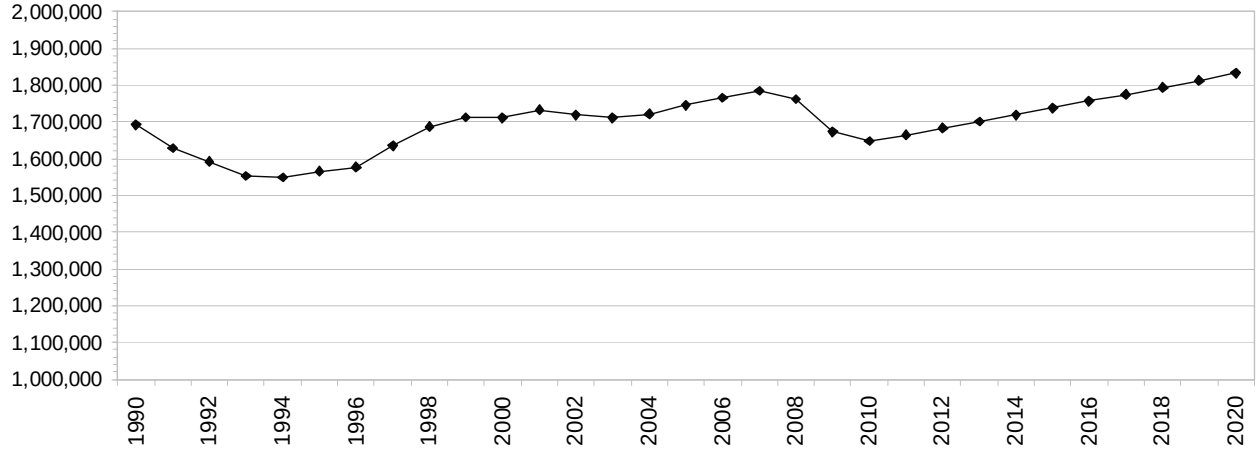
Annual average employment in the City peaked again in 2007, at approximately 1,785,100 before beginning a downward trajectory with the onset of the current recession. By 2009, annual average employment decreased by over 111,500 workers, a 6.2 percent drop from 2007. The annual average unemployment rate more than doubled during this time span, increasing from 5.6 percent in 2007 to 12.8 percent in 2009. The most recent (May 2010) Bureau of Labor Statistics data show employment totals dipping to 1,644,600 and a staggering unemployment rate of 13.4 percent.

Employment Projections

As of the writing of this report, the recession had officially ended, but the labor market was scraping along sideways in the trough of job losses resulting from the recession. Recovery was still a glint in the eye of the hopeful observer, with a shaky local economy characterized by high unemployment rates and no definitive signs of job growth. While it is difficult to determine when the economy will begin its path towards recovery, the Economic Roundtable uses plausible assumptions to project employment growth out of the recession. The following assumptions are made to produce the employment projections shown in Figure 5-1:

- Assumption #1: The regional economy will begin to recover in 2011. The employment figure for 2010 is based on average employment in the City of Los Angeles between January 2010 and May 2010.
- Assumption #2: The projected recovery from the current recession is based on the City of Los Angeles' average rate of recovery from the 1990s recession in the years 1995 through 2004. During this time span, annual average employment grew, on

Figure 5-1
Employment Projections – City of Los Angeles



Source: Bureau of Labor Statistics, LAUS; Economic Roundtable Analysis. Notes: 1990 to 2009 figures are from the Bureau of Labor Statistics; 2010 to 2020 projections are based on the Economic Roundtables analysis of BLS data.

average, by just over 1 percent each year.

Based on these assumptions, our projections for the City of Los Angeles show:

- At the trough of the recession in 2010, there will be an annual average of approximately 1,647,600 employed persons.
- Economic growth will begin in 2011.
- Employment numbers will not return to 2007 levels until 2018.
- In 2015, there will be approximately 1,737,900 employed persons. This is 5 percent more employed persons than in 2010, but still 3 percent less employed persons than there were in 2007 when employment peaked.
- In 2020, there will be approximately 1,833,100 employed persons. This is 11 percent more employed persons than in 2010, and 3 percent more employed persons than there were in 2007.

These projections depict a recession that is beginning a gradual and lengthy climb to recovery. It may well take 8 years for the City to recover the number of jobs lost during the recession. There is, however, hope that strategic and aggressive policies will help the economy recover at a faster pace than in the 1990s when there was no strategy and little public leadership to help lift the economy.

Conclusion

The demand for affordable housing is influenced by multiple factors including labor market and economic changes. When jobs disappear and incomes decline as the economy contracts, the economic wellbeing of individuals and families diminish and the demand for affordable housing rises. Similarly, when the economy grows and new jobs are created, a portion of these jobs will pay workers insufficient wages to afford market-rate housing in the City, which also increases the demand for affordable housing. This section focuses on the latter and estimates the demand for affordable housing that will be generated by economic growth. It is important to note that there is a substantial element of uncertainty in our projections because of the severity of the recession and the unpredictability of how the economy will recover over the next 10 years. Given this limitation, estimates are made by using employment projections shown in Figure 5-1 with the distribution of workers by AMI band that was discussed in Chapter 1.

As shown in Figure 5-1, employment in the City of Los Angeles declined from 2007 to 2010 and is projected to begin recovering at very slow pace in 2011. Annual average employment in the City of Los Angeles is projected to be 1,647,600 at the trough of the recession in 2010. Based on the distribution of workers across AMI bands discussed in Chapter 1, we estimate that approximately 45 percent of these employed persons or 734,700 workers will fall in the three lowest AMI bands (Table 5-2). The 734,700 workers represent an estimated 459,200 households that will have an acute need for affordable housing.[4]

Table 5-2
Projected Workers by AMI Bands – City of Los Angeles

Year	Employed Workers	Workers by AMI Bands							Workers in Three Lowest AMI Bands	Worker Households in the Three Lowest AMI Bands
		0% to 30%	31% to 50%	51% to 80%	81% to 120%	121% to 150%	151% to 200%	Greater than 200%		
2010	1,647,584	153,796	239,948	340,931	332,444	171,790	161,227	247,449	734,674	459,171
2015	1,737,860	162,223	253,095	359,611	350,659	181,203	170,061	261,008	774,929	484,331
2020	1,833,082	171,112	266,963	379,315	369,873	191,131	179,379	275,309	817,390	510,869

Source: Economic Roundtable Analysis

When the economy begins to recover and jobs are added to the local economy, the overall number of employed persons in the City is project to increase to:

- 1,737,900 by 2015, an increase of over 90,200 employed persons over 2010 figures
- 1,833,100 by 2020, an increase of nearly 185,000 employed persons over 2010 figures

We estimate that 45 percent of these new jobs will be in the 3 lowest AMI bands, paying workers insufficient wages to afford rent in the City of Los Angeles. Based on this estimate and expected job growth after 2010, the total number of workers in the three lowest AMI bands is project to increase by:

- 5 percent or over 40,200 workers from 2010 to 2015. These workers represent over 25,100 additional households with affordable housing need.
- 11 percent or over 82,700 workers from 2010 to 2020. These workers represent nearly 51,700 additional households with affordable housing need.

It is important to keep in mind that this is strictly an analysis of the impacts of job growth on affordable housing demand once the local economy begins to recover from the recession. The deleterious impact of substantial job loss and reductions in available work hours on household income during the downswing of the economy will certainly have a greater immediate impact on the demand for affordable housing than the addition of low-paying jobs to the economy. City residents hardest hit by the recession will struggle to sustain decent and affordable housing, spending an excessive share of their available income on housing costs or doubling-up in living quarters to alleviate the cost burden of housing.

PROJECTION OF THE DEMAND FOR AFFORDABLE HOUSING THAT WILL BE GENERATED BY MARKET-RATE RESIDENTIAL CONSTRUCTION OVER THE NEXT 10 YEARS

Overview of Approach

Over the next decade, the demand for affordable housing in the City of Los Angeles will be influenced by the consumer spending of households residing in market-rate residential developments. Although this influence is less than that of businesses occupying commercial developments, the addition of market-rate single-family homes, condominiums, and apartments to the City's housing inventory is still an important factor in shaping overall demand for affordable housing.

Our projection of market-rate, residential development over the next 10 years is based primarily on the last twenty years of building permit data for the City of Los Angeles, with special attention paid to the recovery following the severe recession in the early 1990s. These data on existing trends in housing construction, combined with recent forecasts about the region's economy, enable us to project the number of new, market-rate housing units that will be needed in the next decade. We used the IMPLAN-based, input-output model of Los Angeles households (explained in Chapter 1)[5] to estimate the employment supported by consumer spending, as well as the subset of that employment with wages that are not sufficient to pay for market-rate housing. The results show the additional projected demand for affordable housing that the City will experience in the coming years because of jobs created by new households.

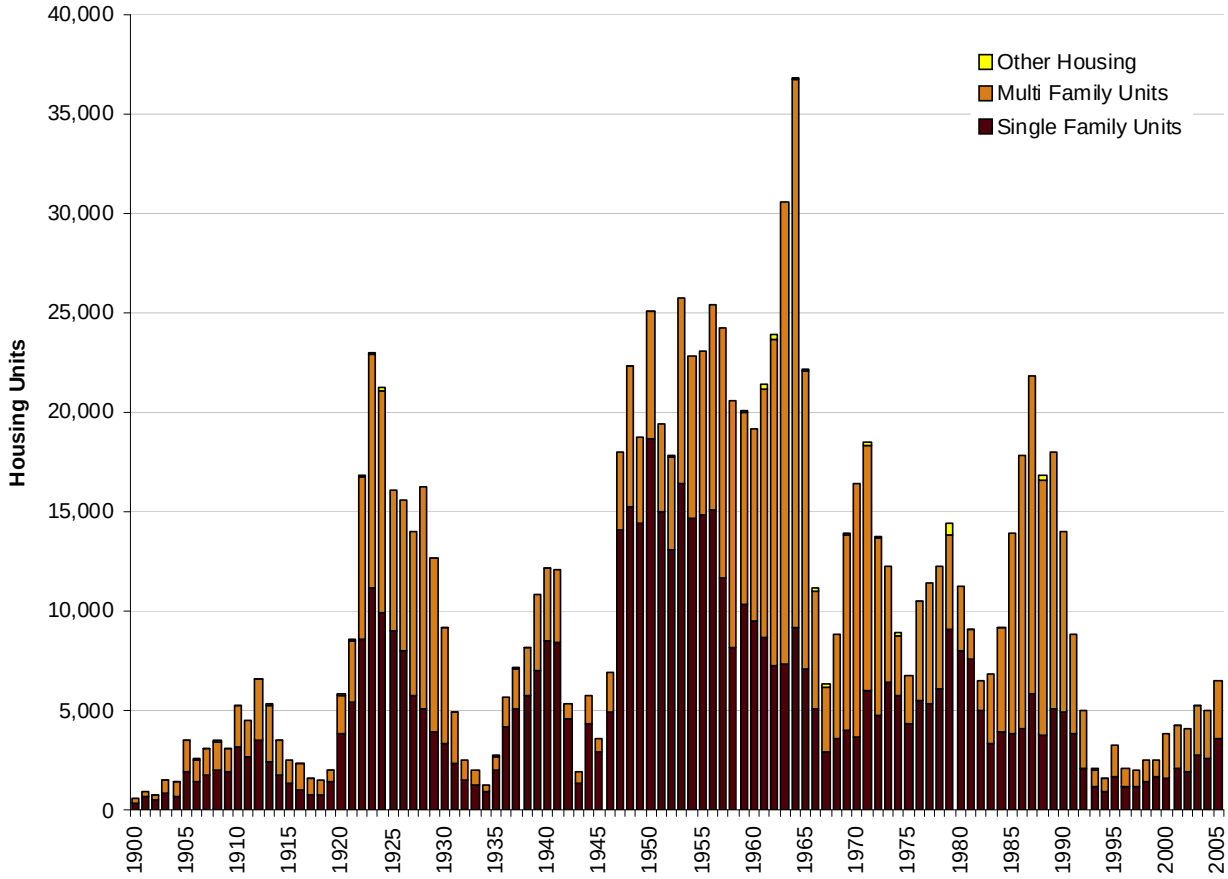
Existing Trends in New Market-Rate Housing Construction

As of the writing of this report, the City of Los Angeles was in the midst of a major residential real estate development downturn[6], the latest in a series of housing construction boom and bust cycles that has characterized the region since 1900 (Figure 5-2). New housing starts have plummeted from the heights of the recent housing boom. In 2009, less than 1,000 net new housing units were added to the City's inventory.[7]

This slowdown is partly due to the home mortgage crisis, which is now accounting for large numbers of discounted home properties on the market. These discounted properties include:

- **Bank-owned, foreclosed properties:** Lenders (usually banks) repossessing homes where borrowers defaulted on their mortgage loan payments. Banks are selling these properties at a discount, sometimes even at auction.
- **Short sales by owners:** Home owners who sell their property for less than what they owe their lender(s). Many lenders balk at approving these sales, but those sales that lenders do approve are pulling overall market prices down from their mid-2000's heights.

Figure 5-2
Current Residential Inventory by Type and Year Built, City of Los Angeles

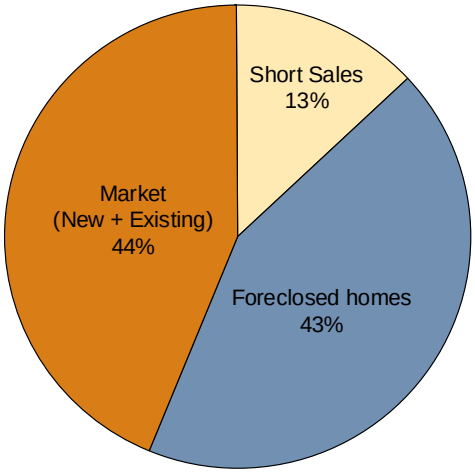


Source: Los Angeles County Assessor's Office. 2009. Secured Basic File Abstract (DS04) and 2007 Local Roll. Universe: Residential properties located in the City of Los Angeles with 1+ housing unit, built after 1900. "Other Housing" includes Residential Manufactured Homes and Rooming/Boarding Houses.

These distressed properties make up over half of all recent home sales statewide (Figure 5-3).[8] The addition of these discounted properties to the residential real estate market has made lenders and developers cautious about investing in new construction.

Another reason for real estate developers' caution is the surplus of unsold, new residential properties on the market, ranging from loft-style condominiums in the urban core to large single-family homes on the periphery (Porter Ranch, etc.). Loans covering the construction of these homes are coming due, causing some developers to sell new units via auction events, and others to go into default. Developers with capital and interest to build housing

Figure 5-3
California Housing Sales by Type, Spring 2010



Source: California Association of Realtors 2010.

are often postponing construction until the market absorbs distressed properties and other inventory.

The lack of capital available to developers is a further reason for the residential real estate development downturn. Fallout from the nation's residential mortgage crisis included a reduction in capital available from banks and other lenders for new housing construction and renovation of existing residential structures due to the poor performance of existing loans. This shortage of capital has stopped or delayed many new housing projects. [9]

Forecasts about Los Angeles Future Market-Rate Housing Construction

Economic forecasters currently predict a "slow healing" for the Los Angeles County real estate market, due to the extreme slow-down in production of new housing units despite growing demand for the inventory of units available on the market.[10]

Residential real estate developers are expected to increase the number of housing starts in 2011. The current slowdown in housing construction – which is limiting additions of new housing units to the overall supply – is allowing investors to slowly buy up the large amounts of distressed properties as well as unsold new market-rate units. Thus, real estate property (residential plus commercial) and securitized forms of real estate such as REITs (real estate investment trusts) saw rising prices in spring 2010.

Within this brightening real estate picture, we expect Los Angeles to continue experiencing greater demand for multi-family apartment and condominium buildings than for single-family homes. This is due to the City's limited vacant land and the high return needed to make any new housing development feasible.[11] This bodes well for the eventual price recovery of multi-family properties, and subsequently for the construction of new multi-family housing. Forecasters' projections for increased new market-rate multi-family housing construction starting in 2011 indicate that Los Angeles' need for increased housing supply will begin to be addressed in the coming years.[12]

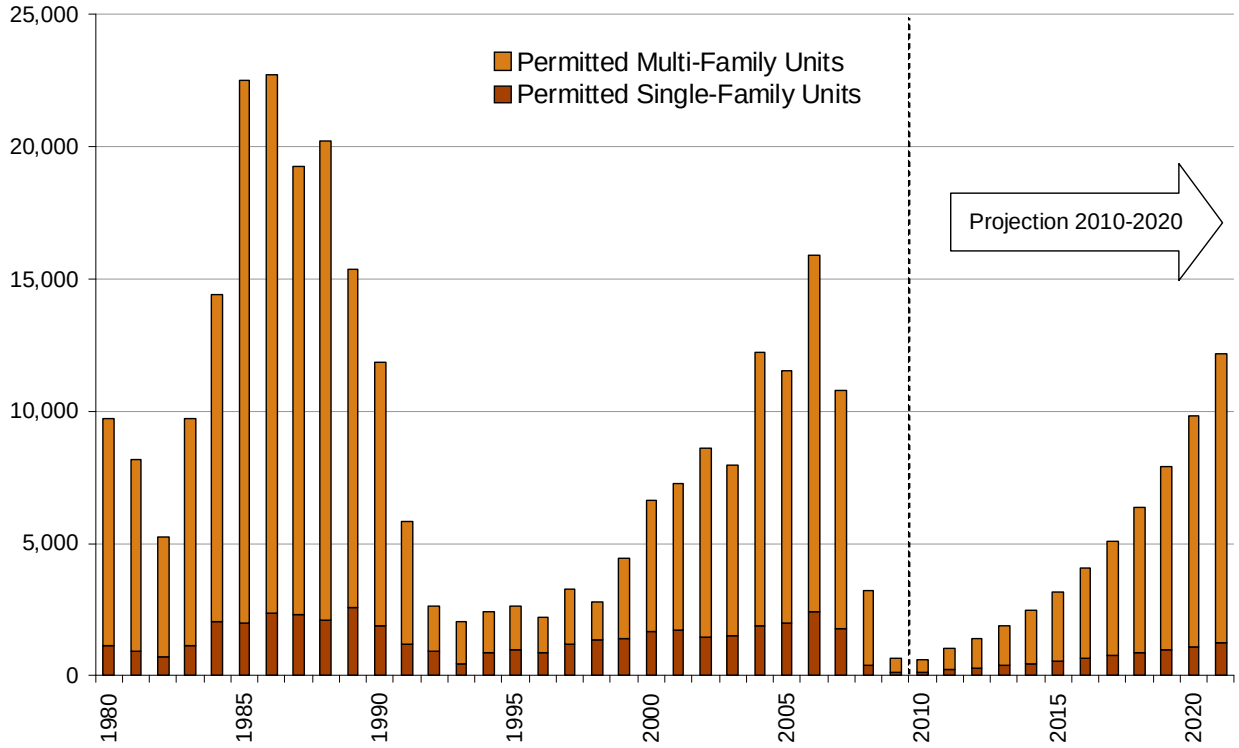
Market-Rate Residential Construction over the Next 10 Years

Based on forecasts by UCLA, USC and Pepperdine, housing construction in Los Angeles will begin increasing in 2011. The Economic Roundtable projects a 10-year period of growth to follow (Figure 5-4, Table 5-3). From a low point of 608 new housing units permitted in 2010, the City is projected to permit approximately 3,181 new units in 2015 and 9,818 new units in the year 2020. This projection is a dramatic increase over the current number of market-rate housing units permitted for construction, but does not reach the heights of this decade's housing bubble, or of earlier peaks dating back to the 1920s.

Our projection of new, market-rate housing construction in Los Angeles during the coming decade is based on the most recent point of comparison: Los Angeles' housing construction rebound from 1994 to 2004. In this period, the City's housing market initially experienced stagnation, but then slowly emerged out of the early 1990s aerospace collapse and national recession.[13] An exponential trend-line of the housing construction trajectory from 1994 to 2004 was used to project housing production over the coming decade.

Important caveats for the projection from 2010 to 2020 include:

Figure 5-4
Actual and Projected New Housing Unit Construction, City of Los Angeles, 2010-2020



Source: Construction Industry Research Board, 1980-2007. City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010.

- These data count the number of building *permits* issued for new housing, and because buildings are completed 6-12 months after the permit is approved, there is a time lag before the housing units are completed and certified for occupancy.
- Single-family housing units make up a smaller share of the total than in previous housing booms, for two reasons: 1) Most new single-family homes will be built only after demolishing previous, smaller single-family units on the same property, and thus do not add to the *net* total number of new housing units or households in the City. 2) The housing element of the City's general plan envisions and supports greater infill, multi-family housing development.
- The coming decade will see some year-to-year fluctuations rather than a smooth-line period of sustained growth, but those fluctuations cannot be projected.

Table 5-3
Projected New Housing Unit Construction

Year	Single-Family Units	Multi-Family Units	Total Housing Units
2010	127	482	608
2011	209	799	1,009
2012	282	1,126	1,409
2013	361	1,530	1,891
2014	446	2,028	2,474
2015	537	2,645	3,181
2016	634	3,406	4,040
2017	739	4,346	5,085
2018	852	5,507	6,359
2019	973	6,942	7,915
2020	1,103	8,715	9,818

Source: Construction Industry Research Board, 1980-2007. City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010.

This projection of market-rate residential construction over the next 10 years provides the basis for projecting the demand for affordable housing that will be needed by lower-income workers that fill jobs generated by additional household consumption.

Projecting the Demand for Affordable Housing Created by New Residential Construction over the Next 10 Years

We stated earlier that the construction of new market-rate housing units in the City through the year 2020 will be accompanied by increased demand for affordable housing due to the household consumption of residents living in these new market-rate units. This section quantifies that impact in two ways: 1) The total dollar amount of earned income deficit created among workers whose jobs are supported by the spending of households occupying new market-rate housing, and 2) the total number of households of these workers whose earnings do not enable them to afford market-rate (rental) housing in Los Angeles.

Total Dollar Amount of Earned Income Deficit Generated by Projected New Housing Unit Construction

We analyze three types of new, market-rate housing units in this section – owner-occupied single-family units, owner-occupied multi-family units (aka condominiums) and renter-occupied multi-family units (aka apartments).[14] These are the most common types of market-rate residential properties developed in the City, since negligible numbers of new single-family homes are built to be rented, and no new mobile home parks are expected to be established.

As calculated in Chapter 1, Table 1-18 the earned income deficit generated by the household spending of a new, market-rate home in the City of Los Angeles is currently $17,928 per owner-occupied single-family unit, $15,998 per owner-occupied multi-family unit, and $7,499 per renter-occupied multi-family unit. Multiplied by our projected number of new market-rate units added each year in the City from 2010 to 2020, this is projected to produce a $467 million cumulative earned income deficit by 2020. This projected deficit is broken out by year and type of housing unit in Table 5-4.

By the year 2020, we project that a total of 28,895 new *market-rate apartment* units will have been built, and that the household spending of the occupants will generate an estimated $217 million earned income deficit in 2020.

Condominiums are projected to generate the next highest amount of earned income deficit in the City. All of the new market-rate condominiums projected to be built in the coming decade are projected to create a deficit of $138 million by 2020.

Single-family households, while generating the highest earned income deficit per unit, are the lowest overall contributor due to the shrinking share of new housing in this category. Nonetheless, an earned income deficit of $112 million is projected to be generated by the new market-rate single-family units built from 2010 to 2020.

Table 5-4
Earned income deficit Generated by Projected Construction of New Housing Units

	SF Units	MF Units		Total Earned Income Deficit Generated		
Year	Permitted Single-Family	Permitted Multi-Family Condominium*	Permitted Multi-Family Apartment*	Permitted Single-Family	Permitted Multi-Family Condominium	Permitted Multi-Family Apartment
Factor	*100%*	*23%*	*77%*	*$17,928.65 / Unit*	*$15,998.04 / Unit*	*$7,499.11 / Unit*
2010	127	111	371	$2,275,018	$1,771,703	$2,780,332
2011	209	184	616	$3,749,731	$2,941,682	$4,616,380
2012	282	259	867	$5,062,757	$4,143,886	$6,502,997
2013	361	352	1,178	$6,473,667	$5,629,096	$8,833,735
2014	446	467	1,562	$7,989,756	$7,463,934	$11,713,145
2015	537	608	2,036	$9,618,867	$9,730,704	$15,270,386
2016	634	783	2,622	$11,369,425	$12,531,087	$19,665,024
2017	739	1,000	3,346	$13,250,483	$15,990,698	$25,094,189
2018	852	1,267	4,241	$15,271,770	$20,264,723	$31,801,413
2019	973	1,597	5,346	$17,443,740	$25,544,881	$40,087,561
2020	1,103	2,004	6,711	$19,777,625	$32,068,023	$50,324,322
Total	6,263	8,631	28,895	$112,282,840	$138,080,416	$216,689,485

*Sources: Economic Roundtable; Construction Industry Research Board, 1980-2007. City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010. * Data is available on the overall number of multi-family units permitted for construction in the City of Los Angeles; the Economic Roundtable estimated the split of 23 percent condominium units and 77 percent multifamily units based upon our survey of recently completed multi-family units in the County Assessor's records for the City. Note: According to the U.S. Census Bureau's 2005-2007 American Community Survey and our own analysis, mean rent in City of LA (adjusted to 2009 dollars) is $1,191 monthly or $14,292 annually. Wages needed to afford rent at 30 percent of income are $3,970 per month or $47,640 per year.*

Number of Worker Households with Insufficient Earnings to Afford Market-rate Housing

Single-Family Housing

The earned income deficit projected to be generated by the spending of new, market-rate single-family households in the City of Los Angeles is shown in greater detail in Appendix 5-1. Based on the projected number of new units expected to be built in the City's from 2010 to 2020, the aggregate household spending will support 3,091 jobs. Of those jobs, 1,376 will earn wages that do not enable them to afford the City's market-rate housing. This estimate is based on distributing the total number of jobs (3,090) into the City's eight AMI (Area Median Income) bands in the proportions shown in Chapter 1, Table 1-17.

The number of *worker households* supported by the household spending of new, market-rate single-family homes is computed from these findings and is shown in Appendix 5-1. Earlier in this report, we established that there is an average of 1.6 workers per worker household in the City of Los Angeles. When the number of workers is converted into numbers of worker households by dividing them by 1.6, the spending of market-rate single-family households added in the next decade is projected to create jobs for 860 worker households whose wages are insufficient to enable them to afford market-rate housing in the City.

Condominiums

The growth in the number of market-rate, multi-family, owner-occupied homes in the City of Los Angeles, also known as condominiums, is projected to be greater than single-family households over the next ten years. The aggregate household spending is projected to support 3,801 jobs from 2010 to 2020 – eight hundred more jobs than new single-family homes over that same period (Appendix 5-2). Of these workers, 1,692 will not earn enough to afford market-rate housing, due to having earnings in the lowest three AMI Bands. These workers will be part of 1,058 households that will not be able to afford market rate housing.

Market-Rate Apartments

The final category of market-rate multi-family housing construction, new apartments, will also make a major contribution to the City's demand for affordable housing. The earned income deficit generated by the household spending of one market-rate apartment unit is $7,499 per year, much less than the impacts of household spending by occupants of market-rate single family homes or condominium units. However, the aggregate impact of the new market-rate apartment projected to be built in the City of Los Angeles from 2010 to 2020 will far exceed the other two categories.

By 2020, the household spending of all new market-rate apartment units built this decade in the City of Los Angeles will support 6,184 workers (Appendix 5-3). Of those workers, 2, 754 are not expected to earn enough to afford market-rate housing in the City. This translates into 1,721 worker households supported by the household spending of new market-rate apartment units that will have insufficient earnings to afford market-rate housing.

Conclusions

These findings detail the additional demand for affordable housing generated by the household spending of new market-rate housing projected to be built in the City of Los Angeles from 2010 to 2020. We project that the number of new, market-rate housing units built – as well as their aggregate impact on the demand for affordable housing – will increase in all three categories: single-family, condominium and apartment units. Jobs created by the consumption of new market rate households over the next decade are projected to create a demand for 3,639 additional units of affordable housing.

Projection of the Type of Affordable Housing that Will be Needed Over 10 Years based on the Age and Household Structure of Residents Needing Affordable Housing

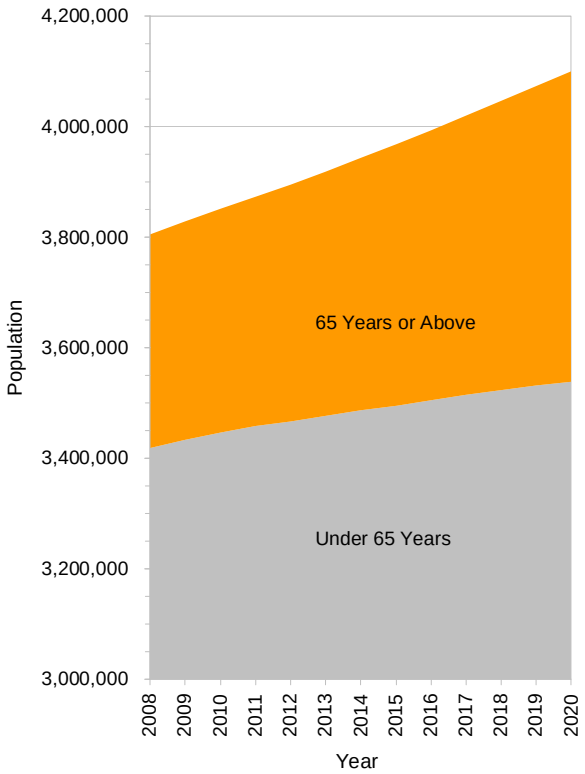
In this section, the Economic Roundtable makes projections of the type of affordable housing needed in the next 10 years based on the age and structure of renter households in the City of Los Angeles. These projections are driven by anticipated changes in the size and age composition of the City's population. Before discussing affordable housing projections for the City, we provide brief overviews of *population growth estimates* and local trends in *household structure* and *household income*, all which inform our affordable housing projections.

Population Growth and Aging

The California Department of Finance produces population projections for Los Angeles County through 2050. The projected mean yearly growth of the County's population after 2008 was utilized to produce growth projections for the City of Los Angeles through 2020. This projection shows that the City will be home to 4,100,424 residents by 2020, as shown in Figure 5-5. This is 295,197 (or 7.8 percent) more residents than the City's population (3,805,227) in 2008, as reported in the 2008 American Community Survey (ACS).

In the years leading up to 2020, the aging of the Baby Boom generation will lead to a rapid growth of the senior population (65 years or above) and a shift in the demographic composition of the City's population. While the City's overall population is projected to increase by nearly 8 percent between 2008 and 2020, its senior population is expected to grow by 45 percent during this time period. The population under 65 years, on the other hand, is projected to grow by only 3.5 percent. According to the 2008 ACS, there were 387,264 seniors residing in the City, accounting for a tenth of the City's overall population. By 2020, the senior population in the City is projected to rise to 562,992, accounting for 14 percent of the overall population. This growth and shift in the City's population underpins the affordable housing projections described later in this section and drives the type of affordable housing projected to be needed by residents.

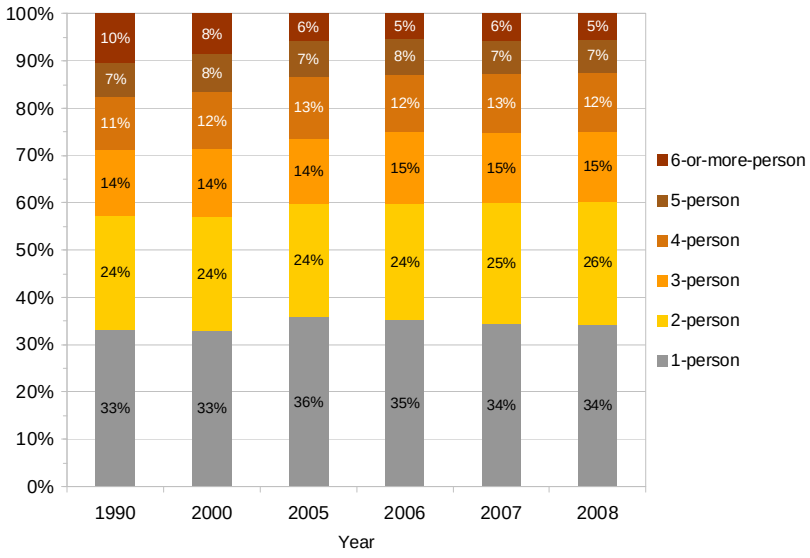
Figure 5-5
Population Projection – City of Los Angeles



Note: Economic Roundtable analysis of U.S. Census 2008 American Community Survey PUMS and CA Department of Finance data

Household Structure

Figure 5-6
Renter Household Size – City of Los Angeles



Source: U.S. Census Bureau, 1990 and 2000 PUMS: 2005, 2006, 2007 and 2008 American Community Survey 1-year PUMS

Since 1990, the mean renter household size in the City of Los Angeles has remained fairly stable, with only a slight increase in the last two decades. Both the 1990 and 2000 U.S. Censuses showed that the mean renter household size was 2.73 persons during these years. Between the years of 2005 and 2008, the mean renter household size ranged from 2.76 to 2.78 persons.[15]

The distribution of renter households by household size, shown in Figure 5-6, also indicates that household size has historically remained fairly stable, particularly since 2005. The only exception is the decreasing share of larger households since 1990, when 10 percent of all renter households were 6-or-more-person households. Since 2005, 6-or-more-person renter households accounted for only 5 to 6 percent of all renter households.

The most current data available from the Census shows that 34 percent of renter households are 1-person households and a majority of renter households (60 percent) are composed of 2 or less persons. In 2008, the distribution of renter households by household size in the City of Los Angeles was:

- 1-person renter households 34 percent
- 2-person renter households 26 percent
- 3-person renter households 15 percent
- 4-person renter households 12 percent
- 5-person renter households 7 percent
- 6-or-more-person renter households 5 percent

Further examination of 2008 ACS data shows that household size varies considerably when the age of the householder is taken into account, as shown in Figure 5-7. Most notably, this breakout shows that:

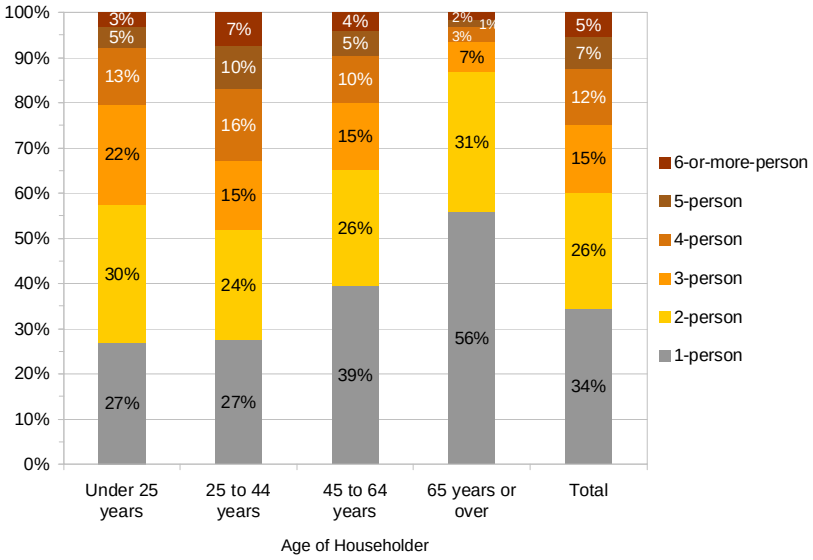
- A third of renter households headed by persons age 25 to 44 years are comprised of 4 or more people. This category of renter households has the largest share of larger size households.
- 87 percent of renter households headed by seniors are households with 2 or less people.

- Except for renter households headed by persons under 25 years, the plurality of renter households in each age category are 1-person households.

Renter Households by AMI Bands

A substantial share of renter households in the City of Los Angeles have incomes that make it very difficult to afford market-rate rental housing without becoming rent burdened. Since 1990, a majority of renter households have been in the three lowest AMI bands (80 percent or less of AMI) and over a fifth of renter households have been in the extremely-low-income AMI band (30 percent or less of AMI), as shown in Figure 5-8.[16] From 1990 to 2005, the share of renter households in the three lowest AMI bands increased from 59 percent to 66 percent, and the share of extremely-low-income renter households increased from 22 percent to 28. More recently, from 2005 to 2008, the share of lower-income renter households has remained fairly stable.

Figure 5-7
Renter Household Size by Age of Householder – City of Los Angeles

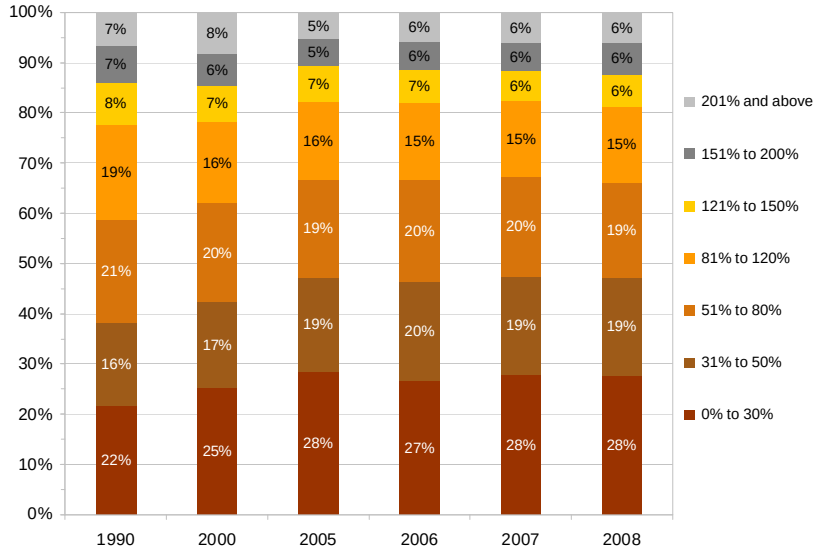


Source: U.S. Census Bureau, 2008 American Community Survey PUMS

This distribution may change as new data that captures the full impact of the current recession becomes available. High rates of unemployment, particularly among the less educated,[17] will likely increase the share of lower-income households and shift households downward into lower rungs of the AMI distribution.

The distribution of renter households across AMI bands is quite different

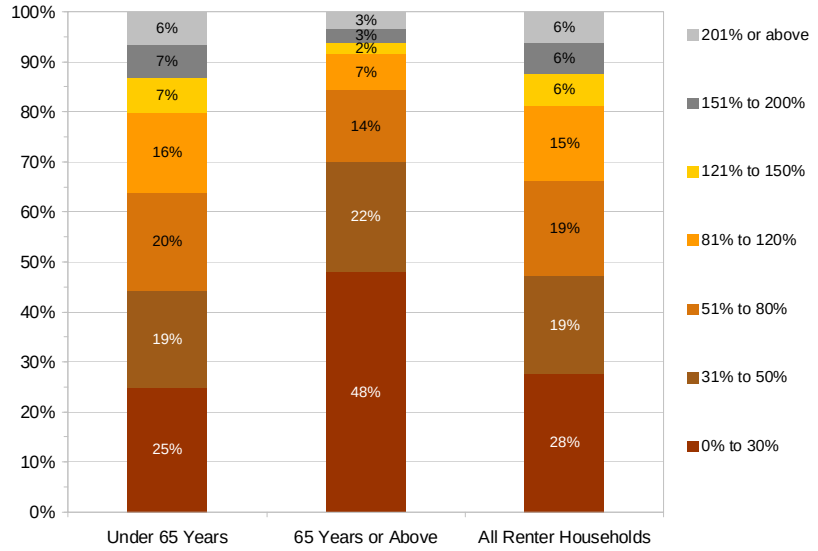
Figure 5-8
Renter Households by AMI Bands – City of Los Angeles



Source: U.S. Census Bureau, 1990 and 2000 PUMS: 2005, 2006, 2007 and 2008 American Community Survey 1-year PUMS

when the age of the householder is taken into consideration. This distinction is particularly apparent when renter households are headed by seniors, as shown in Figure 5-9. Nearly 85 percent of all renter households headed by seniors are in the three lowest AMI bands, with almost 50 percent of households falling in the extremely-low-income band.[18] In contrast, 64 percent of all renter households headed by persons under 65 years are in the three lowest AMI bands, with a quarter falling in the extremely-low-income band. This disparity highlights the vulnerability of senior renters, who face significant economic challenges in addition to increased health and mobility issues.

Figure 5-9
Renter Households by Age of Householder and AMI Bands – City of Los Angeles



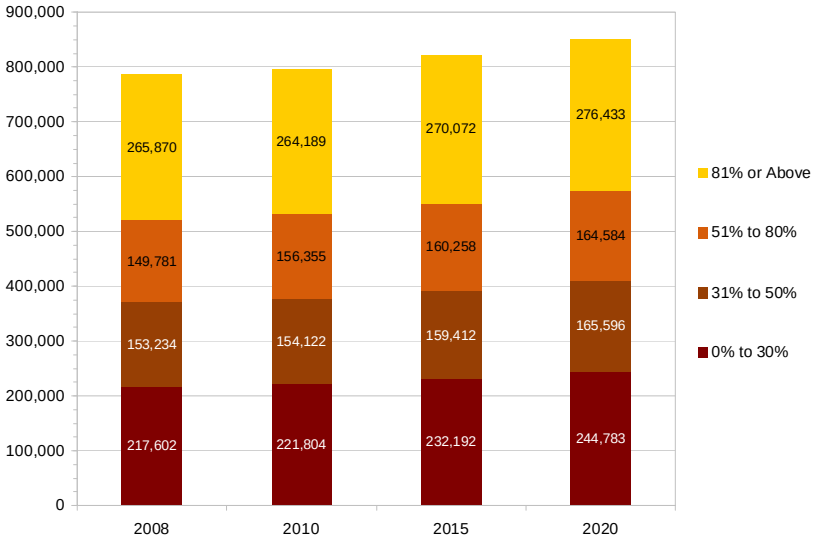
Source: U.S. Census Bureau, 2008 American Community Survey PUMS

Projections

Projections of Affordable Housing Demand

In Chapter 1 of this report, the Economic Roundtable established that average households in the three lowest AMI bands (80 percent or less of AMI) typically have insufficient income to afford rent in the City of Los Angeles. In this section, we again focus on renter households falling in the three lowest AMI bands to project the type of affordable housing that

Figure 5-10
Projection of Renter Households by AMI Bands – City of Los Angeles



Source: 2008 data comes from U.S. Census 2008 American Community Survey PUMS and projections are based on Economic Roundtable analysis

will be needed in the next 10 years based on the age and household structure of renter households.

Population growth estimates were used as the foundation for projecting affordable housing demand for the City of Los Angeles through the year 2020.[19] Figure 5-10 shows the current and projected number of renter households in the City broken out by AMI bands. In 2008, the ACS showed a total of 786,487 renter households in the City of Los Angeles, with 520,617 (66 percent) of these households falling in the three lowest AMI bands. The overall number of renter households in the City is projected to increase to:

- 821,934 renter households by 2015, an increase of 35,447 (4.5 percent) renter households over 2008 figures
- 851,397 renter households by 2020, an increase of 64,910 (8.3 percent) renter households over 2008 figures

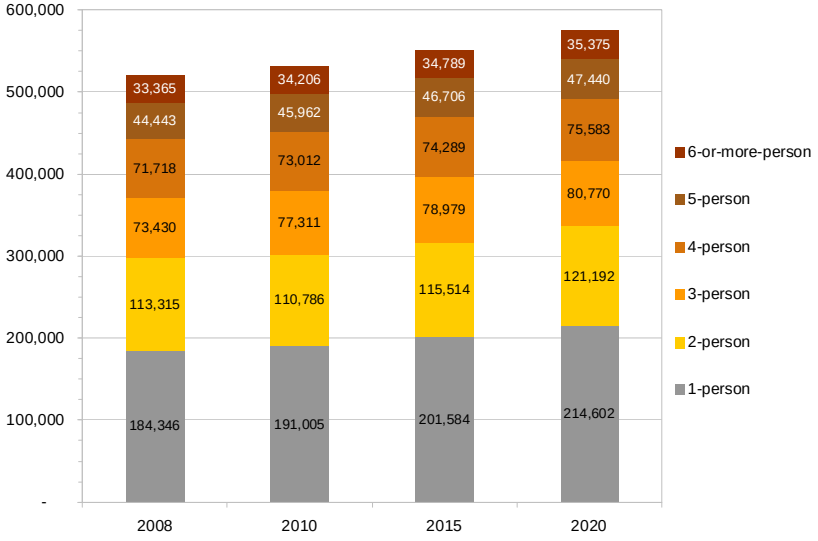
The total number of renter households in the three lowest AMI bands is projected to increase to:

- 551,862 renter households by 2015, an increase of 31,245 (6.0 percent) renter households over 2008 figures
- 574,963 renter households by 2020, and increase of 54,346 (10.4 percent) renter households over 2008 figures

Overall, by 2020, the City may well need:

- 244,783 rental units affordable to extremely-low-income households (0 percent to 30 percent of AMI)
- 165,596 rental units affordable to very-low-income households (31 percent to 50 percent of AMI)
- 164,584 rental units affordable to low-income households (51 percent to 80 percent of AMI)

Figure 5-11
Projection of Renter Households in the Three Lowest AMI Bands (80 percent or less of AMI) by Household Size – City of Los Angeles



Source: 2008 data comes from U.S. Census 2008 American Community Survey PUMS and projections are based on Economic Roundtable analysis

Projections of Affordable Housing Demand by Household Size

As noted, there were 520,617 renter

households in the three lowest AMI bands (80 percent or less of AMI) in 2008. Most of these (57 percent) were was small renter households with 2 or less people, and 15 percent were larger households with 5 or more people (Figure 5-11). In 2008, the breakout of these households by size was:

- 184,346 (35 percent) 1-person households
- 113,315 (22 percent) 2-person households
- 73,430 (14 percent) 3-person households
- 71,718 (14 percent) 4-person households
- 44,443 (9 percent) 5-person households
- 33,365 (6 percent) 6-person households

By 2020 we project the number of renter households in the three lowest AMI bands will grow to 574,963. A majority of this increase can be attributed to the growth of smaller households. In 2020, the total number of renter households in the three lowest AMI bands by household size is projected to increase to:

- 214,602 (38 percent) 1-person households, an increase of 16.4 percent
- 121,192 (21 percent) 2-person households, an increase of 7.0 percent
- 80,770 (14 percent) 3-person households, an increase of 10.0 percent
- 75,583 (13 percent) 4-person households, an increase of 5.4 percent
- 47,440 (8 percent) 5-person households, an increase of 6.7 percent
- 35,375 (6 percent) 6-person households, an increase of 6.0 percent

Projected Affordable Housing Demand by Age

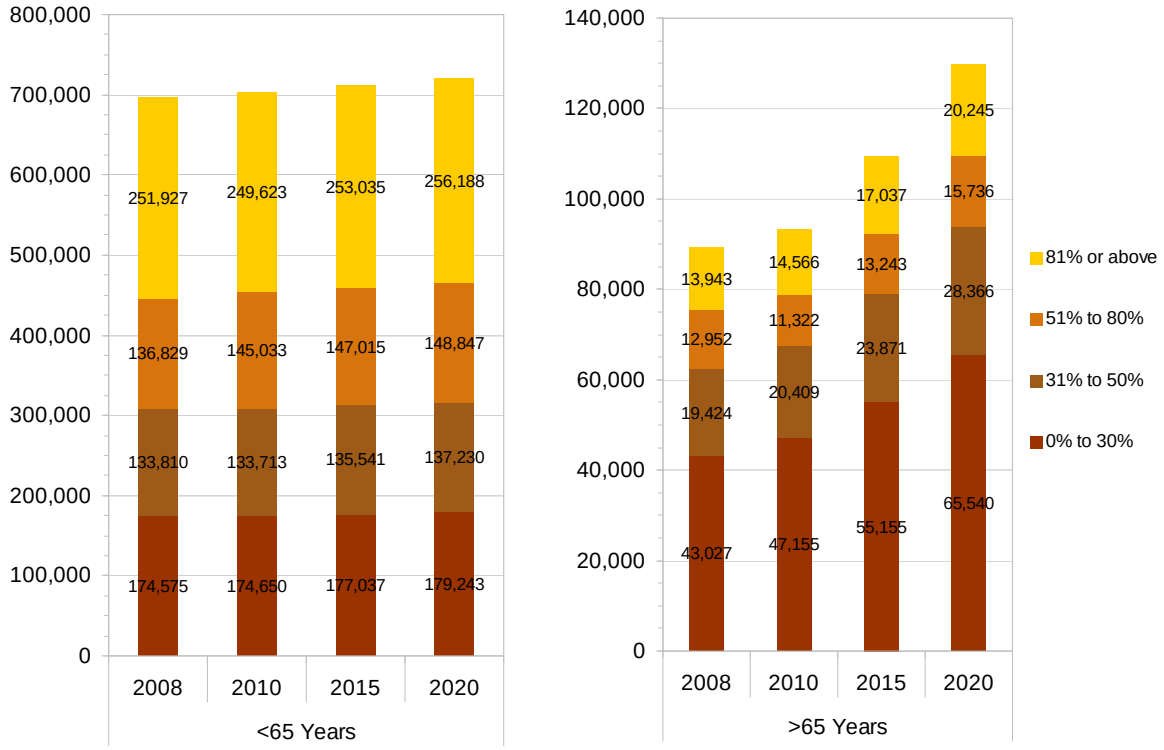
The growth of renter households headed by seniors is projected to outpace the growth of renter households headed by persons under 65 years over the course of the next decade. In 2008, 89,346 or 11 percent of all renter households were headed by seniors, as shown in Table 5-5. Based on the expected growth rate of the senior population in the coming years, we project that the number of households headed by seniors will increase to 129,888 by 2020, accounting for 15 percent of all renter households. This is a 45 percent increase or an addition of over 40,000 senior headed renter households to the City's 2008 totals. Renter households headed by persons under 65 years, on the other hand, are expected to increase from 697,141 in 2008 to 721,508 in 2020. This is a 3 percent increase or an increase of 24,000 renter households.

Table 5-5
Renter Households by Age of Householder – City of Los Angeles

Year	Renter Households by Age of Householder				
	Under 65 Years		65 years or Above		Total
	#	%	#	%	
2008	697,141	89%	89,346	11%	786,487
2010	703,018	88%	93,452	12%	796,470
2015	712,628	87%	109,306	13%	821,934
2020	721,508	85%	129,888	15%	851,397

Source: 2008 data comes from U.S. Census 2008 American Community Survey PUMS and projections are based on Economic Roundtable analysis

Figure 5-12
Renter Household Projections by Age of Householder and AMI Bands – City of Los Angeles



Source: 2008 data comes from U.S. Census 2008 American Community Survey PUMS and projections are based on Economic Roundtable analysis

As previously noted, nearly 85 percent of all renter households headed by seniors fall in the three lowest AMI bands. In 2008, 75,403 of the 89,346 total renter households headed by seniors were in the three lowest AMI bands (Figure 5-12). By 2020, we project that the number of these households will increase by 34,240 to bring the total over 109,000. The number of renter households headed by persons under 65 years in the three lowest AMI bands is projected to increase by over 20,000, from 445,214 in 2008 to 465,320 by 2020.

Conclusion

A detailed breakout of the projected number of renter households in the City of Los Angeles by AMI band, age of householder and household size is provided in Appendix 5-4. Overall, total renter households are expected to increase 8 percent, from 786,487 in 2008 to 851,397 in 2020. Of the 851,397 renter households projected to reside in the City of Los Angeles in 2020, over two-thirds or 574,963 renter households will likely fall into the 3 lowest AMI bands, making it difficult for them to afford market-rate housing in the City. Of these renter households with an acute need for affordable housing:

AMI Bands

- 43 percent or 244,783 will be extremely-low-income households (0 percent to 30 percent of AMI)
- 29 percent or 165,596 will be very-low-income households (31 percent to 50 percent of AMI)
- 29 percent or 164,584 will be low-income households (51 percent to 80 percent of AMI)

Household and Unit Size[20]

- 37 percent or 214,602 will be 1-person households, needing at least a studio (without a separate kitchen) unit
- 21 percent or 121,192 will be 2-person households, needing at least a studio (with a separate kitchen) unit
- 14 percent 80,770 will be 3-person households, needing at least a 1-bedroom unit
- 13 percent 75,583 will be 4-person households, needing at least a 2-bedroom unit
- 8 percent 47,440 will be 5-person households, needing at least a 3-bedroom unit
- 6 percent 35,375 will be 6-person households, needing at least a 4-bedroom unit

Age

- 81 percent or 465,320 will be headed by persons under 65 years
- 19 percent or 109,643 will be headed by persons 65 years or older (seniors)

Population growth and composition will determine the amount and type of affordable housing needed in the next decade. The large number of lower income households, a growing population of seniors and the need to house residents in safe and affordable housing call for substantial growth in the affordable housing inventory.

PROJECTION OF TRENDS IN THE DEMAND FOR AFFORDABLE HOUSING GENERATED BY EXPIRATION OF AFFORDABILITY-RESTRICTED AND DISPLACEMENT FROM RENT STABILIZED HOUSING UNITS 2010-2020

This section analyzes recent trends and makes projections about affordability-restricted and rent stabilized housing. The City monitors both types of rental housing, attempting to increase the number of housing units available to low- and moderate-income residents.[21]

Expiration of Low- and Moderate-Income Affordable Housing Units

Publicly-financed "affordable housing" units have affordability restrictions (e.g. covenant, land use, Project Based Section 8 and use agreements, among others) that are agreed upon between public agencies and private housing developers. These affordability restrictions legally require some or all of the housing units on a property to be rented at specific, below-market prices to qualifying households for a fixed number of years. The affordability restrictions also specify the amounts of public financing offered to property owners in exchange for securing below-market housing unit rents, as well as the duration of the units' affordable status. The City of Los Angeles monitors over 69,000 housing units with affordability restrictions, spread out across over 1,900 properties, including those overseen by its Housing Department and Community Redevelopment Agency.[22] However, the total number of these affordability-restricted housing units in the City fluctuates over time for several reasons, including: 1) some units' affordability restrictions are set to expire over time (i.e. annually), 2) some owners agree to renew and extend their units' affordability restrictions beyond the initial expiration date, 3) alternative public financing sources (such as HUD) can extend affordability restrictions when the initial agreement (locally financed by LAHD, CRA/LA, etc.) expires, and 4) new affordability-restricted housing units are built and added to the City's supply, 5) ongoing monitoring data updates and improvements.

The Los Angeles Housing Department defines affordable housing as units receiving "public financing" and requires that rents remain affordable. In regards to occupants' income, eligibility is based on a combination of tenant income, maximum rents allowable and the Area Median Income (AMI) calculated by the US Department of Housing and Urban Development on an annual basis. Income limits vary for each subsidy program. In 2007, the income limits ranged from $20,000 (30 percent of Area Median Income) to $40,000 (60 percent of Area Median Income) for a family of three. Allowed rents for public housing and Section 8 housing depend on household incomes and cannot exceed 30 percent. [23]

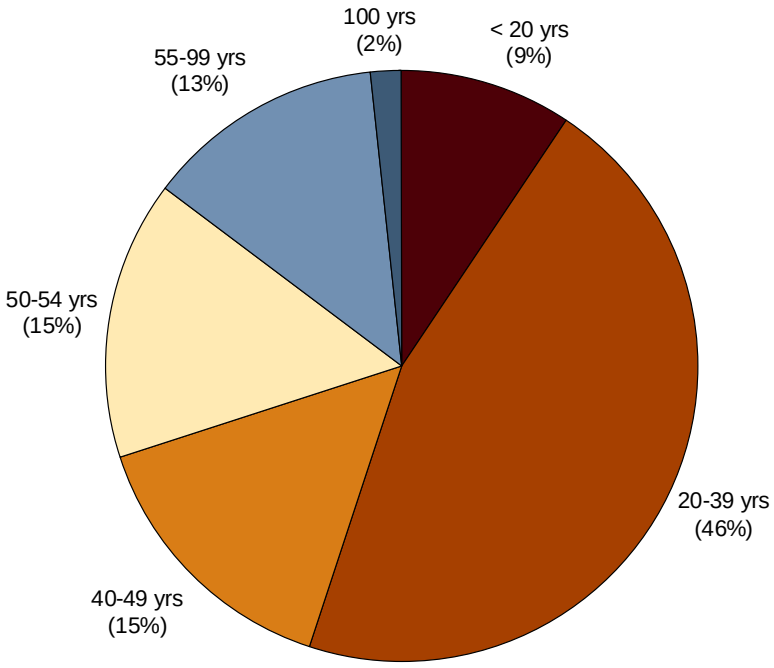
The typical duration of affordability-restriction agreements established between the Los Angeles Housing Department or the Community Redevelopment Agency and private developers for below-market housing has been 31 years, although they can be as short as 5 years or as long as 100 years (Figure 5-13).[24] Shorter restriction terms of less than 40 years in duration were the norm for protecting the status of affordable housing units back in the 1980s. But longer periods of affordability restriction are more common since then. By the period 2005-2010, affordability restriction terms of 40 years or longer had grown to account for 41 percent of affordable units added.[25] As mentioned above, property owners whose units have affordability restrictions may

renew these agreements, making their units' affordable for longer periods than initially agreed upon, and such renewals are not uncommon.[26]

Recent Gains of Housing Units with Affordability Restrictions, Projection for 2010-2020

The City of Los Angeles adds to its affordable housing stock through public policies that often provide financial support and incentives to developers. Financial resources from City, County, State and Federal housing programs and other land use incentives encourage the development of housing units earmarked for low- and moderate-income residents. This includes federal sources (HUD), state and local bond measures, as well as the City of Los Angeles Affordable Housing Trust Fund.

Figure 5-13
Duration of Housing Affordability Restriction Agreements, City of Los Angeles

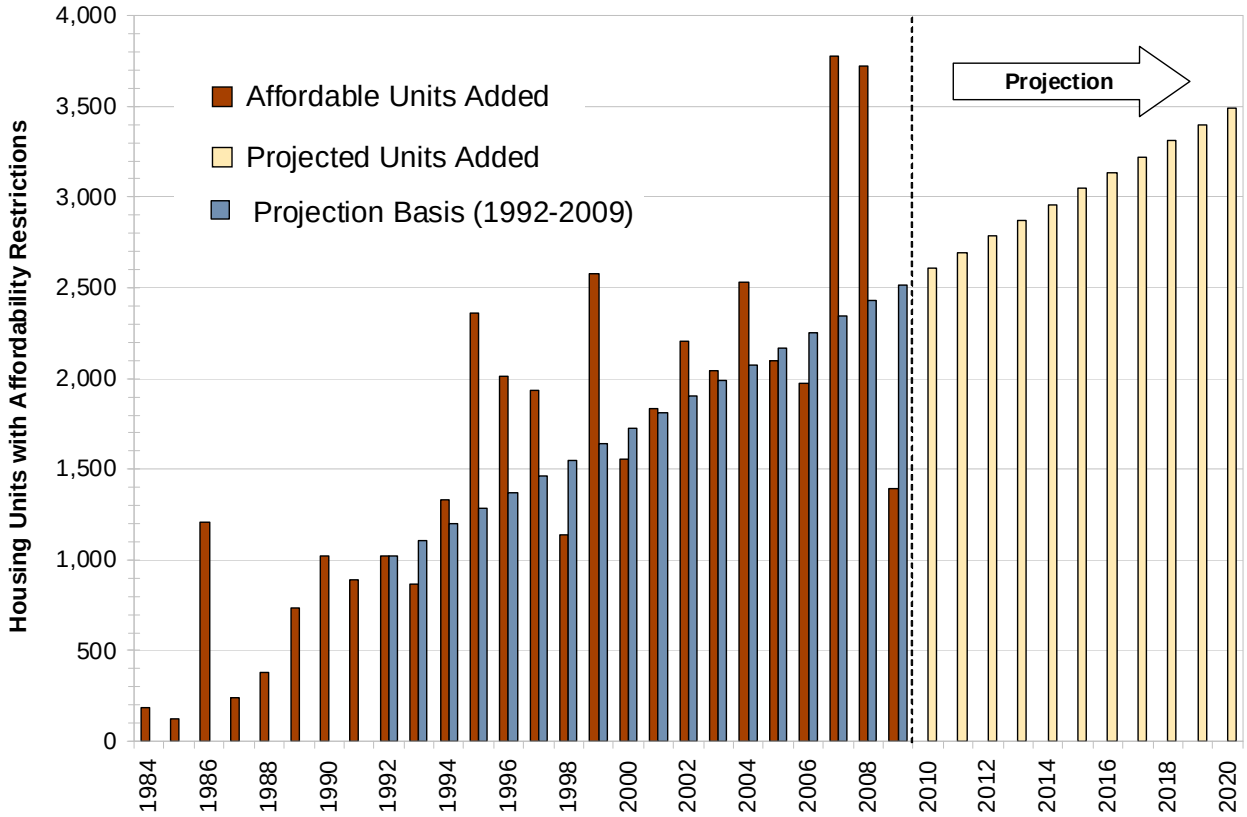


Sources: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (Data Extraction: October 14, 2010).

Despite market pressure to use available land for market-rate housing, the City has nonetheless added many new affordable housing units in recent years. Since the mid-1980's, the City's Housing Department, Community Redevelopment Agency and private housing developers have added more than 1,500 housing units per year with affordability restrictions (Figure 5-14).[27]

The Economic Roundtable projects that the City will continue to add a growing number of affordable housing units during the next decade based on the gradual upward trend established between 1992 and 2009. This projection base period includes several national economic recessions and recoveries, including the major housing market downturns of the mid-1990s and mid-2000s. Based on this established trend, and if the City's declared policy goals for funding and building more affordable housing are continued,[28] we project that 2,600 to 3,500 housing units with affordability restrictions will be added annually this decade by the Housing Department and Community Redevelopment Agency, totaling over 30,000 housing units between 2011 and 2020. This amount is less than the Mayor's "5-year, $5 billion plan to build 20,000 affordable housing units," or 4,000 annually, since the current recession has severely crimped the City's budget and hampered the growth of its Affordable Housing Trust Fund.[29] Nonetheless, we project an upward trend in the annual number of housing units with

Figure 5-14
Housing Units with Affordability Restrictions Added Annually City of Los Angeles, with Projection



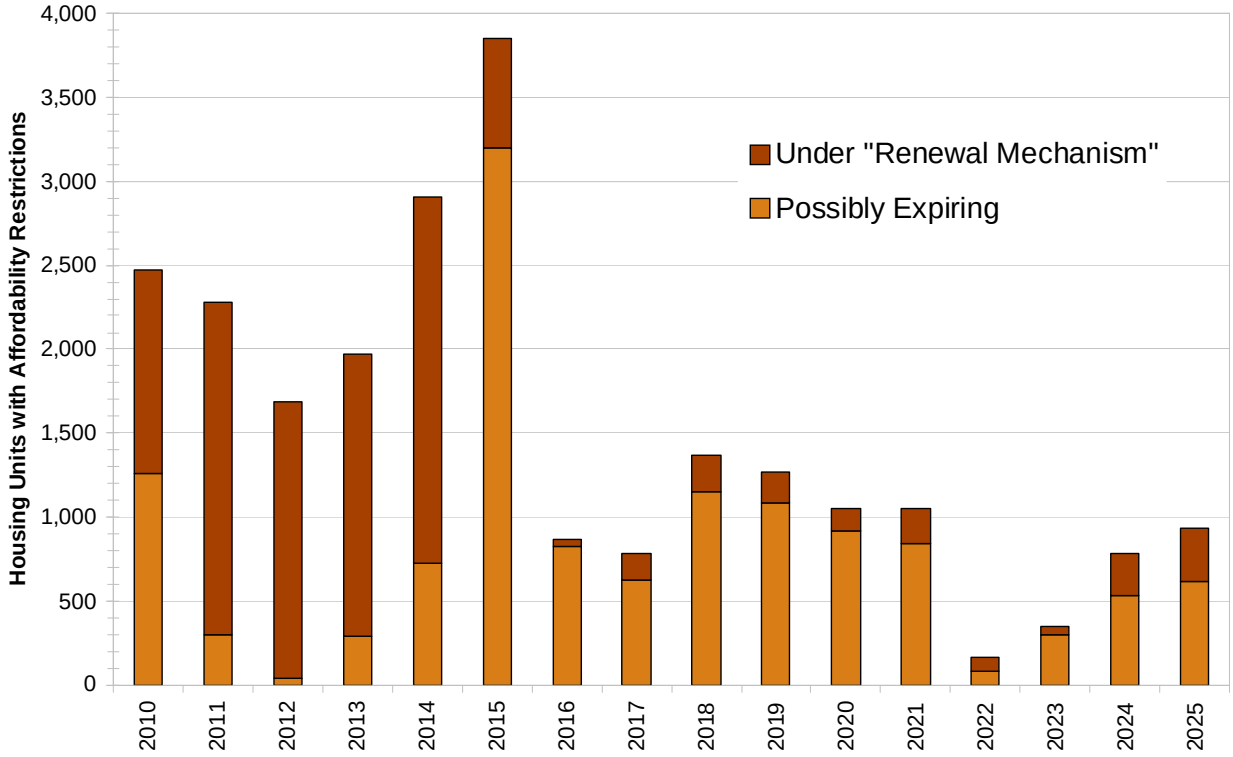
Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (Data Extraction: October 14, 2010).

affordability restrictions as more private housing developers turn to government incentives as part of their overall project financing strategy during tough financial times.

Expected Losses of Affordable Housing Units through 2020

Among the affordability-restriction agreements for units located in the City of Los Angeles many are renewed each year but some expire. Data on these agreements enable us to forecast possible losses in the affordable housing stock. The City may lose as much as 9,142 units of affordable housing in the years 2011 to 2020, based upon the expiration dates of agreements it now monitors (Figure 5-15).[30] The highest possible annual loss of units is likely in 2015, when affordability-restriction agreements covering over 3,000 units are set to expire. However, the owners of some of these units may choose to renew their affordability-restriction agreements with the City, state or federal government agencies, decreasing this spike. Also shown in Figure 5-15 are units that include a rental subsidy with a renewal mechanism and many of these may renew for one year or longer, according to the LAHD Citywide Affordable Housing

Figure 5-15
Housing Units with Affordability Restrictions Possibly Expiring and Under Renewal Mechanism, 2010-2025, City of Los Angeles



Source: Economic Roundtable; LAHD Citywide Affordable Housing Preservation Program. 2010. "All Expiring Properties 15 years Benefit Fee FINAL" and "All Renewal Mechanism Projects Benefit Fee 10 14 10".

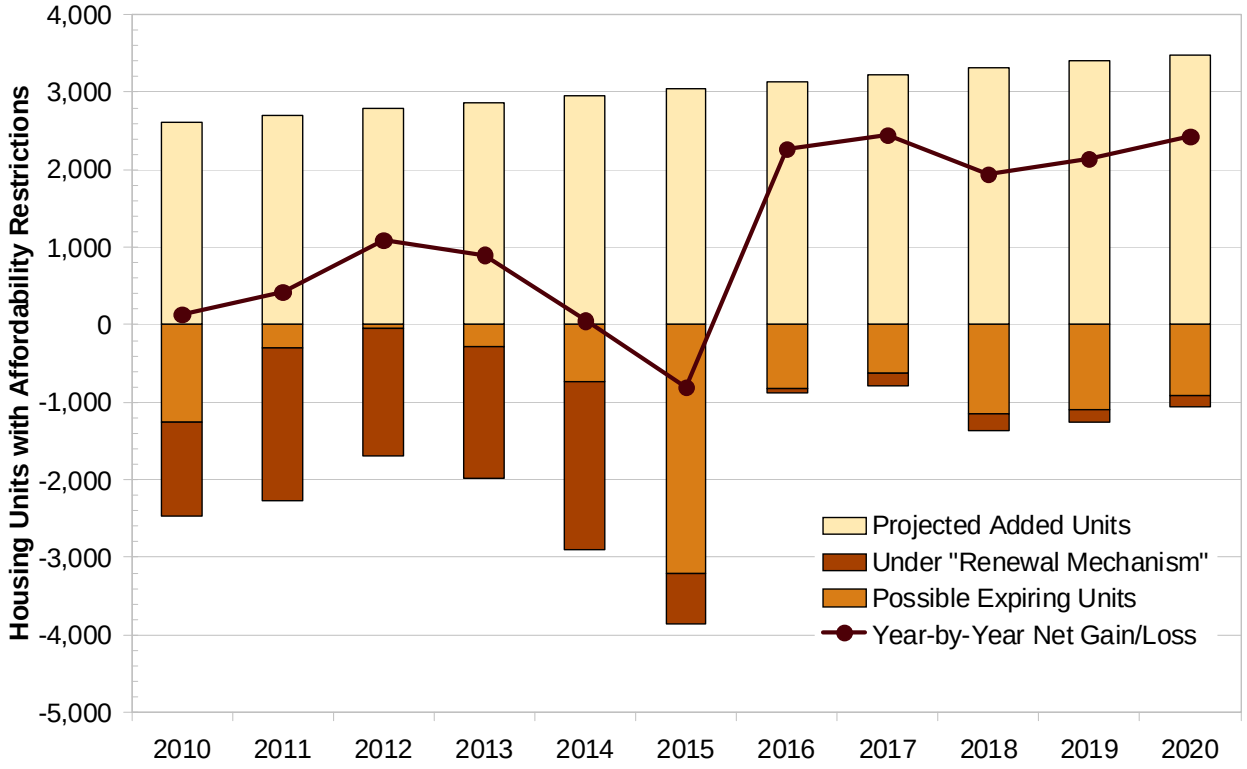
Preservation Program. Currently, there are an additional 8,876 units that would otherwise expire between 2011 and 2020 if they were not under these renewal mechanisms.

Net Effect of Affordable Housing Unit Projection Gains and Possible Losses 2010-2020

The Economic Roundtable projects that the City of Los Angeles will have net gains of housing units with affordability restrictions during the entire period 2010-2020 (Figure 5-16).[31] The year with the lowest net increase is projected to be 2015, but we project that there will be a cumulative net gain of 13,027 units by 2020. This net is based on our projection of 33,514 units added cumulatively from 2010-2020, minus 20,487 units (10,402 possibly expiring units and 10,085 units under renewal mechanism) during the same period.

Our projection is good news with regard to net growth of housing units with affordability restrictions, aiding Los Angeles' low- and moderate-income households. However, the potential loss of up to 20,487 current units from the City's affordable housing stock over this coming decade is cause for concern. Of those families and other residents displaced in this ongoing churn of affordable housing agreements starting, renewing and expiring, it is uncertain how many will be able to find comparable priced and nearby replacement housing. Given Los

Figure 5-16
Net Projected Additions and Possible Expirations of Housing Units
with Affordability Restrictions, City of Los Angeles



Source: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (Data Extraction: October 14, 2010); LAHD Citywide Affordable Housing Preservation Program. 2010. "All Expiring Properties 15 years Benefit Fee FINAL.xls" and "All Renewal Mechanism Projects Benefit Fee 10 14 10.xls". This bar chart combines the total projected units added and possible units expiring from the previous two figures.

Angeles' well-documented shortage of affordable housing, most properties with affordable housing have waiting lists of families seeking to move in. The year-by-year net number of possibly expiring affordable units shown in Figure 5-16 represents the additional demand for affordable housing that is projected to be generated over the next 10 years because of displacement.

Displacement of Low- and Moderate-Income Residents from Rent Stabilized Units

Rent-stabilized housing provides low- and moderate-income renters with partial protection against large increases in rent, resulting in rent levels that typically are below the market rate.[32] Since 1979, when the City of Los Angeles enacted its Rent Stabilization Ordinance (RSO), the Housing Department has set the maximum annual percentage increase in rents for apartment units built in 1978 or before.[33] At last count, the Rent Stabilization Ordinance (RSO) covered 118,254 rental properties with 638,116 rental housing units.[34] This

inventory cannot grow, since no apartments built after 1978 can be covered by the ordinance. However, tenants of individual units may be evicted[35] and whole apartment buildings can be demolished or removed from the RSO inventory,[36] meaning that displacement can occur and the supply of rent-stabilized housing units may gradually decline.

Even though RSO tenants typically have lower rent than tenants in units not covered by the ordinance, a majority (55 percent) of renter households in RSO housing units pay more than 30 percent of their income for rent (Table 5-6).[37] These tenants are *rent burdened*, although we can infer that the RSO protects them from steeper rent increases and that their current rent amounts are likely below market-rate. The remaining 45 percent of RSO renters living in apartments built in 1979 or earlier are not rent burdened, and the longer they remain in the same unit, the more likely it is that they will be paying below-market rents.[38]

Table 5-6
Gross Rent as a Percent of Renter Household Income, by Year Built, City of Los Angeles.

Year Built	30% or less	More than 30%
1980 or later	43%	57%
1979 or earlier	45%	55%

Source: U.S. Census Bureau, 2006-2008 American Community Survey 3-Year Estimates, Public Use Microdata Set.

Low- and moderate-income residents are the majority of those displaced when evictions from RSO units occur, rent-stabilized apartment building uses change (such as conversion to condominium), or entire RSO apartments are demolished.[39] In this section, we examine causes of displacement from RSO units, including gentrification, and project future trends based upon the number of recent losses of RSO units.

Gentrification in Los Angeles Neighborhoods and the Process of Displacement

Gentrification is a commonly accepted explanation for the displacement of low- and moderate-income residents.[40] Rent stabilized apartments located in the City of Los Angeles are privately owned. Therefore, while RSO units are regulated under the conditions of the ordinance, these properties are also affected by the market and changing property values in the surrounding neighborhood. Such changes can be an incentive to discontinue use of a property as rental housing, or to demolish the housing and redevelop the property for a new use.

Gentrification taking place in Los Angeles results in the displacement of low-and moderate-income residents who can no longer afford to live in their neighborhoods. The components of this process include:

- Incomes of owner-occupied household increase over time, often because buyers with higher incomes are attracted to the neighborhood. As a result, the income gap between owner-occupied and renter-occupied households in the same neighborhoods often widens. Rising incomes among owner-occupants encourage traditional gentrification effects: home renovations and rising rents for nearby residential and commercial units.
- Rising value of multi-family properties. In the decade leading up to the current recession, the market value of multi-family residential properties in Los Angeles increased significantly.[41]
- Changing ownership and use of multi-family residential properties:
    - Property sold for a higher price, or

  - Multi-family properties demolished or converted into other uses, underwritten by loans taken out against the higher value of the property.[42]

- New, market-rate housing units are priced out of reach for low- and moderate-income residents,[43] so displacement from an older rental unit usually means having to find replacement housing in another neighborhood or possibly outside of the City, due to the scarcity of vacant affordable and rent-stabilized units.
- New and renovated school campuses, new or improved libraries and parks, and the expanding metro rail system boost neighborhood values, causing rents to rise and become unaffordable for residents initially targeted to be the beneficiaries of these projects.

These changes are ongoing in urban land markets, as less productive land uses get replaced by more lucrative ones, enabled by changes in the overall value of neighborhoods. While not all Los Angeles neighborhoods are experiencing gentrification, these processes have an undesired outcome of displacing low- and moderate-income residents in many neighborhoods.

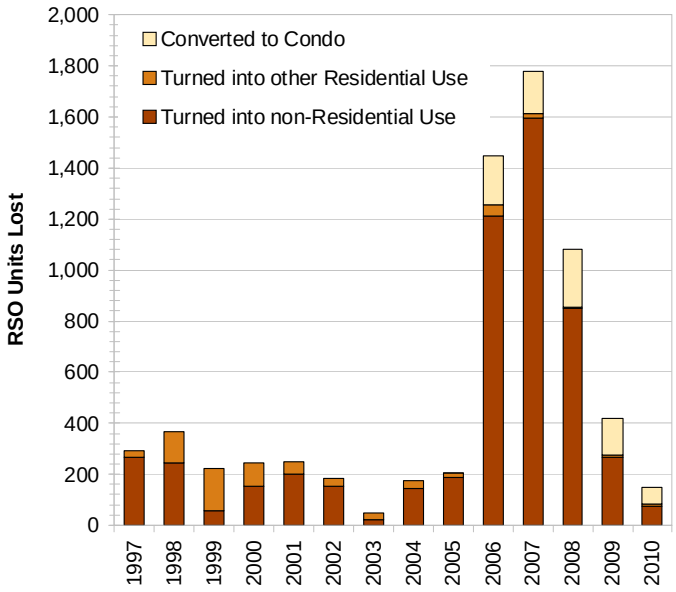
Number of RSO Units Losses

Each year, the City of Los Angeles has lost older multi-family housing while concurrently, new housing was being built. This trade-off reduces the amount of housing available to moderate and low-income families[44] because multi-family housing built on or before October 1, 1978, is covered by the City's Rent Stabilization Ordinance[45] and may provide below-market rent for residents. Although new housing construction offsets the overall number of housing units lost, rental housing built after 1978 (including condominium units subsequently rented) is exempt from the Rent Stabilization Ordinance and thus is rented at market prices.

Losses of housing units previously regulated by the City's Rent Stabilization Ordinance surged during the housing boom in the mid-2000s (Figure 5-17). The number of RSO units lost due to demolitions and conversions increased six-fold between 2005 and 2006. From 2003 through May 2010, a total of 5,302 RSO units were lost.[46]

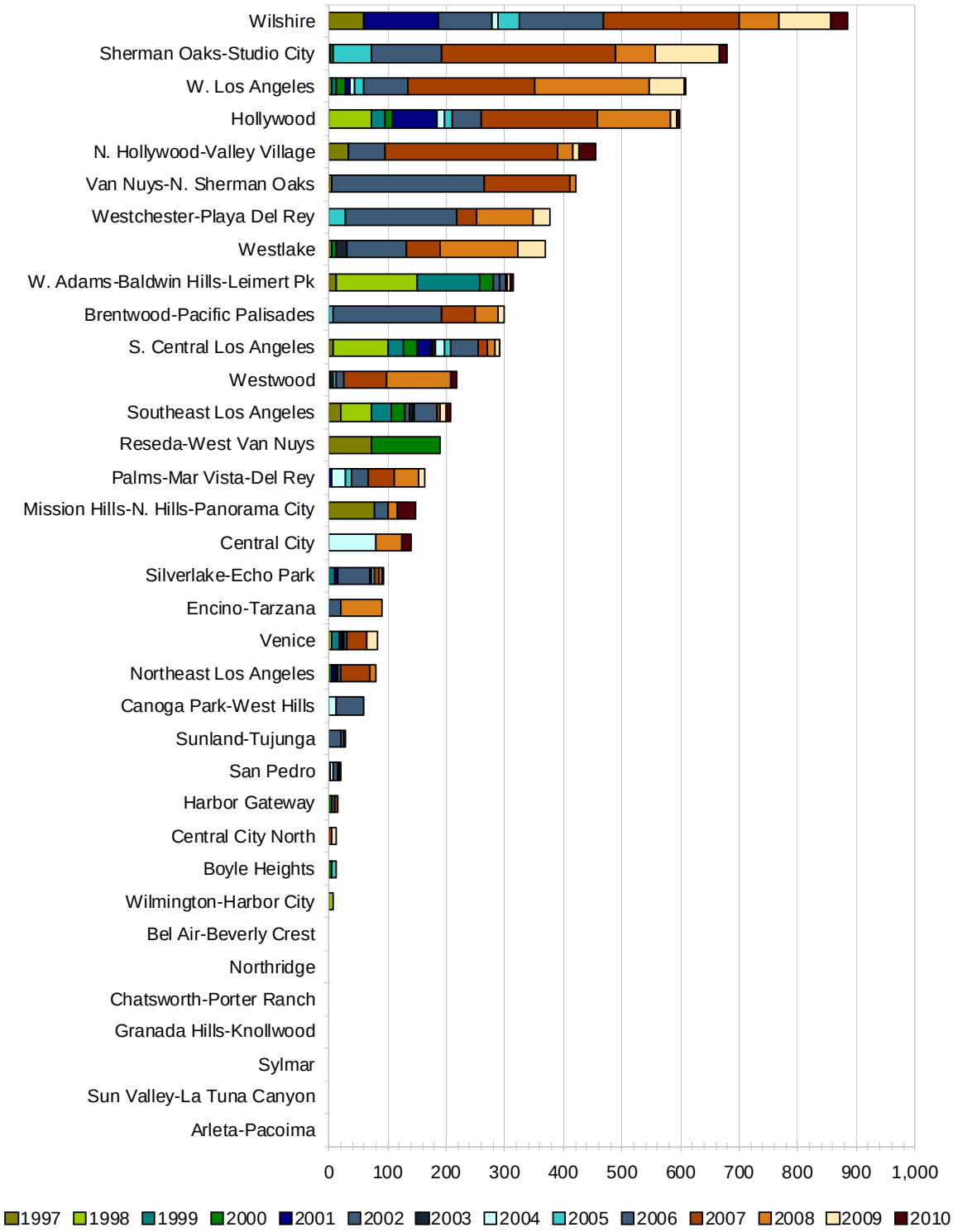
Demolition of older apartment buildings is a common scenario, captured under the "Turned to non-Residential Use" category in Figure 5-17. Only the first step in the property use change

Figure 5-17
RSO Units Lost due to Other Property Uses 1997-2010, City of Los Angeles



Sources: City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010. (Data on number of RSO units comes from the City of Los Angeles Housing Department: General RSO Property Data for Each Property with 2 or More Units.) Note: 2010 is a partial data year, including only January through May.

Figure 5-18
RSO Units in Buildings Permitted for Conversion to Other Uses, City of Los Angeles, 1997-2010



Sources: City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010. (Data on number of RSO units comes from the City of Los Angeles Housing Department: General RSO Property Data for Each Property with 2 or More Units.)

process is shown in Figure 5-17, for example, change from rental property to vacant land. In subsequent steps, the use may change from vacant land to a new residential structure.

Older RSO apartment buildings usually have one parking space per unit, while the Department of City Planning requires that condominium buildings – converted and new – have two spaces per unit. Thus, demolition is a necessary step in converting an apartment property into a condominium property. This is the most common way in which RSO units are lost.

Geography of Recent Losses of RSO Units

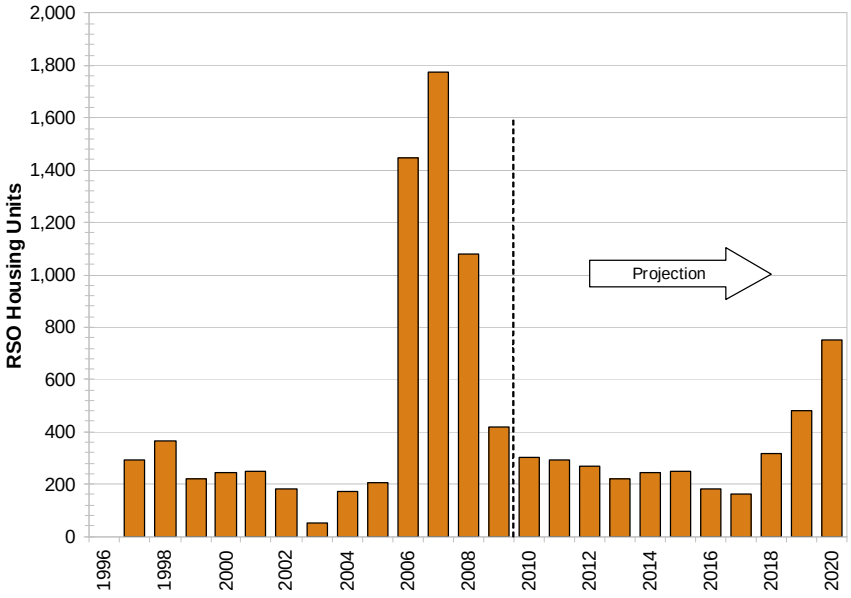
Losses of RSO units due to conversion to other uses have occured across the City (Figure 5-18).[47] The largest number of RSO unit conversions into condominiums took place in the Encino-Sherman Oaks, West LA-Westwood and Hollywood-Los Feliz areas, with most of these conversions occuring from 2006 thorugh 2010.

Projection of Losses 2010 to 2020

We project fewer losses of RSO units in the coming decade compared to past years due to the recession's ongoing impact on Los Angeles' housing market, with fewer homes being sold and housing prices being lower. Part of the recession's impact is the higher cost of borrowing for commercial construction projects, with the result that property owners seeking to carry out condominium conversions are finding it more difficult to obtain credit.[48] The City is also taking regulatory steps to protect renters whose apartment buildings might otherwise be demolished or converted:

- The Department of City Planning is enforcing an ordinance to limit condominium conversions in Community Plan Areas when the multi-family vacancy rate falls below 5 percent.
- Apartment owners seeking to demolish or convert their buildings into other uses first must remove current tenants from their premises. Under

Figure 5-19
RSO Housing Unit Losses, Historical and Projected 1996-2020, City of Los Angeles



Sources: City of Los Angeles Housing Department: General RSO Property Data for Each Property with 2 or More Units. (Projection partly based upon City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010.)

these regulations, the City requires RSO landlords to pay a relocation assistance fee to their displaced tenants ranging from $7,300 to $18,300 per unit.

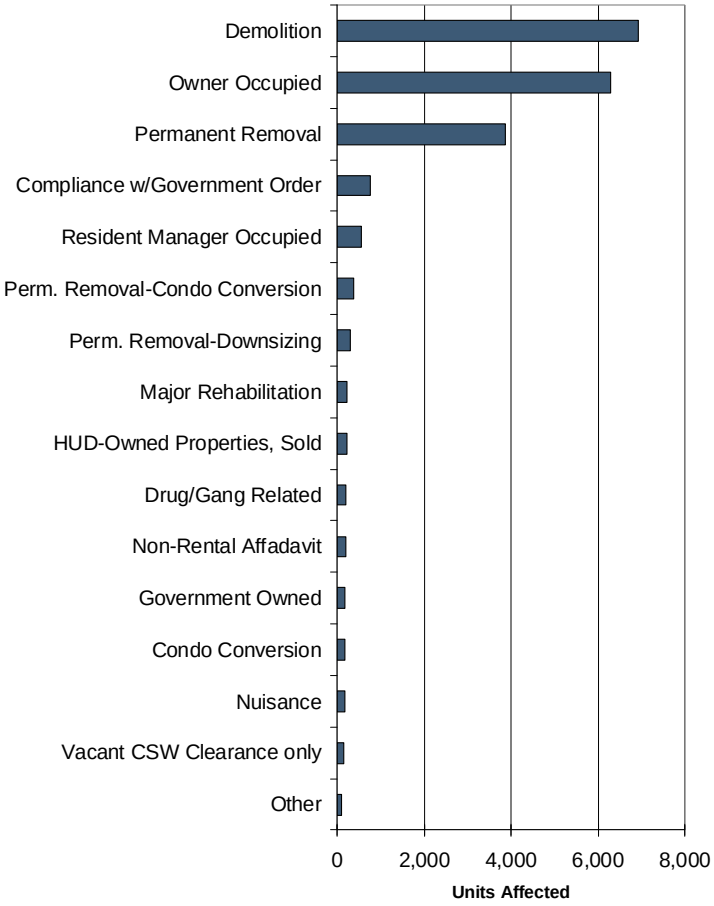
- The City levies a Rental Housing Production Fee on condominium conversions for the purpose of developing affordable housing.

Given these regulatory disincentives for demolitions and conversions of RSO units as well as the poor state of the economy, the Economic Roundtable projects a small number of RSO unit losses for the next several years, followed by a small surge at decade's end (Figure 5-19).[49] We project that the City of Los Angeles will lose 3,463 RSO housing units – 0.5% of current RSO stock – during the period 2010 to 2020. The projected up-swing in losses of RSO units at the end of the coming decade will be a part of the City's gradual economic recovery, wherein new housing construction will likely impact properties currently occupied by older apartment buildings as prices paid in the local housing market rise. Additionally, the region's persistent, ongoing housing shortage will add pressure to displace some low- and moderate-income households from the City's RSO units as that land is sought by developers with more capital, willing to hold RSO units vacant while preparing buildings for demolition or conversion. Lastly, the City may allow replacement of some smaller, older RSO apartment properties with larger, higher density apartment buildings. These development projects may include mitigations for the loss of RSO units, such as units with affordability restrictions.

The reasons for projected losses of RSO units can be inferred from Landlord Declarations of Intent to Evict, filed with the Los Angeles Housing Department voluntarily by rental property owners from 1999 to 2008 (Figure 5-20).[50] The most frequent types of declarations filed by landlords are for permanent removal and demolition of the unit from the rental market (demolition, etc.), or occupancy of the unit by the owner, owner's family member, or resident manager.

The most common types of evictions in RSO Units over the past decade are not the fault of tenants, but instead are due to demolitions and conversions. RSO properties, which

Figure 5-20
Landlord Declarations of Intent to Evict by Type and Number of Units Affected, 1999-2008



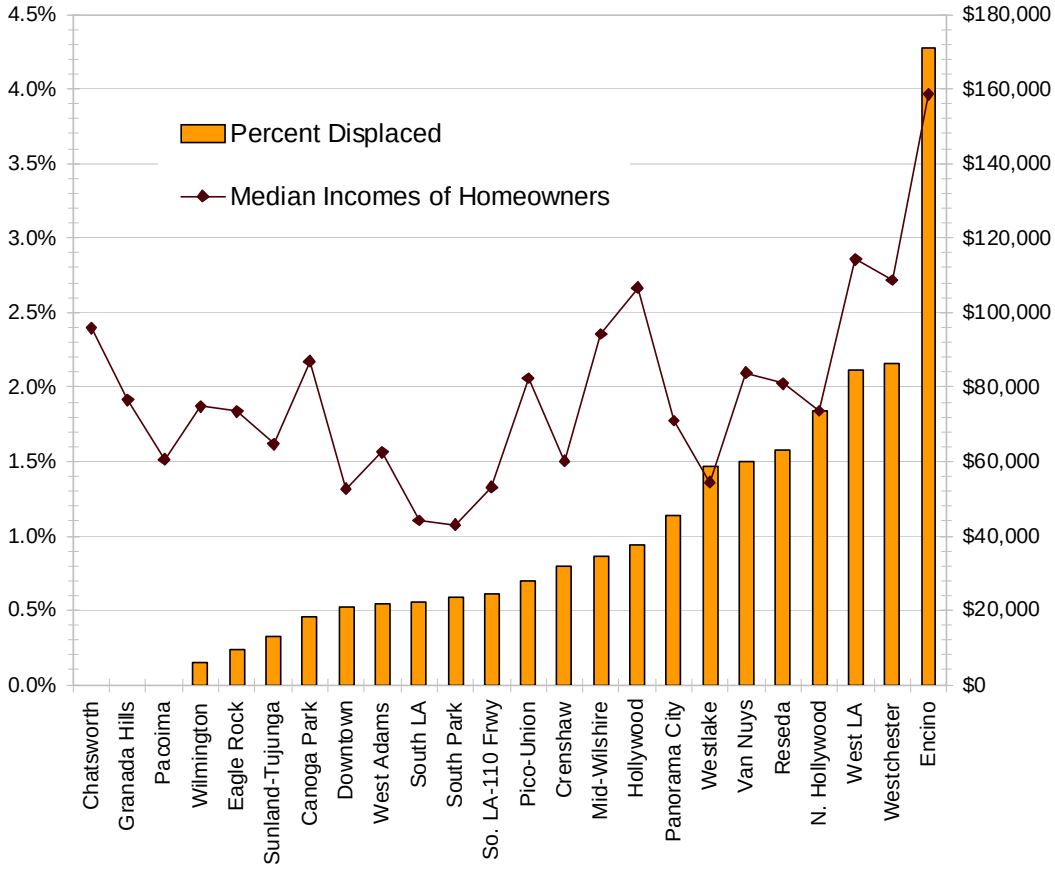
Source: Los Angeles Housing Department. 2008. Dataset 6: Landlord Declarations of Intent to Evict.

were built 30 or more years ago, may well continue to be attractive sites for new development, especially as the economy improves. These development projects will displace low- and moderate-income households, whose ability to find replacement housing at comparable rents will be challenged by the rising price of market-rate rental housing and the overall gentrification of some of the City's previously low-cost neighborhoods.

Community Income Levels and Loss of RSO Units

There is a partial correlation between loss of RSO units and the income levels of homeowners. When we compare the percent of RSO units that were converted to other use in different communities to the level of income in those communities, we find that some areas – namely the hot real estate markets of West Los Angeles and the South San Fernando Valley – have both the highest incomes and the highest percent of RSO units lost from 1997 through 2010 (Figure 5-21).[51] However, this is not an ironclad relationship. Some communities such as Hollywood, with higher incomes do not stand out as having a high percentage of the RSO inventory converted to other uses.

Figure 5-21
Percent of RSO Units Displaced 1997-2010 and Median Income of Homeowners, by Community



Sources: City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010 (Data on number of RSO units comes from the City of Los Angeles Housing Department: General RSO Property Data for Each Property with 2 or More Units.); U.S. Census Bureau, 2006-2008 American Community Survey 3-year PUMS.

Conclusions

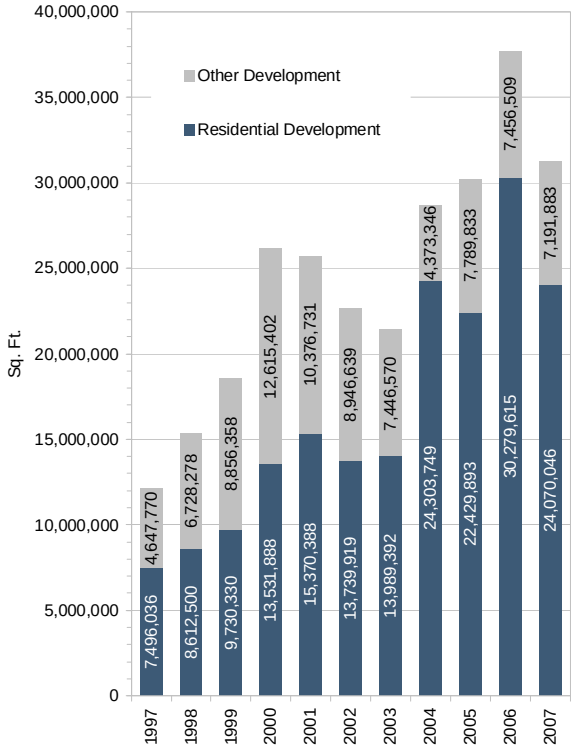
Losses of housing units under the RSO's jurisdiction or with affordability restrictions are likely to impact the City of Los Angeles' supply of housing for low- and moderate-income residents, especially as it seeks to increase housing options for these residents and address the severe housing shortage. From 2010-2020, we project that the City will experience the possible expiration of 20,487 affordability-restricted units and loss of 3,463 rent-stabilized housing units. This adds up to a projected total of 23,950 housing units lost.

Overall, by 2020, there is projected to be demand from lower income City residents (80 percent or less of AMI) for 574,963 affordable rental units. Concurrently, we project that existing financing mechanisms will enable the City to add 33,514 new units of affordable housing by 2020, with some of this progress offset by the aforementioned possible loss of current affordable housing and rent-stabilized units.

EFFECT OF NEW DEVELOPMENT SINCE 2000 ON DISPLACING SPECIAL NEEDS POPULATIONS FROM AFFORDABLE HOUSING

Introduction

Figure 5-22
Square Feet of New Development 1997-2007
City of Los Angeles



Source City of Los Angeles Department of Building and Safety

After slowly climbing out of the 1990s recession, which hit the Los Angeles region particularly hard, development in the City of Los Angeles reemerged in the early 2000s and boomed between 2004 and 2006. Shortly before entering the current recession, the total square feet of new development approved by the City of Los Angeles in 2006 was nearly three-times greater than it was in 1997, as shown in Figure 5-22.[52] Residential development accounted for 80 percent of all development at the peak in 2006.

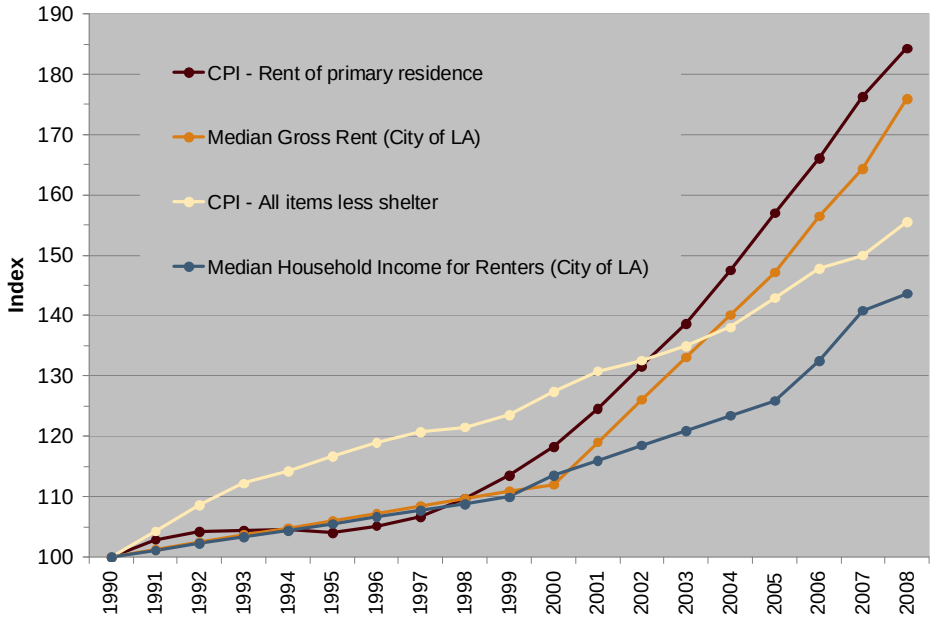
Thriving development and a hot real estate market during the first two-thirds of the decade translated into rapidly escalating housing costs for City residents. Unfortunately, while development thrived and housing costs increased, household incomes for residents increased at a rate far lower than housing costs. Figure 5-23[53] and Table 5-7 show the percent by which rent and household incomes have increased from 1990 to 2008 and also compares them to the Consumer Price Index (CPI) for rent of primary residence and all items less shelter. From 1990 to 2000, median gross rent and median household income for renters increased at a similar rate, growing 12 percent and 14 percent,

Table 5-7
Change since 1990 – CPI, Median Gross Rent and Median Renter Household Income

Time Period	CPI - Rent of Primary Residence	CPI - All Items Less Shelter	Median Gross Rent (City of LA)	Median Household Income for Renters (City of LA)
Change from 1990-2000	18%	27%	12%	14%
Change from 2000-2008	56%	22%	57%	27%

Sources: US Bureau of Labor Statistics, U.S Census Bureau.
Note: CPI data is for the Los Angeles-Riverside-Orange County region

Figure 5-23
Change since 1990 – CPI, Median Gross Rent and Median Renter Household Income



Sources: US Bureau of Labor Statistics, U.S Census Bureau

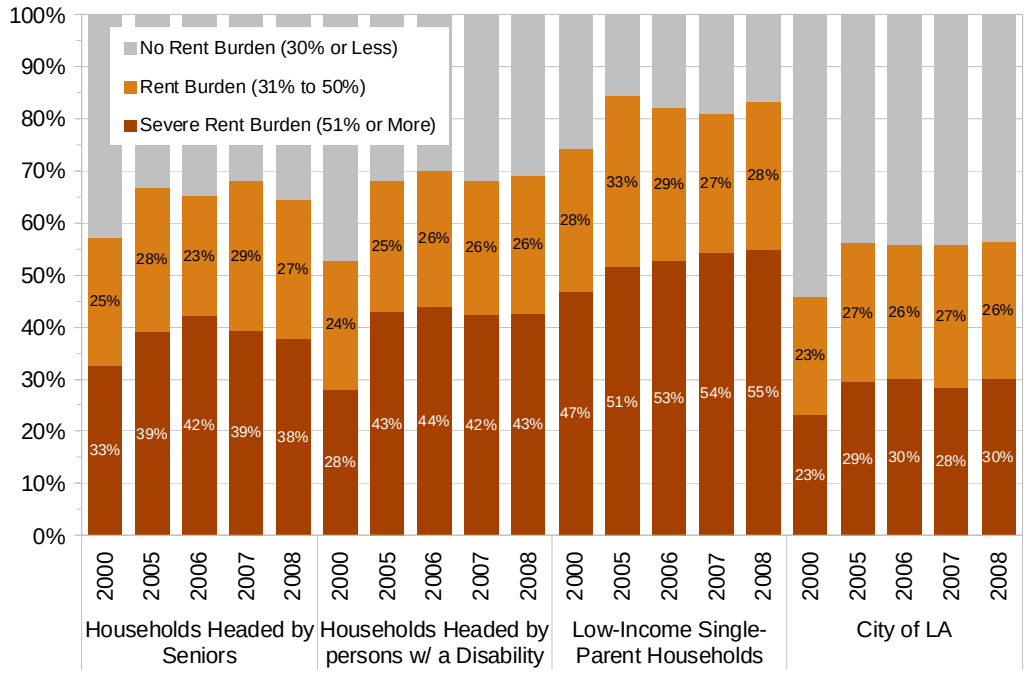
respectively. These increases were less than the overall CPI increases for the region. The picture is quite different for the time period between 2000 and 2008, when the increase in the cost of rent was twice as great as the increase in household incomes. This is illustrated in Figure 5-23 where the median household income for renters (blue line) and median gross rent (orange line) begin to diverge in 2000. From 2000 to 2008, the median gross rent in the City of Los Angeles increased by 57 percent, while the median household income for the City's renters only increased by 27 percent. Growth in the median gross rent outpaced increases in the CPI all items less shelter by 25 percentage points, as shown in Table 5-7.

This section examines the type of impact that new development since 2000 has had on four special needs populations – the elderly, individuals with disabilities, lower income single parent households and homeless persons. It specifically looks at how the market forces impacted the ability of these populations to secure affordable housing.

Rent Burden

Increases in income have not kept pace with rental housing costs. Since 2000, a larger share of renters in the City of Los Angeles became rent-burdened and a smaller share of households was able to secure housing at affordable rent levels. Rent-burden occurs when a household spends more than 30 percent of its income on rent. This 30 percent threshold is a commonly used benchmark of whether a household is able to afford rent without compromising their ability to pay for other household necessities.

Figure 5-24
Citywide Rent-Burden Rates, with Breakout Highlighting Special Needs Households



Sources: U.S. Census Bureau, 2000 PUMS: 2005, 2006, 2007 and 2008 American Community Survey 1-year PUMS

In 2000, less than half (46 percent) of renters citywide were rent-burdened. By 2005, the share of rent-burdened households in the City increased to 56 percent. Rent-burden rates have hovered around 56 percent from 2005 to 2008, as shown in Figure 5-24[54].

Older renters, renters with disabilities and low-income single-parent households[55], who often survive off of limited or fixed incomes and face barriers to employment, are particularly vulnerable to rising housing costs. Compared to the rent-burden rates for households citywide, rent-burden rates from 2005 to 2008 have been, on average:

- 18 percent higher for households headed by seniors
- 23 percent higher for households headed by persons with a disability
- 47 percent higher for low-income, single-parent households

Since 2000, smaller shares of renters have been able to secure housing at affordable rent levels. The reduction in the share of households that are able to secure affordable housing for each vulnerable sub-population (shown in Figure 5-24) can be summarized as follows:

- Households headed by seniors: In 2000, 45 percent of households were able to afford rent. By 2005, this share was reduced to one-third. On average, 34 percent of households from 2005 to 2008 were able to secure housing at affordable levels.

- Households headed by persons with a disability: In 2000, 48 percent of households were able to afford rent. By 2005, this share was reduced to 32 percent. On average, 31 percent of households from 2005 to 2008 were able to secure housing at affordable levels.
- Low-income, single-parent households: Of the three sub-populations of renters examined, low-income, single-parent households had the most difficult time securing affordable housing. In 2000, only a quarter of households were able to afford rent. By 2005, this share was further reduced to 16 percent. On average, 17 percent of these households were able to secure housing with affordable rent from 2005 to 2008.

Displacement and Length of Time in Housing

The rent-burden data in the previous section shows that renters in the City, particularly special needs populations, were impacted by rising rents during the boom years of development. It clearly shows that a larger share of vulnerable renters where unable to secure affordable housing after 2000. The period after 2000 was marked by rapid development, sharp increases in housing costs and sharp increases in the number of condominium conversions, peaking at 206 properties in 2006,[56] resulting in displacement of a significant number of households.

The question of whether vulnerable renters were displaced from affordable housing due to development after 2000 is important for formulating housing policy but it is difficult to answer this question with available data. We do not have good information about the characteristics of people who were displaced from housing or what happened to them after they were displaced.[57]

There are two data points that serve as proxies for quantifying displacement. One is the share of renters that are rent-burdened post-2000, another source of evidence about the impact of market forces on special needs populations. The second data point is turnover in rental units after 2000.

The length of time that renters have been living in their current units, as

Table 5-8
Length of Time Living in Current Rental Unit, City of Los Angeles

Households	Year	Length of Time Living in Current Unit			
		Less than 2 Years	*12 months or less*	*13 to 23 months*	**2+ Years**
Households Headed by Seniors	2000	12%	Data Not Available		88%
	2005	10%	7%	3%	90%
	2006	11%	6%	4%	89%
	2007	12%	8%	5%	88%
	2008	12%	9%	4%	88%
Households Headed by Persons w/ a Disability	2000	26%	Data Not Available		74%
	2005	21%	17%	5%	79%
	2006	17%	13%	5%	83%
	2007	18%	13%	5%	82%
	2008	20%	13%	7%	80%
Low-Income Single-Parent Households	2000	31%	Data Not Available		69%
	2005	26%	22%	5%	74%
	2006	30%	21%	8%	70%
	2007	30%	22%	8%	70%
	2008	30%	21%	8%	70%
City of LA	2000	30%	Data Not Available		70%
	2005	31%	23%	8%	69%
	2006	30%	22%	8%	70%
	2007	30%	22%	8%	70%
	2008	30%	22%	8%	70%

Sources: U.S. Census Bureau, 2000 PUMS: 2005, 2006, 2007 and 2008 American Community Survey 1-year PUMS

reported in the 2000 Decennial Census and 2005, 2006, 2007 and 2008 American Community Surveys, is shown in Table 5-8. Turnover rates have remained stable. This holds true for seniors, persons with disabilities and low-income single parents. This suggests that the run up in housing costs and residential property values during the housing bubble of the 2000s did not result in increased displacement rates among vulnerable renters, although for those affected, the negative consequences were severe.[58] In summary, the data shows:

- Renter households headed by seniors and persons with a disability tend to have less turnover and stay in their units longer than the average renter in the City. Since 2000, the share of these renter households who moved into their unit within the last two years has hovered around 11 percent and 20 percent, respectively. Each year, from 2005 to 2008, approximately 7 percent of senior renters and 14 percent of renters with disabilities moved into their unit after leaving their previous housing accommodations within the last year.[59]
- Low-income, single-parent renter households have turnover rates similar to renters citywide. Since 2000, the share of renters who moved into their unit within the last two years has hovered around 30 percent. From 2005 to 2008, just over a fifth of these renters moved into their current unit after leaving their previous housing accommodations within the last year.
- The turnover rate for renters citywide has not changed since 2000. The share of renters who moved into their unit within the last two years has remained at 30 percent. Annually, from 2005 to 2008, over a fifth of renters citywide moved into their current unit after leaving their previous housing accommodations within the last year.

Overall, the data on turnover (length of stay in current unit) for each subpopulation does not show any spike in turnover rates after 2000. Although there is some fluctuation, this data shows that roughly the same share of renters have moved in and out of housing units each year, with some subpopulations (i.e. seniors) having less turnover and longer lengths of stay in their current rental units than others. This, however, is not to say that special needs populations were not displaced from their units because of development and that the impacts of displacement were not severe. Rather, it generally shows that there have not been any unusual patterns in turnover since development picked up in 2000.

We have anecdotal information about the severe financial impact that renters must struggle with if they are displaced from fourteen households that were displaced from housing regulated by the City's Rent Stabilization Ordinance as a result of condominium conversions.[60] The amount of rent these households paid increased an average of 76 percent after they were displaced. One household reported a 21 percent decrease in rent, for the other thirteen households, rent increases ranged from 10 to 315 percent. The median rent increase after displacement was 58 percent. A sudden change in housing cost of this magnitude represents an extreme burden for most households, especially for special needs households.

Despite the difficulty of obtaining quantitative data about displaced households with special needs, two further housing issues should be noted. First, in the case of rental housing under the jurisdiction of the Rent Stabilization Ordinance (RSO), demolition of units is a significant loss because there is a fixed inventory of these units. The City cannot increase the stock of RSO housing.

Second, for special needs populations who experience displacement, the process of searching for nearby, affordable replacement housing is time consuming and requires overcoming possible mobility limitations. Seniors, households headed by persons with disabilities and single parents all are likely to experience greater difficulty finding new rental housing and moving their household members and belongings to that new home, especially if they are on fixed-incomes. The Los Angeles region's affordable housing shortage makes displacement especially challenging for renters with these types of special needs.

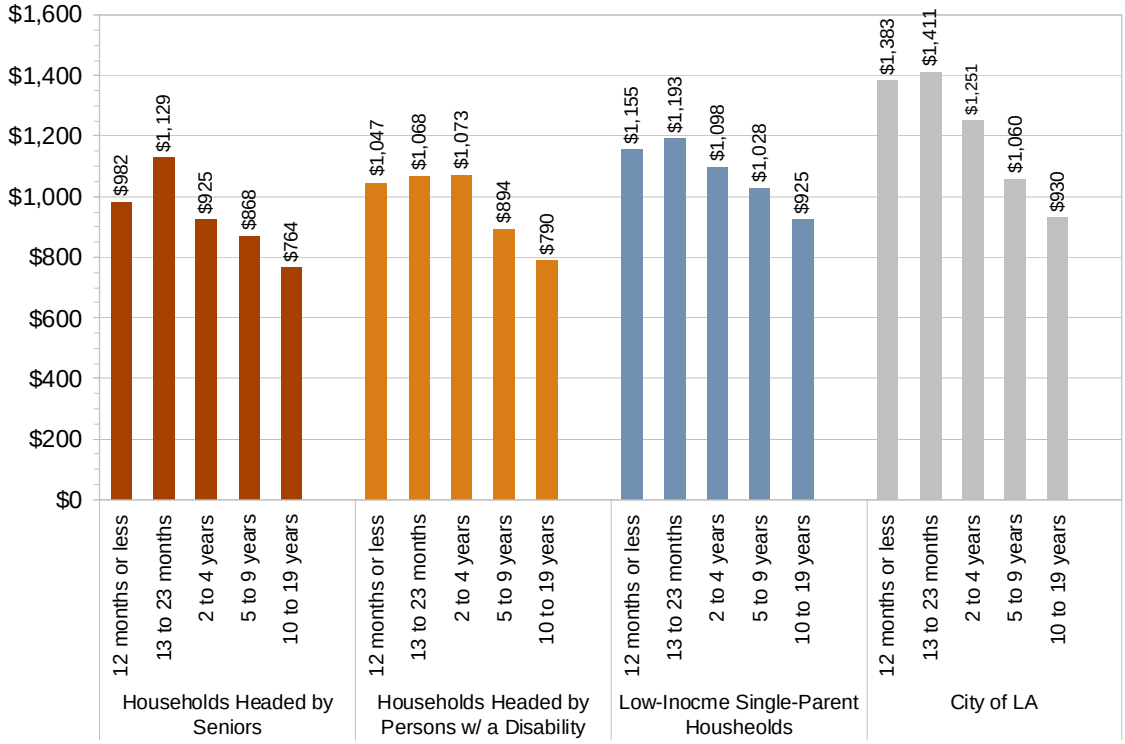
Length of Time in Housing and Rent

Renters move for various reasons; some willingly move to change location, while others may be forced out of their affordable units due to rising rents or redevelopment of their rental units through condominium conversion or demolition. Whatever the reason for moving, it appears that turnover rates in the City have remained fairly stable. The consequences for renters, who are forced to move out of their units opposed to those who willingly move out of their units, however, can be very different. Renters who willing move out of their units likely do so with the understanding that they can bear the current rent levels of the housing market. Renters who are displaced or forced out of their current units, on the other hand, are forced to bear market-rate rents regardless of whether they think they can afford them or not.

This is important because data shows that renters who stay in units longer tend to have lower rents than recent movers. If longer-term renters with affordable rents are displaced from their units, it is likely that they will be paying more for rent. Figure 5-25[61] shows the mean gross rent broken out by the length of stay in units for each subpopulation of vulnerable renters and renter citywide. This data shows:

- For *all renters* citywide, the mean gross rent for households who recently moved into their units (12 months or less) is $1,383. This is 13 percent higher than households who have been living in their units for 5 to 9 years and 33 percent higher than households who have been living in their units for 10 to 19 years.
- For households headed by *seniors*, the mean gross rent for households who recently moved into their units (12 months or less) is $982. This is 13 percent higher than households who have been living in their units for 5 to 9 years and 29 percent higher than households who have been living in their units for 10 to 19 years.
- For households headed by persons with a *disability*, the mean gross rent for households who recently moved into their units (12 months or less) is $1,047. This is 17 percent higher than households who have been living in their units for 5 to 9 years and 33 percent higher than households who have been living in their units for 10 to 19 years.
- For *low-income, single-parent* households, the mean gross rent for households that recently moved into their units (12 months or less) is $1,155. This is 12 percent higher than households who have been living in their units for 5 to 9 years and 25 percent higher than households who have been living in their units for 10 to 19 years.
- The difference in the rental rate between households headed by seniors and low-income single parents that recently moved into their units, $982 and $1,155 respectively, may be

Figure 5-25
Mean Gross Rent (2008$) for Households Headed by Seniors, Persons with a Disability and Low-Income Single Parents by Length of Time Living in Current Unit
City of Los Angeles



Source: U.S. Census Bureau, 2008 American Community Survey PUMS

related to the former's fixed income status. It also may be that households headed by seniors have access to senior housing facilities that offer cost savings. Lastly, the difference may reflect that households headed by seniors seek smaller units than households headed by low-income single parents, since the latter often need more bedrooms for children.

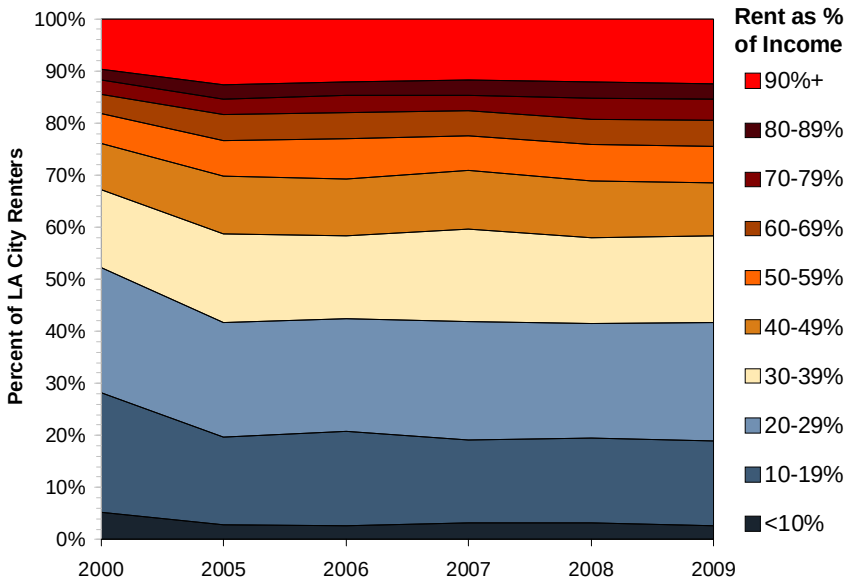
Although we cannot quantify the number or share of recent movers who were forced out or displaced from their units, we can assume that longer-term renters who were displaced from their affordable units are faced with paying higher levels of rent.

Homeless

Homelessness is often the result of multiple co-occurent adverse factors, with acute poverty being one factor and a personal or family crisis being the compounding factor that results in an individual or family losing their claim to shelter. The share of Los Angeles renters that are precariously housed, that is, paying 30 percent or more of their income for rent, making them vulnerable to displacement from housing, increased from 48 percent in 2000 to 58 percent from 2005 onwards, as can be seen in Figure 5-26.[62]

The share of households paying over half of their income for rent increased by a third between 2000 and 2009 – growing from 24 percent to 32 percent. Twelve percent of renters pay 90 percent or more of their income for rent – up from 10 percent in 2000.[63] These renters are acutely vulnerable to becoming homeless if they experience serious illness, loss of income or family dysfunctions such as domestic violence.

Figure 5-26
Gross Rent as a Percent of Income for Los Angeles Renters 2000-2009



Sources: U.S. Census Bureau 2000 Decennial Census, 2005-2008 American Community Survey Microdata files; 2009 American Community Survey table B25070. Distribution of 2009 rents over 50 percent of household income is estimated based on 2008 proportions.

The inventory of beds for homeless residents increased 80 percent from 2003 to 2009, from 16,677 to 30,015, as shown in Table 5-9. Even with this increase in beds, half of homeless residents remain unsheltered.[64]

Displacement of lower-rent housing units by higher-rent units undoubtedly increases the number of precariously housed individuals and increases the risk of homelessness for this growing share of the City's population.

Conclusions

Since 2000, increasing shares of households headed by seniors, people with disabilities and low-income single parents have not been able to secure affordable housing. The housing turnover rates among these groups of renters have remained stable since 2000, however when it is necessary for these renters to find new units, they typically are faced with significant rent increases, particularly if they had been long-term renters in RSO units. The mid-2000s housing boom saw a spike in the number of RSO units demolished or converted to condominiums or other uses. The City's supply of RSO units cannot be expanded due to state laws, so displaced renter households with special needs are left to

Table 5-9
Inventory of Year-Round Beds for Homeless Residents of Los Angeles County 2003-2009

	Emergency Shelter Beds	Transitional Housing Beds	Permanent Housing Beds	Total Beds
2003	3,894	9,543	3,240	16,677
2005	4,366	9,578	5,326	19,270
2007	4,240	7,869	6,326	18,435
2008	5,323	11,177	8,077	24,577
2009	5,137	12,183	12,695	30,015

Source: Los Angeles County Homeless Services Authority Continuum of Care 2003, 2005, 2007, and 2009. This data does not include the cities of Glendale, Long Beach or Pasadena.

vie with other renters facing the regions' housing shortage for fewer of these units. And they do so while facing mobility constraints and other barriers.

Thirty-two percent of renters in the City pay over half of their income for rent; 12 percent pay 90 percent or more of their income for rent. As new development displaces older, more affordable rental housing and the residents that occupied that housing, the number of precariously housed renters increases. The lowest income, most severely rent burdened segment of this population is at risk of homelessness.

Chapter 6

Conclusions and Policy Recommendations

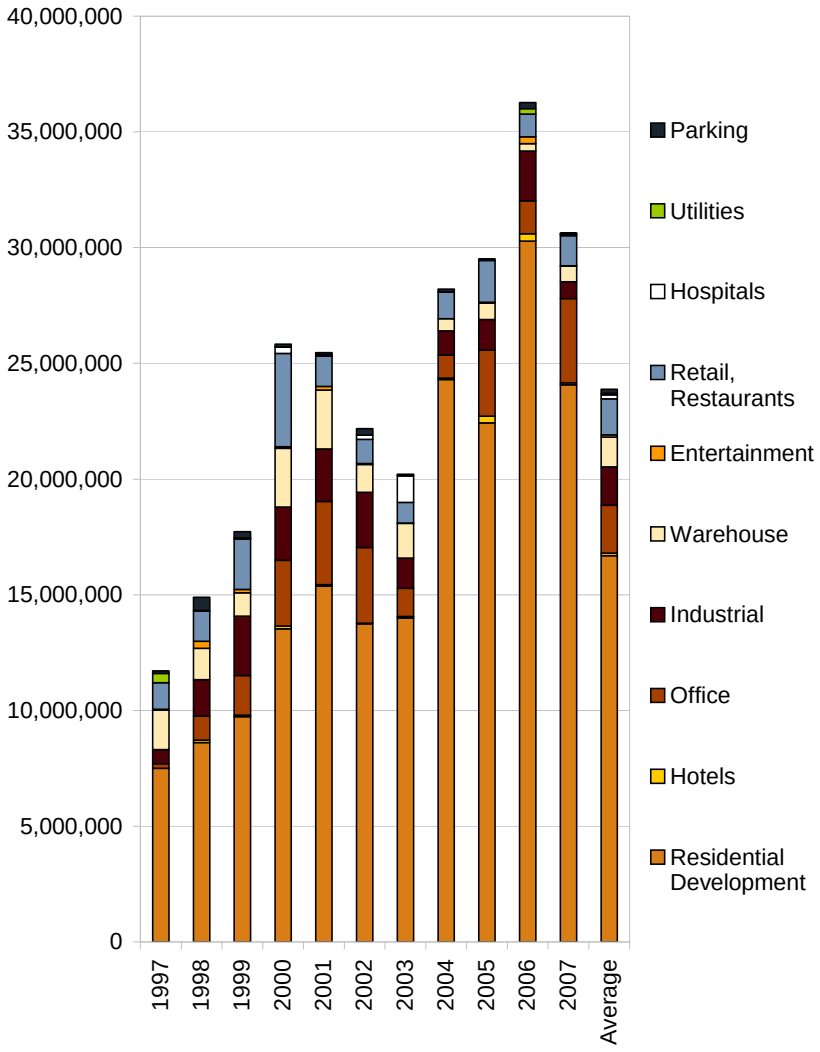
New commercial development creates additional demand for affordable housing because some of the workers who will be employed will not earn enough money to afford market-rate rental housing in the City of Los Angeles.

New residential development also creates jobs as a result of household consumption, and some of these jobs do not pay enough for workers to afford housing. Residential development generates less demand for affordable housing than commercial development on a square foot basis, but the overall volume of market-rate housing development in Los Angeles creates a significant demand for affordable housing, as can be seen in Figure 6-1.[1] From 1997 through 2007, there was an annual average of 24,543,916 square feet of new development in Los Angeles, with 68 percent of this for residential uses.

In 2010, the City's Housing Department and Community Redevelopment Agency provided over 53,000 units of affordable housing and there were over 530,000 households that needed affordable housing, leaving 475,000 low-income households without housing they could afford (Figure 6-2).[2] In the absence of new sources of revenue for building affordable housing, this unmet demand is projected to grow to 493,000 households by 2020.

If an affordable housing benefit fee is enacted, it will provide a revenue stream to finance construction of additional affordable housing units. Figure 6-2 shows three scenarios, with the fee amount pegged to different shares of

Figure 6-1
Annual Square Feet of New Development in the City of Los Angeles by Parking Category 1997 to 2007



Source: City of Los Angeles Department of Building and Safety

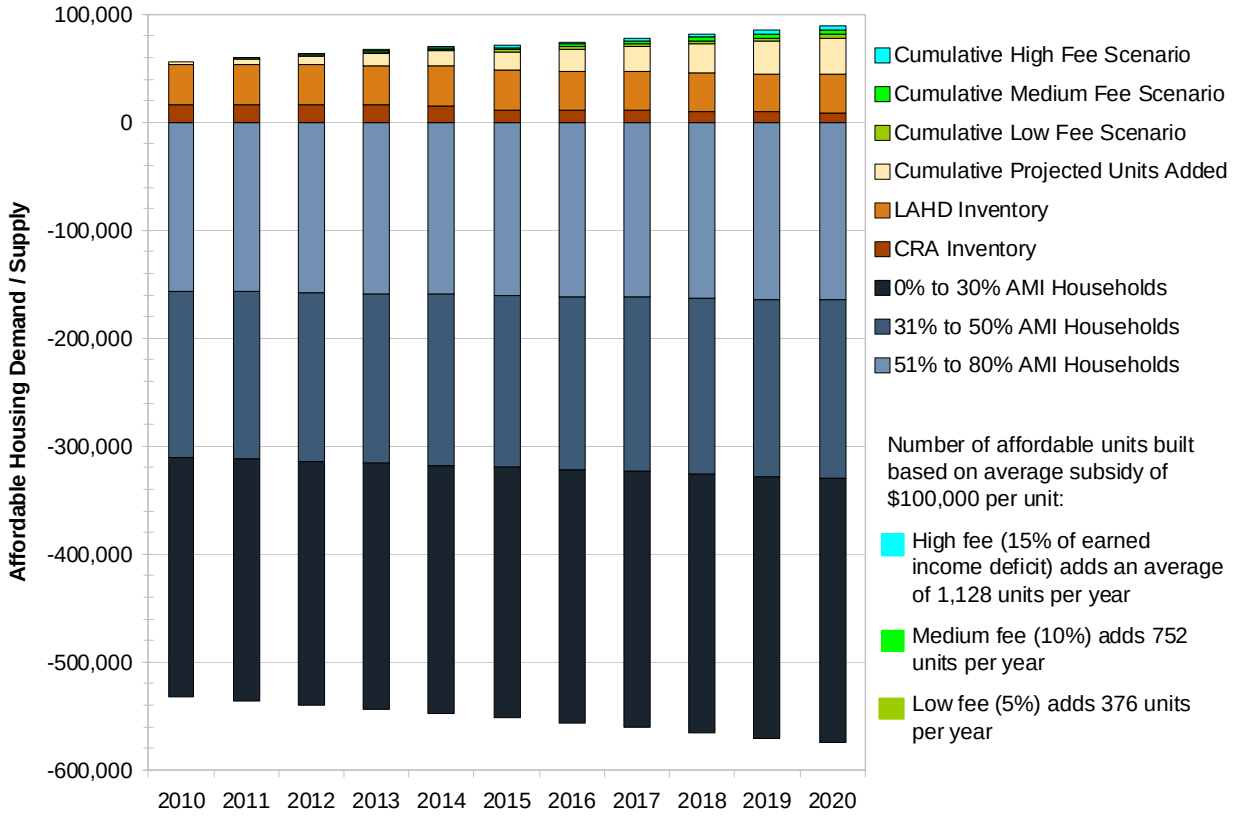
the demand for affordable housing created by new development:

- A fee equal to 5 percent of the demand created by development (low fee scenario) will finance an estimated 3,760 additional affordable units in the next decade.
- A fee equal to 10 percent of the demand created by development (medium fee scenario) will finance an estimated 7,521 affordable units in the next decade.
- A fee equal to 15 percent of the demand created by development (high fee scenario) will finance an estimated 11,281 additional affordable units in the next decade.

The projected level of affordable housing production is based on the assumption that the City's Affordable Housing Trust Fund dollars will be leveraged with loans and grants from Federal and State agencies as well as the capital markets, and that the average City investment will be $100,000 per unit. This also assumes that State and Federal funding will remain at 2003-2009 levels.

Since its inception in 2003 to 2009, the Affordable Housing Trust Fund's annual budget has ranged from $23 million to $119 million, as can be seen in Figure 6-3. The average annual budget has been $65 million. A fee equal to 5 percent of the demand generated by new development will generate approximately $37 million annually, an amount equal to low-end

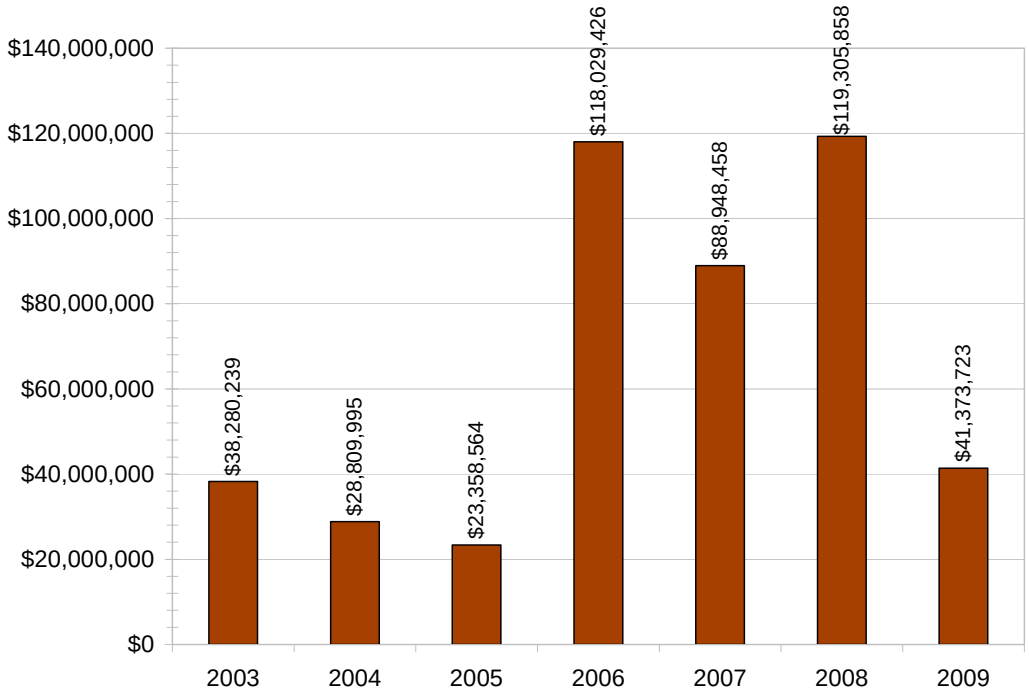
Figure 6-2
The Big Picture: Projected Supply of and Demand for Affordable Housing, City of Los Angeles 2010-2020



Sources: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction 8-04-2010) and "All Renewal Mechanism Projects" (data extracted 10-14-2010); LAHD Policy & Planning Unit: "Citywide Affordable Housing Database" (data extracted 07-15-2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (data extracted: 10-14-2010).

range of the Trust Fund budget. A fee equal to 15 percent of demand generated by new development will add about $112 annually to the Trust Fund budget, doubling the current production level of affordable housing units by the City's Housing Department.

Figure 6-3
Annual Budget of the City of Los Angeles Affordable Housing Trust Fund 2003-2009



Source: City of Los Angeles Housing Department

Linkage between New Development and Affordable Housing Demand – The Jobs-Housing Nexus

The *nexus* between property development and demand for affordable housing is the earned income deficit between the mean annual rent for an apartment in the City and the amount of earned income that workers who fill jobs created by these developments can pay for rent without becoming rent burdened. Workers are considered rent-burdened when they pay more than 30 percent of their household's income for rent. Rental costs rather than construction costs for new housing have been used in this analysis because the results are more conservative and stable.

Households of workers living in Los Angeles with incomes that are 80 percent or less of the Area Median Income (AMI) typically cannot afford market-rate rent with only 30 percent of their earned income, and thus have an *earned income deficit*. The mean annual earned income deficits for worker households in the three lowest AMI bands are:

- $10,455 for extremely-low income households (0 to 30 percent of AMI)
- $5,994 for very-low income households (31 percent to 50 percent of AMI)
- $1,235 for low-income (51 to 80 percent of AMI)

The building permit classification process used by the City of Los Angeles makes it possible to differentiate 29 develop categories for different types of buildings that will be used by different types of industries. Every industry has some workers whose earnings put them into

one of the three lowest AMI bands, ranging from 11 percent of utility workers to 67 percent of restaurant workers. Citywide, the average for all development categories is 45 percent. The earnings distribution among workers in each development category enables us to estimate the mean earned income deficit for the labor force in that sector.

Two adjustment factors have been taken into consideration in converting the mean annual earned income deficit per worker into a deficit per square foot. First, the demand for affordable housing is based on households and not on individual workers. There is an average of 1.6 workers per worker household in the City, which means that a worker requiring affordable housing typically needs only 62.5 percent of a housing unit. Second, the life span of a building determines the total housing impact per worker. Based on Internal Revenue Service depreciation schedules this lifespan is 39 years for commercial buildings and 27.5 years for residential buildings.

Table 6-1
Total Earned Income Deficit per Square Foot

Development Category	Total Earned Income Deficit per Square Foot (2009$)
Airports	$36
Amusement – Spectator sports	$46
Amusement – Recreation or amusement	$103
Churches	$36
Gas Service Stations	$369
Hospitals (General)	$63
Hospitals (Convalescent)	$159
Hotels	$46
Manufacturing (Moderate Hazard)	$88
Manufacturing (Low Hazard)	$92
Manufacturing (High Hazard)	$62
Misc. Bldg or Structure (High Hazard)	$214
Misc. Bldg or Structure (Moderate Hazard)	$192
Misc. Bldg or Structure (Low Hazard)	$137
Office Buildings (F.I.R.E., Business)	$38
Offices (Couriers and Delivery Services)	$155
Owner-Occupied Condominium	$10
Owner-Occupied Single Family Home	$5
Public Garage (Parking Lots & Garages)	$41
Public Garage (Auto Repair, etc.)	$115
Public and Private Utilities	$9
Renter-Occupied Apartment	$7
Restaurants	$274
Retail B (Rental & Leasing Centers)	$97
Retail M (Grocery, Office Supplies, Florists)	$82
Schools	$52
Swimming Pools/Spas	$90
Theatres	$27
Warehouse B (e.g. Motion Picture & Video)	$19
Warehouse M (Merchant Wholesalers)	$57
Warehouse S (Transportation)	$162
Average for All Non-residential Development	**$69**

Source: U.S. Census Bureau, 2005-2007 American Community Survey; Economic Roundtable analysis

Businesses in the City of Los Angeles occupy a mean of 746 square feet of improved building space per job, with this amount varying from 233 square feet for gas service stations to 1,871 square feet for utilities. When the earned income deficit is projected over the life of buildings and adjusted for the square feet of space per job, we get the *earned income deficit per square foot* of new development. The average deficit for commercial development is $69 per square foot, although it varies widely among different types of development. Table 6-1 shows the deficit per square foot for each development category.

Converting buildings to new uses alters the earned income deficit that is generated. Converting apartments to condominiums increases the deficit; converting industrial buildings to residential uses lowers the deficit.

Benefits of Affordable Housing

Increasing the supply of affordable housing throughout the City

can strengthen the jobs-housing balance and lead to mutually beneficial outcomes for low- and moderate-income residents and their employers. The benefits accruing to employers of low- and moderate-income workers include having increased access to workers within a convenient commuting radius to their work sites, who live in healthier, safer and more permanent housing and who have longer-term, more stable connections to their communities. This increased residential permanency and predictability means fewer turnovers of workers and higher retention rates for trained, productive workers.

Housing that is very difficult for workers to afford and sometimes overcrowded, and work commutes that are time-consuming, sometimes without a large enough mobility radius to reach higher-paying jobs, all increase the likelihood of worker turnover. Workers can find themselves forced to quit their jobs when they are displaced from housing because they cannot afford the rent, when overcrowding results in untenable living conditions, or when time-consuming commutes conflict with family needs.

Stable, affordable housing that workers can afford and that is not overcrowded is a strong incentive to remain in the same place, which is likely to reduce worker turnover and create significant cost savings for employers. It costs an estimated 30 percent of a worker's annual salary to replace that worker. Stable, decent and affordable housing located near workers' jobs is likely to reduce the frequency of worker turnover and result in significant cost savings for employers.

Transit-Oriented Districts as Sites for Affordable Housing

Transit oriented districts (TODs) provide advantageous sites for affordable housing. These districts comprise the area within a half-mile radius of subway and light-rail stations, affording a comfortable walking distance for accessing public transit. Thirty-two percent of the affordable housing inventory created by the Housing Department and Community Redevelopment Agency is in TODs, as are 18 percent of the City's rent stabilized units. There are strong arguments for preserving and expanding the affordable housing inventory in TODs.

Los Angeles' poorest households have fewer cars, making it more difficult for their employed members to get to their jobs. Among Los Angeles households whose incomes are 80 percent or less of the Area Median Income, 20 percent have no vehicle, while another 46 percent have access to just one vehicle. Given that many of the City's working poor families rely on more than one income earner, and that buying, maintaining and using a private vehicle is expensive, locating affordable housing in TODs where there is ready access to public transit creates efficiencies for these households, reducing the disadvantage of not having access to cars.

Workers who use public transit to commute to their jobs save an estimated $831 per month, or $9,967 per year, in private transportation costs tied to automobile use, including operating and workplace parking costs. When the private transportation costs are combined with the gap between the cost of affordable housing and the cost of market rate housing, the annual value of affordable housing in a TOD is:

- $20,422 for extremely-low income households (0 to 30 percent of AMI)
- $15,961 for very-low income households (31 to 50 percent of AMI)
- $11,202 for low-income households (51 to 80 percent of AMI)

Projected Levels of Demand for Affordable Housing

Population growth and composition will determine the amount and type of affordable housing needed in the next decade. Since 2000, increasing shares of households headed by seniors, people with disabilities and low-income single parents have not been able to secure affordable housing. Currently, only 34 percent of households headed by a senior, 32 percent of households headed by a person with a disability, and 17 percent of households headed by a low-income single parent are able to secure housing with rent they can afford.

The number of households headed by seniors is projected to increase 45 percent over the next decade, compared to 3 percent growth in renter households headed by persons under 65. Nearly 85 percent of all renter households headed by seniors fall in the three lowest AMI bands.

Job growth will lead to population growth, and to additional demand for affordable housing. Forty-five percent of new jobs that will be created over the next decade are projected to be in the 3 lowest AMI bands, paying workers insufficient wages to afford market rate rents in the City of Los Angeles. The number of workers in the three lowest AMI bands is projected to increase 11 percent by 2020. In addition, low-income workers whose jobs result from the household consumption of occupants of new market rate housing built in the City over the coming decade are projected to need 3,639 units of affordable housing.

In the face of this growing demand for affordable housing, the City is projected to add 33,514 new units of affordable housing by 2020 with existing financial tools, with some of this progress offset by the possible loss of current affordable housing and rent-stabilized units. The City is projected to lose as many as 20,487 affordability-restricted units when the agreements for those units expire without renewal, and 3,463 rent-stabilized housing units after they are converted to other uses. This adds up to a projected total of 23,950 housing units lost. The City's progress towards meeting the large demand for affordable housing will be substantially augmented if additional funding becomes available through an affordable housing benefit fee.

Policy Options for an Affordable Housing Benefit Fee

Impact of a Potential Benefit Fee on the City's Overall Affordable Housing Demand

The potential impacts of an affordable housing benefit fee may be borne by landowners, developers, investors, or end users, depending on whether a development is sold to an investor or held by the developer, and whether market conditions will allow the fees to be passed on to end users. However, the impacts are relatively low in almost all scenarios because the potential affordable housing benefit fee comprises such a small portion of total development costs in every category.

It is most likely that the impact of benefit fees would be absorbed by landowners who would experience a diminution in the prices that developers and investors would be willing to pay for their properties. This would occur except in cases where the current use value of land approaches the value associated with development in a more profitable use (e.g. land with an existing apartment building significant in size relative to the highest permitted use). Other actors in the development process are less likely to absorb the fees, because either their profit margins

cannot withstand the additional cost of the fee or because, as consumers in a buyer's market, they can choose sites that do not require absorption of this cost.

Owners of vacant parcels or obsolete properties are potentially the most impacted by the imposition of an affordable housing benefit fee. This is because developers may lower the offering price for land to offset the cost of the fee to achieve their target rate of return and profit margin, while owners of properties with low value – compared to the value of the property after it is developed for a more profitable use – have limited options. Property owners can either develop their land to a more profitable use themselves, or sell the property at the reduced price offered by the developer. As a result, landowners may experience a decline in the price of land equivalent to the amount of the affordable housing benefit fee. This dynamic with vacant parcels will at most affect a small share of property transactions in the City because there are few vacant parcels to be sold. From 2003 to 2008, there were only 8,200 sales of vacant parcels out of a total of 217,000 property sales.

Table 6-2
Earned Income Deficit and Tipping Point for Developments by Parking Categories

Developments by Parking Category	Earned Income Deficit per SF	Tipping Point per SF as 5% of Development Cost	Tipping Point as % of Deficit
Entertainment – Recreation	$102.70	$43.19	42%
Theatre	$26.93	$83.25	309%
Hospitals (General)	$63.32	$25.47	40%
Hospitals (Convalescent)	$158.94	$29.64	19%
Hotel-20 Rooms	$46.37	$12.16	26%
Hotel-250 Rooms	$46.37	$16.34	35%
Industrial >50,000 SF	$88.05	$12.10	14%
Industrial 8,000 SF	$88.05	$12.85	15%
Warehouse >50,000 SF	$68.96	$8.50	12%
Warehouse 8,000 SF	$68.96	$12.14	18%
Gas Service Stations	$368.24	$25.87	7%
Public Garage (Auto Repair)	$114.52	$16.95	15%
Public Garage (Parking, etc.)	$41.26	$11.29	27%
Small Office- 2 Story	$37.96	$12.65	33%
High Rise Office	$37.96	$16.90	45%
Restaurants	$273.83	$43.20	16%
Retail Strip Center >50,000 SF	$81.69	$20.12	25%
Retail Strip Center <10,000 SF	$81.69	$14.51	18%
Multifamily High Rise	$6.65	$12.48	188%
Multifamily 8 Units	$6.65	$12.16	183%

Source: Economic Roundtable

It is difficult to identify the tipping point for a fee that will make development infeasible. This is due to project-by-project variability in financing, land and building costs, market vacancy, rent, profit margins, threshold rates of return, and developer financial capacity. However, the impact of a hypothetical affordable housing benefit fee can be measured in terms of the ratio of the fee to development cost. As long as the fee represents a relatively low proportion of total development costs (i.e., up to five percent of total costs), the fee's impact on development should be nominal.

The tipping point is significantly below the earned income deficit per square foot for all of the commercial development categories analyzed, but not for residential development. The highest affordable housing benefit fee that can be imposed without deterring development is estimated to be 5 percent of total development cost.

Table 6-2 shows the earned income deficit, the tipping point, and the tipping point as a percent of the deficit for each development category for which financial scenarios were analyzed. The tipping point is typically about a quarter of the earned income deficit, although gasoline station, warehouse, industrial, garage, restaurant, and strip retail projects have significantly lower tipping points as a percent of the earned income deficit, and residential developments have much higher tipping points.

The experiences of other jurisdictions are informative for the City of Los Angeles as it determines whether an affordable housing benefit fee should be adopted, and if so the level of the fee. Among the cities surveyed for this study, fee levels did not exceed $20 per square foot for any development category. The average fee per square foot in the cities surveyed was $4.16. The greatest determinant in the amount of revenue an affordable housing benefit fee generates is the volume of development subjected to the fee as opposed to the level of fee itself.

After establishing a housing linkage fee, one of the challenges in maintaining its long-term efficacy is periodically adjusting the fee level to keep pace with inflation. Most jurisdictions accomplish this by tying annual adjustments of the linkage fee to consumer price or construction cost indices; however, these indices do not take into account changes in land values, which may be the most volatile of development costs. As a result, the fee can become obsolete over time relative to the cost of affordable housing development. Several jurisdictions surveyed obtained a new nexus study to justify a significant increase to the housing linkage fee.

When a jurisdiction adopts a benchmark such as the Consumer Price Index or a construction cost index for adjusting the fee, it is not abdicating its authority to suspend fees temporarily as circumstances require. Multiple California jurisdictions recently exercised their authority to suspend all development fees in response to the Great Recession of 2008. However, the criteria for exercising the authority to suspend or reinstate fees should be easy to administer, transparent and objective.

Granting authority to an administrative level of local government to oversee amendments to the implementation of the linkage fee will provide flexibility in the implementation of the linkage fee program and enable timely response to economic or other conditions.

Building Support to Adopt the Affordable Housing Benefit Fee

The initial adoption as well as subsequent significant amendments to a housing linkage fee can involve extremely contentious negotiation among diverse constituents, which is why building a broad base of support for a linkage fee is critical to its adoption. Based on case histories of housing linkage fees among some of the jurisdictions surveyed in this study, the political negotiations and occasional legal battles delayed the ultimate adoption of a linkage fee for years. The adoption and implementation of a linkage fee ordinance has typically required both significant leadership from political decision makers and a successful constituency campaign. Some of the most contentious battles over linkage fees were ultimately litigated in favor of adoption of the challenged fee. There has never been a successful legal challenge to a linkage fee in California. In the California cases, a key component of the legal defense was the nexus study that justified the proportionality of the fee to the impacts it is supposed to ameliorate.

Considerations in Applying a Linkage Fee to New Development

There are multiple ways to establish and impose a housing linkage fee. Some of the cities surveyed impose a uniform fee across all development categories; others limit the applicability of the fee to discrete development types, or geographic areas. While each of these approaches serves a purpose unique to the locality, limiting the applicability of the fee reduces the City's potential to expand the resource available to the Affordable Housing Trust Fund. Almost all jurisdictions with such limitations expressed a desire to expand the applicability of the linkage fee.

Reducing the fee or exempting development in disinvested areas of the City is not recommended because (1) the correlation between disinvested neighborhoods and low employment growth is inconsistent, and (2) demand for affordable housing is a Citywide issue.

The variable fee schedule that is being recommended incorporates both the earned income deficit generated by different types of development and the ability of each type of development to support a fee without reaching a tipping point at which development becomes infeasible. This approach equitably distributes the cost of providing affordable housing. It also optimizes the potential for generating revenue.

California's legislation regulating the imposition of fees is based on the standard that differences in fees and taxes are valid if they have a plausible or rational basis. Consequently, the level of fee imposed as a percentage of deficit-per-square-foot may vary among development categories as long as there is a reason for the variation.

To optimize the potential for revenue the City may, at its discretion, apply the fee Citywide to all classes of real estate regardless of threshold size, and exempt discrete development categories such as public buildings, affordable housing, and nonprofit facilities.

Collecting the linkage fee in one lump sum prior to the start of construction maximizes the present value of the fee, but this approach increases a developer's construction financing requirements. Securing the developer's linkage fee obligation during construction and collecting a higher level of fees over time, starting when construction is completed, lowers the amount of construction financing needed by the developer, and provides the City with a more consistent stream of revenue, which facilitates longer range planning and budgeting. The City does not otherwise benefit from the extended payment approach because the future value of fees is equivalent to the discounted present value when paid earlier in the development process.

Unlike other affordable housing funding sources available to the City that typically carry restrictions; housing linkage fees may be used in a wide variety of ways to support affordable housing. Since linkage fees are locally generated, the determination of how the funds will be used is also locally determined and other jurisdictions have used fee revenue for capital investment, rental subsidies, as well as administrative costs of the housing trust fund and affordable housing development organizations.

Housing linkage fees alone cannot address Los Angeles' entire affordable housing demand, but they can complement other housing funding sources, give the City a high level of discretion with regard to how to use the funds, and generate millions of dollars for affordable housing with nominal administrative cost to the City. The negotiation leading up to the adoption of a linkage fee ordinance is the primary challenge to using this fee to expand the available resources for providing affordable housing.

Policy Decisions

Information from this study shows that there is a large and growing demand for affordable housing in the City of Los Angeles and that it is feasible to impose a fee to pay a portion of the public cost for meeting the demand for affordable housing that is generated by new development without deterring further new development. Policy decisions for the City of Los Angeles in deciding whether and how to implement an affordable housing benefit fee are summarized below.

1. *Should a fee be imposed* on new development to offset some of the demand for affordable housing that will be generated by that development?
2. Should there be a *threshold size* for developments that are subject to the fee? Should small projects, for example, under 10,000 square feet, be excluded?
3. What *level of fee* should be imposed? Should the fee be based on the different tipping point for different types of development? Alternatively, should the fee be a uniform percent of the earned income deficit for all development categories?
4. What is the *adjustment mechanism* for the fee? Should it be adjusted annually based on an index of construction costs in the Los Angeles region?

There is wide variation in the earned income deficit generated by different types of development, as well as the level of fee that different types of development can afford to pay. If an affordable housing benefit fee is approved by the City of Los Angeles, the policy decisions listed above identify opportunities for tailoring the fee to ensure the feasibility of continued development in the City while also offsetting some of the demand for affordable housing that will be generated by new projects.

Increasing affordable housing supply across the City will provide employers with access to workers who live in healthier, safer and more permanent housing that is closer to work sites and will increase retention rates for trained, productive workers. Reduced worker turnover will result in cost savings for employers.

Glossary of Terms

Adjustment factors: Factors that impact the demand for affordable housing and that are taken into consideration when converting the mean annual earned income deficit per worker into a deficit per square foot.

Affordable housing benefit fee: A fee for commercial development that recovers a portion of the public cost for meeting the demand for affordable housing that results when some of the workers employed in new development are unable to afford market-rate rental housing in the City of Los Angeles.

Affordable housing: Housing, including utilities, that households are able to obtain by paying 30 percent or less of their income.

American Community Survey: An annual survey conducted by the U.S. Census Bureau that produces social, economic, housing and demographic information each year that is similar to what is produced through the official population census of the United States that is conducted every ten years.

AMI band: An income breakout of families expressed as a percentage of the Area Median Income.

APC: Area Planning Commission region, or major sub-City planning area. There are seven APCs in the City: Harbor, South LA, Central LA, East LA, West LA, South Valley, and North Valley.

Area Median Income (AMI): The median is the mid point dividing a group into equal parts, one-half above the median and one-half below. Each year, HUD estimates the median family income for an area. The estimate is adjusted for different family sizes so that family incomes may be expressed as a percentage of the area median income to define limits for eligibility in a variety of housing programs. For example, a family's income may equal 80 percent of the area median income. Generally, eligibility for housing programs is defined in terms of the ratio of household income to area median income. Eighty percent of area median income is a common maximum income level for participation in HUD programs. As of 2010, the HUD definition of area median income for Los Angeles County was $62,100 per year for a household of four.

Best practice: A best practice is a process or procedure that produces a desired outcome in the most effective and efficient manner. As applied to housing linkage fee programs in California jurisdictions, the ultimate test of best practice is an ordinance that not only optimizes revenue for local housing programs but also withstands legal challenge.

Capitalization rate analysis: An analysis of how a potential affordable housing benefit fee could impact the return of investors in transactions where investors leverage capital to purchase a completed property and offer it for rent.

Capitalization rate: Often called the *cap rate* – it is the ratio between the net operating income produced by an asset and its capital cost. It identifies the rate at which a real estate investment's net operating income returns the cost of the development.

CPA: Community Planning Area; there are 36 CPAs in the City, they provide a geographic framework for community level planning.

Development category: Categories of real estate development that can be differentiated through building permit classifications and that typically house different types of industries.

Earned income deficit per square foot: The cumulative per square foot impact that each development type has on affordable housing demand over the life of the building.

Earned income deficit: The gap between the mean annual rent for an apartment in the City of Los Angeles and the amount of earned income that households can pay for an affordable rent, which is no more than 30 percent of the household's earned income.

Gentrification: Displacement of low- and moderate-income residents by more affluent residents who pay more for housing.

Impact fee: Under California's Mitigation Fee Act, a development impact fee is defined as: *a monetary exaction…charged by a local agency to the applicant in connection with approval of a development project for the purpose of defraying all or a portion of the cost of public facilities related to the development project (Government Code Sec 66000 (b)).*

In-Lieu Fee: A fee assessed on new development as an alternative to provided required affordable housing.

Jobs-housing linkage: The linkage between new commercial development and affordable housing demand based on the wages of workers employed in different types of developments and workers' ability to afford market-rate rental housing in the City of Los Angeles

Land valuation analysis: An analysis of how a potential affordable housing benefit fee could impact land values in transactions where developers adjust their offering prices for land in order to offset the cost of public fees.

Linkage program: A framework under which a fee may be assessed citywide on commercial developments that create jobs with wages that are insufficient to pay the cost of rental housing.

Market-rate housing: Housing that is rented or purchased in the open market without public sector regulation or subsidy of prices.

Nexus: The connection between new property development and future demand for affordable housing, quantified by the earned income deficit.

Occupancy group: Subcategories within use categories that are assigned by the Los Angeles Department of Building and Safety as part of the building permit process based on construction standards specified in the International Building Code.

Overcrowding: A housing unit is overcrowded when there are 1.01 or more persons per room. This is equivalent to having 4 people residing in a typical one-bedroom apartment that has 3 rooms – a living room, bedroom and kitchen. This definition is the HUD standard.

PUMA: Public Use Microdata Area from the American Community Survey and the Decennial Census. Each PUMA defines a geographic area for which the Census Bureau tabulates public use microdata sample (PUMS) data. There are 24 PUMAs in the City of Los Angeles.

PUMS: Public Use Microdata Sample from the American Community Survey and the Decennial Census. These computerized files contain a small sample of individual records, with identifying information removed, from the census long form and from the American Community Survey showing the population and housing characteristics of the people included on those forms. Each record is weighted so that the sample can be expanded to reflect the entire population of a given area, for example, the City of Los Angeles.

Rent Burden: Households spending more than 30 percent of their income on housing costs are rent burdened and may have difficulty affording other basic household necessities. Households spending more than 50 percent of their income on housing costs are severely rent burdened. This definition is the HUD standard.

Return on investment analysis: An analysis of how a potential affordable housing benefit fee could impact developer in transactions where the developer absorbs the fee.

Square feet per job: The typical number of square feet of improved building space per job in each industry.

Threshold rent analysis: An analysis of how a potential affordable housing benefit fee could impact rent levels for tenants in transactions where the developer offsets the fee by passing on the cost to tenants or property purchasers who are end users.

Tipping point: The fee level that makes development infeasible.

Use category: Classifications of types of buildings, for example, church, hotel, manufacturing, office, warehouse. These classifications are assigned by the Los Angeles Department of Building and Safety as part of the building permit process.

Worker household: A stable household unit that collectively pays the cost of housing. These can be workers that live in families, workers living alone, and workers living with partners. At least one member must be age 16 to 64, employed (full- or part-time) in the civilian workforce, and have earned income.

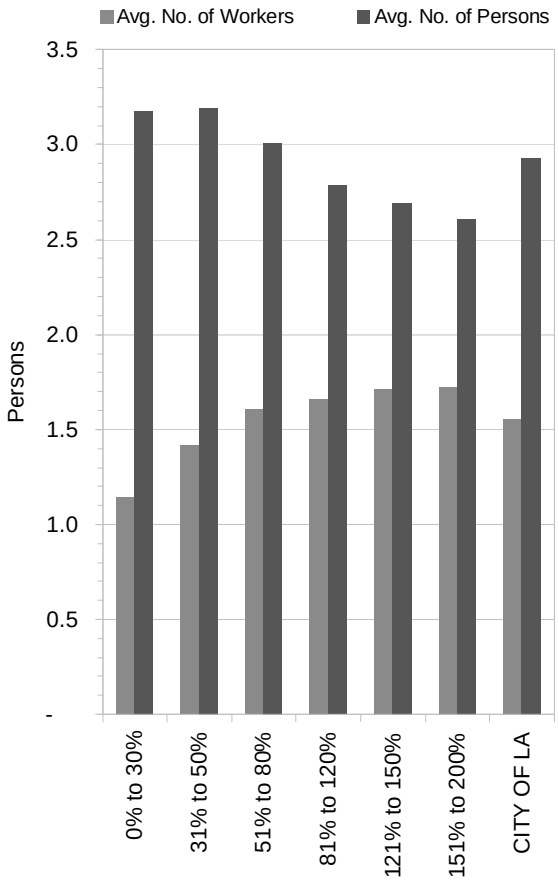
Appendices: Chapter 1

Appendix 1-1

Socioeconomic Structure of Worker Households

An examination of the socioeconomic structure of worker households shows a negative relationship between household size and income levels and a positive relationship between the number of workers and income levels. In other words, worker households in the lower income AMI bands tend to have fewer workers earning income and larger households to support than worker households in the higher income bands. This relationship is shown in Figure A1. At one end of the spectrum, extremely low income households (0 percent to 30 percent AMI) have on average 1.1 workers and 3.2 household members. Worker households in the highest income band, on the other hand, have an average of 1.7 workers and 2.6 household members. This relationship between earned income, the number of workers, and household size has implications on a household's ability to obtain adequate housing in the City of Los Angeles. When adding new, market-rate commercial and residential development, the City's challenge is to avoid simultaneously increasing the number of worker households that are overcrowded and/or paying excessive amounts of their income to pay for housing costs.

Figure A1
Average Number of Workers and Persons in Worker Households by AMI Band



Source: U.S. Census Bureau, 2005-2007 American Community Survey; ERT Analysis

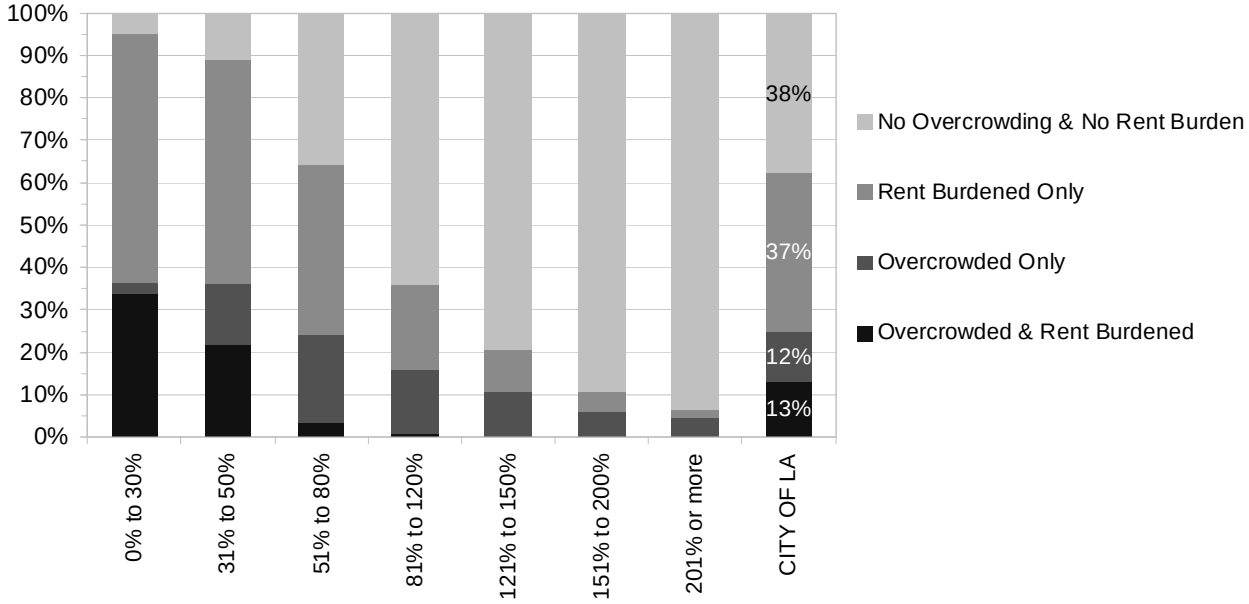
Overcrowding and Rent Burden Rates for Worker Households

HUD defines a housing unit as being overcrowded when there are 1.01 or more persons per room. This is equivalent to having 4 people residing in a typical one-bedroom apartment that has 3 rooms – a living room, bedroom and kitchen. Also, according to HUD definitions, households spending more than 30 percent of their

income on housing costs are considered to be rent burdened and may have difficulty affording other basic household necessities.

In the City of Los Angeles, 62 percent of all worker households that rent their homes are either overcrowded or rent burdened (13 percent are overcrowded and rent burdened, 12 percent are only overcrowded and 37 percent are only rent burdened), as shown in Figure A2. A disproportionate share of worker households in the lower income AMI bands are inadequately housed, facing extremely high rates of overcrowding and rent burden. This is not a surprise given that worker households in the lower income AMI bands have lower levels of income, have fewer workers to share the burden of paying for rent, and have more household members to support and house. Ninety-five percent of extremely low income (0 percent to 30 percent AMI) worker households and 89 percent of very low income (31 percent to 50 percent AMI) worker households are either overcrowded or rent burdened. These rates are 52 percent and 43 percent, respectively, higher than overall rates for worker households in the City.

Figure A2
Overcrowding and Rent Burden Rates for Renter Worker Households by AMI Bands



Source: U.S. Census Bureau, 2005-2007 American Community Survey

Appendix 1-2

Correspondence table for Economic Roundtable development categories, linking Building Types from the Los Angeles Department of Building and Safety's Plan Check And Inspection System (PCIS) to the businesses that occupy them, with NAICS titles and 4-digit codes.

Airports:
- Scheduled Air Transportation (4811)
- Nonscheduled Air Transportation (4812)
- Support Activities for Air Transportation (4881)

Amusement - Recreation or amusement:
- Museums, Historical Sites, and Similar Institutions (7121)
- Amusement Parks and Arcades (7131)
- Gambling Industries (7132)
- Other Amusement and Recreation Industries (7139)

Amusement - Spectator sports:
- Other Schools and Instruction (6116)
- Spectator Sports (7112)

Churches:
- Religious Organizations (8131)

Gas Service Stations:
- Gasoline Stations (4471)

Hospitals (General):
- General Medical and Surgical Hospitals (6221)
- Psychiatric and Substance Abuse Hospitals (6222)
- Specialty (except Psychiatric and Substance Abuse) Hospitals (6223)

Hospitals (Convalescent):
- Nursing Care Facilities (6231)
- Residential Mental Retardation, Mental Health and Substance Abuse Facilities (6232)
- Community Care Facilities for the Elderly (6233)
- Other Residential Care Facilities (6239)

Hotels:
- Traveler Accommodation (7211)
- RV (Recreational Vehicle) Parks and Recreational Camps (7212)
- Rooming and Boarding Houses (7213)

Manufacturing (Moderate Hazard):
- Animal Food Manufacturing (3111)
- Grain and Oilseed Milling (3112)
- Sugar and Confectionery Product Manufacturing (3113)
- Fruit and Vegetable Preserving and Specialty Food Manufacturing (3114)
- Dairy Product Manufacturing (3115)
- Animal Slaughtering and Processing (3116)
- Bakeries and Tortilla Manufacturing (3118)
- Tobacco Manufacturing (3122)
- Fiber, Yarn, and Thread Mills (3131)
- Fabric Mills (3132)
- Textile and Fabric Finishing and Fabric Coating Mills (3133)
- Textile Furnishings Mills (3141)
- Other Textile Product Mills (3149)
- Apparel Knitting Mills (3151)
- Cut and Sew Apparel Manufacturing (3152)
- Apparel Accessories and Other Apparel Manufacturing (3159)
- Leather and Hide Tanning and Finishing (3161)
- Footwear Manufacturing (3162)
- Other Leather and Allied Product Manufacturing (3169)
- Sawmills and Wood Preservation (3211)
- Veneer, Plywood, and Engineered Wood Product Manufacturing (3212)
- Other Wood Product Manufacturing (3219)
- Pulp, Paper, and Paperboard Mills (3221)
- Converted Paper Product Manufacturing (3222)
- Printing and Related Support Activities (3231)
- Soap, Cleaning Compound, and Toilet Preparation Manufacturing (3256)
- Other Chemical Product and Preparation Manufacturing (3259)
- Plastics Product Manufacturing (3261)
- Rubber Product Manufacturing (3262)
- Agriculture, Construction, and Mining Machinery Manufacturing (3331)
- Industrial Machinery Manufacturing (3332)
- Commercial and Service Industry Machinery Manufacturing (3333)
- Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing (3334)
- Metalworking Machinery Manufacturing (3335)
- Engine, Turbine, and Power Transmission Equipment Manufacturing (3336)
- Other General Purpose Machinery Manufacturing (3339)
- Computer and Peripheral Equipment Manufacturing (3341)
- Communications Equipment Manufacturing (3342)
- Audio and Video Equipment Manufacturing (3343)
- Semiconductor and Other Electronic Component Manufacturing (3344)
- Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (3345)
- Manufacturing and Reproducing Magnetic and Optical Media (3346)
- Electric Lighting Equipment Manufacturing (3351)
- Household Appliance Manufacturing (3352)
- Electrical Equipment Manufacturing (3353)
- Other Electrical Equipment and Component Manufacturing (3359)
- Motor Vehicle Manufacturing (3361)
- Motor Vehicle Body and Trailer Manufacturing (3362)

- Motor Vehicle Parts Manufacturing (3363)
- Aerospace Product and Parts Manufacturing (3364)
- Railroad Rolling Stock Manufacturing (3365)
- Ship and Boat Building (3366)
- Other Transportation Equipment Manufacturing (3369)
- Household and Institutional Furniture and Kitchen Cabinet Manufacturing (3371)
- Office Furniture (including Fixtures) Manufacturing (3372)
- Other Furniture Related Product Manufacturing (3379)
- Medical Equipment and Supplies Manufacturing (3391)
- Other Miscellaneous Manufacturing (3399)
- Electronic and Precision Equipment Repair and Maintenance (8112)
- Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Mai (8113)

Manufacturing (Low Hazard):

- Seafood Product Preparation and Packaging (3117)
- Other Food Manufacturing (3119)
- Beverage Manufacturing (3121)
- Clay Product and Refractory Manufacturing (3271)
- Glass and Glass Product Manufacturing (3272)
- Cement and Concrete Product Manufacturing (3273)
- Lime and Gypsum Product Manufacturing (3274)
- Other Nonmetallic Mineral Product Manufacturing (3279)
- Iron and Steel Mills and Ferroalloy Manufacturing (3311)
- Steel Product Manufacturing from Purchased Steel (3312)
- Alumina and Aluminum Production and Processing (3313)
- Nonferrous Metal (except Aluminum) Production and Processing (3314)
- Foundries (3315)
- Forging and Stamping (3321)
- Cutlery and Handtool Manufacturing (3322)
- Architectural and Structural Metals Manufacturing (3323)
- Boiler, Tank, and Shipping Container Manufacturing (3324)
- Hardware Manufacturing (3325)
- Spring and Wire Product Manufacturing (3326)
- Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing (3327)
- Coating, Engraving, Heat Treating, and Allied Activities (3328)
- Other Fabricated Metal Product Manufacturing (3329)

Manufacturing (High Hazard):

- Petroleum and Coal Products Manufacturing (3241)
- Basic Chemical Manufacturing (3251)
- Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing (3252)
- Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing (3253)
- Pharmaceutical and Medicine Manufacturing (3254)
- Paint, Coating, and Adhesive Manufacturing (3255)

Misc. Bldg or Structure (High Hazard):

- Waste Collection (5621)
- Waste Treatment and Disposal (5622)
- Remediation and Other Waste Management Services (5629)

Misc. Bldg or Structure (Moderate Hazard):

- Residential Building Construction (2361)
- Nonresidential Building Construction (2362)
- Utility System Construction (2371)
- Land Subdivision (2372)
- Highway, Street, and Bridge Construction (2373)
- Other Heavy and Civil Engineering Construction (2379)
- Foundation, Structure, and Building Exterior Contractors (2381)
- Building Equipment Contractors (2382)
- Building Finishing Contractors (2383)
- Other Specialty Trade Contractors (2389)

Misc. Bldg or Structure (Low Hazard):

- Oilseed and Grain Farming (1111)
- Vegetable and Melon Farming (1112)
- Fruit and Tree Nut Farming (1113)
- Greenhouse, Nursery, and Floriculture Production (1114)
- Other Crop Farming (1119)
- Cattle Ranching and Farming (1121)
- Hog and Pig Farming (1122)
- Poultry and Egg Production (1123)
- Sheep and Goat Farming (1124)
- Aquaculture (1125)
- Other Animal Production (1129)
- Timber Tract Operations (1131)
- Forest Nurseries and Gathering of Forest Products (1132)
- Logging (1133)
- Fishing (1141)
- Hunting and Trapping (1142)
- Support Activities for Crop Production (1151)
- Support Activities for Animal Production (1152)
- Support Activities for Forestry (1153)
- Oil and Gas Extraction (2111)
- Coal Mining (2121)
- Metal Ore Mining (2122)
- Nonmetallic Mineral Mining and Quarrying (2123)
- Support Activities for Mining (2131)

Office Buildings (F.I.R.E., Business):

- Newspaper, Periodical, Book, and Directory Publishers (5111)
- Software Publishers (5112)
- Sound Recording Industries (5122)
- Radio and Television Broadcasting (5151)
- Cable and Other Subscription Programming (5152)
- Wired Telecommunications Carriers (5171)
- Wireless Telecommunications Carriers (except Satellite) (5172)
- Satellite Telecommunications (5174)
- Other Telecommunications (5179)
- Data Processing, Hosting, and Related Services (5182)
- Other Information Services (5191)
- Monetary Authorities-Central Bank (5211)
- Depository Credit Intermediation (5221)
- Nondepository Credit Intermediation (5222)
- Activities Related to Credit Intermediation (5223)
- Securities and Commodity Contracts Intermediation and Brokerage (5231)
- Securities and Commodity Exchanges (5232)
- Other Financial Investment Activities (5239)

- Insurance Carriers (5241)
- Agencies, Brokerages, and Other Insurance Related Activities (5242)
- Insurance and Employee Benefit Funds (5251)
- Other Investment Pools and Funds (5259)
- Lessors of Real Estate (5311)
- Offices of Real Estate Agents and Brokers (5312)
- Activities Related to Real Estate (5313)
- Lessors of Nonfinancial Intangible Assets (except Copyrighted Works) (5331)
- Legal Services (5411)
- Accounting, Tax Preparation, Bookkeeping, and Payroll Services (5412)
- Architectural, Engineering, and Related Services (5413)
- Specialized Design Services (5414)
- Computer Systems Design and Related Services (5415)
- Management, Scientific, and Technical Consulting Services (5416)
- Scientific Research and Development Services (5417)
- Advertising, Public Relations, and Related Services (5418)
- Other Professional, Scientific, and Technical Services (5419)
- Management of Companies and Enterprises (5511)
- Office Administrative Services (5611)
- Facilities Support Services (5612)
- Employment Services (5613)
- Business Support Services (5614)
- Travel Arrangement and Reservation Services (5615)
- Investigation and Security Services (5616)
- Business Schools and Computer and Management Training (6114)
- Technical and Trade Schools (6115)
- Other Schools and Instruction (6116)
- Educational Support Services (6117)
- Offices of Physicians (6211)
- Offices of Dentists (6212)
- Offices of Other Health Practitioners (6213)
- Outpatient Care Centers (6214)
- Medical and Diagnostic Laboratories (6215)
- Home Health Care Services (6216)
- Other Ambulatory Health Care Services (6219)
- Individual and Family Services (6241)
- Community Food and Housing, and Emergency and Other Relief Services (6242)
- Vocational Rehabilitation Services (6243)
- Child Day Care Services (6244)
- Promoters of Performing Arts, Sports, and Similar Events (7113)
- Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures (7114)
- Independent Artists, Writers, and Performers (7115)
- Grantmaking and Giving Services (8132)
- Social Advocacy Organizations (8133)
- Civic and Social Organizations (8134)
- Business, Professional, Labor, Political, and Similar Organizations (8139)

Offices (Couriers and Delivery Services):

- Couriers and Express Delivery Services (4921)
- Local Messengers and Local Delivery (4922)

Public Administration:

- Executive, Legislative, and Other General Government Support (9211)
- Justice, Public Order, and Safety Activities (9221)
- Administration of Human Resource Programs (9231)
- Administration of Environmental Quality Programs (9241)
- Administration of Housing Programs, Urban Planning, and Community Development (9251)
- Administration of Economic Program (9261)
- Space Research and Technology (9271)
- National Security and International Affairs (9281)

Public Garage (Parking Lots & Garages):

- Other Personal Services (8129)

Public Garage (Auto Repair, etc.) :

- Automotive Repair and Maintenance (8111)

Public and Private Utilities:

- Electric Power Generation, Transmission and Distribution (2211)
- Natural Gas Distribution (2212)
- Water, Sewage and Other Systems (2213)

Restaurants:

- Full-Service Restaurants (7221)
- Limited-Service Eating Places (7222)
- Special Food Services (7223)
- Drinking Places (Alcoholic Beverages) (7224)

Retail B (Rental & Leasing Centers):

- Automotive Equipment Rental and Leasing (5321)
- Consumer Goods Rental (5322)
- General Rental Centers (5323)
- Commercial and Industrial Machinery and Equipment Rental and Leasing (5324)
- Business Support Services (5614)
- Investigation and Security Services (5616)
- Personal and Household Goods Repair and Maintenance (8114)
- Personal Care Services (8121)
- Death Care Services (8122)
- Drycleaning and Laundry Services (8123)
- Other Personal Services (8129)

Retail M (Grocery, Office Supplies, Florists):

- Automobile Dealers (4411)
- Other Motor Vehicle Dealers (4412)
- Automotive Parts, Accessories, and Tire Stores (4413)
- Furniture Stores (4421)
- Home Furnishings Stores (4422)
- Electronics and Appliance Stores (4431)
- Building Material and Supplies Dealers (4441)
- Lawn and Garden Equipment and Supplies Stores (4442)
- Grocery Stores (4451)
- Specialty Food Stores (4452)
- Beer, Wine, and Liquor Stores (4453)
- Health and Personal Care Stores (4461)
- Clothing Stores (4481)
- Shoe Stores (4482)
- Jewelry, Luggage, and Leather Goods Stores (4483)
- Sporting Goods, Hobby, and Musical Instrument Stores (4511)
- Book, Periodical, and Music Stores (4512)
- Department Stores (4521)
- Other General Merchandise Stores (4529)
- Florists (4531)

- Office Supplies, Stationery, and Gift Stores (4532)
- Used Merchandise Stores (4533)
- Other Miscellaneous Store Retailers (4539)
- Electronic Shopping and Mail-Order Houses (4541)
- Vending Machine Operators (4542)
- Direct Selling Establishments (4543)

Schools:

- Elementary and Secondary Schools (6111)
- Junior Colleges (6112)
- Colleges, Universities, and Professional Schools (6113)
- Other Schools and Instruction (6116)

Swimming Pools/Spas:

- Other Amusement and Recreation Industries (7139)

Theatres:

- Performing Arts Companies (7111)

Warehouse B (eg. Motion Picture & Video):

- Motion Picture and Video Industries (5121)
- Postal Service (4911)

Warehouse M (Merchant Wholesalers):

- Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers (4231)
- Furniture and Home Furnishing Merchant Wholesalers (4232)
- Lumber and Other Construction Materials Merchant Wholesalers (4233)
- Professional and Commercial Equipment and Supplies Merchant Wholesalers (4234)
- Metal and Mineral (except Petroleum) Merchant Wholesalers (4235)
- Electrical and Electronic Goods Merchant Wholesalers (4236)
- Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers (4237)
- Machinery, Equipment, and Supplies Merchant Wholesalers (4238)
- Miscellaneous Durable Goods Merchant Wholesalers (4239)
- Paper and Paper Product Merchant Wholesalers (4241)
- Drugs and Druggists' Sundries Merchant Wholesalers (4242)
- Apparel, Piece Goods, and Notions Merchant Wholesalers (4243)
- Grocery and Related Product Merchant Wholesalers (4244)
- Farm Product Raw Material Merchant Wholesalers (4245)
- Chemical and Allied Products Merchant Wholesalers (4246)
- Petroleum and Petroleum Products Merchant Wholesalers (4247)
- Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers (4248)
- Miscellaneous Nondurable Goods Merchant Wholesalers (4249)
- Wholesale Electronic Markets and Agents and Brokers (4251)

Warehouse S (Transportation):

- Rail Transportation (4821)
- Deep Sea, Coastal, and Great Lakes Water Transportation (4831)
- Inland Water Transportation (4832)
- General Freight Trucking (4841)
- Specialized Freight Trucking (4842)
- Urban Transit Systems (4851)
- Interurban and Rural Bus Transportation (4852)
- Taxi and Limousine Service (4853)
- School and Employee Bus Transportation (4854)
- Charter Bus Industry (4855)
- Other Transit and Ground Passenger Transportation (4859)
- Pipeline Transportation of Crude Oil (4861)
- Pipeline Transportation of Natural Gas (4862)
- Other Pipeline Transportation (4869)
- Scenic and Sightseeing Transportation, Land (4871)
- Scenic and Sightseeing Transportation, Water (4872)
- Scenic and Sightseeing Transportation, Other (4879)
- Support Activities for Rail Transportation (4882)
- Support Activities for Water Transportation (4883)
- Support Activities for Road Transportation (4884)
- Freight Transportation Arrangement (4885)
- Other Support Activities for Transportation (4889)
- Warehousing and Storage (4931)
- Services to Buildings and Dwellings (5617)
- Other Support Services (5619)

Appendix 1-3

Labor and Commute Shed Report, City of Los Angeles

**** 54 percent of workers employed in the City of LA live outside of the City. ****

2008 Labor Shed Report -- Where Workers LIVE who are Employed in the City of LA

Total Workers EMPLOYED in City of LA

	2008 Count	2008 Share
	1,384,032	100.0%
LIVING IN (cities):	**Count**	**Share**
Los Angeles city, CA	636,693	46.0%
Glendale city, CA	26,918	1.9%
Santa Clarita city, CA	24,812	1.8%
Long Beach city, CA	21,837	1.6%
Burbank city, CA	16,641	1.2%
Santa Monica city, CA	16,224	1.2%
Inglewood city, CA	16,117	1.2%
Simi Valley city, CA	14,036	1.0%
Pasadena city, CA	12,615	0.9%
Torrance city, CA	12,239	0.9%
All Other Locations	585,900	42.3%
LIVING IN (counties):	**Count**	**Share**
Los Angeles County, CA	1,128,340	81.5%
Orange County, CA	65,131	4.7%
Ventura County, CA	44,277	3.2%
San Bernardino County, CA	40,521	2.9%
San Diego County, CA	26,906	1.9%
Riverside County, CA	25,592	1.8%
Kern County, CA	7,520	0.5%
Santa Barbara County, CA	4,684	0.3%
San Mateo County, CA	4,627	0.3%
San Francisco County, CA	3,853	0.3%
All Other Locations	32,581	2.4%

2008 Commute Shed Report -- Where Workers are EMPLOYED who Live in the City of LA

Total Workers LIVING in City of LA

	2008 Count	2008 Share
	1,273,398	100.0%
WORKING IN (cities):	**Count**	**Share**
Los Angeles city, CA	636,693	50.0%
Burbank city, CA	57,778	4.5%
Santa Monica city, CA	33,519	2.6%
Glendale city, CA	25,335	2.0%
Beverly Hills city, CA	25,201	2.0%
Culver City city, CA	21,342	1.7%
Pasadena city, CA	18,070	1.4%
Torrance city, CA	16,828	1.3%
Long Beach city, CA	16,239	1.3%
West Hollywood city, CA	16,089	1.3%
All Other Locations	406,304	31.9%
WORKING IN (counties):	**Count**	**Share**
Los Angeles County, CA	1,081,262	84.9%
Orange County, CA	61,549	4.8%
Ventura County, CA	25,257	2.0%
San Bernardino County, CA	20,730	1.6%
San Diego County, CA	19,636	1.5%
Riverside County, CA	14,444	1.1%
San Francisco County, CA	7,095	0.6%
Kern County, CA	5,338	0.4%
Santa Barbara County, CA	3,889	0.3%
Santa Clara County, CA	3,709	0.3%
All Other Locations	30,489	2.4%

Source: US Census Bureau, LED OnTheMap origin-Destination Database (Beginning of Quarter Employment, 2nd Quarter 2008); Primary Jobs

Labor and Commute Shed Report, Los Angeles County

**** 23 percent of workers employed in LA County live outside of the County ****

2008 Labor Shed Report -- Where Workers LIVE who are Employed in Los Angeles County

Total Workers EMPLOYED in LA County

	2008	
	Count	**Share**
	3,671,022	100.0%
LIVING IN (counties):	**Count**	**Share**
Los Angeles County, CA	2,837,311	77.3%
Orange County, CA	258,271	7.0%
San Bernardino County, CA	169,942	4.6%
Ventura County, CA	95,853	2.6%
Riverside County, CA	92,439	2.5%
San Diego County, CA	78,873	2.1%
Kern County, CA	25,015	0.7%
Santa Barbara County, CA	10,622	0.3%
Santa Clara County, CA	9,646	0.3%
Alameda County, CA	8,698	0.2%
All Other Locations	84,352	2.3%

2008 Commute Shed Report -- Where Workers are EMPLOYED who Live in Los Angeles County

Total Workers LIVING in LA County

	2008	
	Count	**Share**
	3,534,073	100.0%
WORKING IN (counties):	**Count**	**Share**
Los Angeles County, CA	2,837,311	80.3%
Orange County, CA	293,264	8.3%
San Bernardino County, CA	96,646	2.7%
San Diego County, CA	62,852	1.8%
Ventura County, CA	53,458	1.5%
Riverside County, CA	51,780	1.5%
Kern County, CA	21,122	0.6%
San Francisco County, CA	15,262	0.4%
Santa Clara County, CA	11,965	0.3%
Santa Barbara County, CA	10,315	0.3%
All Other Locations	80,098	2.3%

Source: US Census Bureau, LED OnTheMap origin-Destination Database (Beginning of Quarter Employment, 2nd Quarter 2008); Primary Jobs

Appendices: Chapter 2

Appendix 2-1: Survey Instrument

1) How much money has your city collected since the linkage fee took effect?

2a) Does your city have inclusionary zoning? Is the city's priority or preference to have units produced or to collect fees? Why?

2b) How many units of affordable housing have been developed with the linkage fee? At what AMI levels are these units?

2c) If developers have a choice, do they have a preference, to produce units or pay fees? Why?

3) Please confirm the latest fee schedule.

4) Is your city's linkage fee the only source of funds for your housing trust fund? What other funds are used to fund the housing trust fund?

5) Do applicants utilize the variance process?

6) What strengths and limitations are perceived in city's fee structure?

7) What were the political/economic circumstances leading up to the adoption of the fee originally and subsequent amendments?

8) When did you start administering the program?

9) Has your fee ordinance faced legal challenges?

10) Has your city amended the linkage fee or the ordinance since inception? Can you provide staff reports related to the adoption or amendment of the fee?

Appendix 2-2: Linkage Fee Adoption Process: Boston Case Study

The campaign for a linkage fee in Boston was launched in 1983 with a non-binding ballot resolution promoted by Massachusetts Fair Share, a statewide grassroots organization, and several Boston-based tenants groups. A "neighborhood/community vs. downtown big business interests" tension had been developing as community leaders increasingly felt that Mayor Kevin White had turned his back on Boston's neighborhoods. White, a popular four-term mayor, was stepping down from his position, and mayoral candidates were jockeying for position in a crowded field.

Community based organizations used the referendum and the mayoral race to raise awareness about the growing inequity between the city's downtown area and its neighborhoods. This aggressive campaign also produced significant momentum for a linkage fee program. Over 70 percent of voters supported the concept. The two mayoral candidates who had championed neighborhood issues emerged as the top vote-getters in the September primary. The business-backed candidate, favored to win at least a primary victory, was left in third place.
White moved to establish a linkage fee before his departure. He created a commission that included representatives of business, developers, and community based organizations. The commission recommended a $5.00 per square foot linkage fee for all new commercial development. In December 1983, White successfully moved a linkage fee ordinance through Boston City Council.

However, as Raymond Flynn took office in 1984, the status of the linkage fee was unclear. Several developers threatened to sue the city, arguing that the fee constituted a new tax, which Massachusetts municipalities are not allowed to create. The Flynn administration decided to collect the linkage fee but hold it in escrow until the legal question could be addressed. The City administration, along with community based organizations, began working for passage of state legislation that would enable the City to implement the linkage fee.

In 1986, the Massachusetts legislature passed the legislation and the Boston City Council passed a revised ordinance. The new ordinance added a $1.00 per square foot fee for job training and shortened the pay-in period for developments in the downtown area from twelve to seven years (neighborhood developments remained at 12). The ordinance applies to new commercial developments over 100,000 square feet that require zoning relief. The funds go to the Neighborhood Housing Trust and the Neighborhood Jobs Trust.

In September 2001, Boston Mayor Thomas Menino signaled his interest in increasing the linkage fee and convened a commission to review the linkage program. The proposal to raise the fee to $7.18 per square foot for affordable housing and $1.44 for jobs passed City Council and after an extended political tussle provoked by concerns about the allocation of the linkage fund revenues, the state legislature approved the linkage fee increase in late 2001, and shortened the payment schedule for neighborhood developments to seven years.

Source: PolicyLink. 2010. “Affordable Housing Tool Group: ‘Commercial Linkage Strategies’ and ‘Developer Exactions’,” Oakland, CA.

Appendix 2-3: Bibliography for Linkage Fee Program Best Practices

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San Diego Municipal Code. § 98.0601-0616.

San Francisco Municipal Code. § 313.1-313.13.

Santa Monica Municipal Code. § 9.04.10.12.

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Appendices: Chapter 3

Introduction to Fee Scenarios

The following appendix compiles financial scenarios that measure the potential impacts of a housing linkage fee ranging from $1 per square foot to $20 per square foot for twenty-three different types of development, including:

3-1. Summary Table for all Fee Scenario Findings
3-2. Health Club
3-3. Theatre
3-4. General Surgical Hospital
3-5. 55,000 SF Convalescent Hospital
3-6. 20 Room Motel
3-7. Mid-Rise Hotel
3-8. 50,000 SF Industrial
3-9. 8,000 SF Industrial
3-10. 50,000 SF Warehouse/Distribution
3-11. 8,000 SF Warehouse/Distribution
3-12. Gas Station
3-13. Auto Repair Garage
3-14. Parking Structure
3-15. Two-Story Office
3-16. High Rise Office
3-17. Quick Serve Restaurant
3-18. Anchored Retail Strip Center
3-19. Unanchored Retail Strip Center
3-20. High Rise Condominium
3-21. 100-Unit Apartment
3-22. 10 Unit Apartment
3-23. Two Story Condominium
3-24. Single Family Dwelling

Depending on circumstances, the additional cost of a linkage fee might be borne by renters, developers, investors, or landowners. The last analysis in each table calculates the fee as a percentage of total development cost. This ratio indicates the extent to which varied fee levels approach a tipping point where development is potentially infeasible or deterred by a linkage fee. There are separate tables for each development scenario and each table provides five analyses showing potential impacts of a linkage fee:

- Threshold Rent Analysis
- Return on Investment Analysis
- Cap Rate Analysis
- Profit Margin Analysis

- Land Cost Analysis

The scenarios also explore the question of the threshold size of development that is better suited for absorbing a potential linkage fee, and include financial projections for developments with less than 10,000 square feet and with more than 50,000 square feet, where appropriate.

Assumptions and Methodology

The fee scenarios are designed to measure the impacts for a fee on the development categories that correspond with the 31 industry sectors for which a housing deficit per square foot was calculated. By focusing on two key variables, income generated by the completed property and development costs, the scenarios measure the impact of the fee on end users, developers, investors, and landowners. When rents can be raised, developers can pass through the cost of the fee to renters; but when rents remain constant, the rate of return or ratio of property income to total development cost starts to decline.

Overall, the scenarios are based on conservative assumptions. Financing terms are based on market conditions; however, interest rates were increased at least 50 basis points above current market rates since interest rates are anticipated to rise. Financing terms were provided by national banks for most commercial development categories and a small sample of mortgage lenders provided data on financing costs for development categories that function as businesses (e.g. garages and gas stations). Land values were derived from actual 2005-2010 Costar sales data for the City of Los Angeles, and assumed to be at the low-end of the range for the hypothetical use. Construction cost data for Los Angeles was provided by RS Means Square Foot Costs for 2010, which collects construction cost statistics nationally for local submarkets. For the purposes of feasibility analysis, construction costs are typically assumed to comprise 70 percent of development cost (excluding land), but to be conservative the studies included in this appendix assume construction cost comprises 65 percent of total cost.

Appendix 3-1: Summary of Fee Scenario Findings

Development Category	Development Cost Per SF	Threshold Rent Per SF without Fee	Threshold Rent Per SF with $1/SF Fee	Net Increase in Rent Per SF Per $1 of Linkage Fee	Decrease in Developer Rate of Return with $20 Per SF Fee	Decrease in Investor Cap Rate with $20 Per SF Fee	Decrease in Developer Profit Per $1 of Linkage Fee	Change in Land Value Per $1 of Linkage Fee
Entertainment – Recreation	$864	$9.81	$9.81	$0.004	0.16%	0.14%	0.13%	-0.53%
Entertainment – Theatre	$1,665	$19.70	$19.71	$0.004	0.09%	0.07%	0.07%	-0.88%
Hospitals (General)	$509	$8.52	$8.52	$0.007	0.25%	0.22%	0.23%	-2.70%
Hospitals (Convalescent)	$593	$6.44	$6.44	$0.004	0.22%	0.20%	0.19%	-1.47%
Hotel-20 Rooms	$243	$15.90	$15.91	$0.012	0.46%	0.40%	0.29%	-0.63%
Hotel-250 Rooms	$327	$13.37	$13.38	$0.012	0.54%	0.48%	0.35%	-2.44%
Factory >=50,000 SF	$242	$2.75	$2.75	$0.004	0.55%	0.48%	0.47%	-3.13%
Factory 8000 SF	$257	$2.93	$2.93	$0.004	0.52%	0.45%	0.44%	-2.38%
Warehouse >= 50,000 SF	$170	$1.94	$1.95	$0.004	0.75%	0.66%	0.67%	-4.00%
Warehouse 8000 SF	$243	$2.53	$2.54	$0.004	0.49%	0.43%	0.47%	-2.38%
Gas Service Stations	$517	$7.65	$7.65	$0.005	0.32%	0.28%	0.22%	-0.80%
Public Garage (Auto Repair, etc.)-	$339	$5.01	$5.01	$0.005	0.47%	0.41%	0.34%	-3.23%
Public Garage (Parking Lots & Garages)	$226	$3.56	$3.57	$0.009	0.80%	0.70%	0.51%	-2.27%
Small Office- 2 story	$253	$4.58	$4.59	$0.005	0.54%	0.47%	0.01%	-1.33%
High Rise Office	$338	$6.10	$6.10	$0.005	0.41%	0.36%	0.04%	-4.76%
Quick Serve Restaurant	$864	$8.72	$8.72	$0.005	0.17%	0.15%	0.13%	-0.22%
Anchored Retail Strip Center >= 50,000 SF	$402	$4.36	$4.36	$0.005	0.35%	0.31%	0.29%	-1.20%
Unanchored Retail Strip Center < 10,000 SF	$290	$3.15	$3.16	$0.005	0.47%	0.42%	0.39%	-0.93%
Multifamily High Rise	$250	$3.15	$3.15	$0.005	0.55%	0.55%	0.46%	-3.70%
Multifamily 10 units	$243	$3.34	$3.34	$0.006	0.55%	0.55%	0.47%	-2.70%

Source: Costar, RS Means Square Foot Costs 2010

Appendix 3-2: Health Club Scenario

Health Club-2 Story Steel Frame with Structured Parking				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$125	30,000	3,750,000
Direct Construction		$161	20,000	3,220,000
Parking Required	200	$68	100,000	6,800,000
Soft Costs		$95	35%	3,507,000
Total Cost		$864		$ 17,277,000
Developer Profit	15%	$130		$ 2,591,550
Sales Value		$993		$ 19,868,550

Financing Assumptions		Investor Value	Developer Cost
Value		$19,868,550	$17,277,000
Loan To Value (LTV) Loan as % of Value	60%	$11,921,130	$10,366,200
Equity	40%	$7,947,420	$6,910,800
Interest Rate	7.50%		
Amortization	25		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	3%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$677	$187	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%
$1	$677	$187	$865	$130	$995	$596	$398	$9.81	$3.57	$5.95	$4.41	$1.55	4.66%	7.18%
$5	$677	$187	$869	$130	$999	$596	$402	$9.83	$3.57	$5.97	$4.41	$1.56	4.66%	7.17%
$10	$677	$187	$874	$130	$1,004	$596	$407	$9.85	$3.57	$5.99	$4.41	$1.58	4.66%	7.16%
$15	$677	$187	$879	$130	$1,009	$596	$412	$9.87	$3.57	$6.01	$4.41	$1.60	4.66%	7.15%
$20	$677	$187	$884	$130	$1,014	$596	$417	$9.89	$3.57	$6.03	$4.41	$1.62	4.66%	7.13%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$677	$187	$864	NA	NA	$518	$346	$9.01	$3.57	$5.17	$3.83	$1.34	4.66%	7.18%
$1	$677	$187	$865	NA	NA	$518	$347	$9.01	$3.57	$5.17	$3.83	$1.34	4.64%	7.17%
$5	$677	$187	$869	NA	NA	$518	$351	$9.01	$3.57	$5.17	$3.83	$1.34	4.59%	7.14%
$10	$677	$187	$874	NA	NA	$518	$356	$9.01	$3.57	$5.17	$3.83	$1.34	4.52%	7.10%
$15	$677	$187	$879	NA	NA	$518	$361	$9.01	$3.57	$5.17	$3.83	$1.34	4.46%	7.06%
$20	$677	$187	$884	NA	NA	$518	$366	$9.01	$3.57	$5.17	$3.83	$1.34	4.40%	7.02%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

								Investor's							
Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$677	$187	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%	15.00%
$1	$677	$187	$865	$129	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%	14.86%
$5	$677	$187	$869	$125	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%	14.34%
$10	$677	$187	$874	$120	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%	13.68%
$15	$677	$187	$879	$115	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%	13.03%
$20	$677	$187	$884	$110	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%	12.40%

Appendix 3-2: Health Club Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$677	$187	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	7.18%
$1	$677	$187	$865	$130	$995	$596	$398	$9.81	$3.57	$5.95	$4.41	$1.54	4.64%	7.18%
$5	$677	$187	$869	$130	$999	$596	$402	$9.81	$3.57	$5.95	$4.41	$1.54	4.60%	7.15%
$10	$677	$187	$874	$130	$1,004	$596	$407	$9.81	$3.57	$5.95	$4.41	$1.54	4.54%	7.11%
$15	$677	$187	$879	$130	$1,009	$596	$412	$9.81	$3.57	$5.95	$4.41	$1.54	4.49%	7.08%
$20	$677	$187	$884	$130	$1,014	$596	$417	$9.81	$3.57	$5.95	$4.41	$1.54	4.43%	7.04%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$677	$187	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	0.00%
$1	$677	$186	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	-0.53%
$5	$677	$182	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	-2.67%
$10	$677	$177	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	-5.35%
$15	$677	$172	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	-8.02%
$20	$677	$167	$864	$130	$994	$596	$397	$9.81	$3.57	$5.95	$4.41	$1.54	4.66%	-10.70%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$677	$187	$864	0%
$1	$677	$187	$865	0.12%
$5	$677	$187	$869	0.58%
$10	$677	$187	$874	1.14%
$15	$677	$187	$879	1.71%
$20	$677	$187	$884	2.26%

Source: Costar. RS Means Square Foot Costs 2010

Appendix 3-3: Theatre Scenario

Theatre				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$76	30,000	2,280,000
Direct Construction		$178	20,000	3,550,653
Parking Required	571	$68	285,714	19,428,571
Soft Costs		$95	35%	8,042,729
Total Cost		$1,665	0	$ 33,301,953
15% Developer Profit Upon Sale	15%	$250	-	$ 4,995,293
Total with Developer Profit		$1,915	-	$ 38,297,246

Financing Assumptions		Investor Value	Developer Cost
Value		$38,297,246	$33,301,953
Loan To Value (LTV) Loan as % of Value	60%	$22,978,348	$19,981,172
Equity	40%	$15,318,899	$13,320,781
Interest Rate	7.50%		
Amortization	25		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	40%		
Vacancy Allowance	3%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$1,552	$114	$1,666	$250	$1,916	$1,150	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%
$1	$1,552	$114	$1,667	$250	$1,917	$1,150	$767	$19.71	$7.65	$11.47	$8.49	$2.98	4.66%	7.18%
$5	$1,552	$114	$1,671	$250	$1,921	$1,150	$771	$19.72	$7.65	$11.49	$8.49	$2.99	4.66%	7.18%
$10	$1,552	$114	$1,676	$250	$1,926	$1,150	$776	$19.74	$7.65	$11.51	$8.49	$3.01	4.66%	7.17%
$15	$1,552	$114	$1,681	$250	$1,931	$1,150	$781	$19.76	$7.65	$11.53	$8.49	$3.03	4.66%	7.16%
$20	$1,552	$114	$1,686	$250	$1,936	$1,150	$786	$19.78	$7.65	$11.55	$8.49	$3.05	4.66%	7.16%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$1,552	$114	$1,666	NA	NA	$1,000	$666	$18.16	$7.65	$9.97	$7.39	$2.59	4.66%	7.18%
$1	$1,552	$114	$1,667	NA	NA	$1,000	$667	$18.16	$7.65	$9.97	$7.39	$2.59	4.65%	7.18%
$5	$1,552	$114	$1,671	NA	NA	$1,000	$671	$18.16	$7.65	$9.97	$7.39	$2.59	4.62%	7.16%
$10	$1,552	$114	$1,676	NA	NA	$1,000	$676	$18.16	$7.65	$9.97	$7.39	$2.59	4.59%	7.14%
$15	$1,552	$114	$1,681	NA	NA	$1,000	$681	$18.16	$7.65	$9.97	$7.39	$2.59	4.55%	7.12%
$20	$1,552	$114	$1,686	NA	NA	$1,000	$686	$18.16	$7.65	$9.97	$7.39	$2.59	4.52%	7.10%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
								Investor's							
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$1,552	$114	$1,666	$250	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%	14.99%
$1	$1,552	$114	$1,667	$249	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%	14.92%
$5	$1,552	$114	$1,671	$245	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%	14.65%
$10	$1,552	$114	$1,676	$240	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%	14.31%
$15	$1,552	$114	$1,681	$235	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%	13.97%
$20	$1,552	$114	$1,686	$230	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%	13.63%

Appendix 3-3: Theatre Scenario (cont'd)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$1,552	$114	$1,666	$250	$1,916	$1,149	$766	$19.70	$7.65	$11.47	$8.49	$2.97	4.66%	7.18%
$1	$1,552	$114	$1,667	$250	$1,917	$1,149	$767	$19.70	$7.65	$11.47	$8.49	$2.97	4.65%	7.18%
$5	$1,552	$114	$1,671	$250	$1,921	$1,149	$771	$19.70	$7.65	$11.47	$8.49	$2.97	4.63%	7.16%
$10	$1,552	$114	$1,676	$250	$1,926	$1,149	$776	$19.70	$7.65	$11.47	$8.49	$2.97	4.60%	7.15%
$15	$1,552	$114	$1,681	$250	$1,931	$1,149	$781	$19.70	$7.65	$11.47	$8.49	$2.97	4.57%	7.13%
$20	$1,552	$114	$1,686	$250	$1,936	$1,149	$786	$19.70	$7.65	$11.47	$8.49	$2.97	4.54%	7.11%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$1,552	$114	$1,666	$250	$1,916	$1,149	$766	$19.70	$7.64	$11.47	$8.49	$2.97	4.66%	0.00%
$1	$1,552	$113	$1,666	$250	$1,916	$1,150	$766	$19.70	$7.64	$11.47	$8.49	$2.97	4.66%	-0.88%
$5	$1,552	$109	$1,666	$250	$1,916	$1,150	$766	$19.70	$7.64	$11.47	$8.49	$2.97	4.66%	-4.39%
$10	$1,552	$104	$1,666	$250	$1,916	$1,150	$766	$19.70	$7.64	$11.47	$8.49	$2.97	4.66%	-8.77%
$15	$1,552	$99	$1,666	$250	$1,916	$1,150	$766	$19.70	$7.64	$11.47	$8.49	$2.97	4.66%	-13.16%
$20	$1,552	$94	$1,666	$250	$1,916	$1,150	$766	$19.70	$7.64	$11.47	$8.49	$2.97	4.66%	-17.54%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$1,552	$114	$1,666	0%
$1	$1,552	$114	$1,667	0.06%
$5	$1,552	$114	$1,671	0.30%
$10	$1,552	$114	$1,676	0.60%
$15	$1,552	$114	$1,681	0.89%
$20	$1,552	$114	$1,686	1.19%

Source: Costar, RS Means Square Foot Costs 2010

Appendix 3-4: General Surgical Hospital Scenario

General Hospital: 6 Story Reinforced Concrete Frame				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 6:1	$125	41,000	5,125,000
Direct Construction		$307	135,000	41,377,500
Parking Required	200	$72	80,000	5,760,000
Soft Costs		$122	35%	16,498,125
Total Cost		$509		$ 68,760,625
Developer Profit Upon Completion	15%	$76		$ 10,314,094
Total with Developer Profit		$586		$ 79,074,719

Financing Assumptions		Investor Value	Developer Cost
Value		$79,074,719	$68,760,625
Loan To Value (LTV) Loan as % of Value	65%	$51,398,567	$44,694,406
Equity	35%	$27,676,152	$24,066,219
Interest Rate	6.50%		
Amortization	30		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	39%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$472	$37	$509	$76	$585	$380	$205	$8.52	$1.95	$3.25	$2.40	$0.84	4.93%	6.66%
$1	$472	$37	$510	$76	$586	$380	$206	$8.52	$1.95	$3.25	$2.40	$0.85	4.93%	6.65%
$5	$472	$37	$514	$76	$590	$380	$210	$8.55	$1.95	$3.27	$2.40	$0.86	4.93%	6.64%
$10	$472	$37	$519	$76	$595	$380	$215	$8.58	$1.95	$3.29	$2.40	$0.88	4.93%	6.63%
$15	$472	$37	$524	$76	$600	$380	$220	$8.62	$1.95	$3.31	$2.40	$0.90	4.93%	6.61%
$20	$472	$37	$529	$76	$605	$380	$225	$8.65	$1.95	$3.33	$2.40	$0.92	4.93%	6.60%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$472	$37	$509	NA	NA	$331	$178	$7.82	$1.95	$2.82	$2.09	$0.73	4.93%	6.66%
$1	$472	$37	$510	NA	NA	$331	$179	$7.82	$1.95	$2.82	$2.09	$0.73	4.90%	6.64%
$5	$472	$37	$514	NA	NA	$331	$183	$7.82	$1.95	$2.82	$2.09	$0.73	4.80%	6.59%
$10	$472	$37	$519	NA	NA	$331	$188	$7.82	$1.95	$2.82	$2.09	$0.73	4.67%	6.53%
$15	$472	$37	$524	NA	NA	$331	$193	$7.82	$1.95	$2.82	$2.09	$0.73	4.55%	6.47%
$20	$472	$37	$529	NA	NA	$331	$198	$7.82	$1.95	$2.82	$2.09	$0.73	4.43%	6.40%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$472	$37	$509	$76	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%	15.01%
$1	$472	$37	$510	$75	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%	14.78%
$5	$472	$37	$514	$71	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%	13.89%
$10	$472	$37	$519	$66	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%	12.79%
$15	$472	$37	$524	$61	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%	11.72%
$20	$472	$37	$529	$56	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%	10.66%

Appendix 3-4: General Surgical Hospital (Cont'd)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$472	$37	$509	$76	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	6.66%
$1	$472	$37	$510	$76	$586	$381	$206	$8.52	$1.95	$3.25	$2.41	$0.84	4.91%	6.64%
$5	$472	$37	$514	$76	$590	$381	$210	$8.52	$1.95	$3.25	$2.41	$0.84	4.81%	6.60%
$10	$472	$37	$519	$76	$595	$381	$215	$8.52	$1.95	$3.25	$2.41	$0.84	4.70%	6.54%
$15	$472	$37	$524	$76	$600	$381	$220	$8.52	$1.95	$3.25	$2.41	$0.84	4.59%	6.49%
$20	$472	$37	$529	$76	$605	$381	$225	$8.52	$1.95	$3.25	$2.41	$0.84	4.49%	6.44%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
		assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$472	$37	$509	$76	$585	$381	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	0.00%
$1	$472	$36	$509	$76	$585	$380	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	-2.70%
$5	$472	$32	$509	$76	$585	$380	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	-13.51%
$10	$472	$27	$509	$76	$585	$380	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	-27.03%
$15	$472	$22	$509	$76	$585	$380	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	-40.54%
$20	$472	$17	$509	$76	$585	$380	$205	$8.52	$1.95	$3.25	$2.41	$0.84	4.93%	-54.05%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$472	$37	$509	0
$1	$472	$37	$510	0.20%
$5	$472	$37	$514	0.97%
$10	$472	$37	$519	1.93%
$15	$472	$37	$524	2.86%
$20	$472	$37	$529	3.78%

Source: Costar, RS Means Square Foot Costs 2010, California Office of Statewide Health Planning and Development 2008

Appendix 3-5: 55,000 SF Convalescent Hospital Scenario

3 Story Convalescent Hospital - Reinforced Concrete Frame				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$100	37,500	3,750,000
Direct Construction		$333	55,000	18,315,000
Parking Required	200	$68	45,000	3,060,000
Soft Costs		$136	35%	7,481,250
Total Cost		$593	0	$ 32,606,250
15% Developer Profit Upon Sale	15%	$89		$ 4,890,938
Total with Developer Profit		$682	-	$ 37,497,188

Financing Assumptions		Investor Value	Developer Cost
Value		$37,497,188	$32,606,250
Loan To Value (LTV) Loan as % of Value	60%	$22,498,313	$19,563,750
Equity	40%	$14,998,875	$13,042,500
Interest Rate	7.00%		
Amortization	25		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	3%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$525	$68	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%
$1	$525	$68	$594	$89	$683	$409	$274	$6.44	$2.34	$3.91	$2.89	$1.02	4.45%	6.87%
$5	$525	$68	$598	$89	$687	$409	$278	$6.46	$2.34	$3.92	$2.89	$1.03	4.45%	6.85%
$10	$525	$68	$603	$89	$692	$409	$283	$6.48	$2.34	$3.94	$2.89	$1.05	4.45%	6.83%
$15	$525	$68	$608	$89	$697	$409	$288	$6.50	$2.34	$3.96	$2.89	$1.07	4.45%	6.82%
$20	$525	$68	$613	$89	$702	$409	$293	$6.52	$2.34	$3.98	$2.89	$1.09	4.45%	6.80%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$525	$68	$593	NA	NA	$356	$237	$5.91	$2.34	$3.39	$2.51	$0.88	4.45%	6.87%
$1	$525	$68	$594	NA	NA	$356	$238	$5.91	$2.34	$3.39	$2.51	$0.88	4.43%	6.86%
$5	$525	$68	$598	NA	NA	$356	$242	$5.91	$2.34	$3.39	$2.51	$0.88	4.36%	6.81%
$10	$525	$68	$603	NA	NA	$356	$247	$5.91	$2.34	$3.39	$2.51	$0.88	4.27%	6.76%
$15	$525	$68	$608	NA	NA	$356	$252	$5.91	$2.34	$3.39	$2.51	$0.88	4.19%	6.70%
$20	$525	$68	$613	NA	NA	$356	$257	$5.91	$2.34	$3.39	$2.51	$0.88	4.11%	6.65%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$525	$68	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%	15.00%
$1	$525	$68	$594	$88	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%	14.80%
$5	$525	$68	$598	$84	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%	14.03%
$10	$525	$68	$603	$79	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%	13.09%
$15	$525	$68	$608	$74	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%	12.16%
$20	$525	$68	$613	$69	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%	11.24%

Appendix 3-5: 55,000 SF Convalescent Hospital Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's Monthly Threshold Rent per SF	Investor's Monthly Operating Expenses Per SF	Investor's Monthly Net Operating Income Per SF	Investor's Monthly Mortgage Payments Per SF	Investor's Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$525	$68	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	6.87%
$1	$525	$68	$594	$89	$683	$409	$274	$6.44	$2.34	$3.90	$2.89	$1.01	4.44%	6.86%
$5	$525	$68	$598	$89	$687	$409	$278	$6.44	$2.34	$3.90	$2.89	$1.01	4.37%	6.82%
$10	$525	$68	$603	$89	$692	$409	$283	$6.44	$2.34	$3.90	$2.89	$1.01	4.30%	6.77%
$15	$525	$68	$608	$89	$697	$409	$288	$6.44	$2.34	$3.90	$2.89	$1.01	4.22%	6.72%
$20	$525	$68	$613	$89	$702	$409	$293	$6.44	$2.34	$3.90	$2.89	$1.01	4.15%	6.67%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's Monthly Threshold Rent per SF	Investor's Monthly Operating Expenses Per SF	Investor's Monthly Net Operating Income Per SF	Investor's Monthly Mortgage Payments Per SF	Investor's Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$525	$68	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	0.00%
$1	$525	$67	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	-1.47%
$5	$525	$63	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	-7.35%
$10	$525	$58	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	-14.71%
$15	$525	$53	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	-22.06%
$20	$525	$48	$593	$89	$682	$409	$273	$6.44	$2.34	$3.90	$2.89	$1.01	4.45%	-29.41%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$525	$68	$593	0%
$1	$525	$68	$594	0.17%
$5	$525	$68	$598	0.84%
$10	$525	$68	$603	1.66%
$15	$525	$68	$608	2.47%
$20	$525	$68	$613	3.26%

Source: Costar, RS Means Square Foot Costs 2010, California Office of Statewide Health Planning and Development 2008

Appendix 3-6: 20 Room Motel Scenario

Limited Service Hotel: 2 Story 20 Rooms Wood Frame with Surface Parking				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$80	12,000	960,000
Direct Construction		$157	6,000	942,000
Parking Required 2/unit	$21	$10	7,350	73,500
Soft Costs		$59	35%	355,425
Total Cost		$388	0	$ 2,330,925
Developer Profit	15%	$58	-	$ 349,639
Sales Value		$447	-	$ 2,680,564

Financing Assumptions		Investor	Developer
Value		$ 2,680,564	$2,330,925
Loan To Value (LTV) Loan as % of Value	65%	$ 1,742,366	$1,515,101
Equity	35%	$ 938,197	$815,824
Interest Rate	7.50%		
Amortization	20		
Debt Coverage Ratio	1.50		
Operating Expense Ratio	66%		
Vacancy Allowance	35%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$229	$160	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%
$1	$229	$160	$390	$58	$448	$291	$158	$15.91	$6.82	$3.52	$2.34	$1.18	8.98%	9.42%
$5	$229	$160	$394	$58	$452	$291	$162	$15.96	$6.82	$3.55	$2.34	$1.21	8.98%	9.42%
$10	$229	$160	$399	$58	$457	$291	$167	$16.01	$6.82	$3.59	$2.34	$1.25	8.98%	9.42%
$15	$229	$160	$404	$58	$462	$291	$172	$16.07	$6.82	$3.63	$2.34	$1.28	8.98%	9.41%
$20	$229	$160	$409	$58	$467	$291	$177	$16.13	$6.82	$3.66	$2.34	$1.32	8.98%	9.41%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$229	$160	$389	NA	NA	$253	$136	$15.19	$6.82	$3.06	$2.04	$1.02	8.98%	9.43%
$1	$229	$160	$390	NA	NA	$253	$137	$15.19	$6.82	$3.06	$2.04	$1.02	8.91%	9.40%
$5	$229	$160	$394	NA	NA	$253	$141	$15.19	$6.82	$3.06	$2.04	$1.02	8.66%	9.31%
$10	$229	$160	$399	NA	NA	$253	$146	$15.19	$6.82	$3.06	$2.04	$1.02	8.36%	9.19%
$15	$229	$160	$404	NA	NA	$253	$151	$15.19	$6.82	$3.06	$2.04	$1.02	8.09%	9.08%
$20	$229	$160	$409	NA	NA	$253	$156	$15.19	$6.82	$3.06	$2.04	$1.02	7.83%	8.96%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$229	$160	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%	14.98%
$1	$229	$160	$390	$57	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%	14.69%
$5	$229	$160	$394	$53	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%	13.52%
$10	$229	$160	$399	$48	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%	12.10%
$15	$229	$160	$404	$43	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%	10.71%
$20	$229	$160	$409	$38	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%	9.36%

Appendix 3-7: 20 Room Motel Scenario (cont'd)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$229	$160	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	9.43%
$1	$229	$160	$390	$58	$448	$291	$158	$15.90	$6.82	$3.51	$2.34	$1.17	8.92%	9.40%
$5	$229	$160	$394	$58	$452	$291	$162	$15.90	$6.82	$3.51	$2.34	$1.17	8.70%	9.32%
$10	$229	$160	$399	$58	$457	$291	$167	$15.90	$6.82	$3.51	$2.34	$1.17	8.44%	9.22%
$15	$229	$160	$404	$58	$462	$291	$172	$15.90	$6.82	$3.51	$2.34	$1.17	8.19%	9.12%
$20	$229	$160	$409	$58	$467	$291	$177	$15.90	$6.82	$3.51	$2.34	$1.17	7.96%	9.02%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$229	$160	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	0.00%
$1	$229	$159	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	-0.63%
$5	$229	$155	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	-3.13%
$10	$229	$150	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	-6.25%
$15	$229	$145	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	-9.38%
$20	$229	$140	$389	$58	$447	$291	$157	$15.90	$6.82	$3.51	$2.34	$1.17	8.98%	-12.50%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$229	$160	$389	0%
$1	$229	$160	$390	0.26%
$5	$229	$160	$394	1.27%
$10	$229	$160	$399	2.51%
$15	$229	$160	$404	3.71%
$20	$229	$160	$409	4.89%

Source: Costar, RS Means Square Foot Costs 2010, Smith Travel Research 2009

Appendix 3-7: Mid-Rise Hotel Scenario

Mid Rise Hotel: Steel Frame with Concrete Block				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 3:1	$125	45,000	5,625,000
Direct Construction		$176	135,000	23,760,000
Parking Required 2/unit	209	$57	83,400	4,753,800
Soft Costs		$74	35%	9,979,830
Total Cost		$327	0	$ 44,118,630
Developer Profit	15%	$49		$ 6,617,795
Sales Value		$376		$ 50,736,425

Financing Assumptions		Investor	Developer
Value		$50,736,425	$44,118,630
Loan To Value (LTV) Loan as % of Value	65%	$32,978,676	$28,677,110
Equity	35%	$17,757,749	$15,441,521
Interest Rate	7.50%		
Amortization	20		
Debt Coverage Ratio	1.50		
Operating Expense Ratio	66%		
Vacancy Allowance	35%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$286	$41	$327	$49	$376	$244	$132	$13.37	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%
$1	$286	$41	$328	$49	$377	$244	$133	$13.38	$5.73	$2.96	$1.97	$0.99	8.98%	9.42%
$5	$286	$41	$332	$49	$381	$244	$137	$13.42	$5.73	$2.99	$1.97	$1.02	8.98%	9.42%
$10	$286	$41	$337	$49	$386	$244	$142	$13.48	$5.73	$3.03	$1.97	$1.06	8.98%	9.41%
$15	$286	$41	$342	$49	$391	$244	$147	$13.54	$5.73	$3.07	$1.97	$1.10	8.98%	9.41%
$20	$286	$41	$347	$49	$396	$244	$152	$13.60	$5.73	$3.10	$1.97	$1.13	8.98%	9.40%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$286	$41	$327	NA	NA	$213	$114	$12.77	$5.73	$2.57	$1.71	$0.86	8.98%	9.43%
$1	$286	$41	$328	NA	NA	$213	$115	$12.77	$5.73	$2.57	$1.71	$0.86	8.90%	9.40%
$5	$286	$41	$332	NA	NA	$213	$119	$12.77	$5.73	$2.57	$1.71	$0.86	8.60%	9.28%
$10	$286	$41	$337	NA	NA	$213	$124	$12.77	$5.73	$2.57	$1.71	$0.86	8.26%	9.15%
$15	$286	$41	$342	NA	NA	$213	$129	$12.77	$5.73	$2.57	$1.71	$0.86	7.94%	9.01%
$20	$286	$41	$347	NA	NA	$213	$134	$12.77	$5.73	$2.57	$1.71	$0.86	7.64%	8.88%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's: Monthly Threshold Rent per SF	Investor's: Monthly Operating Expenses Per SF	Investor's: Monthly Net Operating Income Per SF	Investor's: Monthly Mortgage Payments Per SF	Investor's: Monthly Cash Flow Per SF	Investor's: Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$286	$41	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%	14.99%
$1	$286	$41	$328	$48	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%	14.64%
$5	$286	$41	$332	$44	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%	13.26%
$10	$286	$41	$337	$39	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%	11.58%
$15	$286	$41	$342	$34	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%	9.95%
$20	$286	$41	$347	$29	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%	8.36%

Appendix 3-7: Mid-Rise Hotel Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$286	$41	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	9.43%
$1	$286	$41	$328	$49	$377	$244	$133	$13.36	$5.73	$2.95	$1.97	$0.98	8.91%	9.40%
$5	$286	$41	$332	$49	$381	$244	$137	$13.36	$5.73	$2.95	$1.97	$0.98	8.65%	9.30%
$10	$286	$41	$337	$49	$386	$244	$142	$13.36	$5.73	$2.95	$1.97	$0.98	8.34%	9.18%
$15	$286	$41	$342	$49	$391	$244	$147	$13.36	$5.73	$2.95	$1.97	$0.98	8.06%	9.06%
$20	$286	$41	$347	$49	$396	$244	$152	$13.36	$5.73	$2.95	$1.97	$0.98	7.79%	8.95%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$286	$41	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	0.00%
$1	$286	$40	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	-2.44%
$5	$286	$36	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	-12.20%
$10	$286	$31	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	-24.39%
$15	$286	$26	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	-36.59%
$20	$286	$21	$327	$49	$376	$244	$132	$13.36	$5.73	$2.95	$1.97	$0.98	8.98%	-48.78%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$286	$41	$327	0%
$1	$286	$41	$328	0.30%
$5	$286	$41	$332	1.51%
$10	$286	$41	$337	2.97%
$15	$286	$41	$342	4.39%
$20	$286	$41	$347	5.76%

Source: Costar, RS Means Square Foot Costs 2010, Smith Travel Research 2009

Appendix 3-8: 50,000 SF Industrial Scenario

Warehouse/Industrial 50,000 Square Feet				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$25	65,500	1,637,500
Direct Construction		$145	50,000	7,250,000
Parking Required 2/unit	28	$52	9,800	509,600
Soft Costs		$53	35%	2,715,860
Total Cost		$242		$ 12,112,960
Developer Profit	15%	$36		$ 1,816,944
Sales Value		$279		$ 13,929,904

Financing Assumptions		Investor Value	Developer Cost
Value		$13,929,904	$12,112,960
Loan To Value (LTV) Loan as % of Value	60%	$8,357,942	$7,267,776
Equity	40%	$5,571,962	$4,845,184
Interest Rate	7.50%		
Amortization	25		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	3%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$210	$32	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%
$1	$210	$32	$243	$36	$279	$167	$112	$2.75	$1.00	$1.67	$1.23	$0.44	4.66%	7.17%
$5	$210	$32	$247	$36	$283	$167	$116	$2.77	$1.00	$1.69	$1.23	$0.45	4.66%	7.14%
$10	$210	$32	$252	$36	$288	$167	$121	$2.79	$1.00	$1.70	$1.23	$0.47	4.66%	7.10%
$15	$210	$32	$257	$36	$293	$167	$126	$2.81	$1.00	$1.72	$1.23	$0.49	4.66%	7.05%
$20	$210	$32	$262	$36	$298	$167	$131	$2.83	$1.00	$1.74	$1.23	$0.51	4.66%	7.01%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$210	$32	$242	NA	NA	$145	$97	$2.52	$1.00	$1.45	$1.07	$0.38	4.66%	7.18%
$1	$210	$32	$243	NA	NA	$145	$98	$2.52	$1.00	$1.45	$1.07	$0.38	4.61%	7.15%
$5	$210	$32	$247	NA	NA	$145	$102	$2.52	$1.00	$1.45	$1.07	$0.38	4.43%	7.04%
$10	$210	$32	$252	NA	NA	$145	$107	$2.52	$1.00	$1.45	$1.07	$0.38	4.22%	6.90%
$15	$210	$32	$257	NA	NA	$145	$112	$2.52	$1.00	$1.45	$1.07	$0.38	4.03%	6.76%
$20	$210	$32	$262	NA	NA	$145	$117	$2.52	$1.00	$1.45	$1.07	$0.38	3.86%	6.63%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's: Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$210	$32	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%	15.02%
$1	$210	$32	$243	$35	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%	14.54%
$5	$210	$32	$247	$31	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%	12.69%
$10	$210	$32	$252	$26	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%	10.45%
$15	$210	$32	$257	$21	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%	8.30%
$20	$210	$32	$262	$16	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%	6.24%

Appendix 3-8: 50,000 SF Industrial Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's Monthly Threshold Rent per SF	Investor's Monthly Operating Expenses Per SF	Investor's Monthly Net Operating Income Per SF	Investor's Monthly Mortgage Payments Per SF	Investor's Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$210	$32	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	7.18%
$1	$210	$32	$243	$36	$279	$167	$112	$2.75	$1.00	$1.67	$1.23	$0.43	4.61%	7.16%
$5	$210	$32	$247	$36	$283	$167	$116	$2.75	$1.00	$1.67	$1.23	$0.43	4.46%	7.06%
$10	$210	$32	$252	$36	$288	$167	$121	$2.75	$1.00	$1.67	$1.23	$0.43	4.27%	6.93%
$15	$210	$32	$257	$36	$293	$167	$126	$2.75	$1.00	$1.67	$1.23	$0.43	4.10%	6.82%
$20	$210	$32	$262	$36	$298	$167	$131	$2.75	$1.00	$1.67	$1.23	$0.43	3.95%	6.70%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's Monthly Threshold Rent per SF	Investor's Monthly Operating Expenses Per SF	Investor's Monthly Net Operating Income Per SF	Investor's Monthly Mortgage Payments Per SF	Investor's Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$210	$32	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	0.00%
$1	$210	$31	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	-3.13%
$5	$210	$27	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	-15.63%
$10	$210	$22	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	-31.25%
$15	$210	$17	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	-46.88%
$20	$210	$12	$242	$36	$278	$167	$111	$2.75	$1.00	$1.67	$1.23	$0.43	4.66%	-62.50%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$210	$32	$242	0%
$1	$210	$32	$243	0.41%
$5	$210	$32	$247	2.02%
$10	$210	$32	$252	3.97%
$15	$210	$32	$257	5.84%
$20	$210	$32	$262	7.63%

Sources: Costar, RS Means Per Square Foot Cost, Market Survey RealtyRates.com

Appendix 3-9: 8000 SF Industrial Scenario

Warehouse/Industrial 8000 Square Feet: Steel Frame/Precast Concrete				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.0	$42	8,000	336,000
Direct Construction		$159	8,000	1,272,000
Parking Required 2/unit	16	$10	5,600	56,000
Soft Costs		$93	30%	398,400
Total Cost		$257		$ 2,062,400
Developer Profit	15%	$39		$ 309,360
Sales Value		$296		$ 2,371,760

Financing Assumptions		Investor Value	Developer Cost
Value		$2,371,760	$2,062,400
Loan To Value (LTV) Loan as % of Value	60%	$1,423,056	$1,237,440
Equity	40%	$948,704	$824,960
Interest Rate	7.50%		
Amortization	25		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	3%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$216	$42	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%
$1	$216	$42	$259	$39	$298	$178	$120	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.17%
$5	$216	$42	$263	$39	$302	$178	$124	$2.95	$1.07	$1.80	$1.32	$0.48	4.66%	7.14%
$10	$216	$42	$268	$39	$307	$178	$129	$2.97	$1.07	$1.81	$1.32	$0.50	4.66%	7.10%
$15	$216	$42	$273	$39	$312	$178	$134	$2.99	$1.07	$1.83	$1.32	$0.52	4.66%	7.06%
$20	$216	$42	$278	$39	$317	$178	$139	$3.01	$1.07	$1.85	$1.32	$0.54	4.66%	7.02%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$216	$42	$258	NA	NA	$155	$103	$2.69	$1.07	$1.54	$1.14	$0.40	4.66%	7.18%
$1	$216	$42	$259	NA	NA	$155	$104	$2.69	$1.07	$1.54	$1.14	$0.40	4.61%	7.16%
$5	$216	$42	$263	NA	NA	$155	$108	$2.69	$1.07	$1.54	$1.14	$0.40	4.44%	7.05%
$10	$216	$42	$268	NA	NA	$155	$113	$2.69	$1.07	$1.54	$1.14	$0.40	4.24%	6.91%
$15	$216	$42	$273	NA	NA	$155	$118	$2.69	$1.07	$1.54	$1.14	$0.40	4.06%	6.79%
$20	$216	$42	$278	NA	NA	$155	$123	$2.69	$1.07	$1.54	$1.14	$0.40	3.90%	6.67%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$216	$42	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%	14.99%
$1	$216	$42	$259	$38	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%	14.54%
$5	$216	$42	$263	$34	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%	12.80%
$10	$216	$42	$268	$29	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%	10.70%
$15	$216	$42	$273	$24	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%	8.67%
$20	$216	$42	$278	$19	$297	$178	$119	$2.93	$1.07	$1.78	$1.32	$0.46	4.66%	7.18%	6.72%

Appendix 3-9: 8,000 SF Industrial Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$216	$42	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.66%	7.18%
$1	$216	$42	$259	$39	$298	$178	$120	$2.93	$1.07	$1.78	$1.31	$0.46	4.62%	7.16%
$5	$216	$42	$263	$39	$302	$178	$124	$2.93	$1.07	$1.78	$1.31	$0.46	4.47%	7.06%
$10	$216	$42	$268	$39	$307	$178	$129	$2.93	$1.07	$1.78	$1.31	$0.46	4.29%	6.95%
$15	$216	$42	$273	$39	$312	$178	$134	$2.93	$1.07	$1.78	$1.31	$0.46	4.13%	6.84%
$20	$216	$42	$278	$39	$317	$178	$139	$2.93	$1.07	$1.78	$1.31	$0.46	3.98%	6.73%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$216	$42	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.66%	0.00%
$1	$216	$41	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.65%	-2.38%
$5	$216	$37	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.65%	-11.90%
$10	$216	$32	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.65%	-23.81%
$15	$216	$27	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.65%	-35.71%
$20	$216	$22	$258	$39	$297	$178	$119	$2.93	$1.07	$1.78	$1.31	$0.46	4.65%	-47.62%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$216	$42	$258	0%
$1	$216	$42	$259	0.39%
$5	$216	$42	$263	1.90%
$10	$216	$42	$268	3.73%
$15	$216	$42	$273	5.49%
$20	$216	$42	$278	7.19%

Source: Costar, RS Means Square Foot Costs 2010, RealtyRates.com

Appendix 3-10: 50,000 SF Warehouse/Distribution Scenario

50,000 SF Warehouse/Distribution				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.0	$25	50,000	1,250,000
Direct Construction		$96	50,000	4,800,000
Parking Required	28	$52	11,200	582,400
Soft Costs		$53	35%	1,883,840
Total Cost		$170		$ 8,516,240
Developer Profit	15%	$26		$ 1,277,436
Sales Value		$196		$ 9,793,676

Financing Assumptions		Investor Value	Developer Cost
Value	0	$9,793,676	$8,516,240
Loan To Value (LTV) Loan as % of Value	60%	$5,876,206	$5,109,744
Equity	40%	$3,917,470	$3,406,496
Interest Rate	7.50%		
Amortization	25		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	3%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$146	$25	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%
$1	$146	$25	$172	$26	$198	$118	$80	$1.95	$0.71	$1.18	$0.87	$0.31	4.66%	7.17%
$5	$146	$25	$176	$26	$202	$118	$84	$1.96	$0.71	$1.20	$0.87	$0.32	4.66%	7.12%
$10	$146	$25	$181	$26	$207	$118	$89	$1.98	$0.71	$1.22	$0.87	$0.34	4.66%	7.06%
$15	$146	$25	$186	$26	$212	$118	$94	$2.00	$0.71	$1.24	$0.87	$0.36	4.66%	7.00%
$20	$146	$25	$191	$26	$217	$118	$99	$2.02	$0.71	$1.25	$0.87	$0.38	4.66%	6.95%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$146	$25	$171	NA	NA	$103	$68	$1.78	$0.71	$1.02	$0.76	$0.27	4.66%	7.18%
$1	$146	$25	$172	NA	NA	$103	$69	$1.78	$0.71	$1.02	$0.76	$0.27	4.59%	7.14%
$5	$146	$25	$176	NA	NA	$103	$73	$1.78	$0.71	$1.02	$0.76	$0.27	4.34%	6.98%
$10	$146	$25	$181	NA	NA	$103	$78	$1.78	$0.71	$1.02	$0.76	$0.27	4.06%	6.79%
$15	$146	$25	$186	NA	NA	$103	$83	$1.78	$0.71	$1.02	$0.76	$0.27	3.82%	6.60%
$20	$146	$25	$191	NA	NA	$103	$88	$1.78	$0.71	$1.02	$0.76	$0.27	3.60%	6.43%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$146	$25	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%	14.94%
$1	$146	$25	$172	$25	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%	14.27%
$5	$146	$25	$176	$21	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%	11.68%
$10	$146	$25	$181	$16	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%	8.59%
$15	$146	$25	$186	$11	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%	5.67%
$20	$146	$25	$191	$6	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.31	4.66%	7.18%	2.91%

Appendix 3-10: 50,000 SF Warehouse/Distribution Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$146	$25	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.66%	7.18%
$1	$146	$25	$172	$26	$198	$118	$80	$1.94	$0.71	$1.18	$0.87	$0.30	4.60%	7.15%
$5	$146	$25	$176	$26	$202	$118	$84	$1.94	$0.71	$1.18	$0.87	$0.30	4.38%	7.00%
$10	$146	$25	$181	$26	$207	$118	$89	$1.94	$0.71	$1.18	$0.87	$0.30	4.13%	6.84%
$15	$146	$25	$186	$26	$212	$118	$94	$1.94	$0.71	$1.18	$0.87	$0.30	3.91%	6.67%
$20	$146	$25	$191	$26	$217	$118	$99	$1.94	$0.71	$1.18	$0.87	$0.30	3.71%	6.52%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$146	$25	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.66%	0.00%
$1	$146	$24	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.65%	-4.00%
$5	$146	$20	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.65%	-20.00%
$10	$146	$15	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.65%	-40.00%
$15	$146	$10	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.65%	-60.00%
$20	$146	$5	$171	$26	$197	$118	$79	$1.94	$0.71	$1.18	$0.87	$0.30	4.65%	-80.00%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$146	$25	$171	0%
$1	$146	$25	$172	0.58%
$5	$146	$25	$176	2.84%
$10	$146	$25	$181	5.52%
$15	$146	$25	$186	8.06%
$20	$146	$25	$191	10.47%

Sources: Costar, RS Means Square Foot Costs 2010, RealtyRates.com

Appendix 3-11: 8000 SF Warehouse Distribution Scenario

Warehouse/Industrial 8000 Square Feet: Steel Frame/Precast Concrete				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.0	$42	8,000	336,000
Direct Construction		$118	8,000	944,000
Parking Required	16	$52	5,600	291,200
Soft Costs		$53	30%	370,560
Total Cost		$243		$ 1,941,760
Developer Profit Upon Sale	15%	$36		$ 291,264
Total with Developer Profit		$399		$ 2,233,024

Financing Assumptions		Investor Value	Developer Cost
Value		$2,233,024	$1,941,760
Loan To Value (LTV) Loan as % of Value	60%	$1,339,814	$1,165,056
Equity	40%	$893,210	$776,704
Interest Rate	7.50%		
Amortization	30		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	0%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$201	$42	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%
$1	$201	$42	$244	$36	$280	$168	$113	$2.54	$0.95	$1.59	$1.17	$0.41	4.41%	6.79%
$5	$201	$42	$248	$36	$284	$168	$117	$2.55	$0.95	$1.60	$1.17	$0.43	4.41%	6.75%
$10	$201	$42	$253	$36	$289	$168	$122	$2.57	$0.95	$1.62	$1.17	$0.45	4.41%	6.71%
$15	$201	$42	$258	$36	$294	$168	$127	$2.59	$0.95	$1.64	$1.17	$0.47	4.41%	6.67%
$20	$201	$42	$263	$36	$299	$168	$132	$2.61	$0.95	$1.66	$1.17	$0.48	4.41%	6.64%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(f-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$201	$42	$243	NA	NA	$146	$97	$2.33	$0.95	$1.38	$1.02	$0.36	4.41%	6.80%
$1	$201	$42	$244	NA	NA	$146	$98	$2.33	$0.95	$1.38	$1.02	$0.36	4.36%	6.77%
$5	$201	$42	$248	NA	NA	$146	$102	$2.33	$0.95	$1.38	$1.02	$0.36	4.19%	6.66%
$10	$201	$42	$253	NA	NA	$146	$107	$2.33	$0.95	$1.38	$1.02	$0.36	3.99%	6.53%
$15	$201	$42	$258	NA	NA	$146	$112	$2.33	$0.95	$1.38	$1.02	$0.36	3.82%	6.40%
$20	$201	$42	$263	NA	NA	$146	$117	$2.33	$0.95	$1.38	$1.02	$0.36	3.65%	6.28%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$201	$42	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	14.98%
$1	$201	$42	$244	$35	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	14.51%
$5	$201	$42	$248	$31	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	12.66%
$10	$201	$42	$253	$26	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	10.44%
$15	$201	$42	$258	$21	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	8.30%
$20	$201	$42	$263	$16	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	6.24%

Appendix 3-11: 8000 SF Warehouse Distribution Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$201	$42	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%
$1	$201	$42	$244	$36	$280	$168	$113	$2.53	$0.95	$1.58	$1.17	$0.41	4.37%	6.77%
$5	$201	$42	$248	$36	$284	$168	$117	$2.53	$0.95	$1.58	$1.17	$0.41	4.22%	6.68%
$10	$201	$42	$253	$36	$289	$168	$122	$2.53	$0.95	$1.58	$1.17	$0.41	4.04%	6.56%
$15	$201	$42	$258	$36	$294	$168	$127	$2.53	$0.95	$1.58	$1.17	$0.41	3.88%	6.45%
$20	$201	$42	$263	$36	$299	$168	$132	$2.53	$0.95	$1.58	$1.17	$0.41	3.74%	6.34%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$201	$42	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	0.00%
$1	$201	$41	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.40%	-2.38%
$5	$201	$37	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.40%	-11.90%
$10	$201	$32	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.40%	-23.81%
$15	$201	$27	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.40%	-35.71%
$20	$201	$22	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.40%	-47.62%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$201	$42	$243	0%
$1	$201	$42	$244	0.41%
$5	$201	$42	$248	2.02%
$10	$201	$42	$253	3.95%
$15	$201	$42	$258	5.81%
$20	$201	$42	$263	7.60%

Sources: Costar, RS Means Square Foot Costs 2010, RealtyRates.com

Appendix 3-12: Gas Station Scenario

Gas Station 600 Square Feet Steel frame, Concrete Block.				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$25	3,000	75,000
Direct Construction		$279	600	167,400
Parking Required	2	$10	700	7,000
Soft Costs		$102	35%	61,040
Total Cost		$517	0	$ 310,440
15% Developer Profit Upon Sale	15%	$78	-	$ 46,566
Total with Developer Profit		$595	-	$ 357,006

Financing Assumptions		Investor Value	Developer Cost
Value		$357,006	$310,440
Loan To Value (LTV) Loan as % of Value	65%	$232,054	$201,786
Equity	35%	$124,952	$108,654
Interest Rate	8.00%		
Amortization	20		
Debt Coverage Ratio	1.30		
Operating Expense Ratio	45%		
Vacancy Allowance	0%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Lot SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$392	$125	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%
$1	$392	$125	$518	$78	$596	$387	$209	$7.65	$3.44	$4.21	$3.23	$0.98	5.59%	8.48%
$5	$392	$125	$522	$78	$600	$387	$213	$7.67	$3.44	$4.23	$3.23	$0.99	5.59%	8.46%
$10	$392	$125	$527	$78	$605	$387	$218	$7.69	$3.44	$4.25	$3.23	$1.02	5.59%	8.43%
$15	$392	$125	$532	$78	$610	$387	$223	$7.72	$3.44	$4.28	$3.23	$1.04	5.59%	8.41%
$20	$392	$125	$537	$78	$615	$387	$228	$7.74	$3.44	$4.30	$3.23	$1.06	5.59%	8.39%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Lot SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$392	$125	$517	NA	NA	$336	$181	$7.10	$3.44	$3.66	$2.81	$0.84	5.59%	8.48%
$1	$392	$125	$518	NA	NA	$336	$182	$7.10	$3.44	$3.66	$2.81	$0.84	5.56%	8.47%
$5	$392	$125	$522	NA	NA	$336	$186	$7.10	$3.44	$3.66	$2.81	$0.84	5.44%	8.40%
$10	$392	$125	$527	NA	NA	$336	$191	$7.10	$3.44	$3.66	$2.81	$0.84	5.30%	8.32%
$15	$392	$125	$532	NA	NA	$336	$196	$7.10	$3.44	$3.66	$2.81	$0.84	5.16%	8.24%
$20	$392	$125	$537	NA	NA	$336	$201	$7.10	$3.44	$3.66	$2.81	$0.84	5.04%	8.17%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Lot SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
								Investor's							
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$392	$125	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%	15.00%
$1	$392	$125	$518	$77	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%	14.78%
$5	$392	$125	$522	$73	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%	13.90%
$10	$392	$125	$527	$68	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%	12.82%
$15	$392	$125	$532	$63	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%	11.76%
$20	$392	$125	$537	$58	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%	10.72%

Appendix 3-12: Gas Station Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Lot SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$392	$125	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	8.48%
$1	$392	$125	$518	$78	$596	$387	$209	$7.65	$3.44	$4.21	$3.23	$0.97	5.57%	8.47%
$5	$392	$125	$522	$78	$600	$387	$213	$7.65	$3.44	$4.21	$3.23	$0.97	5.46%	8.41%
$10	$392	$125	$527	$78	$605	$387	$218	$7.65	$3.44	$4.21	$3.23	$0.97	5.34%	8.34%
$15	$392	$125	$532	$78	$610	$387	$223	$7.65	$3.44	$4.21	$3.23	$0.97	5.22%	8.27%
$20	$392	$125	$537	$78	$615	$387	$228	$7.65	$3.44	$4.21	$3.23	$0.97	5.10%	8.21%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$392	$125	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	0.00%
$1	$392	$124	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	-0.80%
$5	$392	$120	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	-4.00%
$10	$392	$115	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	-8.00%
$15	$392	$110	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	-12.00%
$20	$392	$105	$517	$78	$595	$387	$208	$7.65	$3.44	$4.21	$3.23	$0.97	5.59%	-16.00%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$393	$125	$518	0%
$1	$393	$125	$519	0.19%
$5	$393	$125	$523	0.96%
$10	$393	$125	$528	1.90%
$15	$393	$125	$533	2.82%
$20	$393	$125	$538	3.72%

Sources: Costar, RS Means Square Foot Costs 2010, RealtyRates.com

Appendix 3-13: Auto Repair Garage Scenario

Auto Repair Shop 1100 SF-Steel Joists				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR .31	$10	3,500	35,000
Direct Construction		$208	1,100	228,800
Parking Required	4	$10	2,200	22,000
Soft Costs		$80	35%	87,780
Total Cost		$339		$ 373,580
15% Developer Profit Upon Sale	15%	$51	-	$ 56,037
Total with Developer Profit		$390	-	$ 429,617

Financing Assumptions		Investor Value	Developer Cost
Value		$429,617	$373,580
Loan To Value (LTV) Loan as % of Value	65%	$279,251	$242,827
Equity	35%	$150,366	$130,753
Interest Rate	8%		
Amortization	20		
Debt Coverage Ratio	130%		
Operating Expense Ratio	45%		
Vacancy Allowance	0%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF
a	b	c	d	e	f	g	h
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)
$0	$308	$31	$339	$51	$390	$253	$136
$1	$308	$31	$340	$51	$391	$253	$137
$5	$308	$31	$344	$51	$395	$253	$141
$10	$308	$31	$349	$51	$400	$253	$146
$15	$308	$31	$354	$51	$405	$253	$151
$20	$308	$31	$359	$51	$410	$253	$156

Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
i	j	k	l	m	n	o
(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.47%
$5.03	$2.25	$2.78	$2.12	$0.66	5.59%	8.44%
$5.06	$2.25	$2.80	$2.12	$0.68	5.59%	8.41%
$5.08	$2.25	$2.83	$2.12	$0.71	5.59%	8.37%
$5.10	$2.25	$2.85	$2.12	$0.73	5.59%	8.34%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF
a	b	c	d	e	f	g	h
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)
$0	$308	$31	$339	NA	NA	$220	$119
$1	$308	$31	$340	NA	NA	$220	$120
$5	$308	$31	$344	NA	NA	$220	$124
$10	$308	$31	$349	NA	NA	$220	$129
$15	$308	$31	$354	NA	NA	$220	$134
$20	$308	$31	$359	NA	NA	$220	$139

Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
i	j	k	l	m	n	o
(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$4.65	$2.25	$2.40	$1.84	$0.55	5.59%	8.48%
$4.65	$2.25	$2.40	$1.84	$0.55	5.55%	8.46%
$4.65	$2.25	$2.40	$1.84	$0.55	5.37%	8.36%
$4.65	$2.25	$2.40	$1.84	$0.55	5.16%	8.24%
$4.65	$2.25	$2.40	$1.84	$0.55	4.96%	8.12%
$4.65	$2.25	$2.40	$1.84	$0.55	4.79%	8.01%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF
a	b	c	d	e	f	g	h
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)
$0	$308	$31	$339	$51	$390	$253	$136
$1	$308	$31	$340	$50	$390	$253	$136
$5	$308	$31	$344	$46	$390	$253	$136
$10	$308	$31	$349	$41	$390	$253	$136
$15	$308	$31	$354	$36	$390	$253	$136
$20	$308	$31	$359	$31	$390	$253	$136

Investor's							
Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
i	j	k	l	m	n	o	p
(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%	15.03%
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%	14.69%
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%	13.36%
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%	11.73%
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%	10.15%
$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%	8.62%

Appendix 3-13: Auto Repair Garage Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$308	$31	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	8.48%
$1	$308	$31	$340	$51	$391	$253	$137	$5.01	$2.25	$2.76	$2.12	$0.64	5.55%	8.46%
$5	$308	$31	$344	$51	$395	$253	$141	$5.01	$2.25	$2.76	$2.12	$0.64	5.39%	8.37%
$10	$308	$31	$349	$51	$400	$253	$146	$5.01	$2.25	$2.76	$2.12	$0.64	5.21%	8.27%
$15	$308	$31	$354	$51	$405	$253	$151	$5.01	$2.25	$2.76	$2.12	$0.64	5.04%	8.17%
$20	$308	$31	$359	$51	$410	$253	$156	$5.01	$2.25	$2.76	$2.12	$0.64	4.88%	8.07%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$308	$31	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	0.00%
$1	$308	$30	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	-3.23%
$5	$308	$26	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	-16.13%
$10	$308	$21	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	-32.26%
$15	$308	$16	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	-48.39%
$20	$308	$11	$339	$51	$390	$253	$136	$5.01	$2.25	$2.76	$2.12	$0.64	5.59%	-64.52%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$308	$31	$339	0.00%
$1	$308	$31	$340	0.29%
$5	$308	$31	$344	1.45%
$10	$308	$31	$349	2.87%
$15	$308	$31	$354	4.24%
$20	$308	$31	$359	5.57%

Source: Costar, RS Means Square Foot Costs 2010

Appendix 3-14: Parking Structure Scenario

Parking Structure: 3 Story Reinforced Concrete Frame				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	P-Zone	$150	43,000	6,450,000
Direct Construction		$145	145,000	21,025,000
Parking Required 2/unit		$0	-	-
Soft Costs		$36	25%	5,256,250
Total Cost		$226		$ 32,731,250
Developer Profit	15%	$34		$ 4,909,688
Sales Value		$260		$ 37,640,938

Financing Assumptions		Investor	Developer
Value		$ 37,640,938	$32,731,250
Loan To Value (LTV) Loan as % of Value	65%	$24,466,609	$21,275,313
Equity	35%	$13,174,328	$11,455,938
Interest Rate	8.00%		
Amortization	20		
Debt Coverage Ratio	1.50		
Operating Expense Ratio	30%		
Vacancy Allowance	15%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	1 x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$182	$44	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%
$1	$182	$44	$227	$34	$261	$169	$92	$3.57	$0.91	$2.13	$1.41	$0.71	9.32%	9.78%
$5	$182	$44	$231	$34	$265	$169	$96	$3.61	$0.91	$2.16	$1.41	$0.75	9.32%	9.78%
$10	$182	$44	$236	$34	$270	$169	$101	$3.65	$0.91	$2.20	$1.41	$0.78	9.32%	9.77%
$15	$182	$44	$241	$34	$275	$169	$106	$3.70	$0.91	$2.24	$1.41	$0.82	9.32%	9.76%
$20	$182	$44	$246	$34	$280	$169	$111	$3.75	$0.91	$2.27	$1.41	$0.86	9.32%	9.75%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$182	$44	$226	NA	NA	$147	$79	$3.24	$0.91	$1.84	$1.23	$0.61	9.32%	9.79%
$1	$182	$44	$227	NA	NA	$147	$80	$3.24	$0.91	$1.84	$1.23	$0.61	9.20%	9.74%
$5	$182	$44	$231	NA	NA	$147	$84	$3.24	$0.91	$1.84	$1.23	$0.61	8.77%	9.57%
$10	$182	$44	$236	NA	NA	$147	$89	$3.24	$0.91	$1.84	$1.23	$0.61	8.27%	9.37%
$15	$182	$44	$241	NA	NA	$147	$94	$3.24	$0.91	$1.84	$1.23	$0.61	7.83%	9.18%
$20	$182	$44	$246	NA	NA	$147	$99	$3.24	$0.91	$1.84	$1.23	$0.61	7.44%	8.99%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's: Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	1 x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$182	$44	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	14.98%
$1	$182	$44	$227	$33	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	14.48%
$5	$182	$44	$231	$29	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	12.49%
$10	$182	$44	$236	$24	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	10.11%
$15	$182	$44	$241	$19	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	7.83%
$20	$182	$44	$246	$14	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	5.63%

Appendix 3-14: Parking Structure Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$182	$44	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%
$1	$182	$44	$227	$34	$261	$169	$92	$3.56	$0.91	$2.12	$1.41	$0.71	9.22%	9.75%
$5	$182	$44	$231	$34	$265	$169	$96	$3.56	$0.91	$2.12	$1.41	$0.71	8.83%	9.60%
$10	$182	$44	$236	$34	$270	$169	$101	$3.56	$0.91	$2.12	$1.41	$0.71	8.40%	9.42%
$15	$182	$44	$241	$34	$275	$169	$106	$3.56	$0.91	$2.12	$1.41	$0.71	8.00%	9.25%
$20	$182	$44	$246	$34	$280	$169	$111	$3.56	$0.91	$2.12	$1.41	$0.71	7.64%	9.09%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's							
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**% Decline in Land Value**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f	
$0	$182	$44	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.79%	0.00%
$1	$182	$43	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.78%	-2.27%
$5	$182	$39	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.78%	-11.36%
$10	$182	$34	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.78%	-22.73%
$15	$182	$29	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.78%	-34.09%
$20	$182	$24	$226	$34	$260	$169	$91	$3.56	$0.91	$2.12	$1.41	$0.71	9.32%	9.78%	-45.45%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$182	$44	$226	0%
$1	$182	$44	$227	0.44%
$5	$182	$44	$231	2.16%
$10	$182	$44	$236	4.24%
$15	$182	$44	$241	6.22%
$20	$182	$44	$246	8.13%

Appendix 3-15: Two-Story Office Scenario

2 Story Office: Wood Frame Wood Siding				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.5	$100	6,000	600,000
Direct Construction		$125	8,000	1,000,000
Parking Required	16	$10	5,600	56,000
Soft Costs		$46	35%	369,600
Total Cost		$253		$ 2,025,600
Developer Profit Upon Sale	15%	$38		$ 303,840
Total with Developer Profit		$291		$ 2,329,440

Financing Assumptions		Investor	Developer
Value		$ 2,329,440	$2,025,600
Loan To Value (LTV) Loan as % of Value	65%	$ 1,514,136	$1,316,640
Equity	35%	$ 815,304	$708,960
Interest Rate	7.50%		
Amortization	30		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	54%		
Vacancy Allowance	15%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF
a	b	c	d	e	f	g	h
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)
$0	$179	$75	$254	$38	$292	$190	$102
$1	$179	$75	$255	$38	$293	$190	$103
$5	$179	$75	$259	$38	$297	$190	$107.24
$10	$179	$75	$264	$38	$302	$190	$112.24
$15	$179	$75	$269	$38	$307	$190	$117
$20	$179	$75	$274	$38	$312	$190	$122

Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
i	j	k	l	m	n	o
(j+k)/(1-vacancy)	assumed	1 x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%
$4.59	$2.10	$1.80	$1.33	$0.47	5.45%	7.36%
$4.61	$2.10	$1.81	$1.33	$0.49	5.45%	7.33%
$4.64	$2.10	$1.84	$1.33	$0.51	5.45%	7.30%
$4.66	$2.10	$1.86	$1.33	$0.53	5.45%	7.27%
$4.69	$2.10	$1.88	$1.33	$0.56	5.45%	7.24%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF
a	b	c	d	e	f	g	h
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(f-g)
$0	$179	$75	$254	NA	NA	$165	$89
$1	$179	$75	$255	NA	NA	$165	$90
$5	$179	$75	$259	NA	NA	$165	$94
$10	$179	$75	$264	NA	NA	$165	$99
$15	$179	$75	$269	NA	NA	$165	$104
$20	$179	$75	$274	NA	NA	$165	$109

Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
i	j	k	l	m	n	o
(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$4.31	$2.10	$1.56	$1.15	$0.40	5.45%	7.36%
$4.31	$2.10	$1.56	$1.15	$0.40	5.39%	7.33%
$4.31	$2.10	$1.56	$1.15	$0.40	5.16%	7.22%
$4.31	$2.10	$1.56	$1.15	$0.40	4.90%	7.08%
$4.31	$2.10	$1.56	$1.15	$0.40	4.67%	6.95%
$4.31	$2.10	$1.56	$1.15	$0.40	4.45%	6.83%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF
a	b	c	d	e	f	g	h
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)
$0	$179	$75	$254	$38	$292	$190	$102
$1	$179	$75	$255	$37	$292	$190	$102
$5	$179	$75	$259	$33	$292	$190	$102
$10	$179	$75	$264	$28	$292	$190	$102
$15	$179	$75	$269	$23	$292	$190	$102
$20	$179	$75	$274	$18	$292	$190	$102

Investor's							
Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
i	j	k	l	m	n	o	p
(j+k)/(1-vacancy)	assumed	1 x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%	14.95%
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%	14.94%
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%	14.71%
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%	14.43%
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%	14.16%
$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%	13.91%

Appendix 3-15: Two-Story Office Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	1.1 x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$179	$75	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	7.36%
$1	$179	$75	$255	$38	$293	$190	$103	$4.58	$2.10	$1.79	$1.33	$0.46	5.40%	7.34%
$5	$179	$75	$259	$38	$297	$190	$107	$4.58	$2.10	$1.79	$1.33	$0.46	5.20%	7.24%
$10	$179	$75	$264	$38	$302	$190	$112	$4.58	$2.10	$1.79	$1.33	$0.46	4.97%	7.12%
$15	$179	$75	$269	$38	$307	$190	$117	$4.58	$2.10	$1.79	$1.33	$0.46	4.76%	7.00%
$20	$179	$75	$274	$38	$312	$190	$122	$4.58	$2.10	$1.79	$1.33	$0.46	4.56%	6.89%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	1.1 x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$179	$75	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	0.00%
$1	$179	$74	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	-1.33%
$5	$179	$70	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	-6.67%
$10	$179	$65	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	-13.33%
$15	$179	$60	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	-20.00%
$20	$179	$55	$254	$38	$292	$190	$102	$4.58	$2.10	$1.79	$1.33	$0.46	5.45%	-26.67%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$179	$75	$254	0%
$1	$179	$75	$255	0.39%
$5	$179	$75	$259	1.93%
$10	$179	$75	$264	3.79%
$15	$179	$75	$269	5.58%
$20	$179	$75	$274	7.30%

Source: Costar, RS Means Square Foot Costs 2010, Market Survey RealtyRates.com

Appendix 3-16: High Rise Office Scenario

16 Story Office: Steel Frame/Structured Parking					
Development Cost Assumptions			**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 6:1		$125	45,000	5,625,000
Direct Construction			$183	260,000	47,580,000
Parking Required	520	-	$73	182,000	13,346,814
Soft Costs			$82	35%	21,324,385
Total Cost			$338	0	$ 87,876,199
Developer Profit Upon Sale	15%		$51	-	$ 13,181,430
Total with Developer Profit			$389	-	$ 101,057,628

Financing Assumptions		Investor	Developer
Value	0	$ 101,057,628	$87,876,199
Loan To Value (LTV) Loan as % of Value	65%	$ 65,687,458	$57,119,529
Equity	35%	$ 35,370,170	$30,756,670
Interest Rate	7.50%		
Amortization	30		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	54%		
Vacancy Allowance	15%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$317	$21	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%
$1	$317	$21	$339	$51	$390	$253	$137	$6.10	$2.80	$2.39	$1.77	$0.62	5.45%	7.36%
$5	$317	$21	$343	$51	$394	$253	$141	$6.13	$2.80	$2.41	$1.77	$0.64	5.45%	7.34%
$10	$317	$21	$348	$51	$399	$253	$146	$6.15	$2.80	$2.43	$1.77	$0.66	5.45%	7.31%
$15	$317	$21	$353	$51	$404	$253	$151	$6.18	$2.80	$2.45	$1.77	$0.69	5.45%	7.29%
$20	$317	$21	$358	$51	$409	$253	$156	$6.21	$2.80	$2.48	$1.77	$0.71	5.45%	7.27%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(f-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$317	$21	$338	NA	NA	$220	$118	$5.73	$2.80	$2.07	$1.54	$0.54	5.45%	7.36%
$1	$317	$21	$339	NA	NA	$220	$119	$5.73	$2.80	$2.07	$1.54	$0.54	5.41%	7.34%
$5	$317	$21	$343	NA	NA	$220	$123	$5.73	$2.80	$2.07	$1.54	$0.54	5.23%	7.26%
$10	$317	$21	$348	NA	NA	$220	$128	$5.73	$2.80	$2.07	$1.54	$0.54	5.03%	7.15%
$15	$317	$21	$353	NA	NA	$220	$133	$5.73	$2.80	$2.07	$1.54	$0.54	4.84%	7.05%
$20	$317	$21	$358	NA	NA	$220	$138	$5.73	$2.80	$2.07	$1.54	$0.54	4.67%	6.95%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

								Investor's							
Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$317	$21	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%	15.00%
$1	$317	$21	$339	$50	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%	14.96%
$5	$317	$21	$343	$46	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%	14.78%
$10	$317	$21	$348	$41	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%	14.57%
$15	$317	$21	$353	$36	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%	14.36%
$20	$317	$21	$358	$31	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%	14.16%

Appendix 3-16: High Rise Office Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$317	$21	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	7.36%
$1	$317	$21	$339	$51	$390	$253	$137	$6.10	$2.80	$2.38	$1.77	$0.62	5.41%	7.34%
$5	$317	$21	$343	$51	$394	$253	$141	$6.10	$2.80	$2.38	$1.77	$0.62	5.26%	7.27%
$10	$317	$21	$348	$51	$399	$253	$146	$6.10	$2.80	$2.38	$1.77	$0.62	5.08%	7.18%
$15	$317	$21	$353	$51	$404	$253	$151	$6.10	$2.80	$2.38	$1.77	$0.62	4.91%	7.09%
$20	$317	$21	$358	$51	$409	$253	$156	$6.10	$2.80	$2.38	$1.77	$0.62	4.75%	7.00%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$317	$21	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	0.00%
$1	$317	$20	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	-4.76%
$5	$317	$16	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	-23.81%
$10	$317	$11	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	-47.62%
$15	$317	$6	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	-71.43%
$20	$317	$1	$338	$51	$389	$253	$136	$6.10	$2.80	$2.38	$1.77	$0.62	5.45%	-95.24%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$317	$21	$338	0%
$1	$317	$21	$339	0.29%
$5	$317	$21	$343	1.46%
$10	$317	$21	$348	2.87%
$15	$317	$21	$353	4.25%
$20	$317	$21	$358	5.59%

Source: Costar, RS Means Square Foot Costs 2010, Market Survey RealtyRates.com

Appendix 3-17: Quick Service Restaurant Scenario

Warehouse/Industrial 8000 Square Feet: Steel Frame/Precast Concrete					
Development Cost Assumptions			**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 1.0		$42	8,000	336,000
Direct Construction			$118	8,000	944,000
Parking Required	16		$52	5,600	291,200
Soft Costs			$53	30%	370,560
Total Cost			$243		$ 1,941,760
Developer Profit Upon Sale		15%	$36		$ 291,264
Total with Developer Profit			$399		$ 2,233,024

Financing Assumptions		Investor Value	Developer Cost
Value		$2,233,024	$1,941,760
Loan To Value (LTV) Loan as % of Value	60%	$1,339,814	$1,165,056
Equity	40%	$893,210	$776,704
Interest Rate	7.50%		
Amortization	30		
Debt Coverage Ratio	1.35		
Operating Expense Ratio	38%		
Vacancy Allowance	0%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$201	$42	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%
$1	$201	$42	$244	$36	$280	$168	$113	$2.54	$0.95	$1.59	$1.17	$0.41	4.41%	6.79%
$5	$201	$42	$248	$36	$284	$168	$117	$2.55	$0.95	$1.60	$1.17	$0.43	4.41%	6.75%
$10	$201	$42	$253	$36	$289	$168	$122	$2.57	$0.95	$1.62	$1.17	$0.45	4.41%	6.71%
$15	$201	$42	$258	$36	$294	$168	$127	$2.59	$0.95	$1.64	$1.17	$0.47	4.41%	6.67%
$20	$201	$42	$263	$36	$299	$168	$132	$2.61	$0.95	$1.66	$1.17	$0.48	4.41%	6.64%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(f-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$201	$42	$243	NA	NA	$146	$97	$2.33	$0.95	$1.38	$1.02	$0.36	4.41%	6.80%
$1	$201	$42	$244	NA	NA	$146	$98	$2.33	$0.95	$1.38	$1.02	$0.36	4.36%	6.77%
$5	$201	$42	$248	NA	NA	$146	$102	$2.33	$0.95	$1.38	$1.02	$0.36	4.19%	6.66%
$10	$201	$42	$253	NA	NA	$146	$107	$2.33	$0.95	$1.38	$1.02	$0.36	3.99%	6.53%
$15	$201	$42	$258	NA	NA	$146	$112	$2.33	$0.95	$1.38	$1.02	$0.36	3.82%	6.40%
$20	$201	$42	$263	NA	NA	$146	$117	$2.33	$0.95	$1.38	$1.02	$0.36	3.65%	6.28%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
								Investor's							
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$201	$42	$243	$36	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	14.98%
$1	$201	$42	$244	$35	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	14.51%
$5	$201	$42	$248	$31	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	12.66%
$10	$201	$42	$253	$26	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	10.44%
$15	$201	$42	$258	$21	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	8.30%
$20	$201	$42	$263	$16	$279	$168	$112	$2.53	$0.95	$1.58	$1.17	$0.41	4.41%	6.80%	6.24%

Appendix 3-17: Quick Service Restaurant Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$415	$450	$865	$130	$995	$646	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	7.36%
$1	$415	$450	$866	$130	$996	$646	$349	$8.72	$2.62	$6.10	$4.52	$1.58	5.44%	7.36%
$5	$415	$450	$870	$130	$1,000	$646	$353	$8.72	$2.62	$6.10	$4.52	$1.58	5.38%	7.33%
$10	$415	$450	$875	$130	$1,005	$646	$358	$8.72	$2.62	$6.10	$4.52	$1.58	5.30%	7.29%
$15	$415	$450	$880	$130	$1,010	$646	$363	$8.72	$2.62	$6.10	$4.52	$1.58	5.23%	7.25%
$20	$415	$450	$885	$130	$1,015	$646	$368	$8.72	$2.62	$6.10	$4.52	$1.58	5.16%	7.22%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$415	$450	$865	$130	$995	$646	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	0.00%
$1	$415	$449	$865	$130	$995	$647	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	-0.22%
$5	$415	$445	$865	$130	$995	$647	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	-1.11%
$10	$415	$440	$865	$130	$995	$647	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	-2.22%
$15	$415	$435	$865	$130	$995	$647	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	-3.33%
$20	$415	$430	$865	$130	$995	$647	$348	$8.72	$2.62	$6.10	$4.52	$1.58	5.45%	-4.44%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$415	$450	$865	0%
$1	$415	$450	$866	0.12%
$5	$415	$450	$870	0.57%
$10	$415	$450	$875	1.14%
$15	$415	$450	$880	1.70%
$20	$415	$450	$885	2.26%

Source: Costar, RS Means Square Foot Costs 2010, Market Survey RealtyRates.com

Appendix 3-18: Anchored Retail Strip Center Scenario

2 Story Neighborhood Strip Retail Center with Reinforced Concrete Frame/3 story parking structure					
Development Cost Assumptions			**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR .9	-	$76	55,000	4,180,000
Direct Construction			$121	50,000	6,050,000
Parking Required	200		$64	90,000	5,760,000
Soft Costs			$83	35%	4,133,500
Total Cost			$402	0	$ 20,123,500
Developer Profit Upon Sale	15%	.	$60	-	$ 3,018,525
Total with Developer Profit			$463	-	$ 23,142,025

Financing Assumptions		Investor	Developer
Value		$ 23,142,025	$20,123,500
Loan To Value (LTV) Loan as % of Value	65%	$ 15,042,316	$13,080,275
Equity	35%	$ 8,099,709	$7,043,225
Interest Rate	8%		
Amortization	30		
Debt Coverage Ratio	135%		
Operating Expense Ratio	30%		
Vacancy Allowance	7%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$319	$83	$402	$60	$462	$300	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%
$1	$319	$83	$403	$60	$463	$300	$163	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%
$5	$319	$83	$407	$60	$467	$300	$167	$4.38	$1.22	$2.86	$2.10	$0.76	5.45%	7.34%
$10	$319	$83	$412	$60	$472	$300	$172	$4.41	$1.22	$2.88	$2.10	$0.78	5.45%	7.32%
$15	$319	$83	$417	$60	$477	$300	$177	$4.43	$1.22	$2.90	$2.10	$0.80	5.45%	7.30%
$20	$319	$83	$422	$60	$482	$300	$182	$4.45	$1.22	$2.93	$2.10	$0.83	5.45%	7.28%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$319	$83	$402	NA	NA	$261	$141	$3.96	$1.22	$2.47	$1.83	$0.64	5.45%	7.36%
$1	$319	$83	$403	NA	NA	$261	$142	$3.96	$1.22	$2.47	$1.83	$0.64	5.42%	7.34%
$5	$319	$83	$407	NA	NA	$261	$146	$3.96	$1.22	$2.47	$1.83	$0.64	5.27%	7.27%
$10	$319	$83	$412	NA	NA	$261	$151	$3.96	$1.22	$2.47	$1.83	$0.64	5.09%	7.18%
$15	$319	$83	$417	NA	NA	$261	$156	$3.96	$1.22	$2.47	$1.83	$0.64	4.93%	7.10%
$20	$319	$83	$422	NA	NA	$261	$161	$3.96	$1.22	$2.47	$1.83	$0.64	4.78%	7.01%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
								Investor's							
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$319	$83	$402	$60	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%	15.02%
$1	$319	$83	$403	$59	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%	14.73%
$5	$319	$83	$407	$55	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%	13.60%
$10	$319	$83	$412	$50	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%	12.23%
$15	$319	$83	$417	$45	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%	10.88%
$20	$319	$83	$422	$40	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%	9.57%

Appendix 3-18: Anchored Retail Strip Center Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

								Investor's						
Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$319	$83	$402	$60	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	7.36%
$1	$319	$83	$403	$60	$463	$301	$163	$4.36	$1.22	$2.84	$2.10	$0.74	5.42%	7.35%
$5	$319	$83	$407	$60	$467	$301	$167	$4.36	$1.22	$2.84	$2.10	$0.74	5.29%	7.28%
$10	$319	$83	$412	$60	$472	$301	$172	$4.36	$1.22	$2.84	$2.10	$0.74	5.14%	7.21%
$15	$319	$83	$417	$60	$477	$301	$177	$4.36	$1.22	$2.84	$2.10	$0.74	4.99%	7.13%
$20	$319	$83	$422	$60	$482	$301	$182	$4.36	$1.22	$2.84	$2.10	$0.74	4.85%	7.06%

Land Valuation Analysis-Fee Absorbed by Land Owner

								Investor's						
Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$319	$83	$402	$60	$462	$301	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	0.00%
$1	$319	$82	$402	$60	$462	$300	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	-1.20%
$5	$319	$78	$402	$60	$462	$300	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	-6.02%
$10	$319	$73	$402	$60	$462	$300	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	-12.05%
$15	$319	$68	$402	$60	$462	$300	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	-18.07%
$20	$319	$63	$402	$60	$462	$300	$162	$4.36	$1.22	$2.84	$2.10	$0.74	5.45%	-24.10%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$319	$83	$402	0%
$1	$319	$83	$403	0.25%
$5	$319	$83	$407	1.23%
$10	$319	$83	$412	2.43%
$15	$319	$83	$417	3.60%
$20	$319	$83	$422	4.74%

Source: Costar, RS Means Square Foot Costs 2010, Market Survey RealtyRates.com

Appendix 3-19: Unanchored Retail Strip Center Scenario

Unanchored Neighborhood Strip Retail Center: 1 Story Reinforced Concrete				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 2:1	$45	9,600	432,000
Direct Construction		$121	4,000	484,000
Parking Required	16	$10	5,600	56,000
Soft Costs		$47	35%	189,000
Total Cost		$290	0	$ 1,161,000
Developer Profit Upon Sale	15%	$44	-	$ 174,150
Total with Developer Profit		$334	-	$ 1,335,150

Financing Assumptions		Investor	Developer
Value		$ 1,335,150	$1,161,000
Loan To Value (LTV) Loan as % of Value	65%	$ 867,848	$754,650
Equity	35%	$ 467,303	$406,350
Interest Rate	8%		
Amortization	30		
Debt Coverage Ratio	135%		
Operating Expense Ratio	30%		
Vacancy Allowance	7%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	1x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$183	$108	$291	$44	$335	$218	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%
$1	$183	$108	$292	$44	$336	$218	$118	$3.16	$0.88	$2.06	$1.52	$0.54	5.45%	7.36%
$5	$183	$108	$296	$44	$340	$218	$122	$3.18	$0.88	$2.08	$1.52	$0.56	5.45%	7.33%
$10	$183	$108	$301	$44	$345	$218	$127	$3.20	$0.88	$2.10	$1.52	$0.58	5.45%	7.31%
$15	$183	$108	$306	$44	$350	$218	$132	$3.23	$0.88	$2.12	$1.52	$0.60	5.45%	7.28%
$20	$183	$108	$311	$44	$355	$218	$137	$3.25	$0.88	$2.14	$1.52	$0.62	5.45%	7.26%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(d-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$183	$108	$291	NA	NA	$189	$102	$2.87	$0.88	$1.79	$1.32	$0.46	5.45%	7.36%
$1	$183	$108	$292	NA	NA	$189	$103	$2.87	$0.88	$1.79	$1.32	$0.46	5.40%	7.34%
$5	$183	$108	$296	NA	NA	$189	$107	$2.87	$0.88	$1.79	$1.32	$0.46	5.20%	7.24%
$10	$183	$108	$301	NA	NA	$189	$112	$2.87	$0.88	$1.79	$1.32	$0.46	4.97%	7.12%
$15	$183	$108	$306	NA	NA	$189	$117	$2.87	$0.88	$1.79	$1.32	$0.46	4.75%	7.00%
$20	$183	$108	$311	NA	NA	$189	$122	$2.87	$0.88	$1.79	$1.32	$0.46	4.56%	6.89%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	1x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$183	$108	$291	$44	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%	14.96%
$1	$183	$108	$292	$43	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%	14.57%
$5	$183	$108	$296	$39	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%	13.02%
$10	$183	$108	$301	$34	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%	11.14%
$15	$183	$108	$306	$29	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%	9.33%
$20	$183	$108	$311	$24	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%	7.57%

Appendix 3-19: Unanchored Retail Strip Center Scenario

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$183	$108	$291	$44	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	7.36%
$1	$183	$108	$292	$44	$336	$217	$118	$3.15	$0.88	$2.05	$1.52	$0.53	5.41%	7.34%
$5	$183	$108	$296	$44	$340	$217	$122	$3.15	$0.88	$2.05	$1.52	$0.53	5.23%	7.25%
$10	$183	$108	$301	$44	$345	$217	$127	$3.15	$0.88	$2.05	$1.52	$0.53	5.02%	7.15%
$15	$183	$108	$306	$44	$350	$217	$132	$3.15	$0.88	$2.05	$1.52	$0.53	4.83%	7.05%
$20	$183	$108	$311	$44	$355	$217	$137	$3.15	$0.88	$2.05	$1.52	$0.53	4.66%	6.95%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	
$0	$183	$108	$291	$44	$335	$217	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	0.00%
$1	$183	$107	$291	$44	$335	$218	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	-0.93%
$5	$183	$103	$291	$44	$335	$218	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	-4.63%
$10	$183	$98	$291	$44	$335	$218	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	-9.26%
$15	$183	$93	$291	$44	$335	$218	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	-13.89%
$20	$183	$88	$291	$44	$335	$218	$117	$3.15	$0.88	$2.05	$1.52	$0.53	5.45%	-18.52%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$183	$108	$291	0%
$1	$183	$108	$292	0.34%
$5	$183	$108	$296	1.69%
$10	$183	$108	$301	3.32%
$15	$183	$108	$306	4.90%
$20	$183	$108	$311	6.43%

Source: Costar, RS Means Square Foot Costs 2010, Market Survey RealtyRates.com

Appendix 3-20: High Rise Condominium Scenario

15 Story High Rise Condominium: steel frame with concrete					
Development Cost Assumptions		**Per Unit**	**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 6:10		$200	25,000	5,000,000
Direct Construction	-		$130	145,000	18,850,000
2 car garage	200		$57	70,000	3,957,660
Soft Costs			$55	35%	7,982,681
Total Cost			$247		$ 35,790,341
Developer Profit	15%		$37		$ 5,368,551
Total with Developer Profit		$411,589	$284		$ 41,158,892

Financing Assumptions	Homebuyer	Developer	
Value			$411,589
Homebuyer Loan to Value	80%		$329,271
Equity	20%		$82,318
Interest Rate	6.00%		
Term in Years	30		
Maximum Housing Cost to Income Ratio	45%		
Monthly Homeowner Association Dues	$150.00		
Property Taxes as % of Value	1.25%		
Property Insurance (annual)	$1,000.00		

Developer Loan to Cost	65%
Developer Equity	35%

Threshold Rent Analysis-Impact of Fee Absorbed by User (Home Buyer)

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost Per SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(b+c)	LTV x value	(d-e)
$0.00	$213	$34	$247	$160	$86
$1.00	$213	$34	$248	$160	$87
$5.00	$213	$34	$252	$160	$91
$10.00	$213	$34	$257	$160	$96
$15.00	$213	$34	$262	$160	$101
$20.00	$213	$34	$267	$160	$106

Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes, HOA and Insurance	Monthly Mortgage Payment	**Monthly Payments (Mortgage, Taxes, Insurance)**	**Minimum Annual Income to Qualify for Mortgage**
g	h	i	j	k	l	m
assumed	g x (100-Buyer LTV)	(g-h)	assumed	assumed	j+k	l/housing expense ratio x 12
$284	$57	$227	$662	$1,974	$2,636	$70,299
$285	$57	$228	$662	$1,981	$2,643	$70,485
$289	$58	$231	$662	$2,009	$2,671	$71,226
$294	$59	$235	$662	$2,044	$2,706	$72,154
$299	$60	$239	$662	$2,078	$2,741	$73,081
$304	$61	$243	$662	$2,113	$2,775	$74,008

Profit Margin Analysis-Linkage Fee Absorbed by Developer

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost Per SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(a+b+c)	LTV x value	(d-e)
$0.00	$213	$34	$247	$160	$87
$1.00	$213	$34	$247	$160	$87
$5.00	$213	$34	$252	$160	$91
$10.00	$213	$34	$257	$160	$96
$15.00	$213	$34	$262	$160	$101
$20.00	$213	$34	$267	$160	$106

			Investor's				
Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**Developer's Rate of Return on Sale Price Per SF**	**Developer's Profit Margin**
g	h	i	j	k	l	m	n
assumed	assumed	(g-h)	assumed	assumed	(g-d)	(l/g)	(l/d)
$284	$57	$227	$512	$1,974	$36	13%	14.70%
$284	$57	$227	$512	$1,974	$36	13%	14.70%
$284	$57	$227	$512	$1,974	$32	11%	12.72%
$284	$57	$227	$512	$1,974	$27	10%	10.52%
$284	$57	$227	$512	$1,974	$22	8%	8.41%
$284	$57	$227	$512	$1,974	$17	6%	6.38%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost Per SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(a+b)	LTC x Cost	(d-e)
$0.00	$213	$34	$247	$161	$87
$1.00	$213	$33	$247	$161	$87
$5.00	$213	$29	$247	$161	$87
$10.00	$213	$24	$247	$161	$87
$15.00	$213	$19	$247	$161	$87
$20.00	$213	$14	$247	$161	$87

Investor's						
Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**% Change in Land Value Due to Fee**
g	h	i	j	k	l	m
assumed	assumed	(g-h)	assumed	assumed	(g-d)	
$284	$57	$227	$512	$164,656	$36	0.00%
$284	$57	$227	$512	$164,656	$36	-2.90%
$284	$57	$227	$512	$164,656	$36	-14.50%
$284	$57	$227	$512	$164,656	$36	-29.00%
$284	$57	$227	$512	$164,656	$36	-43.50%
$284	$57	$227	$512	$164,656	$36	-58.00%

Fee as Percentage of Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b)	(a/d)
$0.00	$213	$34	$247	0%
$1.00	$213	$34	$248	0.40%
$5.00	$213	$34	$252	1.99%
$10.00	$213	$34	$257	3.89%
$15.00	$213	$34	$262	5.73%
$20.00	$213	$34	$267	7.50%

Sources: Costar, RS Means Square Foot Costs 2010.

Appendix 3-21: 100 Unit Apartment Scenario

10 Story 100 Unit Apartment: Steel Frame Construction/Concrete					
Development Cost Assumptions		**Per Unit**	**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 6:1		$150	18,000	2,700,000
Direct Construction			$125	100,000	12,500,000
Parking Required	200		$57	70,000	3,990,000
Soft Costs			$58	35%	5,771,500
Total Cost		$ 249,615	$250		$ 24,961,500
Developer Profit		15%	$37		$ 3,744,225
Total with Developer Profit		$ 287,057	$287		$ 28,705,725

Financing Assumptions		Investor	Developer
Value		$ 28,705,725	$24,961,500
Loan To Value (LTV) Loan as % of Value	75%	$ 21,529,294	$18,721,125
Equity	25%	$ 7,176,431	$6,240,375
Interest Rate	7.00%		
Amortization	30		
Debt Coverage Ratio	1.25		
Operating Expense Ratio	40%		
Vacancy Allowance	5%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$223	$27	$250	$38	$288	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%
$1	$223	$27	$251	$38	$289	$216	$73	$3.15	$1.20	$1.80	$1.43	$0.36	5.99%	7.48%
$5	$223	$27	$255	$38	$293	$216	$77	$3.17	$1.20	$1.82	$1.43	$0.38	5.99%	7.46%
$10	$223	$27	$260	$38	$298	$216	$82	$3.20	$1.20	$1.84	$1.43	$0.41	5.99%	7.43%
$15	$223	$27	$265	$38	$303	$216	$87	$3.22	$1.20	$1.87	$1.43	$0.43	5.99%	7.41%
$20	$223	$27	$270	$38	$308	$216	$92	$3.25	$1.20	$1.89	$1.43	$0.46	5.99%	7.39%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(f-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$223	$27	$250	NA	NA	$188	$63	$2.90	$1.20	$1.56	$1.25	$0.31	5.99%	7.48%
$1	$223	$27	$251	NA	NA	$188	$64	$2.90	$1.20	$1.56	$1.25	$0.31	5.89%	7.45%
$5	$223	$27	$255	NA	NA	$188	$68	$2.90	$1.20	$1.56	$1.25	$0.31	5.54%	7.34%
$10	$223	$27	$260	NA	NA	$188	$73	$2.90	$1.20	$1.56	$1.25	$0.31	5.16%	7.20%
$15	$223	$27	$265	NA	NA	$188	$78	$2.90	$1.20	$1.56	$1.25	$0.31	4.83%	7.06%
$20	$223	$27	$270	NA	NA	$188	$83	$2.90	$1.20	$1.56	$1.25	$0.31	4.54%	6.93%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0	$223	$27	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%	14.98%
$1	$223	$27	$251	$36	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%	14.52%
$5	$223	$27	$255	$32	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%	12.72%
$10	$223	$27	$260	$27	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%	10.55%
$15	$223	$27	$265	$22	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%	8.47%
$20	$223	$27	$270	$17	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%	6.46%

Appendix 3-21: 100 Unit Apartment Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$223	$27	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	7.48%
$1	$223	$27	$251	$37	$288	$216	$73	$3.15	$1.20	$1.79	$1.43	$0.36	5.91%	7.46%
$5	$223	$27	$255	$37	$292	$216	$77	$3.15	$1.20	$1.79	$1.43	$0.36	5.60%	7.36%
$10	$223	$27	$260	$37	$297	$216	$82	$3.15	$1.20	$1.79	$1.43	$0.36	5.26%	7.23%
$15	$223	$27	$265	$37	$302	$216	$87	$3.15	$1.20	$1.79	$1.43	$0.36	4.95%	7.11%
$20	$223	$27	$270	$37	$307	$216	$92	$3.15	$1.20	$1.79	$1.43	$0.36	4.68%	7.00%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Decline in Land Value**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0	$223	$27	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	0.00%
$1	$223	$26	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	-3.70%
$5	$223	$22	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	-18.52%
$10	$223	$17	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	-37.04%
$15	$223	$12	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	-55.56%
$20	$223	$7	$250	$37	$287	$216	$72	$3.15	$1.20	$1.79	$1.43	$0.36	5.99%	-74.07%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0	$223	$27	$250	0%
$1	$223	$27	$251	0.40%
$5	$223	$27	$255	1.96%
$10	$223	$27	$260	3.85%
$15	$223	$27	$265	5.66%
$20	$223	$27	$270	7.41%

Sources: Costar, RS Means Square Foot Costs 2010.

Appendix 3-22: 10 Unit Apartment Scenario

10 Unit Apartment: 2 Story Woodframe				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR 3:1	$50	6,000	300,000
Direct Construction		$148	8,000	1,184,000
Parking Required 2/unit	16	$5	7,000	35,000
Soft Costs		$53	35%	426,650
Total Cost		$243	0	$ 1,945,650
Developer Profit	15%	$36		$ 291,848
Total with Developer Profit		$280		$ 2,237,498

Financing Assumptions		Investor	Developer
Value		$ 2,237,498	$1,945,650
Loan To Value (LTV) Loan as % of Value	75%	$ 1,678,123	$1,459,238
Equity	25%	$ 559,374	$486,413
Interest Rate	7.00%		
Amortization	30		
Debt Coverage Ratio	1.25		
Operating Expense Ratio	40%		
Vacancy Allowance	13%		

Threshold Rent Analysis-Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0	$206	$37	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%
$1	$206	$37	$244	$36	$280	$210	$71	$3.34	$1.16	$1.75	$1.39	$0.35	5.99%	7.48%
$5	$206	$37	$248	$36	$284	$210	$75	$3.37	$1.16	$1.77	$1.39	$0.37	5.99%	7.46%
$10	$206	$37	$253	$36	$289	$210	$80	$3.40	$1.16	$1.79	$1.39	$0.40	5.99%	7.43%
$15	$206	$37	$258	$36	$294	$210	$85	$3.43	$1.16	$1.82	$1.39	$0.42	5.99%	7.41%
$20	$206	$37	$263	$36	$299	$210	$90	$3.45	$1.16	$1.84	$1.39	$0.45	5.99%	7.38%

Return on Investment Analysis-Linkage Fee Absorbed by Developer Holding Property

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Development Cost	Equity Portion of Development Cost Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Rate of Return on Equity (Cash on Cash Return)	**Developer's Return on Investment**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTC x f)	(f-g)	(j+k)/(1-vacancy)	assumed	(i-j)	assumed	(k-l)	(mx12)/(h)	(kx12)/f
$0.00	$206	$37	$243	NA	NA	$182	$61	$3.08	$1.16	$1.52	$1.21	$0.30	5.99%	7.48%
$1.00	$206	$37	$244	NA	NA	$182	$62	$3.08	$1.16	$1.52	$1.21	$0.30	5.89%	7.45%
$5.00	$206	$37	$248	NA	NA	$182	$66	$3.08	$1.16	$1.52	$1.21	$0.30	5.53%	7.33%
$10.00	$206	$37	$253	NA	NA	$182	$71	$3.08	$1.16	$1.52	$1.21	$0.30	5.14%	7.19%
$15.00	$206	$37	$258	NA	NA	$182	$76	$3.08	$1.16	$1.52	$1.21	$0.30	4.80%	7.05%
$20.00	$206	$37	$263	NA	NA	$182	$81	$3.08	$1.16	$1.52	$1.21	$0.30	4.50%	6.92%

Profit Margin Analysis-Linkage Fee Absorbed by Developer Upon Sale

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Cap Rate**	**Developer's Profit Margin**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	I x debt coverage ratio	assumed	(k-l)	(mx12)/(h)	(kx12)/f	(e/d)
$0.00	$206	$37	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%	15.01%
$1.00	$206	$37	$244	$35	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%	14.54%
$5.00	$206	$37	$248	$31	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%	12.69%
$10.00	$206	$37	$253	$26	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%	10.47%
$15.00	$206	$37	$258	$21	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%	8.33%
$20.00	$206	$37	$263	$16	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%	6.27%

Appendix 3-22: 10 Unit Apartment Scenario (cont.)

Cap Rate Analysis-Fee Absorbed By Investor

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale per SF	Investor's Purchase Price per SF	Financed Portion of Investor's Purchase Price Per SF	Equity Portion of Investor's Purchase Price Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**Investor's Cap Rate**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(kx12)/f
$0.00	$206	$37	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	7.48%
$1.00	$206	$37	$244	$36	$280	$210	$71	$3.34	$1.16	$1.74	$1.39	$0.35	5.90%	7.46%
$5.00	$206	$37	$248	$36	$284	$210	$75	$3.34	$1.16	$1.74	$1.39	$0.35	5.59%	7.35%
$10.00	$206	$37	$253	$36	$289	$210	$80	$3.34	$1.16	$1.74	$1.39	$0.35	5.24%	7.23%
$15.00	$206	$37	$258	$36	$294	$210	$85	$3.34	$1.16	$1.74	$1.39	$0.35	4.93%	7.10%
$20.00	$206	$37	$263	$36	$299	$210	$90	$3.34	$1.16	$1.74	$1.39	$0.35	4.66%	6.98%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer Profit at Sale	Sale Price	Financed Portion of Sales Price	Equity Portion of Development Cost Per SF	Investor's						
								Monthly Threshold Rent per SF	Monthly Operating Expenses Per SF	Monthly Net Operating Income Per SF	Monthly Mortgage Payments Per SF	Monthly Cash Flow Per SF	Investor's Rate of Return on Equity (Cash on Cash Return)	**% Decline in Land Value**
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	assumed	assumed	(a+b+c)	assumed	(d+e)	(LTV x f)	(f-g)	(j+k)/(1-vacancy)	assumed	l x debt coverage ratio	assumed	(k-l)	(m/h) x 12	(k/f) x 12
$0	$206	$37	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	0.00%
$1	$206	$36	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	-2.70%
$5	$206	$32	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	-13.51%
$10	$206	$27	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	-27.03%
$15	$206	$22	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	-40.54%
$20	$206	$17	$243	$36	$279	$210	$70	$3.34	$1.16	$1.74	$1.39	$0.35	5.99%	-54.05%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b+c)	(a/d)
$0.00	$206	$37	$243	0%
$1.00	$206	$37	$244	0.41%
$5.00	$206	$37	$248	2.02%
$10.00	$206	$37	$253	3.95%
$15.00	$206	$37	$258	5.81%
$20.00	$206	$37	$263	7.60%

Sources: Costar, RS Means Square Foot Costs 2010.

Appendix 3-23: Two Story Condominium Scenario

Condominium 2 Story Townhouse Over Parking				
Development Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	R-3 Zone	$75	800	60,000
Direct Construction		$196	1,500	293,445
Parking	2	$5	700	3,500
Soft Costs		$45	35%	103,931
Total Cost		$307	0	$ 459,863
Developer Profit	15%	$46	-	$ 68,979
Total with Developer Profit		$353	-	$ 528,843

Financing Assumptions		Homebuyer Value	Developer Cost
Value/Cost		$528,843	$459,863
Homebuyer Loan to Value	80%	$423,074	$298,911
Equity	20%	$105,769	$160,952
Interest Rate	6.00%		
Monthly Homeowner Association Dues	$ 150.00		
Maximum Housing Cost to Income Ratio	45%		
Term in Years	30		
Property Taxes as % of Value	1%		
Property Insurance (annual)	$ 1,000.00		

Developer Loan to Cost	65%
Developer Equity	35%

Threshold Income Analysis--Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost Per SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(b+c)	LTC x Cost	(d-e)
$0.00	$267	$40	$307	$199	$107
$1.00	$267	$40	$308	$199	$108
$5.00	$267	$40	$312	$199	$112
$10.00	$267	$40	$317	$199	$117
$15.00	$267	$40	$322	$199	$122
$20.00	$267	$40	$327	$199	$127

Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes, HOA and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**Total Monthly Payments (Mortgage, Taxes, Insurance)**	**Minimum Annual Income to Qualify for Mortgage**
g	h	i	j	k	l	m	n
assumed	g x (100-Buyer LTV)	(g-h)	assumed	assumed	(g-d)	(j+k)	m x 12 /housing cost ratio
$353	$71	$282	$517	$3,171	$46	$3,688	$84,551.45
$354	$71	$283	$518	$3,180	$46	$3,698	$84,791.27
$358	$72	$286	$522	$3,216	$46	$3,738	$85,750.55
$363	$73	$290	$528	$3,261	$46	$3,788	$86,949.65
$368	$74	$294	$533	$3,306	$46	$3,838	$88,148.75
$373	$75	$298	$538	$3,351	$46	$3,889	$89,347.86

Return on Investment Analysis-Linkage Fee Absorbed by Developer

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost Per SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(a+b+c)	LTC x Cost	(d-e)
$0.00	$268	$40	$307	$199	$107
$1.00	$268	$40	$308	$199	$109
$5.00	$268	$40	$317	$199	$117
$10.00	$268	$40	$322	$199	$122
$15.00	$268	$40	$327	$199	$127
$20.00	$268	$40	$307	$199	$107

Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes, HOA and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**Developer's Rate of Return on Sale Price Per SF**	**Developer's Profit Margin**
g	h	i	j	k	l	m	n
assumed	assumed	(g-h)	assumed	assumed	(g-d)	(j/g)	(l/d)
$353	$71	$282	$517	$3,171	$46	13%	15%
$353	$71	$282	$517	$3,180	$44	13%	14%
$353	$71	$282	$517	$3,216	$36	10%	11%
$353	$71	$282	$517	$3,261	$31	9%	10%
$353	$71	$282	$517	$3,306	$26	7%	8%
$353	$71	$282	$517	$3,351	$46	13%	15%

Appendix 3-23: Two Story Condominium Scenario (cont.)

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost /SF	Developer's Equity Portion of Development Cost Per SF	Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes, HOA and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**% Change in Land Value Due to Fee**
a	b	c	d	e	f	g	h	i	j	k	l	m
	assumed	assumed	(a+b)	LTC x Cost	(d-e)	assumed	assumed	(g-h)	assumed	assumed	(g-d)	
$0.00	$267	$39	$307	$199	$107	$353	$71	$282	$517	$3,171	$46	0%
$1.00	$267	$38	$307	$199	$107	$353	$71	$282	$517	$3,171	$46	-3%
$5.00	$267	$34	$307	$199	$107	$353	$71	$282	$517	$3,171	$46	-13%
$10.00	$267	$29	$307	$199	$107	$353	$71	$282	$517	$3,171	$46	-25%
$15.00	$267	$24	$307	$199	$107	$353	$71	$282	$517	$3,171	$46	-38%
$20.00	$267	$19	$307	$199	$107	$353	$71	$282	$517	$3,171	$46	-51%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF (incl. Linkage Fee)	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b)	a/b
$0.00	$267	$39	$307	0%
$1.00	$267	$39	$308	0.33%
$5.00	$267	$39	$312	1.60%
$10.00	$267	$39	$317	3.16%
$15.00	$267	$39	$322	4.66%
$20.00	$267	$39	$327	6.12%

Sources: Costar, RS Means Square Foot Costs 2010.

Appendix 3-24: Single Family Dwelling Scenario

Single Family Detached 1 story Wood Frame				
›pment Cost Assumptions		**Cost/SF**	**Square Feet**	**Estimated Cost**
Land Cost	FAR .1	$20	5,000	100,000
Direct Construction		$125	2,000	250,000
2 car garage		$10	.	5,500
Soft Costs		$45	35%	89,425
Total Cost		$222		$ 444,925
15% Profit		$33		$ 66,739
Total with Developer Profit		$256		$ 511,664

Financing Assumptions		
Value		$ 511,664
Homebuyer Loan to Value	80%	$ 409,331
Equity	20%	$ 93,657
Interest Rate	6.00%	
Maximum Housing Cost to Income Ratio	45%	
Term in Years	30	
Property Taxes as % of Value	1%	
Property Insurance (annual)	$ 1,000.00	

Developer Loan to Cost (LTC)	65%
Developer Equity	35%

Threshold Income Analysis-Impact of Fee Absorbed by User

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developer's Financed Portion of Development Cost /SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(b+c)	LTC x Cost	(d-e)
$0.00	$172	$50	$222	$145	$78
$1.00	$172	$50	$223	$145	$79
$5.00	$172	$50	$227	$145	$83
$10.00	$172	$50	$232	$145	$88
$15.00	$172	$50	$237	$145	$93
$20.00	$172	$50	$242	$145	$98

Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**Total Monthly Payments (Mortgage, Taxes, Insurance)**	**Minimum Annual Income to Qualify for Mortgage**
g	h	i	j	k	l	m	n
assumed	g x (100-Buyer LTV)	(g-h)	assumed	assumed	(g-d)	(j+k)	m x 12 /housing cost ratio
$256	$51	$205	$616	$3,068	$33	$3,684	$98,240
$257	$51	$205	$618	$3,077	$33	$3,695	$98,535
$261	$52	$209	$627	$3,113	$33	$3,739	$99,717
$266	$53	$213	$637	$3,158	$33	$3,795	$101,194
$271	$54	$217	$648	$3,203	$33	$3,850	$102,671
$276	$55	$221	$658	$3,248	$33	$3,906	$104,147

Return on Investment Analysis-Linkage Fee Absorbed by Developer

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Financed Portion of Development Cost /SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(a+b+c)	LTC x Cost	(d-e)
$0.00	$172	$50	$222	$145	$78
$1.00	$172	$50	$222	$145	$78
$5.00	$172	$50	$227	$145	$83
$10.00	$172	$50	$232	$145	$88
$15.00	$172	$50	$237	$145	$93
$20.00	$172	$50	$242	$145	$98

Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**Developer's Rate of Return on Sale Price Per SF**	**Developer's Profit Margin**
g	h	i	j	k	l	m	n
assumed	assumed	(g-h)	assumed	assumed	(g-d)	(j/g)	(l/d)
$256	$51	$205	$616	$2,454	$33	13%	15.00%
$256	$51	$205	$616	$2,454	$33	13%	15.00%
$256	$51	$205	$616	$2,454	$28	11%	12.47%
$256	$51	$205	$616	$2,454	$23	9%	10.05%
$256	$51	$205	$616	$2,454	$18	7%	7.74%
$256	$51	$205	$616	$2,454	$13	5%	5.51%

Land Valuation Analysis-Fee Absorbed by Land Owner

Linkage Fee Per SF	Construction and Soft Cost Per SF	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	Developers Financed Portion of Development Cost /SF	Developer's Equity Portion of Development Cost Per SF
a	b	c	d	e	f
	assumed	assumed	(a+b)	LTC x Cost	(d-e)
$0.00	$172	$50	$222	$145	$78
$1.00	$172	$49	$222	$145	$78
$5.00	$172	$45	$222	$145	$78
$10.00	$172	$40	$222	$145	$78
$15.00	$172	$35	$222	$145	$78
$20.00	$172	$30	$222	$145	$78

Sales Price Per SF	Required Buyer Downpayment Per SF	Buyer's Monthly Mortgage to Finance 80% of Sales Price Per SF	Monthly Property Taxes and Insurance	Monthly Mortgage Payment	Developer Profit Per SF	**% Change in Land Value Due to Fee**
g	h	i	j	k	l	m
assumed	assumed	(g-h)	assumed	assumed	(g-d)	
$256	$51	$205	$616	$2,454	$33	0.00%
$256	$51	$205	$616	$2,454	$33	-2.00%
$256	$51	$205	$616	$2,454	$33	-10.00%
$256	$51	$205	$616	$2,454	$33	-20.00%
$256	$51	$205	$616	$2,454	$33	-30.00%
$256	$51	$205	$616	$2,454	$33	-40.00%

Fee as Percentage of Total Development Cost

Linkage Fee Per SF	Construction and Soft Cost Per SF (incl. Linkage Fee)	Land Cost Per Building SF	Total Development Cost Per SF (incl. Linkage Fee)	**Fees as % of Total Development Cost Per SF**
a	b	c	d	e
	assumed	assumed	(a+b)	a/b
$0	$172	$50	$222	0%
$1	$172	$50	$223	0.45%
$5	$172	$50	$227	2.20%
$10	$172	$50	$232	4.30%
$15	$172	$50	$237	6.32%
$20	$172	$50	$242	8.25%

Sources: Costar, RS Means Square Foot Costs 2010.

Appendices: Chapter 5

Notes for Appendices 5-1, 5-2 and 5-3

The "AMI Distribution of Workers" row is for all industries and the entire City of Los Angeles, drawn from Figure 1-1. The number of projected new housing units is derived from Figure 5-4 and Table 5-3. "Jobs Generated per Housing Unit" is derived from Table 1-16. The ratio of 1.6 Workers per each Worker Household is derived from the 2005-2007 American Community Survey, described in Chapter 1, Section Step 5, Adjustment Factor #1.

Appendix 5-1

Jobs Generated and Worker Households Supported by the Household Spending of Projected New, Market-Rate **Single-Family** Units Built in the City of Los Angeles, 2010-2020, by AMI Bands

Year	Projected New Single-Family Units	Jobs Generated per SF Housing Unit	Jobs Generated by Household Spending of Projected New, Market-Rate Single-family Units, by AMI Bands, City of Los Angeles								
			Total Workers, All Incomes	0% to 30%	31% to 50%	51% to 80%	*0% to 80%**	81% to 120%	121% to 150%	151% to 200%	Greater than 200%
AMI Distribution of Workers:			100%	9%	14%	21%	*45%*	20%	11%	10%	15%
2010	127	0.493467299	63	5.9	9.1	12.9	*27.9*	12.6	6.6	6.2	9.4
2011	209	0.493467299	103	9.7	15.0	21.3	*46.0*	20.8	10.8	10.2	15.4
2012	282	0.493467299	139	13.1	20.2	28.8	*62.1*	28.1	14.6	13.7	20.8
2013	361	0.493467299	178	16.8	25.8	36.8	*79.3*	35.9	18.7	17.6	26.6
2014	446	0.493467299	220	20.7	31.9	45.4	*97.9*	44.3	23.1	21.7	32.9
2015	537	0.493467299	265	24.9	38.4	54.6	*117.9*	53.4	27.8	26.1	39.6
2016	634	0.493467299	313	29.4	45.3	64.6	*139.4*	63.1	32.9	30.9	46.7
2017	739	0.493467299	365	34.3	52.8	75.3	*162.4*	73.5	38.3	36.0	54.5
2018	852	0.493467299	420	39.6	60.9	86.7	*187.2*	84.7	44.2	41.5	62.8
2019	973	0.493467299	480	45.2	69.6	99.1	*213.8*	96.8	50.5	47.3	71.7
2020	1,103	0.493467299	544	51.2	78.9	112.3	*242.4*	109.8	57.2	53.7	81.3
Total Jobs Generated 2010-20			3,090.6	290.8	447.7	637.7	*1,376.2*	623.1	324.9	304.8	461.7
				Workers with Housing Deficit							

Year	Projected New Single-Family Units	Worker Households Supported per SF Housing Unit	Worker Households Supported by Household Spending of Projected New, Market-Rate Single-family Units, by AMI Bands, City of Los Angeles								
			Number of Jobs (above) / 1.6 Workers per Worker Household								
			Total Worker Households, All Incomes	0% to 30%	31% to 50%	51% to 80%	*0% to 80%**	81% to 120%	121% to 150%	151% to 200%	Greater than 200%
2010	127	0.493… / 1.6	39.1	3.7	5.7	8.1	*17.4*	7.9	4.1	3.9	5.8
2011	209	0.493… / 1.6	64.5	6.1	9.3	13.3	*28.7*	13.0	6.8	6.4	9.6
2012	282	0.493… / 1.6	87.1	8.2	12.6	18.0	*38.8*	17.6	9.2	8.6	13.0
2013	361	0.493… / 1.6	111.4	10.5	16.1	23.0	*49.6*	22.5	11.7	11.0	16.6
2014	446	0.493… / 1.6	137.5	12.9	19.9	28.4	*61.2*	27.7	14.4	13.6	20.5
2015	537	0.493… / 1.6	165.5	15.6	24.0	34.1	*73.7*	33.4	17.4	16.3	24.7
2016	634	0.493… / 1.6	195.6	18.4	28.3	40.4	*87.1*	39.4	20.6	19.3	29.2
2017	739	0.493… / 1.6	228.0	21.4	33.0	47.0	*101.5*	46.0	24.0	22.5	34.1
2018	852	0.493… / 1.6	262.7	24.7	38.1	54.2	*117.0*	53.0	27.6	25.9	39.2
2019	973	0.493… / 1.6	300.1	28.2	43.5	61.9	*133.6*	60.5	31.5	29.6	44.8
2020	1,103	0.493… / 1.6	340.2	32.0	49.3	70.2	*151.5*	68.6	35.8	33.6	50.8
Total Worker Households 2010-20			1,931.7	181.8	279.8	398.5	*860.1*	389.4	203.1	190.5	288.6
				Worker Hhlds. w/Housing Deficit							

*Source: Economic Roundtable. * The category "0% to 80%" is the sum of the preceding three columns.*

Appendix 5-2

Jobs Generated and Worker Households Supported by the Household Spending of Projected New, Market-Rate **Condominium** Units Built in the City of Los Angeles, 2010-2020, by AMI Bands

Year	Projected New Condo Units	Jobs Generated per MF Condo Unit	Jobs Generated by Household Spending of Projected New, Market-Rate Multi-Family Condo Units, by AMI Bands, City of Los Angeles								
			Total Workers, All Incomes	0% to 30%	31% to 50%	51% to 80%	*0% to 80%**	81% to 120%	121% to 150%	151% to 200%	Greater than 200%
AMI Distribution of Workers:			100%	9%	14%	21%	*45%*	20%	11%	10%	15%
2010	111	0.440354	48.8	4.6	7.1	10.1	*21.7*	9.8	5.1	4.8	7.3
2011	184	0.440354	81.0	7.6	11.7	16.7	*36.1*	16.3	8.5	8.0	12.1
2012	259	0.440354	114.1	10.7	16.5	23.5	*50.8*	23.0	12.0	11.2	17.0
2013	352	0.440354	154.9	14.6	22.4	32.0	*69.0*	31.2	16.3	15.3	23.1
2014	467	0.440354	205.4	19.3	29.8	42.4	*91.5*	41.4	21.6	20.3	30.7
2015	608	0.440354	267.8	25.2	38.8	55.3	*119.3*	54.0	28.2	26.4	40.0
2016	783	0.440354	344.9	32.5	50.0	71.2	*153.6*	69.5	36.3	34.0	51.5
2017	1,000	0.440354	440.2	41.4	63.8	90.8	*196.0*	88.7	46.3	43.4	65.8
2018	1,267	0.440354	557.8	52.5	80.8	115.1	*248.4*	112.5	58.6	55.0	83.3
2019	1,597	0.440354	703.1	66.2	101.9	145.1	*313.1*	141.8	73.9	69.3	105.0
2020	2,004	0.440354	882.7	83.1	127.9	182.1	*393.0*	178.0	92.8	87.0	131.9
Total Jobs Generated 2010-20			3,800.7	357.6	550.6	784.2	*1,692.4*	766.3	399.5	374.8	567.8
				Workers with Housing Deficit							

Year	Projected New Condo Units	Worker Households Supported per MF Condo Unit	Worker Households Supported by Household Spending of Projected New, Market-Rate Multi-Family Condo Units, by AMI Bands, City of Los Angeles								
			Number of Jobs (above) / 1.6 Workers per Worker Household								
			Total Worker Households, All Incomes	0% to 30%	31% to 50%	51% to 80%	*0% to 80%**	81% to 120%	121% to 150%	151% to 200%	Greater than 200%
2010	111	0.440… / 1.6	30.5	2.9	4.4	6.3	*13.6*	6.1	3.2	3.0	4.6
2011	184	0.440… / 1.6	50.6	4.8	7.3	10.4	*22.5*	10.2	5.3	5.0	7.6
2012	259	0.440… / 1.6	71.3	6.7	10.3	14.7	*31.7*	14.4	7.5	7.0	10.6
2013	352	0.440… / 1.6	96.8	9.1	14.0	20.0	*43.1*	19.5	10.2	9.5	14.5
2014	467	0.440… / 1.6	128.4	12.1	18.6	26.5	*57.2*	25.9	13.5	12.7	19.2
2015	608	0.440… / 1.6	167.4	15.8	24.3	34.5	*74.5*	33.7	17.6	16.5	25.0
2016	783	0.440… / 1.6	215.6	20.3	31.2	44.5	*96.0*	43.5	22.7	21.3	32.2
2017	1,000	0.440… / 1.6	275.1	25.9	39.9	56.8	*122.5*	55.5	28.9	27.1	41.1
2018	1,267	0.440… / 1.6	348.6	32.8	50.5	71.9	*155.2*	70.3	36.6	34.4	52.1
2019	1,597	0.440… / 1.6	439.5	41.3	63.7	90.7	*195.7*	88.6	46.2	43.3	65.6
2020	2,004	0.440… / 1.6	551.7	51.9	79.9	113.8	*245.7*	111.2	58.0	54.4	82.4
Total Worker Households 2010-20			2,375.5	223.5	344.1	490.1	*1,057.7*	478.9	249.7	234.2	354.8
				Worker Hhlds. w/Housing Deficit							

*Source: Economic Roundtable. * The category "0% to 80%" is the sum of the preceding three columns.*

Appendix 5-3

Jobs Generated and Worker Households Supported by the Household Spending of Projected New, Market-Rate **Apartment** Units Built in the City of Los Angeles, 2010-2020, by AMI Bands

Year	Projected New Apt Units	Jobs Generated per MF Apt Unit	Jobs Generated by Household Spending of Projected New, Market-Rate Multi-Family Apartment Units, by AMI Bands, City of Los Angeles								
			Total Workers, All Incomes	0% to 30%	31% to 50%	51% to 80%	*0% to 80%**	81% to 120%	121% to 150%	151% to 200%	Greater than 200%
AMI Distribution of Workers:			100%	9%	14%	21%	*45%*	20%	11%	10%	15%
2010	371	0.214006116	79.3	7.5	11.5	16.4	*35.3*	16.0	8.3	7.8	11.9
2011	616	0.214006116	131.7	12.4	19.1	27.2	*58.7*	26.6	13.8	13.0	19.7
2012	867	0.214006116	185.6	17.5	26.9	38.3	*82.6*	37.4	19.5	18.3	27.7
2013	1,178	0.214006116	252.1	23.7	36.5	52.0	*112.3*	50.8	26.5	24.9	37.7
2014	1,562	0.214006116	334.3	31.5	48.4	69.0	*148.8*	67.4	35.1	33.0	49.9
2015	2,036	0.214006116	435.8	41.0	63.1	89.9	*194.0*	87.9	45.8	43.0	65.1
2016	2,622	0.214006116	561.2	52.8	81.3	115.8	*249.9*	113.1	59.0	55.3	83.8
2017	3,346	0.214006116	716.1	67.4	103.7	147.8	*318.9*	144.4	75.3	70.6	107.0
2018	4,241	0.214006116	907.5	85.4	131.5	187.2	*404.1*	183.0	95.4	89.5	135.6
2019	5,346	0.214006116	1,144.0	107.6	165.7	236.0	*509.4*	230.6	120.3	112.8	170.9
2020	6,711	0.214006116	1,436.1	135.1	208.0	296.3	*639.5*	289.5	151.0	141.6	214.5
Total Jobs Generated 2010-20			6,183.8	581.8	895.8	1,275.9	*2,753.5*	1,246.7	650.0	609.8	923.7
				Workers with Housing Deficit							

Year	Projected New Apt Units	Worker Households Supported per MF Apt Unit	Worker Households Supported by Household Spending of Projected New, Market-Rate Multi-Family Apartment Units, by AMI Bands, City of Los Angeles								
			Number of Jobs (above) / 1.6 Workers per Worker Household								
			Total Worker Households, All Incomes	0% to 30%	31% to 50%	51% to 80%	*0% to 80%**	81% to 120%	121% to 150%	151% to 200%	Greater than 200%
2010	371	0.214… / 1.6	49.6	4.7	7.2	10.2	*22.1*	10.0	5.2	4.9	7.4
2011	616	0.214… / 1.6	82.3	7.7	11.9	17.0	*36.7*	16.6	8.7	8.1	12.3
2012	867	0.214… / 1.6	116.0	10.9	16.8	23.9	*51.6*	23.4	12.2	11.4	17.3
2013	1,178	0.214… / 1.6	157.6	14.8	22.8	32.5	*70.2*	31.8	16.6	15.5	23.5
2014	1,562	0.214… / 1.6	208.9	19.7	30.3	43.1	*93.0*	42.1	22.0	20.6	31.2
2015	2,036	0.214… / 1.6	272.4	25.6	39.5	56.2	*121.3*	54.9	28.6	26.9	40.7
2016	2,622	0.214… / 1.6	350.7	33.0	50.8	72.4	*156.2*	70.7	36.9	34.6	52.4
2017	3,346	0.214… / 1.6	447.6	42.1	64.8	92.3	*199.3*	90.2	47.0	44.1	66.9
2018	4,241	0.214… / 1.6	567.2	53.4	82.2	117.0	*252.6*	114.4	59.6	55.9	84.7
2019	5,346	0.214… / 1.6	715.0	67.3	103.6	147.5	*318.4*	144.2	75.2	70.5	106.8
2020	6,711	0.214… / 1.6	897.6	84.5	130.0	185.2	*399.7*	181.0	94.4	88.5	134.1
Total Worker Households 2010-20			3,864.9	363.7	559.9	797.4	*1,720.9*	779.2	406.3	381.1	577.3
				Worker Hhlds. w/Housing Deficit							

*Source: Economic Roundtable. * The category "0% to 80%" is the sum of the preceding three columns.*

Appendix 5-4

Renter Household Projections by Year, Age of Householder, AMI Band and Household Size
City of Los Angeles

Year	Age	AMI Band	Renter Household Size						
			1-person	2-person	3-person	4-person	5-person	6-or-more-person	Total
2008	Under 65 Years	0% to 30%	62,834	30,527	25,046	27,143	17,674	11,351	174,575
		31% to 50%	36,416	26,208	21,699	25,185	13,782	10,520	133,810
		51% to 80%	40,276	34,496	22,381	16,899	12,158	10,619	136,829
		81% or Above	80,696	85,202	41,189	25,835	10,703	8,302	251,927
		Total	220,222	176,433	110,315	95,062	54,317	40,792	697,141
	65 Years or Above	0% to 30%	33,183	7,930	1,022	704	117	71	43,027
		31% to 50%	7,838	9,215	1,667	430	67	207	19,424
		51% to 80%	3,799	4,939	1,615	1,357	645	597	12,952
		81% or Above	5,206	5,510	1,600	607	505	515	13,943
		Total	50,026	27,594	5,904	3,098	1,334	1,390	89,346
	Total	0% to 30%	96,017	38,457	26,068	27,847	17,791	11,422	217,602
		31% to 50%	44,254	35,423	23,366	25,615	13,849	10,727	153,234
		51% to 80%	44,075	39,435	23,996	18,256	12,803	11,216	149,781
		81% or Above	85,902	90,712	42,789	26,442	11,208	8,817	265,870
		Total	270,248	204,027	116,219	98,160	55,651	42,182	786,487
2010	Under 65 Years	0% to 30%	62,019	31,189	25,994	27,074	16,524	11,849	174,650
		31% to 50%	33,434	26,845	23,494	24,017	15,258	10,665	133,713
		51% to 80%	44,470	32,143	23,901	20,129	13,440	10,950	145,033
		81% or Above	82,663	82,982	37,484	26,255	11,382	8,857	249,623
		Total	222,585	173,159	110,873	97,476	56,604	42,322	703,018
	65 Years or Above	0% to 30%	37,638	7,675	1,065	515	126	136	47,155
		31% to 50%	8,558	9,396	1,546	467	147	295	20,409
		51% to 80%	4,887	3,537	1,311	809	468	310	11,322
		81% or Above	6,380	5,345	1,710	364	360	407	14,566
		Total	57,462	25,953	5,632	2,155	1,100	1,149	93,452
	Total	0% to 30%	99,657	38,864	27,059	27,589	16,650	11,985	221,804
		31% to 50%	41,991	36,241	25,040	24,485	15,404	10,960	154,122
		51% to 80%	49,357	35,680	25,211	20,938	13,908	11,260	156,355
		81% or Above	89,042	88,327	39,194	26,619	11,742	9,265	264,189
		Total	280,047	199,112	116,505	99,631	57,704	43,470	796,470
2015	Under 65 Years	0% to 30%	62,867	31,616	26,349	27,444	16,750	12,011	177,037
		31% to 50%	33,891	27,212	23,816	24,346	15,466	10,811	135,541
		51% to 80%	45,077	32,582	24,227	20,405	13,624	11,100	147,015
		81% or Above	83,793	84,116	37,996	26,614	11,538	8,978	253,035
		Total	225,627	175,526	112,388	98,808	57,378	42,900	712,628
	65 Years or Above	0% to 30%	44,024	8,977	1,246	602	147	159	55,155
		31% to 50%	10,010	10,990	1,808	547	172	345	23,871
		51% to 80%	5,716	4,137	1,533	946	548	362	13,243
		81% or Above	7,462	6,252	2,000	426	421	477	17,037
		Total	67,211	30,356	6,587	2,521	1,287	1,344	109,306
	Total	0% to 30%	106,890	40,592	27,595	28,046	16,897	12,170	232,192
		31% to 50%	43,900	38,203	25,624	24,892	15,638	11,156	159,412
		51% to 80%	50,793	36,720	25,761	21,351	14,171	11,462	160,258
		81% or Above	91,254	90,368	39,996	27,040	11,959	9,455	270,072
		Total	292,839	205,882	118,976	101,329	58,665	44,244	821,934
2020	Under 65 Years	0% to 30%	63,650	32,010	26,678	27,786	16,959	12,161	179,243
		31% to 50%	34,313	27,551	24,112	24,649	15,659	10,946	137,230
		51% to 80%	45,639	32,988	24,529	20,659	13,794	11,238	148,847
		81% or Above	84,837	85,164	38,470	26,945	11,682	9,090	256,188
		Total	228,439	177,714	113,789	100,040	58,093	43,435	721,508
	65 Years or Above	0% to 30%	52,313	10,667	1,480	716	175	190	65,540
		31% to 50%	11,894	13,060	2,149	649	204	410	28,366
		51% to 80%	6,792	4,917	1,822	1,124	651	431	15,736
		81% or Above	8,867	7,429	2,377	506	500	566	20,245
		Total	79,867	36,072	7,828	2,996	1,529	1,597	129,888
	Total	0% to 30%	115,963	42,677	28,158	28,502	17,133	12,350	244,783
		31% to 50%	46,207	40,611	26,261	25,298	15,863	11,356	165,596
		51% to 80%	52,432	37,905	26,351	21,783	14,444	11,669	164,584
		81% or Above	93,704	92,593	40,846	27,452	12,182	9,657	276,433
		Total	308,306	213,786	121,616	103,035	59,622	45,031	851,397

Note: 2008 figures are from the U.S. Census 2008 American Community Survey PUMS. Projections are based on the Economic Roundtable's analysis of U.S. Census and CA Department of Finance data.

END NOTES FOR CHAPTER 1

[1] Change in the Consumer Price Index, all urban consumers, rent of primary residence in Los Angeles, Riverside and Orange counties and change in the Case-Schiller Home Price Index for the Los Angeles Metro Area are provided in the table below, which shows greater volatility in the cost of purchasing than the cost of renting housing.

Year	Annual Average Case-Schiller Home Price Index	Annual Average Consumer Price Index for Rent of Primary Residence	Case Schiller Home Price Change from 1987	Consumer Price Index Rental Change from 1987
1987	63.23	130.47	0%	0%
1988	76.39	136.78	17%	5%
1989	94.79	143.15	33%	9%
1990	99.36	149.57	36%	13%
1991	94.07	153.87	33%	15%
1992	89.68	155.76	29%	16%
1993	81.08	156.13	22%	16%
1994	76.75	156.39	18%	17%
1995	74.85	155.73	16%	16%
1996	74.08	157.26	15%	17%
1997	76.62	159.60	17%	18%
1998	87.01	163.97	27%	20%
1999	96.12	169.94	34%	23%
2000	106.00	176.79	40%	26%
2001	116.49	186.40	46%	30%
2002	132.47	196.98	52%	34%
2003	157.73	207.38	60%	37%
2004	202.71	220.66	69%	41%
2005	243.27	234.93	74%	44%
2006	271.33	248.46	77%	47%
2007	257.10	263.76	75%	51%
2008	194.70	275.68	68%	53%
2009	164.82	280.26	62%	53%

[2] For example, a gas station or restaurant may have a higher value in Westwood than Wilmington, but the wages paid and resulting demand for affordable housing generated by gas stations or restaurants in either location would be comparable, regardless of property value.

[3] Developing a housing linkage fee on the basis of property valuation would necessitate a separate linkage study demonstrating the relationship between the value of new developments and the subsequent affordable housing impacts generated by that development. The use of value as a measure for the fee would be a complex approach that either would require differentiation among sub-market areas of the City or would be subject to criticism for failing to take such differences into account.

[4] "Worker households" includes workers that live in families, workers living alone, and workers living with partners. The U.S. Census defines *family* as "a group of two or more people who reside together and who are related by birth, marriage, or adoption." Persons living alone are defined by the Census as *non-family households, living alone*. Since HUD's AMI breakout by family size includes 1-person families, persons living alone (non-family households, living alone) were included in the universe for analysis. In order to capture stable households maintained by unmarried people (not in Census-defined family households) who identified having a close personal relationship with each other, non-family households with unmarried same- or opposite-sex partners were included in the universe.

[5] The universe of worker households used to assign AMI bands to households includes both full-time and part-time workers. This universe was created to identify the mean earned income of worker households, not individual workers in each AMI band. Out of this universe of households, only workers who were employed 35 or more hours a week were assigned to the AMI bands used to classify the wage distribution within each industry.

[6] 2005-2007 American Community Survey

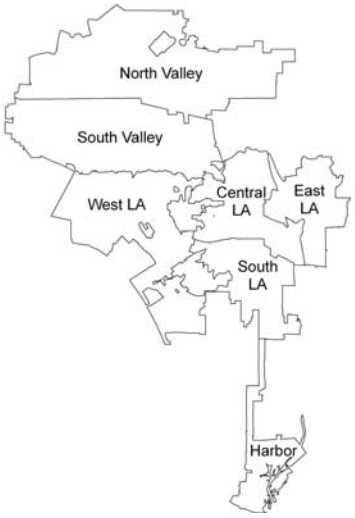
[7] The income limits by family size for the Los Angeles-Long Beach Metro Area produced by HUD incorporate a High Housing Cost Adjustment factor.

[8] Los Angeles-Long Beach, CA HUD Metro Fair Market Rent (FMR) Area

[9] The Economic Roundtable used Census-defined *earnings* or *earned income* of worker households (in addition to household size) to place worker households in appropriate AMI bands. *Earned income*, as opposed to *total income*, was used because earned income captures dollar amounts from two primary sources – 1) wage or salary income and 2) net income from self-employment. Unlike total income, earned income does not include dollar amounts from other sources such as social assistance programs. Earned income is the best measure for assessing households' ability to secure housing based on the wages paid by their employers and for determining the strength of the relationship between jobs created by new development and the demand for affordable housing.

[10] Using the 2005-2007 ACS 3-year PUMS file, the Economic Roundtable coded all worker households into the appropriate HUD-defined AMI band based on household size and household earned income. The income distribution is discussed in the geographic boundaries section of Chapter 3, Fee Scenarios.

[11] The City of Los Angeles has 7 Area Planning Commissions (APC). See map below.



[12] The universe of analysis for determining the mean rent was limited to all apartment-renting households in the City of Los Angeles that have been living in their units for 12 months or less. It includes apartments of all sizes and types. The tenure limitation that restricted the sample to households that had recently rented their apartment was used to capture current, market-rate rents. A larger sample that included renters who had been their units for longer intervals would show lower average rents, in part because of the City's Rent Stabilization Ordinance (RSO), which places limits on yearly rent increase. When rent-stabilized units turnover, there is decontrol and rents can be raised to market levels. Although HUD uses gross rent, which is the amount of the contract rent plus the estimated average monthly cost of utilities, to calculate rent burden (or rent as a percent of household income), the Economic Roundtable used contract rent for this analysis, resulting in more conservative estimates of market-rate rents.

[13] The 29 development categories are buildings that serve as 'places of work,' either leased or owned by private sector employers. Two special types of work are excluded from this list due to being outside the universe of 'places of work' that might be assessed a linkage fee: 1) publicly-owned government administration buildings, since a

linkage fee is not typically being assessed by on other units of government and 2) workers hired directly by private households, such as nannies, maids and gardeners who do not have a 'place of work' building other than their clients' private homes. Signs are excluded from development categories because they do not have square footage that is comparable to the demand for affordable housing they create. The City did not have advertising revenue data available for estimating the future demand for affordable housing created by new signs, thus this category was excluded.

[14] The 29 Development Categories put forth in this chapter are based on the overlap of two coding systems in the building permits:

- Use Codes: This is the intended use of the building, declared by the property developer(s) to the City.
- Building Occupancy Classifications: Maintained as part of the International Building Code (IBC) and used by the Los Angeles Department of Building and Safety, "building occupancy classifications refer to categorizing structures based on their usage and are primarily used for building and fire code enforcement. They are usually defined by model building codes, and vary, somewhat, among them. Often, many of them are subdivided. The following is based on the International Building Code, the most commonly used building code in the United States:
    - Assembly (Group A) - places used for people gathering for entertainment, worship, and eating or drinking. Examples: churches, restaurants (with 50 or more possible occupants), theaters, and stadiums.
    - Business (Group B) - places where services are provided (not to be confused with mercantile, below). Examples: banks, insurance agencies, government buildings (including police and fire stations), and doctor's offices.
    - Educational (Group E) - schools and day care centers up to the 12th grade.
    - Factory (Group F) - places where goods are manufactured or repaired (unless considered "High-Hazard" (below)). Examples: factories and dry cleaners.
    - High-Hazard (Group H) - places involving production or storage of very flammable or toxic materials. Includes places handling explosives and/or highly toxic materials (such as fireworks, hydrogen peroxide, and cyanide).
    - Institutional (Group I) - places where people are physically unable to leave without assistance. Examples: hospitals, nursing homes, and prisons. In some jurisdictions, Group I may be used to designate Industrial.
    - Mercantile (Group M) - places where goods are displayed and sold. Examples: grocery stores, department stores, and gas stations.
    - Residential (Group R) - places providing accommodations for overnight stay (excluding Institutional). Examples: houses, apartment buildings, hotels, and motels.
    - Storage (Group S) - places where items are stored (unless considered High-Hazard). Examples: warehouses and parking garages.
    - Utility and Miscellaneous (Group U) - others. Examples: water towers, barns, towers."

Source: Economic Roundtable; International Code Council. "2009 International Building Code: Building Occupancy Classifications" Washington, DC.

[15] Public Use Microdata Sample (PUMS) files from the American Community Survey (ACS) show a wide range of population and housing unit responses collected on individual ACS questionnaires that can be used to develop social, economic, housing and demographic profiles for populations. Data users can design tabulations to aggregate weighted responses in ways that are representative of populations in specified geographic regions. PUMS files are available in both 1-year, 3-year and 5-year estimate versions through the American Fact Finder. Three-year PUMS files provide a sample of records that is three-times larger than the 1-year sample, allowing data users to breakout data into multiple discrete categories without compromising the reliability of the data. For more information about PUMS files see: http://www.census.gov/acs/www/Products/PUMS/.

[16] This report can be downloaded at: http://www.economicrt.org/publications.html.

[17] The informal employment estimate for the City of Los Angeles is derived from the informal estimate produced for Los Angeles County. Informal estimates for the County were produced by analyzing anomalies in 2 data sources – 1) Bureau of Economic Analysis (BEA), REIS data and 2) Bureau of Labor Statistics (BLS), QCEW data. QCEW data is a quarterly count of employment tabulated from quarterly unemployment insurance (UI) program contribution reports submitted by employers. The Economic Roundtable uses QCEW employment figures as the formal employment count since it only includes on-the-book employees reported by businesses. BEA REIS employment estimates are derived from employment in industries covered by UI programs and employment in industries not cover by UI programs, along with additional adjustments made for the misreporting of private sector employment. Misreported employment for each industry comes in two forms: 1) underreporting of employment on UI contribution returns filed by employers and 2) the employment of employers that fail to file UI contribution returns. The Economic Roundtable uses BEA REIS employment estimates as the count for the total economy. It is also important to note that QCEW and REIS employment figures are place-of-work figures, meaning that it is an estimate of the number of employees working (not living) in Los Angeles County. The table below shows the adjustment factors needed to create comparable universes for comparing the two data sources. Jobs not included in the QCEW, multiple job holders and self-employed persons were extracted from the REIS figures. Only multiple jobholders were excluded from QCEW figures. The difference between the REIS and QCEW figures, after the adjustments, shows over 970,000 unaccounted for workers in employer-reported QCEW reports. This is 19.7 percent of the total workers in Los Angeles County. The City of Los Angeles informal employment rate (22 percent) is calculated by increasing the LA County rate of 19.7 percent by the ratio of informal employment in LA City to LA County found in the 2004 study.

Estimate of Informal Employment in Los Angeles County
Bureau of Economic Analysis Estimate vs. QCEW

Data Description	Adjustment Factor	Employment Number
BEA REIS 2007 TOTAL EMPLOYMENT		
Los Angeles County total employment		5,846,145
Farm Jobs		-6,266
Military		-18,343
Additional jobs held by multiple jobholders	-5.3%	-308,541
Source: Basic CPS March 2007 for LA County		
Self-employed persons	-10.1%	-556,812
Source: Basic CPS March 2007 for LA County		
Total workers in LA County		4,956,182
BLS QCEW (ES-202) 2007 Annual Avg. TOTAL EMPLOYMENT		
Los Angeles County total employment		4,200,998
Additional jobs held by multiple jobholders	-5.3%	-222,653
Source: Basic CPS March 2007 for LA County		
Formal workers employed in private industries in LA County		3,978,345
ESTIMATE OF TOTAL INFORMAL WORKERS in LA County		**977,837**
Informal workers as % of total workers		19.7%

[18] The estimated share of informal workers broken out by regions of the City (APCs) was produced by adjusting the share of informal workers in the City (22 percent) by the ratio of the percent of foreign-born non-citizens (FBNC) in each APC to the percent of FBNC in the City. The estimated share of informal workers broken out by development categories was produced by adjusting the share of informal workers in the City by the ratio of the percent FBNC in each development category to the percent of FBNC in the City. The 2005-2007 American Community Survey was used as the source for determining the share of FBNC in APCs and development categories.

[19] Flaming, Daniel, Michael Matsunaga, Patrick Burns. 2009. Ebbing Tides in the Golden State: Impacts of the 2008 Recession on California and Los Angeles County, Economic Roundtable. Report underwritten by The California Endowment and Economic Roundtable; June 2009, 110 pages.

[20] The following table shows employment figures for the City of Los Angeles published by the U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics. The 2005 to 2007 time period is marked by high employment and low unemployment rates.

Year	Period	Labor Force	Employed	Unemployed	Unemployment Rate
1990	Annual Avg.	1,812,933	1,692,706	120,227	6.6
1991	Annual Avg.	1,792,394	1,629,634	162,760	9.1
1992	Annual Avg.	1,792,160	1,592,150	200,010	11.2
1993	Annual Avg.	1,750,779	1,553,162	197,617	11.3
1994	Annual Avg.	1,730,788	1,549,230	181,558	10.5
1995	Annual Avg.	1,721,707	1,565,111	156,596	9.1
1996	Annual Avg.	1,739,228	1,576,724	162,504	9.3
1997	Annual Avg.	1,775,165	1,636,000	139,165	7.8
1998	Annual Avg.	1,823,745	1,687,317	136,428	7.5
1999	Annual Avg.	1,835,517	1,712,451	123,066	6.7
2000	Annual Avg.	1,819,887	1,710,743	109,144	6.0
2001	Annual Avg.	1,849,862	1,733,345	116,517	6.3
2002	Annual Avg.	1,859,029	1,719,334	139,695	7.5
2003	Annual Avg.	1,855,146	1,711,578	143,568	7.7
2004	Annual Avg.	1,856,265	1,722,038	134,227	7.2
2005	Annual Avg.	1,856,401	1,745,970	110,431	5.9
2006	Annual Avg.	1,865,261	1,766,138	99,123	5.3
2007	Annual Avg.	1,891,719	1,785,070	106,649	5.6
2008	Annual Avg.	1,920,713	1,761,928	158,785	8.3
2009	Annual Avg.	1,918,870	1,673,510	245,360	12.8

[21] 2005-2007 American Community Survey

[22] US Census Bureau, LED OnTheMap Origin-Destination Database, Beginning of Quarter Employment, 2nd Quarter 2008. (See Appendix 1-3 for more detailed data tables.)

2008 Labor Shed - Where Workers Live who are Employed in the City of LA			**2008 Commute Shed - Where Workers are Employed who Live in the City of LA**		
	Count	**%**		**Count**	**%**
Worker Employed in City of LA	1,384,032	100%	**Workers Living in City of LA**	1,273,398	100%
Living in:			**Working in:**		
City of LA	636,693	46%	City of LA	636,693	50%
Other Cities in LA County	491,647	36%	Other Cities in LA County	444,569	35%
Other Counties outside LA County	255,692	18%	Other Counties outside LA County	192,136	15%

[23] The table below shows how 12 nexus studies of housing impacts in California jurisdictions have treated adjustment factor #3. Five of the 12 studies used factor #3, making an adjustment for workers living outside the jurisdiction, 7 of the studies did not make this adjustment. None of the studies included a quantitative analysis that supported including or excluding this adjustment factor. For, example, in the Sacramento study, Keyser Marston simply stated, "It is common practice in nexus analyses to reduce total demand generated by new worker households by a factor for commuting or by some sort of policy target." Keyser Marston Associates, Inc. (2006), "Housing Trust Fund Analysis, City of San Francisco," p.21, http://www.cityofsacramento.org/dsd/planning/long-range/housing/documents/HTF-Nexus-Study_final_3-30-06.pdf.

Jurisdiction	Author	Type of Impact	Date	Reduce Impacts by Share of Workers Living Outside the City
Berkeley, CA	Bay Area Economics	Multi-Family Development	October 2010	No
Marin County, CA	Vernazza Wolfe Associates, Inc.	Single Family Homes	March 2008	No
Napa, CA	Keyser Marston Associates, Inc.	Residential Development	November 2009	No
Oakland, CA	David Paul Rosen & Associates	Commercial Development	September 2001	Yes
Sacramento, CA	Keyser Marston Associates, Inc.	Commercial Development	March 2006	Yes

San Carlos, CA	Rosenow Spevacek Group	Residential Development	February 2010	No
San Diego, CA	Keyser Marston Associates, Inc.	Commercial Development	October 2010	Yes
San Francisco, CA	Keyser Marston Associates, Inc.	Residential Development	December 2006	No
Santa Monica, CA	Hamilton, Rabinovitz & Alschuler, Inc.	Multi-Family Development	July 2005	No
Solono Beach, CA	Keyser Marston Associates, Inc.	Residential Development	August 2010	No
Sunnyvale, CA	Vernazza Wolfe Associates, Inc.	Commercial Development	2003	Yes
Walnut Creek, CA	Keyser Marston Associates, Inc.	Commercial Development	December 2004	Yes

[24] It should be noted that much of the data used in this discussion of adjustment factors is drawn from the U.S. Census Bureau's 2005 through 2009 American Community Survey (ACS) Public Use Microdata Sample (PUMS), whereas most other sections of this report used 2007 or 2006 through 2008 ACS data. The more recent and larger ACS data sample was used for this section because it became available while this section was being prepared and because the larger sample made it possible to have a reliable number of records for representing some of the smaller labor force segments that are analyzed in this section. Earnings data shown in this section has been converted to 2007 dollars.

[25] California Employment Development Department, Labor Market Information Division (http://www.labormarketinfo.edd.ca.gov/?pageid=127)
The Quarterly Workforce Indicators (QWI) are derived from state administrative records and basic demographic information from the Census Bureau. Detailed information is available in a paper by David Stevens, "Employment job openings, hires, quits, layoffs and discharges, and other separations. Separations data shows the number of workers who were employed by a business in one quarter, but not in the subsequent quarter. Separations data includes:

- Quits: Employees who left voluntarily. Exception: retirements or transfers to other locations are reported with Other Separations.
- Layoffs & Discharges: Involuntary separations initiated by the employer, including:
  - Layoffs with no intent to rehire
  - Discharges because positions were eliminated
  - Discharges resulting from mergers, downsizing, or plant closings
  - Firings or other discharges for cause
  - Terminations of seasonal employees (whether or not they are expected to return next season)
  - Layoffs (suspensions from pay status) lasting or expected to last more than 7 days. (If the employee was later recalled, they should be reported as a Hire at the time of recall.)
- Other Separations: retirements; transfers to other locations; deaths; or separations due to employee disability

Separations data does not include:

- Transfers within the sampled establishment
- Employees on strike
- Employees of temporary help agencies, employee leasing companies, outside contractors, or consultants working at the sampled establishment. These employers are reported by their employer of record.

[26] Thirty-four occupants per average private sector workspace over the life of a commercial building is based on 87 percent (average annual job separation rate for private sector industries) of 39 (average useful life of a commercial building.)

[27] Under-employment rates are a more comprehensive measure of labor market conditions and workforce participation than unemployment rates. Under-employment rates include both unemployed and underutilized workers participating in the labor force and marginalized workers not included in the labor force, a group often referred to as "hidden unemployment." More specifically, under-employment includes the following four categories of workers.

- Unemployed workers [included in official labor force statistics]
- Employed workers who are working part-time (for economic reasons) that usually work full-time [included in official labor force statistics]

- Discouraged workers [not included in official labor force statistics] – These are persons who are not currently looking for a job because they believe there are no jobs available or there are none for which they would qualify, but they want and are available for work and have looked for work sometime in the last 12 months.
- Conditionally interested workers [not included in official labor force statistics] – These are persons who want to work, but who have not looked for work recently because they face barriers to employment, such as lack of transportation or child care.

Supporting data for Figure 1-10, Los Angeles County Under-Employment Rate by Level of Education is as follows:

Month	Under-employment Rate for All Workers	Less than HS Diploma	HS Graduate	Some College or AA Degree	BA Degree or higher
Jan-07	9.1%	11.4%	8.3%	9.0%	5.8%
Feb-07	9.6%	12.4%	9.1%	9.2%	5.3%
Mar-07	9.9%	12.9%	10.4%	9.8%	4.6%
Apr-07	9.7%	13.2%	9.3%	8.8%	4.6%
May-07	9.7%	13.5%	9.6%	8.8%	4.6%
Jun-07	9.7%	14.5%	9.5%	7.2%	4.8%
Jul-07	9.6%	15.2%	9.6%	7.5%	4.8%
Aug-07	9.6%	14.8%	9.5%	8.0%	5.0%
Sep-07	9.6%	13.9%	8.1%	8.7%	6.0%
Oct-07	9.3%	13.0%	7.4%	8.5%	6.3%
Nov-07	9.2%	13.0%	6.7%	7.9%	6.9%
Dec-07	9.8%	13.7%	8.8%	8.3%	6.8%
Jan-08	11.2%	15.4%	10.9%	9.1%	7.1%
Feb-08	11.7%	15.5%	11.8%	9.8%	6.9%
Mar-08	11.6%	15.4%	11.2%	10.1%	6.5%
Apr-08	11.6%	15.5%	11.4%	10.8%	6.4%
May-08	12.6%	18.8%	12.1%	11.4%	7.0%
Jun-08	13.7%	21.7%	12.9%	12.0%	7.8%
Jul-08	14.6%	23.1%	12.9%	12.1%	8.2%
Aug-08	14.7%	23.5%	13.0%	11.7%	7.9%
Sep-08	14.9%	23.5%	14.2%	11.2%	7.5%
Oct-08	14.8%	23.1%	15.0%	11.4%	7.2%
Nov-08	15.8%	24.3%	16.0%	12.6%	7.8%
Dec-08	17.4%	26.1%	19.4%	14.8%	8.8%
Jan-09	20.1%	31.0%	22.8%	16.7%	10.3%
Feb-09	21.7%	32.0%	26.1%	18.4%	10.7%
Mar-09	22.5%	32.9%	26.2%	18.5%	10.9%
Apr-09	21.8%	31.7%	24.4%	18.7%	10.1%
May-09	21.6%	31.5%	23.9%	17.6%	10.1%
Jun-09	21.8%	31.7%	22.3%	17.6%	11.4%
Jul-09	22.9%	33.0%	22.1%	18.5%	12.7%
Aug-09	23.9%	34.3%	21.9%	19.7%	14.2%
Sep-09	24.7%	34.3%	23.9%	20.6%	14.1%
Oct-09	24.7%	34.0%	26.5%	20.6%	13.5%
Nov-09	24.4%	33.5%	26.0%	20.4%	13.0%
Dec-09	23.7%	34.6%	25.2%	19.4%	12.4%
Jan-10	24.0%	34.9%	23.9%	20.2%	13.4%
Feb-10	24.0%	33.7%	24.6%	21.5%	13.7%
Mar-10	24.1%	32.9%	23.5%	23.6%	14.2%
Apr-10	23.8%	30.7%	24.1%	23.3%	13.9%
May-10	23.4%	30.9%	23.6%	22.1%	13.4%
Jun-10	23.4%	30.4%	23.9%	21.5%	13.0%
Jul-10	23.8%	30.4%	23.6%	21.7%	13.4%
Aug-10	24.5%	32.4%	24.4%	23.2%	13.3%

[28] Supporting data for Figure 1-11, Education Level by AMI Band among Los Angeles Workers is as follows:

	Less than HS diploma	High school graduate	Some college or AA degree	BA degree or higher
0% to 30% AMI	55%	37%	25%	14%

31% to 50% AMI	25%	22%	16%	10%
51% to 80% AMI	14%	24%	28%	23%
81% to 120% AMI	5%	10%	19%	23%
121% to 150% AMI	1%	2%	4%	6%
151% to 200% AMI	0%	3%	5%	12%
Over 200% AMI	1%	2%	3%	12%

[29] Data is for City of Los Angeles residents of working age (18 to 64 years) who had earned income in the past year. Length of time in current housing was calculated using the midpoint in the time range of responses requested by the Census Bureau. The time ranges and midpoints are as follows:

12 months or less	0.5 years
13 to 23 months	1.5 years
2 to 4 years	3 years
5 to 9 years	7 years
10 to 19 years	14.5 years
20 to 29 years	24.5 years
30 years or more	35 years

[30] This population that lived outside of Los Angeles City and may well have worked in the City was filtered based on the following criteria:

a. Lived in one of the following PUMAs, which are adjacent to but not in the City of Los Angeles:

PUMA	Place Name
4500	Lancaster city
4600	Palmdale city
4700	Santa Clarita city
4800	Burbank city
4900	Glendale city
5000	Pasadena city
5300	East Los Angeles CDP
5500	Inglewood city
5600	Torrance city
5701	Long Beach city
5702	Long Beach city
5703	Long Beach city
6101	Acton CDP
6103	Alhambra city
6113	Cudahy city
6114	Florence-Graham CDP
6115	Compton city
6119	Compton city
6120	Carson city
6123	Alondra Park CDP
6124	Del Aire CDP
6125	Beverly Hills city
6126	Agoura Hills city

b. Worked in Place of Work PUMA 04890, which includes the City of Los Angeles and many surrounding cities
c. Had above-average duration commutes, that is, 26 or more minutes if commuting by car, truck or van, or 41 or more minutes if commuting by public transit
d. Working age, that is 18 to 64 years old
e. Had earned income in the past year

[31] The two populations of workers whose commuting times are contrasted in this table are made up of workers with the following characteristics:

Characteristic	Workers Living Outside LA City and Commuting into the City	Workers Living Outside LA City and Commuting to Jobs Closer to Their Homes
Live outside of LA City in a community adjacent to the City	Yes	Yes
Work in Place of Work PUMA 04890, which includes LA City	Yes	No
Average or less duration commute	No	Yes
Above average duration commute	Yes	No
Working age, 18-64 years	Yes	Yes
Earned income in the past year	Yes	Yes
Live in rental housing	Yes	Yes

[32] The table below shows how 12 nexus studies of housing impacts in California jurisdictions have treated adjustment factor #4. One of the 12 studies used factor #4, making an adjustment for new labor force entrants and re-entrants, 11 of the studies did not make this adjustment. None of the studies included a quantitative analysis that supported including or excluding this adjustment factor.

Jurisdiction	Author	Type of Impact	Date	Reduce Impacts by Share of New Labor Force Entrants and Re-entrants
Berkeley, CA	Bay Area Economics	Multi-Family Development	October 2010	No
Marin County, CA	Vernazza Wolfe Associates, Inc.	Single Family Homes	March 2008	No
Napa, CA	Keyser Marston Associates, Inc.	Residential Development	November 2009	No
Oakland, CA	David Paul Rosen & Associates	Commercial Development	September 2001	Yes
Sacramento, CA	Keyser Marston Associates, Inc.	Commercial Development	March 2006	No
San Carlos, CA	Rosenow Spevacek Group	Residential Development	February 2010	No
San Diego, CA	Keyser Marston Associates, Inc.	Commercial Development	October 2010	No
San Francisco, CA	Keyser Marston Associates, Inc.	Residential Development	December 2006	No
Santa Monica, CA	Hamilton, Rabinovitz & Alschuler, Inc.	Multi-Family Development	July 2005	No
Solono Beach, CA	Keyser Marston Associates, Inc.	Residential Development	August 2010	No
Sunnyvale, CA	Vernazza Wolfe Associates, Inc.	Commercial Development	2003	No
Walnut Creek, CA	Keyser Marston Associates, Inc.	Commercial Development	December 2004	No

[33] The characteristics of this population of new entrants and re-entrants to the labor force are as follows:
a. Live in the City of Los Angeles
b. Working age, 18-64 years
c. Currently unemployed
d. Earned income in the previous year
e. Live in rental housing

[34] The characteristics of this population of unemployed job seekers are as follows:
a. Live in the City of Los Angeles
b. Working age, 18-64 years
c. Civilian employed and currently at work
d. No earned income in the previous year
e. Live in rental housing

[35] The table below shows how 12 nexus studies of housing impacts in California jurisdictions have treated adjustment factor #5. One of the 12 studies used factor #5, making an adjustment for workers who are moving between jobs, 11 of the studies did not make this adjustment. None of the studies included a quantitative analysis that supported including or excluding this adjustment factor.

Jurisdiction	Author	Type of Impact	Date	Reduce Impacts by Share Moving between Jobs
Berkeley, CA	Bay Area Economics	Multi-Family Development	October 2010	No
Marin County, CA	Vernazza Wolfe Associates, Inc.	Single Family Homes	March 2008	No

Napa, CA	Keyser Marston Associates, Inc.	Residential Development	November 2009	No
Oakland, CA	David Paul Rosen & Associates	Commercial Development	September 2001	Yes
Sacramento, CA	Keyser Marston Associates, Inc.	Commercial Development	March 2006	No
San Carlos, CA	Rosenow Spevacek Group	Residential Development	February 2010	No
San Diego, CA	Keyser Marston Associates, Inc.	Commercial Development	October 2010	No
San Francisco, CA	Keyser Marston Associates, Inc.	Residential Development	December 2006	No
Santa Monica, CA	Hamilton, Rabinovitz & Alschuler, Inc.	Multi-Family Development	July 2005	No
Solono Beach, CA	Keyser Marston Associates, Inc.	Residential Development	August 2010	No
Sunnyvale, CA	Vernazza Wolfe Associates, Inc.	Commercial Development	2003	No
Walnut Creek, CA	Keyser Marston Associates, Inc.	Commercial Development	December 2004	No

[36] The criteria used to define the population of currently employed workers who have moved, or may move, between jobs are different than those used to define the overall level of overcrowding and rent burden among renter households shown in Figure 4-1. The population shown in Figure 1-9 is made up of individuals who are:

a. Residents of the City of Los Angeles
b. Employed in Place of Work PUMA 04890
c. Working age, i.e., 18-64 years
d. Had earned income in the preceding year
e. Civilians currently employed and at work
f. Occupants of rental housing

One key difference between this population and this population shown in Figure 4-1 is that this population is limited to people who are currently employed, making it a population with higher overall earning levels than the populations shown in Figure 4-1. This is the most important factor for explaining the lower level of adverse housing conditions for this population. Other differences between the two populations is that this population is drawn from a five-year sample of ACS PUMS records covering 2005 through 2009, whereas the population in Figure 4-1 is drawn from a three-year sample covering 2006 through 2008, and this population is restricted to workers employed in Place of Work PUMA 04890, whereas the population shown in Figure 4-1 did not have this restriction.

[37] Property data used in this report comes from the Los Angeles County Office of the Assessor, Data Sales Unit, and the City of Los Angeles Department of Building and Safety, Plan Check and Inspection System (PCIS). These data do not separate the square footage of building structures from that of parking improvements, but instead list them as a single figure for square feet of improvements per property. It is important to note that improved space in parking facilities also generates an earned income deficit. Those facilities have maintenance and operating staff that often have low wages. In this study, the square footage of improvements for building space and parking facilities were both included in the calculation of the earned income deficit per square foot. Developments that are likely to have parking facilities have deficits per square foot that are similar to those of stand-alone parking facilities. The deficit per square foot for office buildings, hotels, hospitals, and stand-alone parking facilities are as follows: Hospitals (General) $63, Hotels $46, Office Buildings (Finance, Insurance, Real Estate, Business) $38, Public Garage (Parking Lots & Garages) $41. The effect of removing parking improvements from the model would be to increase the earned income deficit per square foot from those developments that include parking facilities. This is because the number of workers and their earnings shortfall would remain the same, but the number of square feet shown for the development would shrink, so the number of square feet per job would go down and the deficit per square foot would go up.

[38] Previous nexus studies carried out for other cities typically use the real estate's estimated square feet per job estimates, which are abstract figures based upon limited set of categories, such as "office," "retail," "manufacturing," and "warehouses." All businesses that might occupy these developments are assumed to have the same square feet per jobs ratio, although in reality this is rarely the case. The employment data used in this study covers all formal sector employers in the City of Los Angeles, grouped into our more detailed 29 development categories. This methodology more accurately captures the variety of types of development – and hence square feet per job ratios – that characterize different industries in the City. For example, restaurants may occupy stand-alone buildings where they are the sole tenants or units within larger retail developments, situated in office buildings and

hotels. The variety of restaurants and all other businesses that occupy these different types of commercial space is captured in this study's data, providing an accurate reflection of typical square feet per job ratios in Los Angeles.

[39] The ratios of square feet per job methodology used in this study addresses several difficulties when matching employers records to the real estate they occupy:

1. Multi-tenant commercial properties: How to make sure all tenants in a multi-tenant property are matched and are accounted for? The Economic Roundtable used a complete establishment listing for the City of Los Angeles, matched to Assessor property records to estimate the square feet per job. This data made it possible to proportionately allocate the overall square footage of multi-tenant commercial buildings: assessor's records, business directories and commercial real estate listings. Since commercial buildings regularly contain vacant units, unused square footage of buildings needed to be discounted. The Economic Roundtable used "for rent/lease" listings to subtract this extra space and avoid including it in our ratios of square feet per job. Lastly, for multi-tenant buildings where one tenant takes up the vast majority of total square footage, such as a hospital or hotel with small gift shops, restaurants or salons on the ground floors, the square footage was redistributed.
2. Multi-tenant residential properties: The square footage of single-family homes and condominiums units can readily be determined from assessor's records, but the square footage of individual apartment units is not. In assessor's data, square footage for apartment buildings is recorded altogether rather than for individual units, so we divided the floor area of these properties by the number of units in the building in order to estimate the square footage of individual units.
3. Excluding the informal economy: Square feet per job figures in this study use employer data reported to the State of California Employment Development Department, and thus does not include Los Angeles' sizable "off-the-books" informal economy. In this report, the Economic Roundtable estimates that a fifth of the City's wage and salary jobs are off the books. Informal employers are assumed to have the same job-to-square-foot ratios as formal employers.

[40] Data used for estimating the demand for affordable housing generated by new market-rate housing developments includes the following:

- Mean annual household income for new properties comes from the U.S. Census Bureau's 2005-2007 American Community Survey Public Use Microdata Sample;
- Mean square feet for new housing developments from the Los Angeles County Assessor's Office, 2009 Secured Basic File Abstract (DS04),
- Induced employment impacts of household spending from the Minnesota IMPLAN Group's 2007 input/output model for Los Angeles County.

The earned income deficit per square foot of commercial development – expanded and used to measure the demand for affordable housing in industries where households spend their income – was created for an earlier section of this study and used again here. The expansion is to include two additional economic sectors in the analysis of new market-rate housing's impacts: private household operations (including maids, nannies, cooks, gardeners and others not working for an outside company) and government public administration workers. Private household operation workers, employed directly by other residents, do not create additional demand for commercial real estate development, and thus would not generate additional demand for affordable housing. Given that local government does not generally impose fees upon itself related to publicly owned government buildings, this development type ("Public Administration") is not analyzed and no fee is calculated for those commercial properties. When we add both of these development categories to the analysis of market-rate housing impacts on the demand for affordable housing, they have a small net impact since private household workers report to the US Census that they are very low paid, while public sector employees are relatively well paid.

[41] Duplex housing units are not included as a separate housing category in this study because very few new ones are being built; the vast majority of duplex properties in the City of Los Angeles' housing inventory were built decades ago. New multi-family residential developments need more units in order to be financially feasible given the cost of land and construction. Additionally, there are not enough sample records in the American Community Survey 2005-

2007 3-Year Public Use Microdata Sample (PUMS) of households living in duplexes for them to be statistically representative for the City of Los Angeles. Households living in "Artists-in-Residence" housing units are not identifiable as a separate category in the American Community Survey.

[42] The Los Angeles County Office of the Assessor's Secured Basic File Abstract is drawn off the Assessor's Property Data base, created in October 2009 using the latest updated version of the master file. For more information, visit http://assessor.lacounty.gov/extranet/outsidesales/sbf.aspx.

[43] "Mobile home" records in the Los Angeles County Office of the Assessor's Secured Basic File are mobile home *parks*, rather than individual mobile home units. Thus, the Secured Basic File only records information about the overall mobile home park property. Mean square feet of individual mobile home units is taken from a nationwide survey, the U.S. Department of Energy, Energy Information Administration's 2005 Residential Energy Consumption Survey, Floorspace Tables - Housing Characteristics: All, Heated, and Cooled Floorspace (HC1.1.1). These represent standard, double-wide mobile homes.

[44] IMPLAN's Social Accounting System describes transactions that occur between producers, and intermediate and final consumers (including households) using a Social Accounting Matrix. In this system, IMPLAN uses multipliers, a numeric way of describing the impact of a change. An employment multiplier of 1.8 would suggest that for every 10 employees hired in the given industry, 18 total jobs (in all sectors) would be added in the county economy. Likewise, a household spending multiplier of 1.2 would suggest that for each additional housing unit added with an annual household income of $10,000, $12,000 worth of economic output (in all sectors) would be added to county economy. Jobs supported by this spending are one component of this impact, and the overall employment impact is the aggregate effect of differing capital-to-labor ratios in local industries.

The Multiplier Model is derived mathematically using the input-output model and social accounting framework. The Social Accounting System provides the framework for the predictive Multiplier Model used in economic impact studies. Purchases for final use drive the model. Industries that produce goods and services for consumer consumption must purchase products, raw materials, and services from other companies to create their product. These vendors must also procure goods and services. This cycle continues until all the money is leaked from the region's economy. There are three types of effects measured with a multiplier: the direct, the indirect, and the induced effects. The direct effect is the known or predicted change in the local economy that is to be studied. The indirect effect is the business to business transactions required to satisfy the direct effect. Finally, the induced effect is derived from local spending on goods and services by people working to satisfy the direct and indirect effects.

1. Direct effects take place only in the industry immediately affected: if DEMCO lays-off 39 employees, the manufacturing industry loses 39 employees.
2. Indirect effects concern inter-industry transactions: because DEMCO is closing, they will no longer have a demand for locally produced materials needed to produce their product. This will affect all of their suppliers, possibly resulting in a further loss of a few more jobs. Supplier employment loss as a result of the Direct effects would be the Indirect effects.
3. Induced effects measure the effects of the changes in household income: employees laid-off by DEMCO and suppliers may reduce their expenditures in restaurants and shops since they are no longer employed. These changes affect the related industries.
4. Total effects represent the total changes to the original economy as the result of a defined event, i.e., Direct effects + Indirect effects + Induced effects = Impacts

Once there is a clear picture of the economy through the Social Accounting Matrix (SAM) and Multipliers, outcomes can be predicted for a defined event. If DEMCO spent 20 percent of its earnings on bananas in 2006, then received an additional $1,000,000 of income from a new project in 2007, the banana industry could expect to make approximately $200,000 more that year. If 5 percent of the banana grower's industry is spent on fertilizer, the fertilizer industry could expect $10,000 more; and so on. However, at each of these steps, each company will source some products out of the region of the economy of study. These are the losses that occur and eventually drive the

cycle to zero. The total increase in economic activity from that million-dollar project is the economic impact of the project; $1,000,000 spent became at least $1,210,000 of economic activity giving the DEMCO a multiplier of 1.21 - every dollar spent on DEMCO creates 1.21 dollars of economic activity. Source: Economic Roundtable, Minnesota IMPLAN Group, Inc., IMPLAN System (2007/2008 data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, http://www.implan.com, 2009.

[45] The IMPLAN economic impact modeling system uses several data sources. Included among these is the US Bureau of Economic Analysis' Regional Economic Information System (REIS) data, which is the most inclusive and complete source of economic data. The BEA uses information collected by government agencies to prepare its estimates of state and local area personal income. Generally, two kinds of information are used to measure the income of persons: information generated at the point of disbursement of the income and information elicited from the recipient of the income. The first kind, referred to as "administrative record data," is a byproduct of the administration of various Federal and State government programs; the second kind is survey and census data. The following are among the more important sources of the administrative record data used by REIS:

- Department of Labor: State Unemployment Insurance Programs (Employment Training Administration)
- Department of Health and Human Services: Social Insurance Programs (Social Security Administration) and Health Care Financing Administration
- Department of the Treasury: Federal Income Tax Program (Internal Revenue Service)
- Department of Veterans Affairs: Veterans Benefit Programs
- Department of Defense: Military Payroll Systems
- Sources of Census Data: Censuses of Agriculture and of Housing and Population

The data obtained from administrative records and censuses is used to estimate about 90 percent of personal income. Data of lesser quality, scope, and relevance are used for the remaining 10 percent. Source: US Bureau of Economic Analysis. 2010. "Regional Economic Information System (REIS)," Washington DC.

The following is a list of all data sources used in the IMPLAN economic impact modeling system:

- 2002 Benchmark I/O updated annually by MIG, Inc. Most current updated dataset is 2008.
- County level wage + salary employment income are derived by using ES202 and CBP* 6-digit data to estimate non-disclosed cells in released data series.
- BEA (REIS)* 3-digit employment and income are used to distribute county level self-employment and proprietor income.
- Regional purchase coefficients and regional VA/output ratios are used to localize the national absorption and by-product matrices. All final demand and value added components are region specific.

Source: Minnesota IMPLAN Group, Inc., "*Comparison of RIMS II vs. IMPLAN*" software documentation article, July 2010, 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, http://www.implan.com, 2009.

[46] IMPLAN's annual income ranges for gauging household spending are:

• Less than $10k/year	• $25-$35k/year	• $75-$100k/year
• $10-$15k/year	• $35-$50k/year	• $100-$150k/year
• $15-$25k/year	• $50-$75k/year	• $150k or More/year

When a user inputs a specific household income amount, IMPLAN distributes the income based on the household sector from the list above. Household savings and tax payments to government are then discounted, and the purchase of locally produced goods and services is estimated. Minnesota IMPLAN Group, Inc., IMPLAN System (2007/2008 data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, http://www.implan.com, 2009.

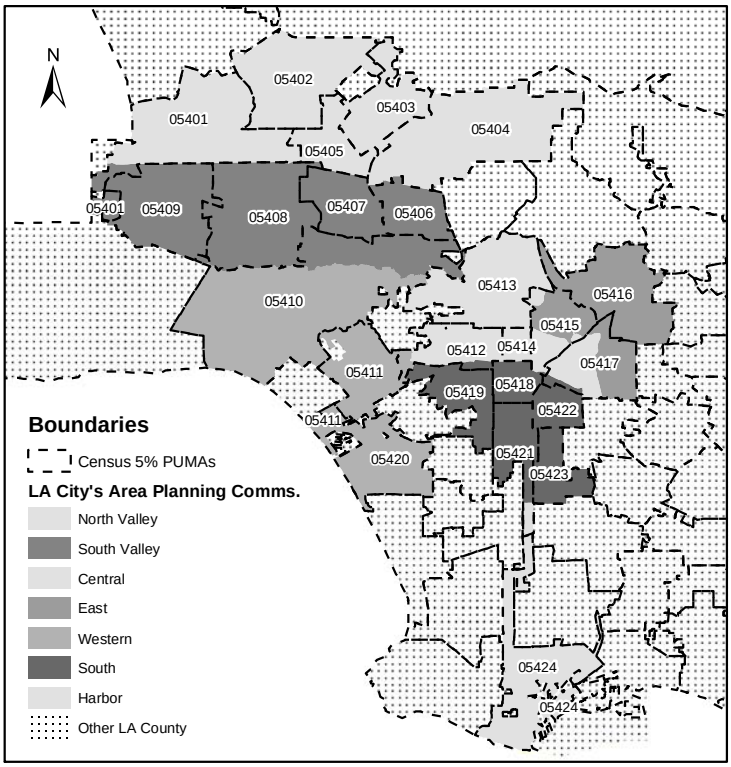
[47] This estimate of the number of households in the City of Los Angeles is from the 2005-2007 American Community Survey.

[48] Our study adopts standard accounting principles when determining how many years of household spending impacts a housing unit will generate. Residential income (rental) property depreciates over a 27.5 year period using straight-line depreciation (depreciation by equal amounts each year over its useful life), and this standard is applied to all housing in this study. Commercial property depreciates over 39 years using straight-line depreciation. Depreciation represents the loss in value of a building over time due to physical deterioration, wear and age. Although many housing units in Los Angeles are older than 27.5 years, it is assumed that major renovations are made to these structures in order to extend their useful life and continued occupancy. Each major renovation made will require a new building permit to which the City can subsequently attach additional fees to collect and invest in the construction of affordable housing. Source: Department of the Treasury, Internal Revenue Service, 2009 Form 4562.

[49] To estimate household income before and after condominium conversions, we utilize data from the 2006-2008 American Community Survey 3-Year Estimates. Renter-occupied households in multi-family apartment buildings are our proxy for households before condominium conversion, while owner-occupied households in multi-family that pay a condo fee are our proxy for households after condominium conversion. (In all cases, households had to have moved into their current home within the previous four years.) We use these proxy data because of the limited longitudinal, 'before and after' housing information available on real condominium conversions, especially in regards to pre-conversions rent prices and household incomes.

[50] Due to the lack of longitudinal data that records household incomes before and after apartment units are converted into condominium units, we use records of comparable apartment and condominium housing units drawn from the US Census 2006-2008 American Community Survey (ACS), Public Use Microdata Sample to compare incomes of renters and owners of comparable housing units.

[51] Data from the Census Bureau's American Community Survey Public Use Microdata Sample (PUMS), includes geographic coding for records based on Public Use Microdata Areas (PUMA). For the City of Los Angeles, the 3-year PUMS for 2006-2008 is based on a sample of 41,752 housing survey records and 100,919 person survey records. The PUMS sample size is 2.7 percent of the estimated total population of the City, 3,750,329 residents at that time. The 2006-2008 PUMS includes a sample of 44,457 employed persons who lived in the City and "worked last week," which is 44 percent of the person survey records. There are 24 PUMAs in the City of Los Angeles, and their boundaries provide a close, but not precise, match with the boundaries of the seven APCs. An example of this type of mismatch is in the West Los Angeles APC. There is also some overlap between downtown and East Los Angeles, although a substantial share of this overlap is in the Los Angeles River, so it has less effect on our data. As a consequence of these overlaps, PUMS data for APCs, particularly for the West Los Angeles APC, may be slightly impacted by this mismatch between PUMA and APC boundaries. In the map below, APC boundaries are overlaid on PUMA boundaries, with the APCs shown as solid areas of color and the PUMA outlines shown in broken black lines. The PUMA number is shown in the middle of each PUMA area.



[52] Two bedroom housing units were used in order to control for the size of households when compiling data for mean annual income. The reasons for this are 1) several geographic sub-areas in the City of Los Angeles do not have enough unweighted records in the 2006-2008 American Community Survey 3-Year Estimates to provide statistically representative results, and 2) the median size of households is two bedrooms, with equal numbers of smaller (zero and one bedroom) and larger (three, four and five or more bedroom) households captured by the Census. Thus, two-bedroom apartment households are a proxy for all apartments in this section, and two-bedroom condominiums are a proxy for all condominiums.

[53] Refer to the table in Table 1-16 to view the IMPLAN model's estimated impacts of household spending, showing the annual jobs supported per dollar spent by in household income range, Los Angeles County 2008. This table shows the fractions of a jobs supported by household spending across the entire Los Angeles economy, aggregated by this study's development categories. These fractions are multiplied by mean household income amounts reported in the 2006-2008 American Community Survey 3-Year Estimates in order to estimate household spending impacts per household. Some sections of this report use 2005-2007 American Community Survey data in order to capture industry employment during pre-recession conditions, however we use more recent 2006-2008 American Community Survey data here in order to capture the latest household expenditures.

[54] IMPLAN's annual income ranges for gauging household spending are:

- Less than $10k/year
- $10-$15k/year
- $15-$25k/year
- $25-$35k/year
- $35-$50k/year
- $50-$75k/year
- $75-$100k/year
- $100-$150k/year
- $150k or More/year

When a user inputs a specific household income amount, IMPLAN distributes the income based on the household sector from the list above. Household savings and tax payments to government are then discounted, and the purchase of locally produced goods and services is estimated. Minnesota IMPLAN Group, Inc., IMPLAN System

(2007/2008 data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, http://www.implan.com, 2009.

[55] The IMPLAN input-output model's job impacts of one dollar of household spending are broken out by household income categories and industry sector in the table below. Each household's annual consumption supports a portion of a job, creating a significant number of jobs when aggregated across the City's million-plus households.

	Household Income Categories Used to Estimate Impacts of Household Spending in the IMPLAN Model								
Industries in which Jobs are Created by Household Spending	<$10k per year	$10-$15k per year	$15-$25k per year	$25-$35k per year	$35-$50k per year	$50-$75k per year	$75-$100k per year	$100-$150k per year	$150k + per year
Airports	0.000000028	0.000000017	0.000000016	0.000000014	0.000000016	0.000000014	0.000000013	0.000000014	0.000000016
Amusement – Spectator sports	0.000000022	0.000000021	0.000000015	0.000000025	0.000000022	0.000000020	0.000000020	0.000000017	0.000000015
Amusement – Recreation or amusement	0.000000074	0.000000060	0.000000053	0.000000060	0.000000057	0.000000053	0.000000049	0.000000048	0.000000056
Churches	0.000000024	0.000000019	0.000000018	0.000000033	0.000000034	0.000000025	0.000000020	0.000000020	0.000000026
Gas Service Stations	0.000000025	0.000000020	0.000000022	0.000000018	0.000000023	0.000000021	0.000000025	0.000000025	0.000000021
Hospitals (General)	0.000000187	0.000000348	0.000000310	0.000000255	0.000000204	0.000000221	0.000000164	0.000000158	0.000000154
Hospitals (Convalescent)	0.000000137	0.000000113	0.000000159	0.000000205	0.000000173	0.000000128	0.000000085	0.000000108	0.000000112
Hotels	0.000000011	0.000000006	0.000000004	0.000000005	0.000000005	0.000000004	0.000000004	0.000000004	0.000000004
Manufacturing (Moderate-Hazard)	0.000000123	0.000000128	0.000000125	0.000000108	0.000000109	0.000000099	0.000000101	0.000000093	0.000000082
Manufacturing (Low-Hazard)	0.000000025	0.000000028	0.000000025	0.000000023	0.000000022	0.000000020	0.000000020	0.000000017	0.000000014
Manufacturing (High-Hazard)	0.000000007	0.000000009	0.000000010	0.000000008	0.000000007	0.000000006	0.000000006	0.000000005	0.000000004
Misc. Bldg or Structure (High-hazard)	0.000000029	0.000000027	0.000000026	0.000000025	0.000000024	0.000000025	0.000000025	0.000000025	0.000000023
Misc. Bldg or Structure (Moderate-hazard)	0.000000008	0.000000009	0.000000007	0.000000007	0.000000006	0.000000006	0.000000005	0.000000005	0.000000004
Misc. Bldg or Structure (Low Hazard)	0.000000011	0.000000010	0.000000010	0.000000009	0.000000009	0.000000008	0.000000008	0.000000007	0.000000006
Office Buildings (F.I.R.E., Business)	0.000001785	0.000002027	0.000001734	0.000001774	0.000001804	0.000001664	0.000001588	0.000001447	0.000001360
Offices (Couriers and Delivery Services)	0.000000016	0.000000014	0.000000013	0.000000013	0.000000015	0.000000014	0.000000015	0.000000014	0.000000012
Public Administration (14), All	0.000000052	0.000000055	0.000000046	0.000000044	0.000000041	0.000000038	0.000000035	0.000000033	0.000000030
Public Garage (Parking Lots & Garages)	0.000000054	0.000000049	0.000000047	0.000000037	0.000000040	0.000000035	0.000000033	0.000000033	0.000000033
Public Garage (Auto Repair, etc.)	0.000000099	0.000000081	0.000000078	0.000000073	0.000000075	0.000000075	0.000000074	0.000000069	0.000000070
Public / Private Utility	0.000000016	0.000000019	0.000000016	0.000000015	0.000000013	0.000000012	0.000000011	0.000000010	0.000000008
Restaurants	0.000000602	0.000000523	0.000000440	0.000000447	0.000000485	0.000000503	0.000000511	0.000000472	0.000000396
Retail B (Rental & Leasing Centers)	0.000000184	0.000000166	0.000000161	0.000000127	0.000000135	0.000000120	0.000000112	0.000000112	0.000000111
Retail M (Grocery, Office Supplies)	0.000000914	0.000000743	0.000000826	0.000000657	0.000000839	0.000000764	0.000000936	0.000000941	0.000000782
Schools	0.000000532	0.000000360	0.000000138	0.000000149	0.000000121	0.000000141	0.000000122	0.000000155	0.000000198
Swimming Pools/Spas	0.000000049	0.000000041	0.000000037	0.000000032	0.000000031	0.000000029	0.000000026	0.000000027	0.000000026
Theatres	0.000000015	0.000000013	0.000000011	0.000000011	0.000000012	0.000000013	0.000000013	0.000000012	0.000000011
Warehouse B (ex. Motion Picture & Video)	0.000000044	0.000000040	0.000000037	0.000000033	0.000000036	0.000000034	0.000000034	0.000000032	0.000000030
Warehouse M (Merchant Wholesalers)	0.000000150	0.000000136	0.000000114	0.000000125	0.000000191	0.000000203	0.000000199	0.000000177	0.000000104
Warehouse S (Transportation)	0.000000157	0.000000147	0.000000147	0.000000127	0.000000130	0.000000121	0.000000120	0.000000114	0.000000114
Private Household Operations	0.000000199	0.000000125	0.000000162	0.000000188	0.000000146	0.000000118	0.000000135	0.000000191	0.000000191
Total Jobs, all Industries	0.000005575	0.000005355	0.000004809	0.000004646	0.000004825	0.000004533	0.000004507	0.000004385	0.000004012

[56] The share of workers in each industry where household consumption creates jobs that fall in the lowest three AMI bands is shown in the two-part table below. The first table shows the fraction of a job created in each industry by the spending of a typical Los Angeles household renting a two-bedroom apartment, broken out by AMI band. This spending pattern is based on a mean annual income of $62,834.57. The first table also shows the annual average earned income deficit per full-time job in each industry, also broken out proportionately by AMI. These last four

columns are drawn from the Economic Roundtable's analysis of Earned Income Deficit per Job for the entire economy of the City of Los Angeles, in the earlier chapter on the relationship between the Demand for Affordable Housing and Different Categories of New Development.

	All Jobs Generated by Annual Spending of One 2BR Apartment Renter Household, City of Los Angeles, by AMI Band				Average Annual Deficit per Job, City of Los Angeles			
Industries in which Jobs are Created by Household Spending	0%-30% (A)	31%-50% (B)	51%-80% (C)	Total, all AMI bands (D)	0%-30% (E)	31%-50% (F)	51%-80% (G)	Total, all AMI bands (H)
Airports	0.00005	0.00007	0.00017	0.00085	$606	$450	$239	$1,294
Amusement – Spectator sports	0.00007	0.00009	0.00016	0.00124	$626	$387	$157	$1,170
Amusement – Recreation or amusement	0.00037	0.00034	0.00074	0.00336	$1,138	$555	$268	$1,961
Churches	0.00006	0.00030	0.00030	0.00161	$452	$1,085	$228	$1,766
Gas Service Stations	0.00034	0.00012	0.00028	0.00131	$2,659	$505	$263	$3,428
Hospitals (General)	0.00056	0.00125	0.00237	0.01391	$360	$546	$207	$1,113
Hospitals (Convalescent)	0.00105	0.00137	0.00169	0.00815	$1,359	$983	$256	$2,597
Hotels	0.00003	0.00006	0.00007	0.00026	$1,319	$1,315	$309	$2,943
Manufacturing (Moderate-Hazard)	0.00081	0.00112	0.00156	0.00618	$1,300	$1,064	$299	$2,664
Manufacturing (Low-Hazard)	0.00010	0.00021	0.00039	0.00125	$834	$1,008	$374	$2,216
Manufacturing (High-Hazard)	0.00002	0.00006	0.00009	0.00038	$520	$855	$274	$1,649
Misc. Bldg or Structure (High-hazard)	0.00019	0.00036	0.00030	0.00160	$1,180	$1,314	$231	$2,725
Misc. Bldg or Structure (Moderate-hazard)	0.00006	0.00008	0.00009	0.00037	$1,652	$1,298	$289	$3,239
Misc. Bldg or Structure (Low Hazard)	0.00007	0.00008	0.00009	0.00052	$1,356	$931	$219	$2,506
Office Buildings (F.I.R.E., Business)	0.00523	0.00941	0.01672	0.10453	$555	$515	$197	$1,268
Offices (Couriers and Delivery Services)	0.00008	0.00016	0.00022	0.00091	$871	$1,056	$289	$2,216
Public Administration (14), All	0.00010	0.00012	0.00036	0.00239	$433	$301	$178	$912
Public Garage (Parking Lots & Garages)	0.00029	0.00042	0.00053	0.00224	$1,311	$1,092	$285	$2,688
Public Garage (Auto Repair, etc.)	0.00071	0.00118	0.00122	0.00476	$1,500	$1,452	$311	$3,262
Public / Private Utility	0.00004	0.00001	0.00004	0.00072	$540	$30	$65	$636
Restaurants	0.00569	0.00728	0.00822	0.03195	$1,790	$1,315	$308	$3,413
Retail B (Rental & Leasing Centers)	0.00098	0.00144	0.00182	0.00764	$1,311	$1,092	$285	$2,688
Retail M (Grocery, Office Supplies)	0.00528	0.00816	0.01152	0.04802	$1,097	$1,015	$293	$2,405
Schools	0.00027	0.00071	0.00133	0.00875	$256	$464	$183	$902
Swimming Pools/Spas	0.00020	0.00018	0.00039	0.00179	$2,306	$1,479	$321	$4,106
Theatres	0.00005	0.00006	0.00010	0.00081	$1,138	$555	$268	$1,961
Warehouse B (ex. Motion Picture & Video)	0.00006	0.00008	0.00027	0.00211	$626	$387	$157	$1,170
Warehouse M (Merchant Wholesalers)	0.00102	0.00229	0.00319	0.01274	$299	$247	$152	$699
Warehouse S (Transportation)	0.00114	0.00182	0.00190	0.00751	$811	$1,037	$295	$2,142
Private Household Operations	0.00170	0.00185	0.00199	0.00746	$1,512	$1,408	$305	$3,225
Total Jobs, all Industries	**0.02564**	**0.03988**	**0.05982**	**0.28484**	**$958**	**$846**	**$248**	**$2,051**

The second part of this two-part table, shown below, provides information about the portion of each job's earned income deficit that is attributable to the aforementioned renter household in a two-bedroom apartment based on its annual consumption. This is followed by a percent and fractional job count of those pre-conversion jobs that pay less as well as more than what is required to afford market rate housing.

	Income Deficit Created by this Household per Year	Share of Pre-Conversion Jobs that Pay **Less** than What is Required to Afford Market-Rate Housing		Share of Pre-Conversion Jobs that Pay **More** than What is Required to Afford Market-Rate Housing	
Industries in which Jobs are Created by Household Spending	Total (A*E)+(B*F)+(C*G)	Percent (I)	Jobs (D*I)	Percent (J)	Jobs (D*J)
Airports	$0.10	34%	0.0003	66%	0.0006
Amusement – Spectator sports	$0.10	26%	0.0003	75%	0.0009
Amusement – Recreation or amusement	$0.80	43%	0.0014	57%	0.0019

Churches	$0.43	42%	0.0007	59%	0.0009
Gas Service Stations	$1.03	57%	0.0007	44%	0.0006
Hospitals (General)	$1.37	30%	0.0042	70%	0.0097
Hospitals (Convalescent)	$3.20	51%	0.0041	50%	0.0040
Hotels	$0.14	62%	0.0002	40%	0.0001
Manufacturing (Moderate-Hazard)	$2.72	56%	0.0035	43%	0.0027
Manufacturing (Low-Hazard)	$0.44	56%	0.0007	44%	0.0005
Manufacturing (High-Hazard)	$0.08	43%	0.0002	57%	0.0002
Misc. Bldg or Structure (High-hazard)	$0.77	54%	0.0009	47%	0.0007
Misc. Bldg or Structure (Moderate-hazard)	$0.23	62%	0.0002	38%	0.0001
Misc. Bldg or Structure (Low Hazard)	$0.19	47%	0.0002	54%	0.0003
Office Buildings (F.I.R.E., Business)	$11.05	30%	0.0314	70%	0.0732
Offices (Couriers and Delivery Services)	$0.31	51%	0.0005	49%	0.0004
Public Administration (14), All	$0.14	24%	0.0006	76%	0.0018
Public Garage (Parking Lots & Garages)	$0.99	56%	0.0012	45%	0.0010
Public Garage (Auto Repair, etc.)	$3.15	66%	0.0031	35%	0.0016
Public / Private Utility	$0.02	11%	0.0001	88%	0.0006
Restaurants	$22.29	67%	0.0212	34%	0.0108
Retail B (Rental & Leasing Centers)	$3.38	56%	0.0042	45%	0.0034
Retail M (Grocery, Office Supplies)	$17.46	52%	0.0250	48%	0.0230
Schools	$0.64	26%	0.0023	73%	0.0064
Swimming Pools/Spas	$0.85	43%	0.0008	57%	0.0010
Theatres	$0.11	26%	0.0002	75%	0.0006
Warehouse B (ex. Motion Picture & Video)	$0.12	20%	0.0004	80%	0.0017
Warehouse M (Merchant Wholesalers)	$1.36	51%	0.0065	49%	0.0062
Warehouse S (Transportation)	$3.37	64%	0.0049	35%	0.0027
Private Household Operations	$5.78	75%	0.0055	26%	0.0019
Total Jobs, all Industries	**$73.11**	**44%**	**0.1253**	**56%**	**0.1595**

[57] Table 1-22 presents earned income deficits per square foot based upon the *citywide* average of 1,156 square feet for a rental apartment and 1,390 square feet for a condominium unit. The citywide averages are used instead of averages specific to the different Area Planning Commissions (APCs) because the latter reflects historical differences of housing sizes across the City, while new market-rate housing development is more uniform.

[58] The average interest rate for 30-year fixed-rate conventional mortgages from 1999-2009 was 6.4 percent according to Freddie Mac's Primary Mortgage Market Survey.

END NOTES FOR CHAPTER 2

[1] Data was also compiled for the City of Santa Monica, however it was not included in the report because the information was incomplete.

[2] A detailed case study of the Boston linkage fee originally published by Policylink.org is presented in its entirety in Appendix 2-2 to this chapter.

[3] Supporting data for Figure 2-2, Annual Change in Consumer Price Index Compared to Los Angeles Construction Costs:

Year	% Annual Change in RS Means Square Foot Costs for LA Region	% Annual Change in Consumer Price Index for LA Region – All Urban Consumers
2004	1.69	3.3
2005	9.61	4.5
2006	6.10	4.3
2007	5.75	3.3
2008	3.90	3.5
2009	6.05	-0.8

END NOTES FOR CHAPTER 3

[1] Huffman, Forrest, Arthur C. Nelson, Mark T. Smith, and Michael Stegman. 1988. Who Bears the Burden of Development Impact Fees? *Journal of the American Planning Association* 54: 49-55;
- Delaney, Charles, and Mark Smith. 1989a. Impact Fees and the Price of New Housing: An Empirical Study, *American Real Estate and Urban Economics Association Journal* 17: 41-54.
- Singell, Larry, and Jane H. Lillydahl. 1990. An Empirical Examination of the Effect of Impact Fees on the Housing Market, *Land Economics*, 66: 82-92.
- Skaburskis, Andrejs, and Mohammad Qadeer. 1992. An Empirical Estimation of the Price Effects of Development Impact Fees, *Urban Studies*, 5: 653-667.
- Skidmore, Mark, and Michael Peddle. 1998. Do Development Impact Fees Reduce the Rate of Residential Development, *Growth and Change*, 29: 383-400.
- Burge, Gregory S., and Keith R. Ihlanfeldt. 2006a. Impact Fees and Single-Family Home Construction, *Journal of Urban Economics*. 60: 284-306.
- Burge, Gregory S., and Keith R. Ihlanfeldt. 2006b. The Effects of Impact Fees on Multifamily Housing Construction, *Journal of Regional Science* 46: 5-23.

[2] A $20 per square foot fee was deemed the highest level fee that could practically be imposed since other jurisdictions surveyed in the study did not exceed this level.

[3]USC Lusk Center, "Casden Forecast Industrial and Office Report" (Los Angeles: 2009), 8-13.

[4] From 2006 to 2009 building permits issued by City of Los Angeles Department of Building and Safety declined 80% for apartments, 78% for industrial, and 32% for retail. Office was the only sector that saw an increase in permit activity of 31%. However, from 2007 to 2009, new construction permits for office space declined by 20%.

[5] Table 3-1 Impact of Linkage Fee on Threshold Rent differs from Table 1-11 Total Earned Income deficit Per Square Foot by reflecting the incremental increase in rent required to pay an additional $1 per square foot of linkage fee. Table 2-10 reflects the cumulative per square foot impact that each development type has on affordable housing need over the life of the building.

[6] Supporting data for Figure 3-4, Percentage of Development Reaching Tipping Point with Different Fee Levels:

Tipping Point	% of Projects Reach Tipping Point	% of Square Feet of Development Reaching Tipping Point	% of Value of Development Reaching Tipping Point
5%	0.0%	0.0%	0.0%
6%	0.0%	0.0%	0.0%
7%	0.2%	3%	2%
8%	0.2%	3%	2%
9%	0.4%	9%	5%
10%	2%	9%	5%
11%	5%	10%	5%
12%	5%	10%	5%
13%	5%	10%	6%
14%	6%	11%	6%
15%	6%	11%	6%

[7] Supporting data for Figures 3-5 to 3-7 is shown below.

Supporting data for Figure 3-5, Low Fee Scenario - 5% of Deficit, Fees Generated by Property Use Schedule based on Type of Development:

Category	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007

Residential	2,248,811	2,583,750	2,919,099	4,059,566	4,611,116	4,121,976	4,196,818	7,291,125	6,728,968	9,083,885	7,221,014
Hotels	0	255,116	151,909	269,373	156,467	67,612	166,609	144,634	677,556	740,668	207,346
Office	397,907	1,985,555	3,274,320	5,428,280	6,867,350	6,252,933	2,318,904	1,902,000	5,464,192	2,718,772	6,958,787
Industrial	4,079,450	10,592,411	17,307,162	15,569,334	15,309,695	16,063,475	8,809,223	7,043,193	8,854,623	14,517,907	4,873,682
Warehouse	9,962,527	7,927,124	5,910,939	14,787,495	14,883,634	7,050,490	8,788,075	3,062,311	4,149,885	1,879,453	4,014,498
Entertainment	96,505	778,263	365,196	190,286	404,448	98,040	56,029	0	82,036	758,689	4,973
Retail, Rest.	5,969,372	6,693,466	11,228,304	20,856,957	6,737,066	5,436,704	4,562,512	5,947,261	9,353,448	5,044,770	6,715,494
Hospitals	0	207,779	202,533	1,607,443	358,884	1,066,153	6,958,735	0	296,554	0	404,993
Utilities	171,775	2,007	8,239	6,291	3,271	518	8,698	7,484	561	103,421	14,983
Parking	216,567	1,181,440	576,473	247,334	187,543	580,083	94,132	229,699	30,043	542,033	23,084

Supporting data for Figure 3-6, Medium Fee Scenario - 10% Deficit, Fees Generated by Property Use Schedule based on Type of Development:

Category	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Residential	4,497,622	5,167,500	5,838,198	8,119,133	9,222,233	8,243,951	8,393,635	14,582,249	13,457,936	18,167,769	14,442,028
Hotels	0	510,232	303,818	538,746	312,933	135,225	333,219	289,269	1,355,111	1,481,337	414,691
Office	795,814	3,971,111	6,548,641	10,856,560	13,734,700	12,505,866	4,637,807	3,803,999	10,928,385	5,437,544	13,917,573
Industrial	8,158,901	21,184,821	34,614,324	31,138,668	30,619,391	32,126,949	17,618,445	14,086,386	17,709,246	29,035,814	9,747,365
Warehouse	19,925,053	15,854,249	11,821,879	29,574,991	29,767,269	14,100,980	17,576,150	6,124,622	8,299,769	3,758,906	8,028,996
Entertainment	193,010	1,556,525	730,391	380,572	808,896	196,080	112,057	0	164,072	1,517,378	9,945
Retail, Rest.	11,938,743	13,386,933	22,456,609	41,713,913	13,474,133	10,873,408	9,125,024	11,894,523	18,706,896	10,089,539	13,430,988
Hospitals	0	415,557	405,065	3,214,885	717,767	2,132,307	13,917,470	0	593,109	0	809,986
Utilities	343,550	4,015	16,478	12,582	6,542	1,037	17,395	14,969	1,122	206,842	29,965
Parking	433,133	2,362,880	1,152,946	494,668	375,086	1,160,166	188,263	459,398	60,086	1,084,066	46,169

Supporting data for Figure 3-7, High Fee Scenario - 15% of Deficit, Fees Generated by Property Use Schedule based on Type of Development:

Category	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Residential	6,746,432	7,751,250	8,757,297	12,178,699	13,833,349	12,365,927	12,590,453	21,873,374	20,186,904	27,251,654	21,663,041
Hotels	0	765,348	455,726	808,120	469,400	202,837	499,828	433,903	2,032,667	2,222,005	622,037
Office	1,193,721	5,956,666	9,822,961	16,284,840	20,602,049	18,758,799	6,956,711	5,705,999	16,392,577	8,156,315	20,876,360
Industrial	12,238,351	31,777,232	51,921,486	46,708,002	45,929,086	48,190,424	26,427,668	21,129,579	26,563,869	43,553,720	14,621,047
Warehouse	29,887,580	23,781,373	17,732,818	44,362,486	44,650,903	21,151,471	26,364,224	9,186,934	12,449,654	5,638,359	12,043,494
Entertainment	289,514	2,334,788	1,095,587	570,858	1,213,344	294,120	168,086	0	246,108	2,276,066	14,918
Retail, Rest.	17,908,115	20,080,399	33,684,913	62,570,870	20,211,199	16,310,112	13,687,536	17,841,784	28,060,344	15,134,309	20,146,482
Hospitals	0	623,336	607,598	4,822,328	1,076,651	3,198,460	20,876,204	0	889,663	0	1,214,979
Utilities	515,324	6,022	24,717	18,873	9,813	1,555	26,093	22,453	1,682	310,263	44,948
Parking	649,700	3,544,320	1,729,418	742,002	562,628	1,740,248	282,395	689,097	90,129	1,626,099	69,253

[8] For purposes of the potential revenue generation scenarios, a small amount of permitted building floor area was excluded due to discrepancies in the classification of categories in the source data. Additionally, the following categories were excluded from the calculations due to the low likelihood of fees being imposed on them: churches, schools, federal, state, and local administration buildings, and airports.

[9] Source: City of Los Angeles Housing Department.

[10] The geographic breakout for this time series showing household income levels is at the Area Planning Commission level because the level of geographic detail in American Community Survey data for 2005 through 2008 does not enable breakouts at the Community Planning Area level.

[11] Supporting data for Figure 3-8, "Distribution of City of Los Angeles Residents by Average Median Income Band of Household, 1990-2008," is as follows:

APC	Year	0% to 30% of AMI	31% to 50% of AMI	51% to 80% of AMI	81% to 120% of AMI	121% to 150% of AMI	151% to 200% of AMI	201% + of AMI
South LA	1990	26%	20%	22%	17%	6%	5%	4%
	2000	28%	18%	21%	16%	7%	5%	5%
	2005	28%	22%	21%	15%	5%	4%	4%
	2006	27%	22%	23%	16%	6%	3%	3%
	2007	30%	20%	24%	16%	4%	3%	3%
	2008	29%	22%	22%	15%	5%	3%	3%
East LA	1990	21%	17%	23%	18%	8%	7%	6%
	2000	25%	19%	20%	16%	7%	6%	8%
	2005	25%	20%	20%	15%	9%	4%	7%
	2006	23%	20%	21%	16%	6%	6%	7%
	2007	21%	20%	20%	19%	8%	6%	6%
	2008	22%	21%	20%	14%	8%	7%	7%
Central LA	1990	20%	18%	21%	17%	8%	7%	11%
	2000	21%	16%	19%	16%	7%	7%	14%
	2005	19%	19%	19%	16%	7%	8%	13%
	2006	18%	17%	20%	17%	8%	8%	13%
	2007	21%	19%	20%	12%	7%	7%	13%
	2008	19%	16%	18%	17%	8%	8%	14%
Harbor	1990	14%	14%	19%	20%	11%	10%	11%
	2000	17%	16%	20%	17%	8%	8%	14%
	2005	15%	15%	20%	21%	8%	9%	11%
	2006	16%	16%	22%	16%	10%	11%	8%
	2007	15%	18%	25%	19%	8%	6%	8%
	2008	16%	17%	20%	21%	10%	8%	8%
South Valley	1990	8%	8%	14%	17%	11%	14%	28%
	2000	12%	13%	18%	18%	10%	10%	19%
	2005	13%	14%	20%	20%	12%	9%	13%
	2006	11%	16%	19%	19%	10%	11%	14%
	2007	13%	16%	18%	19%	10%	10%	15%
	2008	14%	16%	20%	18%	9%	9%	14%
North Valley	1990	9%	9%	16%	21%	13%	15%	18%
	2000	11%	11%	19%	20%	11%	11%	17%
	2005	11%	13%	20%	22%	11%	11%	12%
	2006	12%	14%	20%	20%	10%	11%	13%
	2007	11%	15%	21%	22%	11%	10%	11%
	2008	11%	14%	20%	23%	10%	11%	11%
West LA	1990	12%	8%	12%	16%	11%	13%	27%
	2000	12%	6%	11%	14%	9%	12%	36%
	2005	10%	6%	11%	15%	10%	13%	33%
	2006	11%	7%	12%	15%	10%	12%	34%
	2007	8%	7%	10%	15%	9%	13%	37%
	2008	10%	8%	10%	13%	9%	13%	37%
LA CITY	1990	16%	13%	18%	18%	9%	10%	15%
	2000	18%	14%	18%	17%	9%	8%	16%
	2005	18%	16%	19%	18%	9%	8%	13%
	2006	17%	17%	20%	17%	8%	8%	13%
	2007	17%	17%	20%	17%	8%	8%	13%
	2008	18%	17%	19%	17%	8%	8%	13%

[12] The Census Bureau's definition of "family" is "A group of two or more people who reside together and who are related by birth, marriage, or adoption." This definition excludes single adults and unrelated individuals living together.

[13] Supporting data for Figure 3-10, Typical Annual Change in the Number of Jobs 1996-2008 as a Percent of 1996 Employment, by CPA:

CPA	Area Name	Percent in Poverty	Total Families	Income in 1999 Below Poverty Level
1	Northeast Los Angeles	18%	53,348	9,681
2	Boyle Heights	30%	17,466	5,284
3	Southeast Los Angeles	40%	49,379	19,575
4	West Adams-Baldwin Hills-Leimert Park	22%	41,368	9,201
5	South Central Los Angeles	30%	53,769	16,128
6	Wilshire	22%	64,916	14,261
7	Hollywood	22%	43,432	9,362
8	Silver Lake-Echo Park	21%	15,345	3,181
9	Westlake	37%	22,073	8,198
10	Central City	20%	2,348	473
11	Central City North	27%	3,448	943
12	Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass	4%	16,988	683
13	North Hollywood-Valley Village	18%	29,142	5,308
14	Arleta-Pacoima	17%	20,021	3,455
15	Van Nuys-North Sherman Oaks	18%	36,371	6,523
16	Mission Hills-North Hills-Panorama City	19%	28,705	5,535
17	Sun Valley-La Tuna Canyon	16%	17,708	2,919
18	Sylmar	11%	17,378	1,952
19	Granada Hills-Knollwood	5%	15,520	792
20	Canoga Park-West Hills-Winnetka-Woodland Hills	8%	43,893	3,338
21	Chatsworth-Porter Ranch	6%	22,516	1,270
22	Northridge	9%	15,151	1,324
23	Reseda-West Van Nuys	11%	23,302	2,578
24	Encino-Tarzana	7%	19,131	1,338
25	Sunland-Tujunga-Lakeview Terrace-Shadow Hills-East La Tuna Canyon	9%	13,118	1,127
26	Westwood	7%	7,213	478
27	West Los Angeles	7%	15,914	1,117
28	Palms-Mar Vista-Del Rey	11%	24,478	2,780
29	Venice	8%	7,033	565
30	Westchester-Playa Del Rey	6%	12,003	731
31	Brentwood-Pacific Palisades	2%	13,654	327
32	Bel Air-Beverly Crest	3%	7,243	214
33	Wilmington-Harbor City	22%	16,582	3,606
34	San Pedro	13%	19,090	2,532
35	Harbor Gateway	17%	13,487	2,360
	City of Los Angeles	18%	822,575	149,139

[14] Supporting data for Figure 3-11, Percent of Adults 16+ Years of Age with Earned Income in 1999, by CPA, is as follows:

CPA	Area Name	% with Earnings	Total Population 16 Years and Over	Population with Earnings
1	Northeast Los Angeles	64%	177,081	114,164
2	Boyle Heights	57%	60,781	34,749
3	Southeast Los Angeles	54%	164,860	89,677
4	West Adams-Baldwin Hills-Leimert Park	61%	129,184	78,962
5	South Central Los Angeles	58%	184,100	106,172
6	Wilshire	66%	236,755	157,148
7	Hollywood	68%	181,767	123,368
8	Silver Lake-Echo Park	68%	58,530	39,972
9	Westlake	62%	78,714	48,727
10	Central City	46%	21,520	9,917
11	Central City North	53%	22,322	11,876
12	Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass	78%	65,466	51,266
13	North Hollywood-Valley Village	70%	101,804	71,072
14	Arleta-Pacoima	63%	72,493	45,971
15	Van Nuys-North Sherman Oaks	69%	119,515	82,294
16	Mission Hills-North Hills-Panorama City	66%	91,966	60,783

17	Sun Valley-La Tuna Canyon	64%	60,605	38,871
18	Sylmar	67%	58,509	38,976
19	Granada Hills-Knollwood	70%	46,957	32,679
20	Canoga Park-West Hills-Winnetka-Woodland Hills	71%	135,142	95,524
21	Chatsworth-Porter Ranch	71%	67,594	48,159
22	Northridge	68%	50,856	34,533
23	Reseda-West Van Nuys	68%	75,769	51,476
24	Encino-Tarzana	67%	58,798	39,277
25	Sunland-Tujunga-Lakeview Terrace-Shadow Hills-East La Tuna Canyon	69%	41,945	28,854
26	Westwood	70%	46,635	32,838
27	West Los Angeles	72%	62,348	44,885
28	Palms-Mar Vista-Del Rey	73%	92,366	67,363
29	Venice	79%	33,122	26,224
30	Westchester-Playa Del Rey	75%	42,590	31,799
31	Brentwood-Pacific Palisades	71%	45,258	32,256
32	Bel Air-Beverly Crest	66%	21,326	14,103
33	Wilmington-Harbor City	64%	51,421	33,053
34	San Pedro	68%	58,951	39,890
35	Harbor Gateway	64%	42,476	27,264
	City of Los Angeles	66%	2,860,807	1,884,584

[15] Supporting data for Figures 3-12, 3-13 and 3-14, "Typical Annual Employment Change 1996-2008 as Percent of 1996 Employment, by CPA ", "Average Annual Pay in 2008, by CPA", and "Average Pay in Growing Sectors as Percent of All Sectors", is as follows:

	DATA FOR ALL INDUSTRIES				DATA FOR GROWING INDUSTRY SECTORS			
Code	Area	Average Annual Pay in 2008	Typical Annual Employment Change 1996-2008	Typical Annual Employment Change as % of 1996 Employment	Average Annual Pay in 2008	Typical Annual Employment Change 1996-2008	Typical Annual Employment Change as % of 1996 Employment	Average Pay in Growing Sectors as % of All Sectors
	City of Los Angeles	55,189	14,400	1%	53,200	21,430	2%	96%
APCs								
1	North Valley	43,085	1,852	1%	36,266	3,008	3%	84%
2	South Valley	50,128	2,982	1%	45,890	4,409	2%	92%
3	West LA	69,417	2,521	1%	61,873	3,969	3%	89%
4	Central LA	60,595	4,539	1%	63,675	7,483	2%	105%
5	East LA	41,970	375	1%	42,124	1,741	5%	100%
6	South LA	35,042	1,732	2%	34,653	3,249	6%	99%
7	Harbor	47,483	398	1%	43,956	612	3%	93%
CPAs								
1	Northeast LA	42,971	417	1%	41,565	1,230	6%	97%
2	Boyle Heights	36,477	-97	0%	37,454	397	6%	103%
3	Southeast LA	32,976	78	0%	34,533	1,089	6%	105%
4	West Adams	36,975	553	3%	37,159	631	4%	101%
5	South LA	35,869	1,101	3%	35,329	1,826	8%	98%
6	Wilshire	46,397	2,086	2%	40,934	2,418	4%	88%
7	Hollywood	53,507	1,923	3%	42,488	2,249	6%	79%
8	Silver Lake	47,808	55	1%	50,317	224	3%	105%
9	Westlake	41,098	647	2%	40,835	849	4%	99%
10	Central City	69,826	-270	0%	81,051	2,512	1%	116%
11	Central City North	51,319	153	0%	52,819	677	3%	103%
12	Sherman Oaks	57,828	126	0%	58,742	556	3%	102%
13	North Hollywood	35,004	282	1%	32,334	567	3%	92%
14	Arleta	35,082	67	1%	32,359	247	6%	92%
15	Van Nuys	41,114	685	2%	37,635	1,044	4%	92%
16	Mission Hills	41,487	629	3%	42,115	773	5%	102%
17	Sun Valley	45,428	245	1%	43,995	423	3%	97%
18	Sylmar	58,022	460	3%	59,152	512	4%	102%

19	Granada Hills	30,269	182	3%	29,716	199	3%	98%
20	Canoga Park	54,710	770	1%	50,645	1,435	3%	93%
21	Chatsworth	43,236	-231	0%	33,996	908	4%	79%
22	Northridge	41,820	293	1%	44,227	421	3%	106%
23	Reseda	43,515	138	1%	39,344	398	2%	90%
24	Encino	61,416	983	3%	60,497	1,188	6%	99%
25	Sunland	29,324	206	5%	29,856	217	7%	102%
26	Westwood	61,661	1,614	3%	58,421	1,841	5%	95%
27	West LA	98,984	-191	0%	89,457	809	2%	90%
28	Palms	56,600	250	2%	56,760	352	5%	100%
29	Venice	58,112	92	2%	58,558	251	7%	101%
30	Westchester	46,987	1,051	4%	45,673	1,125	5%	97%
31	Brentwood	82,209	473	3%	83,308	543	4%	101%
32	Bel Air	54,447	33	1%	42,648	78	4%	78%
33	Wilmington	50,719	259	2%	44,714	355	4%	88%
34	San Pedro	39,979	210	2%	39,808	243	3%	100%
35	Harbor Gateway	46,664	10	1%	43,821	31	3%	94%
36	Port Of LA	55,024	-80	-2%	52,555	71	3%	96%
37	LAX	49,372	-802	-2%	48,040	94	16%	97%

[16] Flaming, Daniel and Drayse, M. (2001): "Los Angeles Labor Market Action Plan," pp. 112-114, Economic Roundtable, www.economicrt.org.

[17] Flaming, Daniel and Drayse, M. (2002): "South Los Angeles Rising," Economic Roundtable, www.economicrt.org.

[18] Supporting data for Figure 3-15, Mode of Transportation to Work by AMI Band and APC:

Area	AMI Band	Car, truck, or van	Public Transit	Bicycle or Motor-cycle	Walked	Worked at home	Other
Central LA	0% to 30%	51%	31%	4%	4%	8%	2%
	31% to 50%	66%	22%	1%	4%	7%	1%
	51% to 80%	67%	22%	1%	4%	5%	1%
	81% to 120%	69%	17%	2%	5%	5%	1%
	121% to 150%	82%	6%	1%	4%	6%	0%
	151% to 200%	80%	6%	1%	2%	10%	1%
	201%+	80%	5%	1%	1%	13%	1%
East LA	0% to 30%	52%	32%	0%	9%	5%	2%
	31% to 50%	61%	25%	1%	6%	5%	2%
	51% to 80%	62%	28%	0%	5%	3%	2%
	81% to 120%	72%	19%	1%	4%	4%	1%
	121% to 150%	85%	10%	1%	1%	2%	0%
	151% to 200%	82%	10%	1%	3%	3%	2%
	201%+	80%	7%	1%	5%	8%	0%
South LA	0% to 30%	57%	29%	2%	6%	5%	1%
	31% to 50%	64%	26%	1%	5%	3%	1%
	51% to 80%	77%	17%	1%	3%	2%	0%
	81% to 120%	81%	12%	1%	2%	4%	0%
	121% to 150%	86%	10%	0%	2%	1%	1%
	151% to 200%	94%	2%	0%	1%	2%	0%
	201%+	68%	19%	2%	6%	0%	5%
Harbor	0% to 30%	61%	25%	6%	4%	4%	0%
	31% to 50%	72%	17%	1%	5%	6%	0%
	51% to 80%	81%	10%	0%	6%	2%	1%
	81% to 120%	89%	4%	0%	3%	3%	1%
	121% to 150%	96%	2%	0%	0%	1%	2%
	151% to 200%	94%	3%	0%	0%	4%	0%
	201%+	92%	2%	0%	0%	4%	2%
West LA	0% to 30%	58%	13%	4%	16%	6%	1%

	31% to 50%	77%	9%	3%	3%	8%	0%
	51% to 80%	77%	8%	1%	7%	8%	0%
	81% to 120%	76%	6%	3%	6%	8%	1%
	121% to 150%	84%	3%	2%	1%	9%	0%
	151% to 200%	85%	3%	0%	2%	9%	0%
	201%+	85%	1%	2%	3%	8%	1%
South Valley	0% to 30%	78%	10%	2%	4%	6%	0%
	31% to 50%	78%	13%	1%	6%	1%	2%
	51% to 80%	82%	7%	2%	2%	4%	3%
	81% to 120%	82%	6%	1%	3%	3%	4%
	121% to 150%	89%	3%	1%	2%	3%	3%
	151% to 200%	86%	3%	2%	1%	6%	2%
	201%+	88%	1%	0%	0%	9%	1%
North Valley	0% to 30%	82%	6%	1%	5%	4%	2%
	31% to 50%	79%	11%	0%	3%	3%	3%
	51% to 80%	82%	9%	1%	1%	3%	4%
	81% to 120%	85%	6%	1%	2%	2%	3%
	121% to 150%	88%	5%	0%	1%	4%	3%
	151% to 200%	90%	4%	2%	0%	3%	1%
	201%+	91%	2%	0%	1%	5%	1%
LA City	0% to 30%	61%	24%	2%	7%	6%	1%
	31% to 50%	69%	20%	1%	5%	4%	1%
	51% to 80%	75%	15%	1%	3%	4%	2%
	81% to 120%	79%	10%	1%	3%	4%	2%
	121% to 150%	87%	5%	1%	2%	4%	1%
	151% to 200%	86%	5%	1%	1%	6%	1%
	201%+	85%	3%	1%	2%	8%	1%
Total		78%	11%	1%	3%	5%	1%

[19] Supporting data for Figure 3-16, "Minutes Spent Commuting to Work by Mode of Transportation and APC,":

APC	Mode of Transportation for Commuting to Work	Average Minutes Spent Commuting to Work
South LA	Public transit	53
	Car, truck or van	28
	Bicycle or motorcycle	27
	Walked	12
	Worked at home	0
South Valley	Public transit	52
	Car, truck or van	29
	Bicycle or motorcycle	23
	Walked	15
	Worked at home	0
North Valley	Public transit	49
	Car, truck or van	29
	Bicycle or motorcycle	21
	Walked	11
	Worked at home	0
Harbor	Public transit	47
	Car, truck or van	25
	Bicycle or motorcycle	14
	Walked	10
	Worked at home	0
Central LA	Public transit	45
	Car, truck or van	28
	Bicycle or motorcycle	19
	Walked	16
	Worked at home	0
East LA	Public transit	42
	Car, truck or van	28

	Bicycle or motorcycle	29
	Walked	13
	Worked at home	0
West LA	Public transit	42
	Car, truck or van	26
	Bicycle or motorcycle	20
	Walked	13
	Worked at home	0
LA City	Public transit	47
	Car, truck or van	28
	Bicycle or motorcycle	22
	Walked	13
	Worked at home	0

[20] Data on time spent commuting to work is from the Public Use Microdata Sample of the 2008 American Community Survey. Elsewhere in this report, the commuting modes of bicycling and walking are combined into a single category, with an average commuting time for this combined category of 14 minutes. The number of people who walk to work is nearly three times greater than the number that ride bicycles, so the average commuting time for this combined category is tilted toward the commuting time for walkers.

[21] Data for the average countywide local bus speed of 12 miles per hour is from Timothy Papandreou (2004), "Westside Transportation Access Needs Assessment - Short and Long Term Improvements." Data for the average commuting speed by automobile of 20 miles per hour is from http://www.City-Data.com.

END NOTES FOR CHAPTER 4

[1] A convenient commuting radius is defined as the distance that a worker can travel in 30 or less minutes. This is based on the average commuting time of 30 minutes for workers residing in the City of Los Angeles.

[2] Supporting data for Figure 4-2, Overcrowding and Rent Burden Rates for Renter Households by APC:

Area Planning Commission	Household Income as % of AMI	Over Crowded Only	Rent Burdened Only	Over Crowded and Rent Burdened	No Over Crowding or Rent Burden	Total
Harbor	0% to 30%	0%	70%	23%	6%	100%
	31% to 50%	10%	58%	17%	14%	100%
	51% to 80%	20%	34%	5%	41%	100%
	81% to 120%	13%	17%	0%	70%	100%
	121% +	7%	5%	0%	89%	100%
	Total	10%	41%	11%	38%	100%
South LA	0% to 30%	1%	70%	23%	6%	100%
	31% to 50%	11%	55%	19%	15%	100%
	51% to 80%	23%	34%	4%	38%	100%
	81% to 120%	19%	9%	0%	72%	100%
	121% +	13%	3%	0%	84%	100%
	Total	10%	50%	15%	25%	100%
Central LA	0% to 30%	1%	65%	26%	8%	100%
	31% to 50%	10%	58%	22%	10%	100%
	51% to 80%	22%	46%	4%	28%	100%
	81% to 120%	18%	25%	1%	57%	100%
	121% +	8%	6%	0%	87%	100%
	Total	11%	42%	12%	36%	100%
East LA	0% to 30%	1%	66%	21%	13%	100%
	31% to 50%	13%	51%	23%	13%	100%
	51% to 80%	24%	30%	5%	41%	100%
	81% to 120%	21%	15%	1%	63%	100%
	121% +	9%	5%	1%	85%	100%
	Total	11%	42%	13%	33%	100%
West LA	0% to 30%	0%	85%	10%	5%	100%
	31% to 50%	1%	83%	10%	6%	100%
	51% to 80%	5%	75%	2%	18%	100%
	81% to 120%	5%	43%	0%	52%	100%
	121% +	3%	11%	0%	87%	100%
	Total	3%	47%	3%	47%	100%
So. Valley	0% to 30%	0%	77%	20%	4%	100%
	31% to 50%	3%	70%	22%	5%	100%
	51% to 80%	11%	57%	4%	28%	100%
	81% to 120%	10%	31%	0%	58%	100%
	121% +	3%	7%	0%	90%	100%
	Total	6%	46%	9%	40%	100%
North Valley	0% to 30%	0%	66%	27%	7%	100%
	31% to 50%	5%	65%	24%	6%	100%
	51% to 80%	22%	42%	8%	27%	100%
	81% to 120%	20%	17%	2%	60%	100%
	121% +	13%	7%	0%	80%	100%
	Total	12%	44%	14%	31%	100%
LA CITY	0% to 30%	0%	70%	23%	7%	100%
	31% to 50%	8%	61%	21%	10%	100%
	51% to 80%	19%	46%	5%	31%	100%
	81% to 120%	15%	25%	1%	60%	100%
	121% +	6%	7%	0%	87%	100%
	Total	9%	45%	11%	35%	100%

[3] Supporting data for Figure 4-3, Number of Vehicles in Household by APC and AMI Bands City of Los Angeles:

Area Planning Commission	Household Income as % of AMI	Number of Vehicles					
		0	1	2	3	4+	Total
Harbor	0% to 30%	26%	56%	15%	2%	2%	100%
	31% to 50%	10%	53%	28%	8%	1%	100%
	51% to 80%	4%	42%	40%	11%	4%	100%
	81% to 120%	2%	36%	43%	15%	5%	100%
	121% +	1%	20%	46%	20%	13%	100%
	Total	7%	39%	36%	12%	6%	100%
South LA	0% to 30%	39%	45%	12%	2%	1%	100%
	31% to 50%	19%	47%	25%	7%	2%	100%
	51% to 80%	8%	43%	32%	11%	7%	100%
	81% to 120%	5%	31%	38%	18%	9%	100%
	121% +	3%	26%	36%	22%	13%	100%
	Total	20%	41%	25%	10%	5%	100%
Central LA	0% to 30%	46%	43%	9%	1%	1%	100%
	31% to 50%	27%	54%	16%	3%	0%	100%
	51% to 80%	14%	53%	26%	5%	2%	100%
	81% to 120%	9%	53%	28%	7%	2%	100%
	121% +	3%	38%	45%	10%	5%	100%
	Total	20%	47%	26%	5%	2%	100%
East LA	0% to 30%	41%	37%	19%	2%	1%	100%
	31% to 50%	20%	45%	27%	5%	2%	100%
	51% to 80%	9%	43%	32%	11%	4%	100%
	81% to 120%	7%	27%	42%	18%	6%	100%
	121% +	1%	24%	45%	17%	13%	100%
	Total	18%	35%	32%	10%	5%	100%
West LA	0% to 30%	22%	57%	16%	4%	2%	100%
	31% to 50%	15%	54%	26%	4%	1%	100%
	51% to 80%	7%	60%	28%	4%	1%	100%
	81% to 120%	4%	53%	33%	7%	3%	100%
	121% +	1%	35%	50%	11%	4%	100%
	Total	6%	46%	38%	8%	3%	100%
So. Valley	0% to 30%	23%	57%	16%	3%	1%	100%
	31% to 50%	14%	55%	23%	5%	2%	100%
	51% to 80%	7%	48%	32%	10%	3%	100%
	81% to 120%	4%	42%	39%	12%	4%	100%
	121% +	2%	24%	50%	17%	7%	100%
	Total	7%	39%	37%	12%	5%	100%
North Valley	0% to 30%	24%	48%	22%	5%	2%	100%
	31% to 50%	11%	44%	32%	9%	4%	100%
	51% to 80%	4%	36%	38%	15%	7%	100%
	81% to 120%	2%	21%	40%	22%	14%	100%
	121% +	1%	13%	44%	26%	15%	100%
	Total	7%	28%	38%	18%	10%	100%
LA CITY	0% to 30%	35%	47%	14%	2%	1%	100%
	31% to 50%	18%	50%	24%	6%	2%	100%
	51% to 80%	8%	46%	32%	9%	4%	100%
	81% to 120%	5%	38%	37%	14%	6%	100%
	121% +	2%	26%	47%	16%	8%	100%
	Total	13%	40%	33%	10%	5%	100%

[4] The breakout of City of Los Angeles households by Planning Area and AMI band is shown below. This data is from 2006-2008 American Community Survey 3-year PUMS records.

APC	0% to 30%	31% to 50%	51% to 80%	81% to 120%	121% and Above	Total
Harbor	18%	15%	20%	20%	27%	100%
South LA	34%	20%	21%	14%	11%	100%
Central LA	23%	17%	19%	15%	27%	100%
East LA	26%	19%	18%	15%	22%	100%

West LA	13%	10%	13%	16%	49%	100%
South Valley	13%	13%	16%	17%	41%	100%
North Valley	14%	15%	19%	20%	33%	100%
City of LA	20%	16%	18%	16%	31%	100%

[5] Supporting data for Figure 4-5, Mode of Transportation to Work by APC and AMI Bands:

Area Planning Commission	Household Income as % of AMI	Private vehicle	Public transit	Walk	Bicycle	Work at home	Other
Harbor	0% to 30%	63%	22%	7%	2%	4%	2%
	31% to 50%	78%	13%	5%	2%	3%	0%
	51% to 80%	83%	7%	4%	1%	2%	3%
	81% to 120%	88%	4%	3%	0%	4%	1%
	121% +	92%	2%	1%	0%	3%	2%
	Total	85%	7%	3%	1%	3%	2%
South LA	0% to 30%	60%	28%	5%	2%	4%	2%
	31% to 50%	66%	25%	5%	1%	2%	1%
	51% to 80%	77%	17%	3%	1%	2%	1%
	81% to 120%	80%	14%	2%	1%	2%	1%
	121% +	83%	10%	3%	0%	3%	2%
	Total	74%	18%	3%	1%	3%	1%
Central LA	0% to 30%	47%	35%	7%	1%	8%	2%
	31% to 50%	57%	30%	5%	1%	5%	2%
	51% to 80%	62%	28%	4%	0%	4%	1%
	81% to 120%	71%	18%	5%	1%	4%	1%
	121% +	80%	7%	3%	0%	8%	1%
	Total	68%	20%	4%	1%	6%	1%
East LA	0% to 30%	57%	28%	8%	0%	2%	5%
	31% to 50%	70%	18%	5%	0%	3%	3%
	51% to 80%	73%	16%	6%	1%	2%	2%
	81% to 120%	79%	12%	4%	0%	3%	2%
	121% +	84%	7%	3%	0%	5%	1%
	Total	75%	14%	5%	0%	3%	2%
West LA	0% to 30%	55%	20%	15%	2%	6%	2%
	31% to 50%	68%	13%	6%	2%	9%	2%
	51% to 80%	74%	10%	5%	1%	9%	2%
	81% to 120%	81%	6%	5%	2%	5%	1%
	121% +	84%	2%	3%	1%	8%	2%
	Total	79%	6%	5%	1%	8%	1%
So. Valley	0% to 30%	77%	9%	5%	1%	5%	2%
	31% to 50%	80%	10%	4%	1%	4%	2%
	51% to 80%	83%	6%	4%	1%	4%	2%
	81% to 120%	84%	6%	2%	1%	4%	2%
	121% +	87%	2%	1%	0%	8%	1%
	Total	85%	5%	2%	1%	6%	2%
North Valley	0% to 30%	78%	9%	7%	1%	5%	1%
	31% to 50%	79%	10%	5%	0%	3%	3%
	51% to 80%	85%	7%	2%	1%	3%	2%
	81% to 120%	88%	5%	2%	1%	2%	2%
	121% +	91%	2%	1%	0%	4%	2%
	Total	87%	5%	2%	0%	3%	2%
LA CITY	0% to 30%	60%	24%	7%	1%	5%	2%
	31% to 50%	69%	20%	5%	1%	4%	2%
	51% to 80%	76%	15%	4%	1%	3%	2%
	81% to 120%	81%	10%	3%	1%	3%	2%
	121% +	86%	4%	2%	0%	6%	1%
	Total	79%	11%	3%	1%	5%	2%

[6] Supporting data for Endnote on Average Commute Time by Mode of Transportation, APC and AMI Band for workers residing in the City of Los Angeles:

Area Planning Commission	Household Income as % of AMI	Private vehicle	Public transit	Walk	Bicycle	Work at home	Other	All Modes
Harbor	0% to 30%	23	39	14	10	0	33	25
	31% to 50%	23	44	14	9	0	30	25
	51% to 80%	23	36	13	9	0	36	24
	81% to 120%	25	47	.	11	0	17	25
	121% +	26	54	30	3	0	31	26
	Total	24	43	15	9	0	31	25
South LA	0% to 30%	29	52	21	17	0	24	35
	31% to 50%	29	51	25	12	0	29	34
	51% to 80%	28	52	25	19	0	29	32
	81% to 120%	29	54	19	12	0	27	32
	121% +	29	54	28	18	0	42	31
	Total	29	52	20	15	0	31	33
Central LA	0% to 30%	28	46	16	15	0	38	34
	31% to 50%	28	43	32	16	0	25	32
	51% to 80%	27	42	18	13	0	33	31
	81% to 120%	27	39	24	14	0	24	29
	121% +	27	43	22	11	0	39	28
	Total	27	43	23	13	0	32	30
East LA	0% to 30%	26	46	19	18	0	21	31
	31% to 50%	27	50	21	13	0	30	31
	51% to 80%	28	50	29	14	0	26	30
	81% to 120%	27	51	30	12	0	28	30
	121% +	29	47	33	9	0	44	30
	Total	28	49	28	12	0	29	30
West LA	0% to 30%	23	35	19	17	0	53	25
	31% to 50%	22	40	16	13	0	13	24
	51% to 80%	26	46	23	15	0	29	28
	81% to 120%	25	40	16	13	0	31	25
	121% +	26	39	23	14	0	24	26
	Total	26	40	20	14	0	26	26
So. Valley	0% to 30%	30	50	16	17	0	25	31
	31% to 50%	29	50	21	15	0	36	31
	51% to 80%	29	48	28	12	0	22	29
	81% to 120%	28	52	25	12	0	30	29
	121% +	30	45	23	8	0	34	30
	Total	29	49	24	12	0	30	30
North Valley	0% to 30%	27	39	21	17	0	25	27
	31% to 50%	27	44	5	9	0	22	28
	51% to 80%	27	47	24	12	0	27	28
	81% to 120%	28	42	18	12	0	34	28
	121% +	30	50	24	9	0	40	30
	Total	28	46	22	11	0	33	29
LA CITY	0% to 30%	28	47	19	16	0	28	32
	31% to 50%	28	47	23	13	0	27	31
	51% to 80%	27	46	24	14	0	28	30
	81% to 120%	28	46	22	12	0	29	29
	121% +	29	47	24	11	0	36	29
	Total	28	46	22	13	0	31	30

[7] Wang, Fahui (2003), "Job Proximity and Accessibility for Workers of Various Wage Groups," Urban Geography, Bellwether Publishing, Ltd. The authors report that many low-wage workers (particularly some inner-city residents) have the worst job accessibility because of their limited transport mobility as indicated by a low level of automobile ownership. Rupert, E. Stancanelli and E. Wasmer (2009), "Commuting, Wages and Bargaining Power," University

of California, Santa Barbara. The authors report that wages are positively related to commute distances – wages increase with commuting time. The cost impact of commuting on wages reflects the bargaining power of higher-skilled workers

[8] Paul M. Ong and Houston, D. (2002): Transit, Employment and Women on Welfare [in Los Angeles County], School of Public Policy and Social Research, University of California, Los Angeles, UCTC Reprint no. 542, p.1, http://www.uctc.net/papers/542.pdf.

[9] The breakout of the educational attainment for the City of Los Angeles' resident labor force 25 years of age and older by AMI band is shown below. The source is 2006-2008 American Community Survey 3-year PUMS records.

AMI Band	Less than HS Diploma	HS Graduate	Some College or AA Degree	BA Degree or Higher	Total
0% to 30%	47%	24%	17%	12%	100%
31% to 50%	43%	25%	20%	12%	100%
51% to 80%	33%	26%	23%	18%	100%
81% to 120%	22%	22%	27%	28%	100%
121% and Above	7%	13%	24%	56%	100%
Total	23%	20%	23%	34%	100%

[10] The breakout of the unemployment and underemployment rates for the City of Los Angeles' resident labor force in August 2010 is shown below. The source of this data is the Economic Roundtable's analysis of Current Population Survey (CPS) data, using a 3-month moving average.

	Unemployment Rate	Under-employment Rate
Less than HS Diploma	12.0%	32.4%
HS Graduate	13.3%	24.4%
Some College or AA Degree	12.4%	23.2%
BA Degree or higher	6.7%	13.3%

[11] Sasha Corporation (2007), "Compilation of Turnover Cost Studies," http://www.sashacorp.com/turnframe.html.

[12] Sasha Corporation (2007), "Compilation of Turnover Cost Studies," http://www.sashacorp.com/turnframe.html. Costs have been updated from 2007 to 2009 dollars using an adjustment factor of 1.02706 for all Urban Consumers in the Los Angeles-Riverside-Orange County region.

[13] Leigh Branham (2000): "Keeping the People Who Keep You in Business," American Management Association, http://www.amacombooks.org/book.cfm?isbn=9780814405970.

[14] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 16-17.

[15] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development. Materials obtained on-line at: http://latod.reconnectingamerica.org/ A half-mile radius around a station point produces an area of 1.24957 square miles, with a circumference of 3.12301 miles.

[16] As of 2009, the City of Los Angeles' population density is 8,205/sq mi (3,168/km^2), compared with other major cities:

City	Population 2009	Area Sq Miles	Population Density
New York City	8,391,881	303.31	27,667.67
Chicago	2,853,114	227.13	12,561.59
Philadelphia	1,547,901	135.09	11,458.29
San Francisco	815,358	46.69	17,463.23
Boston	645,169	48.43	13,321.68

Miami	433,136	35.67	12,142.87
Los Angeles	3,833,995	469.10	8,173.09

[17] In 2009, 20 percent of renter-occupied units in the City of Los Angeles were overcrowded, with RSO units more likely to experience overcrowding than non-RSO units. Also, 59 percent of renter households in the City were rent-burdened, paying 30 percent or more of their income for rent. The City's apartment vacancy rate has been at five percent or below for the past decade, tens of thousands of residents are homeless. Economic Roundtable. 2010. "Update on Renters in the City of Los Angeles" (New information on the condition of renter residents, including the 2009 American Community Survey. Housing tenure, vacancy, overcrowding, rent cost and rent burden are reviewed, updating the "Economic Study of the RSO and the Los Angeles Housing Market" study released in 2009.) Los Angeles Homeless Services Authority, "2009 Greater Los Angeles Homeless Counts."

[18] The City of Los Angeles Planning Department's vision statement for its Transportation Element of the General Plan includes the following vision statement: "By the year 2010, Angelenos are traveling to work, to school, to visit friends and shopping by way of the newly-built mass transit system. Surrounding the transit stops are high-activity, liveable, pedestrian oriented neighborhoods that are linked to other neighborhoods via rail, bus and other modes of transportation. These pedestrian-oriented neighborhoods are identified by compact development that provides for a full range of economic and social services, including housing, ground-floor retail, community and entertainment facilities, grocery stores and cafes. Moreover, these areas contain safe and clean environments with attractive settings for living and working. By integrating life around transit, the City of Los Angeles has the opportunity to reduce automobile congestion and consequently to better the City's air quality, provide a more efficient land use pattern and create a better quality of life for all Los Angeles residents." Source: City of Los Angeles, Department of City Planning. 1999. "Transportation Element of the General Plan," Appendix F, page 2.

[19] Stephanie Pollack, Barry Bluestone, Chase Billingham. 2010. "Maintaining Diversity in America's Transit-Rich Neighborhoods: Tools for Equitable Neighborhood Change" Dukakis Center for Urban and Regional Policy, Boston, MA. "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 18-19.

[20] 58 percent of those who report that they commute to work using public transportation are renters, according to the 2006-2008 American Community Survey. Stephanie Pollack, Barry Bluestone, Chase Billingham. 2010. "Maintaining Diversity in America's Transit-Rich Neighborhoods: Tools for Equitable Neighborhood Change" Dukakis Center for Urban and Regional Policy, Boston, MA, page 14.

[21] The City of Los Angeles has 1.6 workers per household, excluding households comprised of only retirees or other cases where no one works. See the section in Chapter 2 entitled "Relationship between the Demand for Affordable Housing and Different Categories of New Development in the City of Los Angeles," subsection "Step 1: Assessing the Ability to Pay for Housing."

[22] American Public Transportation Association "Transit Savings Report," December 2009, accessed November 2010 (http://www.apta.com/mediacenter/pressreleases/2009/Pages/091209_December_Savings.aspx). This report contains data specific to the Los Angeles region.

[23] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 36-43.

[24] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 36-43.

[25] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 25-35.

[26] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 60-65. Hank Dittmar and Gloria Ohland. 2004. "The New Transit Town: Best Practices in Transit-Oriented Development" Washington, DC: Island Press, pages 57-82.

[27] "Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary" February 2010. Center for Transit-Oriented Development, pages 83-85. Hank Dittmar and Gloria Ohland. 2004. "The New Transit Town: Best Practices in Transit-Oriented Development" Washington, DC: Island Press, pages 57-82.

[28] Los Angeles Department of Planning. "City of Los Angeles General Plan: Transportation Element." 2006-2014 Housing Element of the General Plan." Chapter VII. Implementation Programs & Investment Strategies: Ordinances: P8: "Establish incentives to stimulate development and desired uses (e.g. mixed use, community facilities, affordable housing) in centers and districts as identified in the Community Plans and adjacent to transit stations/corridors" http://planning.lacity.org/cwd/gnlpln/transelt/

[29] Los Angeles Housing Department. 2009 "City of Los Angeles General Plan: Housing Element, 2006-2014." Policy 2.2.4 "Promote and facilitate a jobs/housing balance at a citywide level." Programs "A. Congestion Management Program Land Use Strategy" and "B. Jobs/Housing Balance Incentives: Residential Exemptions in Transportation Specific Plans" page 6-63.

[30] "Highly vulnerable" to becoming rent burdened refers to the situation of low- and moderate-income households living in housing units with affordability restrictions. These families' annual incomes place them in the lowest three AMI bands, but due to paying below-market rents for their housing, they are not rent burdened. Instead, they are highly vulnerable to becoming rent burdened *if* they loose their affordable housing unit.

[31] Los Angeles regional transit savings data created by the Center for Transit-Oriented Development ("Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary," February 2010, http://latod.reconnectingamerica.org/), using the American Public Transportation Association's "Transit Savings Calculator" (http://www.publictransportation.org/contact/stories/calculator_08.asp) and their "Transit Savings Report," December 2009, accessed November 2010 (http://www.apta.com/mediacenter/pressreleases/2009/Pages/091209_December_Savings.aspx). The "Transit Savings Report" figure of $9,967 for Los Angeles is based on the purchase of 12 monthly public transit passes versus average commuting distances, local gas prices, and monthly unreserved parking rates.

[32] The Housing Authority of the City of Los Angeles (HACLA) also oversees affordable housing, with funding coming mainly from the US Department of Housing and Urban Development. HACLA's Section 8 program provides 45,432 Housing Choice Vouchers, rent subsidies in the form of housing assistance payments to private landlords on behalf of eligible families. HACLA also manages more than 6,500 public housing units at 60 sites (large developments, senior and scattered sites) throughout Los Angeles. A small number of the Housing Choice Vouchers provided through HACLA's Section 8 program are used by eligible families to occupy affordable housing units partly financed by the City of Los Angeles' Housing Department and Community Redevelopment Agency, particularly permanent supportive housing for formerly homeless residents. However, most of HACLA's Section 8 vouchers are used by families occupying privately owned rental units that leased on an annual basis, without multi-year affordability restrictions. Data about HACLA units was not available for this study.

[33] There is no means test for tenants seeking to live in regulated, rent stabilized housing units in the City, but a majority (55 percent) of occupied renter households in pre-1980 housing units pay more than 30 percent of their income for rent (see Table 4-27). These tenants are rent burdened and their RSO apartments protect them against

potential steeper rent increases, and their current rent is likely below market-rate if they have resided in the same unit for five or more years. (Economic Roundtable. 2009. *Economic Study of the RSO and the Los Angeles Housing Market*. Pages 129-132, 152-154) The City of Los Angeles' Rent Stabilization Ordinance (RSO), administered by its Housing Department, sets the maximum annual percentage increase in rents for apartment units built in 1978 or before.

[34] Source: Economic Roundtable. 2009. *Economic Study of the RSO and the Los Angeles Housing Market*, page 32.

[35] Los Angeles regional transit savings data created by the Center for Transit-Oriented Development ("Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals, Executive Summary," February 2010, http://latod.reconnectingamerica.org/), using the American Public Transportation Association's "Transit Savings Calculator" (http://www.publictransportation.org/contact/stories/calculator_08.asp) and their "Transit Savings Report," December 2009, accessed November 2010 (http://www.apta.com/mediacenter/pressreleases/2009/Pages/091209_December_Savings.aspx). The "Transit Savings Report" figure of $9,967 for Los Angeles is based on the purchase of 12 monthly public transit passes versus average commuting distances, local gas prices, and monthly unreserved parking rates.

[36] In the Economic Roundtable's detailed study of the City of Los Angeles' Rent stabilization Ordinance, the rent differential between RSO and non-RSO rental housing units was found to be between $150 (median) and $199 (mean) monthly, Citywide, or between $1,800 (median) and $2,388 (mean) annually:

	Average Monthly Rent				Median Monthly Rent			
	RSO	Non-RSO	Rent Differential		RSO	Non-RSO	Rent Differential	
			$	%			$	%
CITY OF LA	$871	$1,071	-$199	-19%	$800	$950	-$150	-16%
North Valley	$875	$1,063	-$188	-18%	$850	$1,000	-$150	-15%
South Valley	$962	$1,241	-$279	-22%	$900	$1,105	-$205	-19%
West LA	$1,231	$1,703	-$472	-28%	$1,100	$1,600	-$500	-31%
Central LA	$854	$972	-$118	-12%	$800	$900	-$100	-11%
East LA	$799	$892	-$93	-10%	$725	$860	-$135	-16%
South LA	$793	$836	-$42	-5%	$750	$713	$37	5%
Harbor	$863	$983	-$120	-12%	$820	$850	-$30	-4%

Source: Economic Roundtable. 2009. *Economic Study of the RSO and the Los Angeles Housing Market*. See Table 2-16, page 119 section on "RSO vs. Non-RSO Rent."

[37] These figures add our projected increase in annual housing costs when displaced from RSO housing units with the estimated costs of changing from public transit to private transportation.

	Low	High
Housing	$1,800	$2,388
Transit	$9,967	$9,967
Total	$11,767	$12,355

Transit savings data from Center for Transit-Oriented Development, see endnote 31.

[38] These hypothetical data are based on the following calculation:

117,531 RSO households in TODs x $11,767 annual transit savings = $1,382,987,277
117,531 RSO households in TODs x $12,355 annual transit savings = $1,452,095,505

[39] In Table 4-8, data is compiled from the 2005-2009 American Community Survey 5 Year Estimate, census tract data where "Metro Groups" capture census tracts predominantly in the City of Los Angeles' half-mile radius Transit Oriented Districts. "Median Household Income, in 2009 $" is income amounts from the five years of survey captured in this estimate, adjusted by the Census into 2009 dollars. "Rent Burden" and "Severe Rent Burden" are

the percent of renter-occupied housing units paying 30 percent or more and 50 percent or more of their income for rent and utilities, respectively.

END NOTES FOR CHAPTER 5

[1] Flaming, Daniel, Michael Matsunaga, Patrick Burns. 2009. *Ebbing Tides in the Golden State: Impacts of the 2008 Recession on California and Los Angeles County*, Economic Roundtable. Report underwritten by The California Endowment and Economic Roundtable; June 2009, 110 pages.

[2] Total employment figures include formal and informal employment.

[3] Employment data is taken from the BLS Local Area Unemployment Statistics and shows total employment: http://www.bls.gov/lau/lauov.htm. The underlying data is from the Current Population Survey CPS data, with sources such as the CES and employer Unemployment Insurance payroll reports used to calibrate the numbers.

[4] The number of workers is converted to worker households by dividing the total number of workers by the average number of workers per household. Based on 2005-2007 American Community Survey data, there is an average of 1.6 workers per worker household in the City of Los Angeles.

[5] The IMPLAN economic impact modeling system is used to estimate household spending patterns. The Economic Roundtable inputted household income figures from 2007 – the most recent American Community Survey data available – to create detailed, comprehensive multiplier models and social accounting matrices of the local economy. The household spending patterns estimated in the IMPLAN model are based upon the average incomes of single-family homes, condominium units and rental apartment units. The IMPLAN model then reports the economic impacts and number of jobs supported by that household income amount due to its spending on goods and services. The amount of household income spent on goods and services varies by the overall amount of income. For example, higher income households tend to have a greater rate of savings than lower income households. Also, households spend slightly different shares of their overall income on housing, groceries, restaurants and healthcare depending on their income. Minnesota IMPLAN Group, Inc., IMPLAN System (2007/2008 data and software), 1725 Tower Drive west, Suite 140, Stillwater, MN 55082, http://www.implan.com, 2009.

[6] Mortgage Bankers Association. 2008. *National Delinquency Survey Q1 2008*, (Data as of March 31, 2008), cited in Reynolds, Maura. 2008. "Foreclosure rate hits record high: More than 2 percent of all mortgages in the U.S. were in the process at the end of the fourth quarter. Home equity levels decline," *Los Angeles Times*, Friday, March 7, 2008. Hiltzik, Michael A. 2008. "A new Great Depression? It's different this time: Fear is spreading with the financial system in disarray. But the global boom is ongoing, unemployment is low and the government has new tools to address the downturn." *Los Angeles Times*, Friday, March 20, 2008. This trend is continuing: Zimbert, Max. 2010 "Condos Go Rental as Market Weakness Persists" Los Angeles Business Journal. Monday, November 15, 2010.

[7] Building permits data from the California Construction Industry Research Board. The City of Los Angeles permitted 141 single-family units and 535 multi-family units in 2009, a total of 676 units. The Los Angeles Department of City Planning cites lower figures: a net loss of 51 single-family units and a net gain of 400 multi-family units in 2009. These lower figures take into account demolitions and conversions in building permit data.

[8] Supporting data for Figure 5-3, California Housing Sales by Type, Spring 2010, are as follows:

Home Sales Type	**Percent**
Short Sales	13%
Foreclosed homes	43%
Market (New + Existing)	44%

Source: California Association of Realtors 2010.

[9] Cooper, James C. 2007. "Business Outlook: Housing's New Risks for the Economy: Mortgage rates are up, credit is tighter, and home prices are falling faster" *Business Week*. Monday, July 9, 2007.

Reckard, E. Scott. 2008. "Lending: Housing problems hit small banks; Many that financed residential developers and home builders are seeing soaring losses." *Los Angeles Times*. Tuesday, June 17, 2008, page C1.

[10] The Economic Roundtable refers to three regional forecasts for Los Angeles:

- David Shulman, Senior Economist, UCLA Anderson Forecast. 2010. "UCLA Anderson Forecast presents: June 2010 Economic Outlook, Special Topic: Healing and Recovery in the Housing Market" Wednesday, June 15, 2010.
- Green, R., T. Seslen, S. Tirsbier, M. Tornabene. 2010. *Casden Real Estate - Multifamily Market Forecast*, USC Lusk Center.
- Duffy, Patrick S. 2010. "Residential Real Estate," *What's Next LA? The Road to Economic Recovery 2010*, Graziadio School of Business and Management, Pepperdine University and Beacon Economics.

[11] Bostic, Raphael. 2009. "Chapter 6: Rental Market Analysis: Housing Market Dynamics, Development Financing, and Growth Trends," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, 431 pages, Economic Roundtable. This report was underwritten by The City of Los Angeles Housing Department.

[12] Department of City Planning. 2008. *City of Los Angeles Housing Element 2006-2014*, City of Los Angeles, California. Part of the City of Los Angeles' General Plan, this report includes "strategies to increase housing production and maintain existing housing include encouraging fair housing practices, revising zoning regulations to encourage infill, mixed-uses, transit-oriented development, adaptive reuse and streamlining approval processes." These strategies are dependent upon recovery in the aforementioned private sector multi-family housing market.

[13] Flaming, Daniel, Michael Matsunaga, Patrick Burns. 2009. *Ebbing Tides in the Golden State: Impacts of the 2008 Recession on California and Los Angeles County*, Economic Roundtable. Report underwritten by The California Endowment and Economic Roundtable; June 2009, 110 pages.

[14] The number of condominium and apartments is derived from the total number of building permits for new multi-family housing units (previous section), split up using the ratio of condominium versus apartments units permitted from 1997 to 2009.

[15] US Census Bureau 2005, 2006, 2007 and 2008 American Community Survey 1-year PUMS.

[16] HUD income limits for each of the Census years analyzed were used to determine AMI bands. Renter households were coded into AMI bands based on their total household size and total household income.

[17] Higher rates of unemployment and underemployment are found among the least educated:

Unemployment and Under-employment Rate by Educational Attainment (August 2010) - Los Angeles County

	Unemployment Rate	Under-employment Rate
Less than HS Diploma	12.0%	32.4%
HS Graduate	13.3%	24.4%
Some College or AA Degree	12.4%	23.2%
BA Degree or higher	6.7%	13.3%

Source: Economic Roundtable's analysis of Current Population Survey (CPS) data, using a 3-month moving average

[18] U.S Census Bureau, 2008 American Community Survey.

[19] The following is an overview of the steps taken to develop projections from California Department of Finance (CA DoF) population estimates:

- CA DoF population estimates for Los Angeles County (2008 to 2020) were broken out into two age categories - under 65 years and 65 years or over

- The yearly rate of change for the County's population (by age category) was applied to the City of Los Angeles' population (by age category) in 2008 to produce population estimates for the City. Base figures for the City's population were taken from the 2008 American Community Survey.
- The City's total population was converted to the renter population using the ratio of renters to the total population in the City (2008 American Community Survey).
- The City's renter population was converted to renter household using the ratio of renter households to the renter population (2008 American Community Survey).
- Renter households were broken out by age, AMI band and household size using the 4-year average distribution found in 2005-2008 American Community Surveys.

[20] The size of the unit is based on the minimum size the unit must be for there to be no overcrowding, which is defined as an occupant-to-room ratio that is 1.00 or less. The table below shows these ratios for each household size by unit type. The shaded cells represent household-housing unit combinations that are *not* overcrowded.

Occupant-to-Room Ratio by Unit Type

Household Size	Unit Type and Number of Rooms					
	Studio w/out kitchen	Studio w/ kitchen	1-bdr w/ living room & kitchen	2-bdr w/ living room & kitchen	3-bdr w/ living room & kitchen	4-bdr w/ living room & kitchen
	1-room	2-rooms	3 rooms	4 rooms	5 rooms	6 rooms
1	1.00	0.50	0.33	0.25	0.20	0.17
2	2.00	1.00	0.67	0.50	0.40	0.33
3	3.00	1.50	1.00	0.75	0.60	0.50
4	4.00	2.00	1.33	1.00	0.80	0.67
5	5.00	2.50	1.67	1.25	1.00	0.83
6	6.00	3.00	2.00	1.50	1.20	1.00

[21] There are several types of affordable housing available to low- and moderate-income residents in the City of Los Angeles. In addition to the two types studied here, subsidized/affordable and rent-stabilized housing, there are also Tenant-based (voucher) and other types such as Housing Choice Vouchers (i.e. Section 8). Several of these are supported using funds from federal sources, such as the US Department of Housing and Urban Development. Source: Los Angeles Housing Department. January 1, 2011. *A Guide to Affordable Rental Housing in the City of Los Angeles*, pages 3-4.

[22] These figures capture all units whose affordability restriction expiration is tracked by the Affordable Housing Preservation Program so it includes units financed by CRA, LAHD, HACLA, and State/Federal programs. Due to limited data about this larger universe of affordable housing in the City, this report studies a subset of units monitored by the Housing Department and Community Redevelopment Agency. Source: Los Angeles Housing Department. January 1, 2011. *A Guide to Affordable Rental Housing in the City of Los Angeles*, page 2.

[23] Source: Los Angeles Housing Department. January 1, 2011. *A Guide to Affordable Rental Housing in the City of Los Angeles*, page 2-3.

[24] Supporting data for Figure 5-13, Duration of Housing Affordability Restriction Agreements, City of Los Angeles, are as follows:

		Duration of Housing Affordability Restriction Agreements						Total
		< 20 yrs	20-39 yrs	40-49 yrs	50-54 yrs	55-99 yrs	100 yrs	
Affordable Housing Units	Number	3,930	19,302	6,320	6,466	5,518	685	42,221
	Percent	9.3%	45.7%	15.0%	15.3%	13.1%	1.6%	100%

Source: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (Data Extraction: October 14, 2010).

[25] Two-thirds of housing units with affordability restrictions in the 1980s had terms less than 40 years in length. However, this changed during the 1990s and 2000s, such that by the 2005-2010 period about 41 percent of new affordability-restriction agreements were 40 years in length or longer:

Agreement Start Year	Length of Agreement Term for LAHD Affordable Housing						Total
	< 20 yrs	20-39 yrs	40-49 yrs	50-54 yrs	55-99 yrs	100 yrs	
<= 1979	1	466	272	0	0	0	739
1980 - 1984	0	395	104	0	0	0	499
1985 - 1989	108	1,631	880	7	23	42	2,691
1990 - 1994	136	2,675	914	1,048	223	140	5,136
1995 - 1999	1,022	3,711	2,223	2,008	936	119	10,019
2000 - 2004	1,080	4,398	1,394	2,438	738	114	10,162
2005 - 2010	1,583	6,026	533	965	3,598	270	12,975
Total	3,930	19,302	6,320	6,466	5,518	685	42,221

Agreement Start Year	Length of Agreement Term for LAHD Affordable Housing						Total
	< 20 yrs	20-39 yrs	40-49 yrs	50-54 yrs	55-99 yrs	100 yrs	
<= 1979	0%	63%	37%	0%	0%	0%	100%
1980 - 1984	0%	79%	21%	0%	0%	0%	100%
1985 - 1989	4%	61%	33%	0%	1%	2%	100%
1990 - 1994	3%	52%	18%	20%	4%	3%	100%
1995 - 1999	10%	37%	22%	20%	9%	1.2%	100%
2000 - 2004	11%	43%	14%	24%	7%	1.1%	100%
2005 - 2010	12%	46%	4%	7.4%	28%	2.08%	100%
Total	9.3%	45.7%	15.0%	15.3%	13.1%	1.6%	100%

Source: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (Data Extraction: October 14, 2010).

[26] This kind of renewal is usually for rental subsidies (i.e. Project Based Section 8).

[27] Supporting data for Figure 5-14, Housing Units with Affordability Restrictions Added Annually, City of Los Angeles, with Projection, are as follows:

Year	Affordable Units Added	Projection Basis Slope Value	Projected Units Added
1984	168		
1985	127		
1986	1,210		
1987	239		
1988	376		
1989	739		
1990	1,020		
1991	892		
1992	1,021	88.07	1,021.00
1993	868	88.07	1,109.07
1994	1,335	88.07	1,197.15
1995	2,358	88.07	1,285.22
1996	2,017	88.07	1,373.30
1997	1,932	88.07	1,461.37
1998	1,138	88.07	1,549.45
1999	2,574	88.07	1,637.52
2000	1,557	88.07	1,725.59
2001	1,832	88.07	1,813.67
2002	2,203	88.07	1,901.74
2003	2,040	88.07	1,989.82

2004	2,530	88.07	2,077.89
2005	2,100	88.07	2,165.97
2006	1,973	88.07	2,254.04
2007	3,779	88.07	2,342.11
2008	3,722	88.07	2,430.19
2009	1,397	88.07	2,518.26
2010			2,606.34
2011			2,694.41
2012			2,782.49
2013			2,870.56
2014			2,958.63
2015			3,046.71
2016			3,134.78
2017			3,222.86
2018			3,310.93
2019			3,399.01
2020			3,487.08

Source: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit: "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010); LAHD Affordable Housing Preservation Program (AHPP), supplied by Community Redevelopment Agency/LA: "Affordable Housing Database" (Data Extraction: October 14, 2010). Notes: Data are not cumulative. "Projection Basis Slope Value" is the projected annual change in units – in this case, positive – over the previous year, based a linear regression trend line of the years 1992-2009. The slope value is 88.07 units per year annual increase. "Total Projected New Units" is the Economic Roundtable's projection for 2010-2020 using the annual increase of 98.37.26 new housing units with affordability restrictions per year.

[28] Recent reports highlight the City's affordable housing goals:

- City of Los Angeles, Housing Department. 2008. "Housing that Works 2008-2013: A 5 Year, $5 Billion Housing Plan for LA's Families."
- City of Los Angeles, Department of City Planning. 2008. "General Plan: City of Los Angeles Housing Element 2006-2014"

This projection assumes no cuts to housing programs at the federal and state levels.

[29] The overall goal of the Mayor's plan is financing affordable housing units, which includes permanent supportive housing with on-site services for homeless residents, is 4,000 units annually from 2008 through 2012. Actual totals achieved thus far are promising but declining after the first three years, likely due to the worsening recession. Source: December 3, 2010 memo from Mayor Antonio Villaraigosa to the Los Angeles City Council, entitled "Re: Pursuant to Motion by Councilmember Ed P. Reyes regarding Progress on Housing That Works (Council File No. 08-0689)," in the table on page 1 of Appendix A, entitled "Housing That Works – Housing Goals – Units Financed."

Income Level % of AMI	5-Year Target	2008 Actual	2009 Actual	2010 Actual	Actual 2008-2010**	Actual % to Date
Permanent Supportive Housing	2,200	805	163	415	1,383	63%
Very Low Income 0 -50% AMI	8,800	2,961	1,461	439	4,861	55%
Low Income 51 - 80% AMI	3,800	1,294	974	179	2,447	64%
Moderate Income 81%-120% of AMI	2,600	187	358	42	587	23%
Above Moderate Over 121% AMI	2,600	1,915	2,464	183	4,562	175%
City Total	20,000	7,162	5,420	1,258	13,840	

For comparison purposes, the City's Regional Housing Needs Assessment (RHNA) goals for adding new affordable housing units are as follows:

Income Level % of AMI	2006-2014	2006	2007	2008	2009	2010	2011	2012	2013	2014
Extremely Low-Income	4,344	483	483	483	483	483	483	483	483	483
Very Low-Income	8,576	953	953	953	953	953	953	953	953	953
Low-Income	8,582	954	954	954	954	954	954	954	954	954
Moderate-Income	4,415	491	491	491	491	491	491	491	491	491
Above Moderate Income	86,961	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662	9,662
Total	112,876	12,542	12,542	12,542	12,542	12,542	12,542	12,542	12,542	12,542

Source: Los Angeles Department of City Planning. 2009. "Housing Element of the General Plan, 2006-2014," Table ES.1a Quantified Objectives: New Construction (RHNA Allocation), page 13. Note: Annual housing unit goals are calculated by the Economic Roundtable, dividing the 2006-2014 goals across the nine years.

[30] The data in Figure 5-15 include units financed by a government agency as well as land use covenants applied when the City allows a variance on a property. The data come from the City of Los Angeles Housing Department, Citywide Affordable Housing Preservation Program's "All_Expiring_Properties_15_years _Benefit Fee_FINAL.xls," tracking the expiration date for all properties with expiring affordability restrictions in the City. In many cases, the same unit/property may have multiple financing sources that impose a separate affordability restrictions for a specified number of years; for instance, one unit may have two restrictions, one for 5 years and another for up to 20 years. The data shared represents units where the most restrictive (i.e. longest time period) affordability restriction is set to expire at any time during the next 15 years.

Housing units with affordability restrictions monitored by the City of Los Angeles Housing Department, Occupancy Monitoring Units, fall into five broad categories:

- Bond Projects Program – generally new construction projects that were developed using funds established through the sale of multi-family housing revenue bonds.
- Majors Projects Program – new construction or major rehabilitation using US Department of Housing and Urban Development funds (HOME Investment Partnerships and Community Development Block Grant Programs) and/or the City of Los Angeles Affordable Housing Trust Fund (AHTF), often in conjunction with Low-Income Housing Tax Credits (LIHTC).
- Comprehensive Rehabilitation Program – existing housing stock rehabilitation projects funded through a number of different programs utilizing various funding sources. In the past, rehabilitation was conducted by LAHD's former Neighborhood Preservation Program (NPP) using HOME Program funds.
- Land Use Projects – generally involved new construction developed in consideration of some type of land use benefit, such as a density bonus, tract map approval, variance, conditional permit, or coastal development permit.
- Earthquake Projects – rehabilitation and some major projects that are financed with HUD funds under the City's Earthquake Emergency Loan Program (EELP), and include some tax credit projects.

Supporting Data for Figure 5-15, Possible Expiring Housing Units with Affordability Restrictions, City of Los Angeles, are as follows:

Year	Possibly Expiring	Under "Annual Renewal"	Total
2010	1,260	1,209	2,469
2011	294	1,982	2,276
2012	40	1,646	1,686
2013	286	1,684	1,970
2014	723	2,180	2,903
2015	3,202	647	3,849
2016	823	46	869
2017	625	156	781
2018	1,149	219	1,368
2019	1,083	180	1,263
2020	917	136	1,053
2021	842	207	1,049

2022	83	81	164
2023	295	52	347
2024	529	257	786
2025	616	314	930
Total	12,767	10,516	23,283

Source: Economic Roundtable; LAHD Citywide Affordable Housing Preservation Program. 2010. "All Expiring Properties 15 years Benefit Fee FINAL" and "All Renewal Mechanism Projects Benefit Fee 10 14 10".

[31] Supporting data for Figure 5-16, Net Projected Additions and Possible Expirations of Housing Units with Affordability Restrictions, City of Los Angeles, are as follows:

Year	Projected Added Units	Possible Expiring Units	Under "Renewal Mechanism"	Year-by-Year Net Gain/Loss
2010	2,606	-1,260	-1,209	137
2011	2,694	-294	-1,982	418
2012	2,782	-40	-1,646	1,096
2013	2,871	-286	-1,684	901
2014	2,959	-723	-2,180	56
2015	3,047	-3,202	-647	-802
2016	3,135	-823	-46	2,266
2017	3,223	-625	-156	2,442
2018	3,311	-1,149	-219	1,943
2019	3,399	-1,083	-180	2,136
2020	3,487	-917	-136	2,434
Total	33,514	-10,402	-10,085	13,027

Source: Economic Roundtable; LAHD Affordable Housing Occupancy Monitoring Unit. 2010. "Occupancy Monitoring Data, Site Info" (Data Extraction: August 4, 2010) and "Citywide Affordable Housing Database" (Data Extraction: July 15, 2010); LAHD Affordable Housing Preservation Program (AHPP). 2010. "Affordable Housing Database," "All Renewal Mechanism Projects" and "All Expiring Properties 15 years Benefit Fee FINAL." Note: Number may not total exactly as shown due to rounding errors, since Projected Added Units (and this Year-by-Year Net Gain/Loss) include fractions not shown.

The net gain of affordable housing units projected here can only be realized if Federal, State and City funding commitments remain at 20005-2010 levels. Considering that the Federal, State and City deficits necessitate cuts, it is unlikely that the past affordable housing building trend will continue in the near future.

[32] In 2008, an estimated 66% of renter households in the City of Los Angeles were in the three lowest AMI bands (80 percent or less of AMI). The amounts to an estimated 520,617 out of 786,487 total households in the City. Source: U.S. Census Bureau, 2008 American Community Survey 1-year PUMS. Data corresponds with Figure 5-10 earlier in this chapter

[33] "To be under the RSO of the City of Los Angeles, a property must meet the following three criteria:

1. The property must be in the City of Los Angeles;
2. There must be two (2) or more units on the lot;
3. The building must have a Certificate of Occupancy issued on or before October 1, 1978.

"Properties exempt from the RSO are as follows:

1. Properties located in other municipalities or unincorporated areas within the County of Los Angeles;
2. Single family dwellings, used as such;
3. Properties with a Certificate of Occupancy issued after October 1, 1978 (new construction);
4. Government owned properties;
5. Units occupied by an owner or family member where no rents are collected;
6. Vacant units (10 days to register upon rental of the property);
7. Properties permanently removed from the rental market;

8. Luxury Housing Accommodations as designated by a Housing Department Certificate;
9. Demolished RSO properties;
10. Schools/hospitals;
11. Hotel/motels - with tenancy under 30 days;
12. Non-profit owned units, with certain qualifications.

Source: Los Angeles Housing Department. 2010. "Landlord-Tenant Handbook." revised July 2010. http://lahd.lacity.org/lahdinternet/RSOPublicationsandForms/tabid/264/Default.aspx

[34] Source: Economic Roundtable. 2009. *Economic Study of the RSO and the Los Angeles Housing Market*.

[35] The City of Los Angeles' Rent Stabilization Ordinance specifies twelve legal reasons for evictions:

1. Tenant fails to pay the rent.
2. Tenant has violated the lease.
3. Tenant causes damage to the rental unit or becomes a nuisance.
4. Tenant commits illegal activities in the unit or overall property.
5. Tenant refuses to renew a reasonable lease agreement after an earlier on expires.
6. Tenant refused the landlord reasonable access to the unit for making repairs or improvements.
7. Rental unit occupant at the end of a lease term is a subtenant not approved by the landlord.
8. Occupancy by the landlords' family member(s) or resident manager.
9. Landlord seeks to undertake Primary Renovation Work.
10. Landlord seeks to demolish the rental unit or remove it permanently from rental housing use.
11. Compliance with a governmental agency's order to vacate the building as a result of a violation of the law.
12. HUD property to be sold.

Source: Los Angeles Housing Department. 2010. "Landlord-Tenant Handbook." revised July 2010. Section VI. http://lahd.lacity.org/lahdinternet/RSOPublicationsandForms/tabid/264/Default.aspx

[36] Rental Housing units under the jurisdiction of the City of Los Angeles Rent Stabilization Ordinance may be removed from the inventory for the following reasons:

- Occupation of the unit by the landlord or landlord's family member
- Occupation of the unit by the landlord's designated rental property manager
- Permanent removal of the unit from use as rental housing
- Demolition of the rental unit
- Compliance with a government order due to code violation
- Government-owned rental properties to be put up for sale

Source: Los Angeles Housing Department. 2010. *Landlord-Tenant Handbook for Rental Units Subject to the Rent Stabilization Ordinance*.

[37] This table uses US Census American Community Survey data for households occupying rental housing units built before 1980 as a proxy for the universe of RSO units, even though the latter includes structures certified for occupancy after October 1, 1978. While the US Census' "year built" categories do not match up precisely with the City of Los Angeles' universe of RSO rental housing, we believe it is an acceptable proxy for this universe due to the small amount of rental properties with units built in 1979.

[38] Economic Roundtable. 2009. "Chapter 2: Survey of Renters Living in the City of Los Angeles," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, pages 120-132. This report section examines the number and percent of rent burdened households in the City of Los Angeles, as well as the comparative trajectory of rent increases of market-rate and RSO apartment units.

[39] Low- and moderate-income households are the majority of those living in RSO units. Although there is no household-level data on the incomes of those displaced by RSO units converted to condos and other uses, it is safe

to assume that low- and moderate-income households make up the same majority proportion of those displaced, and maybe more so. Source: Economic Roundtable. 2009. *Economic Study of the Rent Stabilization Ordinance and the Los Angeles Housing Market*. Chapter 1: "Renters and Rental Housing in the City of Los Angeles," page 72, Figure 1-65.

[40] In standard usage, "gentrification" denotes the changes resulting from wealthier people buying up residential property in less prosperous neighborhoods. This results in increased average neighborhood incomes, which may spur increases in rents, home prices, and property tax assessments, which in turn results in the displacement (via eviction, etc.) of low- and moderate-income residents who no longer can afford to live there. New businesses that cater to new, affluent residents may reduce the shopping options for low- and moderate-income residents. Some definitions of gentrification associate changes in the culture and feel of neighborhoods from "urban" to "suburban." Government-funded redevelopment of "blighted" local infrastructure, financial incentives for the renovation of dilapidated housing and commercial property, and mortgage incentives for first-time house buyers may further fuel this process. Sources: Maureen Kennedy, Paul Leonard (April 2001). *Dealing with Neighborhood Change: A Primer on Gentrification and Policy Choices*. The Brookings Institution Center on Urban and Metropolitan Policy and PolicyLink. Benjamin Grant (June 17, 2003).

[41] The Los Angeles' housing market surge during the last decade changed many landowners' expectations, resulting in an escalation of prices for land and parcels in previously lower-cost neighborhoods. This change in values makes it more difficult to produce affordable housing in what were lower-priced neighborhoods. Source: Economic Roundtable. 2009. *Economic Study of the Rent Stabilization Ordinance and the Los Angeles Housing Market*. Chapter 1: "Executive Summary," page 15.

[42] Rental property owners have the right under the Ellis Act to take their properties out of operation as rental housing. Compared to other legal reasons for eviction under the RSO, landlords who invoke the Ellis Act begin a process of removing all tenants in their building for a period of at least five years. The Ellis Act, passed by the California legislature in 1986, is contained in California Code § 7060: (a) "*No public entity, as defined in Section 811.2, shall, by statute, ordinance, or regulation, or by administrative action implementing any statute, ordinance or regulation, compel the owner of any residential real property to offer, or to continue to offer, accommodations in the property for rent or lease.*" In Los Angeles and other California jurisdictions with rent control laws, tenants have 120 days to relocate once their landlord starts the process of removing their units from use as rental housing, and may be entitled to relocation assistance from the landlord.

[43] "The high cost of land, construction materials and labor in Los Angeles make the redevelopment of residential property very expensive. Property development costs result in rents that greatly exceed what is affordable for many families. In order for residential property developments to pencil out, this high cost structure typically results in new housing with extremely high cost units that are sold or leased at luxury prices." Source: Economic Roundtable. 2009. *Economic Study of the Rent Stabilization Ordinance and the Los Angeles Housing Market*. Raphael Bostic. Chapter 6: "Rental Market Analysis," pages 272-275.

[44] Economic Roundtable. 2009. "Chapter 2: Survey of Renters Living in the City of Los Angeles," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, pages 120-122; Figure 2-37. This report section illustrates the number of low- and moderate-income families in RSO units, by way of the percent of rent burdened. Throughout the City, between 47 percent and 75 percent of RSO households reported paying 30 percent or more of their income for rent.

[45] The Rent Stabilization Ordinance (RSO), Chapter XV of the Los Angeles Municipal Code (LAMC) was enacted by City Council through Ordinance #152120 in 1978 and went into effect on May 1, 1979. The purpose of the RSO is to allow landlords a reasonable return on their investments while protecting tenants from excessive rent increases.

To be under the RSO of the City of Los Angeles, a property must meet the following three criteria:

1. The property must be in the City of Los Angeles;
2. There must be two (2) or more units on the lot;
3. The building must have a Certificate of Occupancy issued on or before October 1, 1978.

Source: City of Los Angeles Housing Department. September 2009. *Landlord-Tenant Handbook*. http://lahd.lacity.org/lahdinternet/RSOPublicationsandForms/tabid/264/Default.aspx

[46] Supporting data for Figure 5-17, RSO Units Lost due to Permitted Building Activity 1997-2009, City of Los Angeles, are as follows:

Permit Issue Year	RSO Units Converted to Condo	RSO Units Turned into other Residential Use	RSO Units Turned into non-Residential Use
1997		26	266
1998		124	243
1999		165	56
2000		90	154
2001		48	202
2002		31	153
2003		29	20
2004		28	145
2005	1	17	187
2006	194	41	1,213
2007	163	17	1,597
2008	226	6	849
2009	143	9	267
2010	68	6	76

Source: City of Los Angeles, Department of Building and Safety, Building Permit Data from the Plan Check and Inspection System (PCIS), 1997-2010. (Data on number of RSO units comes from the City of Los Angeles Housing Department: General RSO Property Data for Each Property with 2 or More Units.)

[47] Supporting data for Figure 5-18, RSO Units in Buildings Permitted for Conversion to Other Uses, City of Los Angeles, 1996-2010, are as follows:

Community Plan Area	Permit Issue Year														Total
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Wilshire	59	0	0	0	127	92	0	11	36	142	233	69	86	30	885
Sherman Oaks-Studio City	0	0	3	3	0	0	0	0	65	122	297	66	110	12	678
W. Los Angeles	4	0	8	16	7	0	0	8	15	76	218	195	60	3	610
Hollywood	0	71	24	14	75	0	0	12	14	51	198	125	10	4	598
N. Hollywood-Valley Village	32	0	0	0	0	0	0	2	0	62	294	27	10	27	454
Van Nuys-N. Sherman Oaks	5	0	0	0	0	0	0	0	0	260	147	10	0	0	422
Westchester-Playa Del Rey	0	0	0	0	0	0	0	0	27	190	36	95	29	0	377
Westlake	4	0	0	7	0	0	19	0	0	102	57	132	47	0	368
W. Adams-Baldwin Hills-Leimert Pk	12	138	106	26	0	8	0	0	0	11	0	4	5	4	314
Brentwood-Pacific Palisades	0	0	0	0	0	0	0	0	6	187	56	40	10	0	299
S. Central Los Angeles	8	94	24	24	25	2	5	14	11	48	15	14	6	2	292
Westwood	0	0	0	0	2	0	6	0	4	13	72	111	0	10	218
Southeast Los Angeles	19	53	34	24	0	6	7	3	0	38	4	0	11	8	207
Reseda-West Van Nuys	72	0	0	118	0	0	0	0	0	0	0	0	0	0	190
Palms-Mar Vista-Del Rey	0	0	0	0	4	0	0	25	9	28	45	43	8	0	162
Mission Hills-N. Hills-Panorama City	77	0	0	0	0	0	0	0	0	25	0	14	0	31	147
Central City	0	0	0	0	0	0	0	79	0	0	0	46	0	15	140
Silverlake-Echo Park	0	0	10	0	4	56	3	0	4	0	8	4	0	4	93
Encino-Tarzana	0	0	0	0	0	0	0	0	0	20	0	71	0	0	91
Venice	0	5	12	0	0	0	3	3	3	4	35	0	17	0	82

Northeast Los Angeles	0	0	0	4	6	0	3	0	3	5	48	12	0	0	81
Canoga Park-West Hills	0	0	0	0	0	0	0	13	0	45	0	0	0	0	58
Sunland-Tujunga	0	0	0	0	0	20	0	0	0	5	0	0	2	0	27
San Pedro	0	0	0	0	0	0	3	3	0	8	4	3	0	0	21
Harbor Gateway	0	0	0	4	0	0	0	0	0	6	6	0	0	0	16
Boyle Heights	0	0	0	4	0	0	0	0	8	0	0	0	0	0	12
Central City North	0	0	0	0	0	0	0	0	0	0	4	0	8	0	12
Wilmington-Harbor City	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Arleta-Pacoima	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sun Valley-La Tuna Canyon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sylmar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Granada Hills-Knollwood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chatsworth-Porter Ranch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bel Air-Beverly Crest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Data in this table are arranged by the City of Los Angeles' Community Plan Areas, with some names shortened.

[48] Bostic, Raphael. 2009. "Chapter 6: Rental Market Analysis: Housing Market Dynamics, Development Financing, and Growth Trends," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, pages 275-276, Economic Roundtable. This report was underwritten by The City of Los Angeles Housing Department.

[49] Endnote 49 to be added here - Supporting Data for Figure 5-19, Projected New Housing Construction and RSO Housing Unit Losses 1996-2020, City of Los Angeles , are as follows:

Year	Losses of RSO-Regulated Units (-)
1997	292
1998	367
1999	221
2000	244
2001	250
2002	184
2003	49
2004	173
2005	205
2006	1,448
2007	1,777
2008	1,081
2009	419
2010	300
2011	292
2012	267
2013	221
2014	244
2015	250
2016	184
2017	160
2018	315
2019	480
2020	750

The Economic Roundtable's projections of RSO-regulated unit losses are based partly on our earlier projections of Permitted New Single- and Multi-Family Units to be built 2010-2020.

[50] Supporting Data for Figure 4-33, Landlord Declarations of Intent to Evict by Type and Number of Units Affected, 1999-2008, are as follows:

Eviction Type	Units Affected
Demolition	6,922
Owner Occupied	6,287
Permanent Removal	3,861
Compliance w/Government Order	759
Resident Manager Occupied	558
Perm. Removal-Condo Conversion	389
Perm. Removal-Downsizing	298
Major Rehabilitation	240
HUD-Owned Properties, Sold	220
Drug/Gang Related	214
Non-Rental Affidavit	189
Government Owned	186
Condo Conversion	180
Nuisance	173
Vacant CSW Clearance only	149
Other	111

Source: Los Angeles Housing Department. 2008. Dataset 6: Landlord Declarations of Intent to Evict.

[51] Supporting Data for Figure 5-21, Percent of RSO Units Displaced 1997-2010 and Median Income of Homeowners, by Community, are as follows:

Community (PUMA)	RSO Units Converted to Other Uses (1997-2010)	Total RSO Units	Percent of RSO Units Converted (1997-2010)	Median Homeowner Household Income, 2006-2008
Chatsworth (5401)	0	12,033	0.000%	$95,843
Granada Hills (5402)	0	6,054	0.000%	$76,465
Pacoima (5403)	0	2,584	0.000%	$60,618
Wilmington (5424)	39	26,655	0.146%	$74,762
Eagle Rock (5416)	76	31,482	0.241%	$73,385
Sunland-Tujunga (5404)	27	8,218	0.329%	$64,667
Canoga Park (5409)	58	12,541	0.462%	$86,885
Downtown (5417)	169	32,222	0.524%	$52,636
West Adams (5418)	129	23,792	0.542%	$62,429
South LA (5423)	88	15,981	0.551%	$44,150
South Park (5422)	119	20,185	0.590%	$43,038
South LA-110 Fwy (5421)	167	27,524	0.607%	$53,036
Pico Union (5415)	360	51,661	0.697%	$82,314
Crenshaw (5419)	293	37,000	0.792%	$60,124
Mid-Wilshire (5412)	426	49,144	0.867%	$94,271
Hollywood (5413)	678	72,029	0.941%	$106,586
Panorama City (5405)	147	12,888	1.141%	$71,016
Westlake (5414)	513	34,924	1.469%	$54,468
Van Nuys (5407)	422	28,225	1.495%	$83,797
Reseda (5408)	281	17,877	1.572%	$80,823
N. Hollywood (5406)	454	24,731	1.836%	$73,532
West LA (5411)	974	46,024	2.116%	$114,271
Westchester (5420)	463	21,489	2.155%	$108,676
Encino (5410)	977	22,853	4.275%	$158,533

Note: The communities show in this figure are PUMAs (Public Use Microdata Areas) from the US Census, with our place names added. These geographic areas are used in order to analyze recent data at the community level.

[52] Supporting data for Figure 5-22, Square Feet of New Development 1997-2007, City of Los Angeles:

Year	Residential Development	Other Development
1997	7,496,036	4,647,770
1998	8,612,500	6,728,278
1999	9,730,330	8,856,358
2000	13,531,888	12,615,402
2001	15,370,388	10,376,731
2002	13,739,919	8,946,639
2003	13,989,392	7,446,570
2004	24,303,749	4,373,346
2005	22,429,893	7,789,833
2006	30,279,615	7,456,509
2007	24,070,046	7,191,883

[53] Supporting data for Figure 5-23, Change since 1990 – CPI, Median Gross Rent and Median Renter Household Income:

Year	CPI - Rent of primary residence	CPI - All items less shelter	Median Gross Rent (City of LA)	Median Household Income for Renters (City of LA)
1990	100.00	100.00	100.00	100.00
1991	102.87	104.27	101.20	101.10
1992	104.14	108.62	102.40	102.20
1993	104.34	112.20	103.60	103.30
1994	104.55	114.26	104.80	104.40
1995	104.08	116.63	106.00	105.50
1996	105.15	118.92	107.20	106.60
1997	106.68	120.67	108.40	107.70
1998	109.63	121.51	109.60	108.80
1999	113.57	123.57	110.80	109.90
2000	118.18	127.38	112.00	113.54
2001	124.60	130.82	119.03	116.02
2002	131.68	132.57	126.07	118.49
2003	138.64	134.94	133.10	120.96
2004	147.53	138.06	140.13	123.43
2005	157.02	142.94	147.17	125.90
2006	166.11	147.75	156.50	132.51
2007	176.31	149.98	164.33	140.85
2008	184.28	155.50	176.00	143.65
2009	187.34	152.94		

[54] Supporting data for Figure 5-24, Rent-Burden Rates for Households Headed by Seniors, Households Headed by Persons w/ a Disability and Low-Income Single-Parent Households, City of Los Angeles:

Renter Population	Year	No Rent Burden (30% or Less)	Rent Burden (31% to 50%)	Severe Rent Burden (51% or More)
Households Headed by Seniors	2000	43%	25%	33%
	2005	33%	28%	39%
	2006	35%	23%	42%
	2007	32%	29%	39%
	2008	35%	27%	38%
Households Headed by persons w/ a Disability	2000	47%	24%	28%
	2005	32%	25%	43%
	2006	30%	26%	44%
	2007	32%	26%	42%
	2008	31%	26%	43%
Low-Income Single-Parent Households	2000	26%	28%	47%
	2005	16%	33%	51%
	2006	18%	29%	53%
	2007	19%	27%	54%
	2008	17%	28%	55%

City of LA	2000	54%	23%	23%
	2005	44%	27%	29%
	2006	44%	26%	30%
	2007	44%	27%	28%
	2008	44%	26%	30%

[55] Low-income, single-parent households were identified in the Census PUMS files by using the following characteristics:

- Male/female householder with no wife/husband/partner present
- Presence of own children under the age of 18
- Households falling in 3 lowest AMI bands: 0-30 percent of AMI (extremely-low-income), 31-50 percent of AMI (very-low-income) and 51-80 percent of AMI (low-income)

[56] The following table shows the number of building permits that were approved for converting apartment properties to condominiums in the City of Los Angeles from 1997 to 2007

Year	Building Permits
1997	6
1998	24
1999	17
2000	15
2001	16
2002	45
2003	21
2004	51
2005	114
2006	129
2007	206
Total	644

Source: LA Department of Building and Safety. 1997-2007. Building Permit Data from the Plan Check and Inspection System (PCIS). Based upon 664 permits to convert property use from apartments to condominiums. This table originally appears in: Economic Roundtable. 2009. "Chapter 1: Renters and Rental Housing in the City of Los Angeles," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, pages 80, Table 1-20.

[57] In order to capture instances of displacement due to development, one would have to conduct a detailed, micro-level analysis of specific development projects (i.e. condo conversions or demolitions) that may have physically displaced renters from their homes, and track those renters after they were displaced.

[58] In regards to displacement of special needs populations, even when the number of impacted households is small, for the minority affected, the negative consequences are severe. Previous research by the Economic Roundtable documented that tenants by eviction often pay higher rent for their new apartment. These circumstances are difficult to document, since quantitative data about displaced households is difficult to obtain. However:

1) The absence of available data does not diminish the severity of impacts from displacement.
2) In the case of rental housing under the RSO, demolition of units is a significant loss because this is a finite universe of them. The City cannot increase the stock of RSO housing.
3) For special needs populations who experience displacement, the process of searching for nearby, affordable replacement housing is time consuming and requires overcoming possible mobility limitations. Seniors, households headed by disabled persons and single parents all are likely to experience greater difficulty finding new rental housing and moving their household members and belongings to that new home, especially if on fixed-incomes. The Los Angeles region's affordable housing shortage makes displacement still more challenging renters with special needs.

Source: Economic Roundtable. 2009. "Chapter 2: Survey of Renters Living in the City of Los Angeles," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, pages 109-112, Figure 2-25.

[59] The 2000 Census PUMS files do not have this data broken out in increments less than two years.

[60] These fourteen displaced RSO (Rent Stabilization Ordinance) households are a small fraction of the RSO households displaced by condominium conversions, but they are the only cases for which information about rent before and after displacement was available. Source: Economic Roundtable. 2009. "Chapter 2: Survey of Renters Living in the City of Los Angeles," *Economic Study of the Rent Stabilization Ordinance (RSO) and the Los Angeles Housing Market*, pages 109-112, Figure 2-25.

[61] Supporting data for Figure 5-25, Mean Gross Rent (2008$) for Households Headed by Seniors, Households Headed by Persons w/ a Disability and Low-Income Single-Parent Households by Length of Time Living in Current Unit City of Los Angeles:

Renter Population	Length of Tenure in Current Unit	Mean Gross Rent
Households Headed by Seniors	12 months or less	$982
	13 to 23 months	$1,129
	2 to 4 years	$925
	5 to 9 years	$868
	10 to 19 years	$764
Households Headed by Persons w/ a Disability	12 months or less	$1,047
	13 to 23 months	$1,068
	2 to 4 years	$1,073
	5 to 9 years	$894
	10 to 19 years	$790
Low-Income Single-Parent Households	12 months or less	$1,155
	13 to 23 months	$1,193
	2 to 4 years	$1,098
	5 to 9 years	$1,028
	10 to 19 years	$925
City of LA	12 months or less	$1,383
	13 to 23 months	$1,411
	2 to 4 years	$1,251
	5 to 9 years	$1,060
	10 to 19 years	$930

[62] Supporting data for Figure 5-26, Gross Rent as a Percent of Income for Los Angeles Renters 2000-2009:

Gross Rent as a Percent of Household Income	Percent of City of Los Angeles Renters in Each Rent Cohort by Year					
	2000	2005	2006	2007	2008	2009
<10%	5%	3%	3%	3%	3%	3%
10-19%	23%	17%	18%	16%	16%	16%
20-29%	24%	22%	22%	23%	22%	23%
30-39%	15%	17%	16%	18%	16%	17%
40-49%	9%	11%	11%	11%	11%	10%
50-59%	6%	7%	8%	7%	7%	7%
60-69%	4%	5%	5%	5%	5%	5%
70-79%	3%	3%	3%	3%	4%	4%
80-89%	2%	3%	3%	3%	3%	3%
90%+	10%	13%	12%	12%	12%	12%

Distribution of the 32 percent of households paying 50%+ of income in 2009 is disaggregated into 10 percent bands shown in graph based on proportions found in 2008 distribution.

[63] Based on American Community Survey data from the U.S. Census Bureau, 12 percent of City of Los Angeles renter households have paid 90 percent or more of their income for rent since 2006. Data for 2009 is from 20009 American Community Survey table B25070, which rolls all rents above 50 percent of income into a single figure, which was 32 percent. The proportional distribution of rents above 50 percent of household income in 2008 was used to produce an estimated distribution of rents over 50 percent in 2009.

[64] The Los Angeles County Homeless Service Authority's 2009 Continuum of Care document (page 48) reports that at any point in time, 28,644 homeless individual remain unsheltered; http://www.lahsa.org/continuum_of_care.asp.

END NOTES FOR CHAPTER 6

[1] Supporting data for Figure 6-1, Annual Square Feet of New Development in the City of Los Angeles by Parking Category 1997 to 2007:

Category	Residential Develop-ment	Hotels	Office	Industrial	Warehouse	Enter-tainment	Retail, Restau-rants	Hospitals	Utilities	Parking
1997	7,496,036	0	208,369	604,363	1,702,996	37,845	1,154,444	0	401,253	104,322
1998	8,612,500	109,314	1,039,761	1,569,246	1,355,064	305,201	1,294,480	34,459	4,689	569,110
1999	9,730,330	65,091	1,714,639	2,564,024	1,010,417	143,214	2,171,493	33,589	19,246	277,692
2000	13,531,888	115,423	2,842,587	2,306,568	2,527,777	74,622	4,033,622	266,586	14,695	119,143
2001	15,370,388	67,044	3,596,174	2,268,103	2,544,211	158,607	1,302,912	59,519	7,641	90,341
2002	13,739,919	28,971	3,274,427	2,379,774	1,205,212	38,447	1,051,429	176,816	1,211	279,431
2003	13,989,392	71,390	1,214,323	1,305,070	1,502,235	21,972	882,365	1,154,070	20,317	45,344
2004	24,303,749	61,974	996,006	1,043,436	523,472	0	1,150,168	0	17,483	110,648
2005	22,429,893	290,324	2,861,393	1,311,796	709,382	32,171	1,808,906	49,182	1,310	14,472
2006	30,279,615	317,367	1,423,719	2,150,801	321,274	297,525	975,631	0	241,584	261,102
2007	24,070,046	88,845	3,644,056	722,027	686,239	1,950	1,298,740	67,166	34,998	11,120
Average	16,686,705	110,522	2,074,132	1,656,837	1,280,753	101,050	1,556,745	167,399	69,493	171,157

[2] Supporting data for Figure 6-2, The Big Picture: Projected Supply of and Demand for Affordable Housing, City of Los Angeles 2010-2020, are as follows:

	Projected Supply			Added Supply Based on Funds from an Affordable Housing Benefit Fee			Projected Demand		
Year	Cum. Proj. Units Added	LAHD Inventory	CRA Inventory	Cum. Low Fee Scenario	Cum. Medium Fee Scenario	Cum. High Fee Scenario	0% to 30% AMI Hhlds	31% to 50% AMI Hhlds	51% to 80% AMI Hhlds
2010	2,880	37,846	15,999	0	0	0	221,804	154,122	156,355
2011	5,858	37,341	15,930	376	752	1,128	223,882	155,180	157,135
2012	8,934	37,235	15,926	752	1,504	2,256	225,959	156,238	157,916
2013	12,109	37,119	15,850	1,128	2,256	3,384	228,037	157,296	158,697
2014	15,382	36,809	15,324	1,504	3,008	4,512	230,114	158,354	159,477
2015	18,754	36,539	11,941	1,880	3,760	5,640	232,192	159,412	160,258
2016	22,223	36,428	11,047	2,256	4,512	6,768	234,710	160,649	161,123
2017	25,792	36,339	10,576	2,632	5,264	7,897	237,228	161,886	161,988
2018	29,458	35,910	10,243	3,008	6,016	9,025	239,747	163,123	162,853
2019	33,223	35,601	9,552	3,384	6,768	10,153	242,265	164,360	163,718
2020	37,087	35,435	8,996	3,760	7,521	11,281	244,783	165,596	164,584

Note: The “LAHD Inventory” and “CRA Inventory” categories include the Economic Roundtable’s projection of possible expirations of housing units with affordability restrictions. The “Cumulative Projected Units Added” column captures the new housing units with affordability restrictions that the Economic Roundtable projects that the City as a whole (LAHD plus CRA) will add to its inventory. Overall, the “Projected Demand” and “Projected Supply” data are drawn from Chapter 5, while the “Added Supply Based on Funds from an Affordable Housing Benefit Fee” data come from Chapter 3.