

Downtown Berkeley Development Feasibility Study Final Report

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prepared for:
City of Berkeley



Hixson & Associates

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I. INTRODUCTION AND PURPOSE

This report summarizes the methodology and results of a development feasibility study prepared by Strategic Economics (SE) and Hixson & Associates for the City of Berkeley. The study is intended to supplement current downtown planning efforts by examining the effects of building height limitations and other factors on the feasibility of future mixed-use development projects in the Downtown.

Broadly, a development feasibility study is a planning-level analysis that assesses whether a development project meets typical criteria that developers and financial institutions consider essential. Real estate professionals often use development feasibility analysis to select viable development projects in which to invest. It can also be used by a public agency to test the impact of regulatory mechanisms, such as zoning, parking requirements, and height limits, on development potential. This kind of analysis can help city leaders make regulatory decisions that are congruent with the type of development they would like to attain.

Building height is a central factor in determining the costs (or feasibility) of development because taller buildings are typically more expensive to build on a per-square foot basis than shorter ones. Wood-frame construction, used primarily in shorter buildings, is significantly less expensive than construction in concrete or steel. Central to this study is the analysis of several building heights that span a continuum from 5-story wood-frame construction to 17-story concrete construction. The analysis evaluates how the cost of construction and life/safety requirements impact feasibility at each height. This analysis also tests the implications of maximum lot coverage requirements, green building requirements, and development fees on development feasibility in the downtown. The study examines the economics of development given current real estate market conditions and weighs in on what is reasonable to expect might be possible in the foreseeable future.

Berkeley's building code permits the use of wood-frame construction on buildings up to six residential stories and up to a height of 75 feet, which includes the two shortest buildings tested in this analysis. A six-story, 75-foot, wood-frame building is a newly permitted building type in Berkeley and throughout the Bay Area. While there are a few examples of this construction type elsewhere, 75-foot wood frame buildings are virtually untested in the Bay Area and it may take some time before they are widely accepted by the development community as a viable product. In order to attain six residential stories within 75 feet, the building's floor-to-ceiling height would be 8 feet 6 inches. In today's condominium construction, 9-foot ceiling heights are considered desirable. For this building type, a story with commercial uses at the ground level is permitted when built with concrete. Costs associated with constructing a building of this type are also somewhat speculative because no historical data exists regarding exactly what is involved in their construction.

When building are above 76 feet, building codes necessitate the use of concrete construction. Concrete construction also applies to buildings built at DAPAC's generally allowed height limit of 85 feet. Using typical floor-to-ceiling heights, an 85-foot building yields a 7-story building with six residential stories above groundfloor commercial, which is the same as the 75-foot wood-frame

construction described above but with more typical 9-foot floor heights. At the 100-foot height¹, additional life/safety requirements, such as sophisticated alarm systems, pressurized exit stairs and other fire and life safety provisions, are required (see Figures 8 and 9 for building type diagrams).

Around eleven stories, steel frame materials may also be used. For mid-rise buildings between 6- and 9-stories, a steel frame system called "Conextech" can be used in place of concrete. While this system does afford some cost and time savings, a survey of builders and developers indicates that despite the steel option, it is more typical for concrete construction to be used on buildings of this size. The primary reason for this is that concrete is more efficient in minimizing the space between floors, allowing builders to build more stories within a city's height limit. Steel construction on the other hand takes up more space between floors and ultimately is a less efficient use of space.

To offset higher per-square foot construction costs, buildings with additional life/safety requirements (those over 75 feet) must generate significantly higher revenues in order to be feasible. Prior to conducting this study, it was unknown if a 100-foot building would be feasible because it might not be a tall enough height to earn enough increased revenue to compensate for the higher costs of construction. It was unclear at what height development would become feasible given the increase in construction costs with taller buildings. This development feasibility study demonstrates how the increased cost of construction and life/safety requirements impact feasibility at each height.²

Development feasibility is strongly influenced by conditions in the real estate and construction materials markets. The market for real estate tends to be cyclical in nature and we are currently in a "downcycle", wherein home prices and the volume of sales are both declining. In the Bay Area, home prices have fallen more than 22 percent³ during the past year and home prices in Berkeley have fallen 12 percent in the last year⁴. Constrained credit markets, rising interest rates and the broader economic downturn are further impacting the market for real estate and it is difficult to anticipate when the market will improve. While current market conditions are not conducive to real estate development, the Downtown Area Plan is not expected to be adopted until May 2009 and projects subject to any of its revised provisions will not be constructed and occupied until 2011–2012 at the earliest. It is therefore important to ensure that policies designed to regulate building heights in the downtown are reasonable given likely future market and economic conditions. To account for this, the analysis used historic construction cost and revenue trends to test development under a range of likely future market conditions. The analysis is based on judgments about what may be possible given likely future construction costs and

¹ The code requires these additional features for buildings with the ground floor of the highest floor at a height of over 75 feet. For this analysis, the first building height that is subject to this requirement is the 100-foot building.

² To complete this work, Hixson & Associates completed a physical analysis of the sites and created prototype buildings based on the physical and regulatory constraints to the development. Hixson & Associates also generated the construction costs for the study. Strategic Economics conducted the market research and the pro forma analysis used to determine feasibility.

³ "Bay Area Home Prices Continue Steep Fall," San Francisco Chronicle, June 25, 2008.

⁴ DQ News: California Home Sale Price Medians by County and City, <http://www.dqnews.com/Charts/Monthly-Charts/CA-City-Charts/ZIPCAR.aspx>

market conditions. Such predictions of future market conditions are always subject to exceptions, unforeseen and/or unpredictable conditions.

This report is organized as follows:

- Methodological overview: describes the key assumptions used in this analysis.
- Discussion of findings: findings from the study are divided into sections on apartments; condominiums; regulatory factors influencing feasibility; and other findings.
- Methodology: a more comprehensive description of the methodology used in the study, including all the assumptions made as part of this analysis and in projecting financial feasibility over time.

An appendix includes descriptions of alternative measures of testing for financial feasibility and firm descriptions for Strategic Economics and Hixson & Associates.

II. METHODOLOGICAL OVERVIEW

This section describes some of the key assumptions used in this analysis. A more detailed and exhaustive explanation of all of the assumptions used is included in the comprehensive methodology section at the end of the report.

LAND USES TESTED

This study tested the feasibility of mixed-use development consisting of ground floor retail with residential floors above. Within the residential space, the analysis studied the feasibility of both apartments and condominiums. This analysis did not test the feasibility of office uses in Downtown because a majority of DAPAC members determined that attracting new office development Downtown was not a priority since the University is planning to add about 2,000 new jobs to the Downtown Area. Furthermore, Berkeley already has considerably more jobs compared with employed residents and this jobs-housing balance drives ABAG housing targets.

HEIGHTS TESTED

The project team tested development schemes reflecting seven heights being considered for downtown. These heights include: 55 feet; 75 feet; 85 feet; 100 feet; 120 feet; 140 feet; and 180 feet. Table 1 shows each building height tested and its corresponding number of stories. Each building is designed with one floor of commercial space on the ground floor and residential floors above. Table 2 shows some current buildings in downtown Berkeley and their respective heights.

Table 1: Building Heights and Stories

Building Height (feet)	Number of Stories
55	5
75	7
85	7
100	9
120	11
140	13
180	17

Table 2: Current Building Heights in Downtown Berkeley

Current Buildings in Downtown Berkeley	Height (feet)
Great Western	180
Wells Fargo	173
Arpeggio (under construction)	117
Gaia Building	87
Brower Center (under construction)	79
Fine Arts, Stadium Place, Allston Court & Library Gardens	50

“TEST SITE” ASSUMPTIONS

The team assumed a single hypothetical lot with dimensions of 130 feet by 100 feet. This 13,000 square foot site is representative of larger sites likely to be redeveloped in downtown Berkeley because they are vacant, only one-story, or require a maximum of two parcels to be assembled. Because the vast majority of the sites targeted for redevelopment in downtown are corner lots, the hypothetical “test site” is also presumed to be a corner site.

FLOOR AREA RATIOS (FARS)⁵

The project team utilized the FARs shown in Table 3 for this analysis. These FARs conform to those recommended by the Downtown Area Planning Advisory Committee (DAPAC), which went up to 120 feet. The project team estimated FARs for 140-foot and 180-foot buildings based on site area, lot coverage, and upper-story setback assumptions. Using the FARs in Table 3, a stepback was assumed for buildings above 55 feet. The first 4 residential floors are built to streetside property lines, and contain 8 or 9 units. For options with more floors, a single upper-level floor plate containing 6 units was established to account for stepping back of the building above the fifth floor. The analysis did not examine more complicated alternatives for setbacks, structural transitions, and façade articulation and core/stair locations. FAR assumptions are discussed in more detail on page 18.

⁵ Floor Area Ratio is a measure of the intensity of development. It is calculated by dividing the total gross square footage of the building by the total square footage of the site the building sits on. A one-story building that covers the entire site it sits on has a floor area ratio of 1. Likewise, a 2-story building that covers half the site it is on has a floor area ratio of 1.

Table 3: FARs

Building Height	FAR
55'	4.0
75'	4.9
85'	4.9
100'	5.6
120'	6.5
140'	7.5
180'	9.5

LOT COVERAGE

The project team utilized lot coverages shown in Table 4. These lot coverages conform to those recommended by the DAPAC. A more detailed study of lot coverages can be found in Figure 2.

Table 4: Lot Coverages

Building Height	Lot Coverage
55'	100%
75'	90%
85'	90%
100'	90%
120'	80%
140'	80%
180'	80%

INCLUSIONARY HOUSING REQUIREMENTS

All development projects tested were designed to meet the full requirements of the City of Berkeley Inclusionary Housing policy.

Apartments

Pursuant to City regulations, 20 percent of the total units in the apartment projects tested must pay affordable rents. Also in accordance with the City’s rent schedules, rents in half of the inclusionary units were set to be affordable to families at 80 percent AMI, and the other half of the affordable units were set at Section 8 rent levels.⁶ The requirement that half of the inclusionary units be Section 8 units is only applicable when the City has enough Section 8 vouchers to

⁶ Rents are set pursuant to City of Berkeley rent schedules

accommodate the inclusionary housing program. This is currently not the case, but the projects were tested under the strictest regulatory requirements nonetheless.

Condominiums

Condominium projects were tested two ways: 1) Providing the required affordable units on-site; and 2) Paying a fee in-lieu of providing affordable units in the project. The analysis determined that from a financial feasibility perspective, it is preferable for condominium projects to pay the in-lieu fee rather than provide affordable units on-site. The conclusions in this memorandum that pertain to condominiums assume the payment of an in-lieu fee to meet the City of Berkeley Inclusionary Housing requirements.⁷

The in-lieu fee was determined to have a significant impact on feasibility. In order evaluate how project feasibility might change as a result of changes in the Inclusionary Housing policy, developments were tested paying a full in-lieu fee and paying half the in-lieu fee. The findings from this analysis are described in Figures 4, 5 & 6. Unless otherwise noted in the text, conclusions regarding development feasibility are based on payment of the full inclusionary fee currently required by the City.

⁷ The only condominium projects tested in this analysis that actually build the affordable units on-site are those that receive a State Density Bonus. Projects that receive a State Density Bonus are required by law to build 100 percent of the State-required units on-site. City of Berkeley Inclusionary Housing Requirements also pertain to projects that receive a State Density Bonus. Therefore, if the State-required units do not meet the full requirements of the City of Berkeley, developers could pay an in-lieu fee to the City to meet the City requirements in addition to building the State-required units on-site.

III. APARTMENTS: KEY FINDINGS

Table 5: Feasibility of Apartment Buildings

Building Height	55'	75'	85'	100'	120'	140'	180'
Number of Stories	5	7	7	9	11	13	17
Feasible Under Current Market Conditions	Yes	Maybe	No	No	No	No	No
Potential for Future Feasibility	Good	Maybe	Poor	Poor	Poor	Poor	Poor

Apartment projects are most feasible at a height of 55 feet under current and foreseeable market conditions. In the *current* market environment, 55 feet is the only building height where apartment development is clearly financially feasible. This conclusion is corroborated by much of the recent development activity in downtown Berkeley. Several new 5-story apartment projects have been built in recent years, including the ARTech, Bachenheimer, Touriel, and FineArts buildings. This finding is also consistent with the current approach to the 1885 University Project (commonly referred to as the Trader Joe's project), which is slated to be a 5-story apartment project with ground floor retail.

A 75-foot building has the potential to be feasible if it is able to attract rents at the top end of the regional market or if prices in construction and materials markets decline. The rents required to support 75-foot apartment projects are currently not found in downtown Berkeley. However, the 7-story (75-foot) project tested in this analysis was not out of the realm of possibility and would become feasible with a 20 percent increase in rents or a 20 percent decrease in construction costs (or some combination of the two).

The Gaia building, completed in 2001, is the only 7-story apartment project built in downtown Berkeley during the past 10 years. There are a number of reasons why the circumstances surrounding development of the Gaia Building differ from those used in this analysis. First, the Gaia Building received a 2-story density bonus for providing ground floor cultural space, which allowed the project to increase in size from 5 to 7 floors⁸ and increased the number of market rate units in the building. Additionally, the land for the project was purchased over 10 years ago at land values nearly a third of today's prices. Furthermore, over the last several years, increases in construction costs have outpaced inflation, which means that the relative construction costs of the Gaia Building were lower than for the prototypical buildings tested for this analysis. In fact, many of the material costs for the Gaia Building were 30 percent lower than in today's market. The combination of receiving a density bonus, purchasing cheaper land, and lower construction costs most likely accounts for why the 7-story Gaia Building was feasible and the 7-story apartment building tested as part of this analysis is not.

Apartment buildings taller than 7 stories are unlikely to become feasible. Apartment buildings taller than 75 feet are not feasible to develop because achievable rents are

⁸ Under current zoning, the effective height of the Gaia building is 8 stories, inclusive of two mezzanine levels.

simply not high enough to cover the higher construction costs of taller buildings (due to more expensive construction and the life/safety requirements). Although rents are expected to increase in the future, they are unlikely to increase enough to make development of 8-story (or more) buildings profitable. Assuming current construction costs, rents would need to increase 50-80 percent from already record high levels in order to make such a project feasible (which would place rents between \$4,200 and \$6,700 a month). Although there is a strong market for apartments in downtown Berkeley that has resulted in a significant amount of new construction in recent years, the current target market for these units is not the luxury rental market needed to support the construction of apartments buildings over 75 feet tall. While it is conceivable that in the future a luxury rental market could emerge in Berkeley, expected rents would have to be extremely high to provide sufficient economic incentive to build apartments buildings over 75 feet.

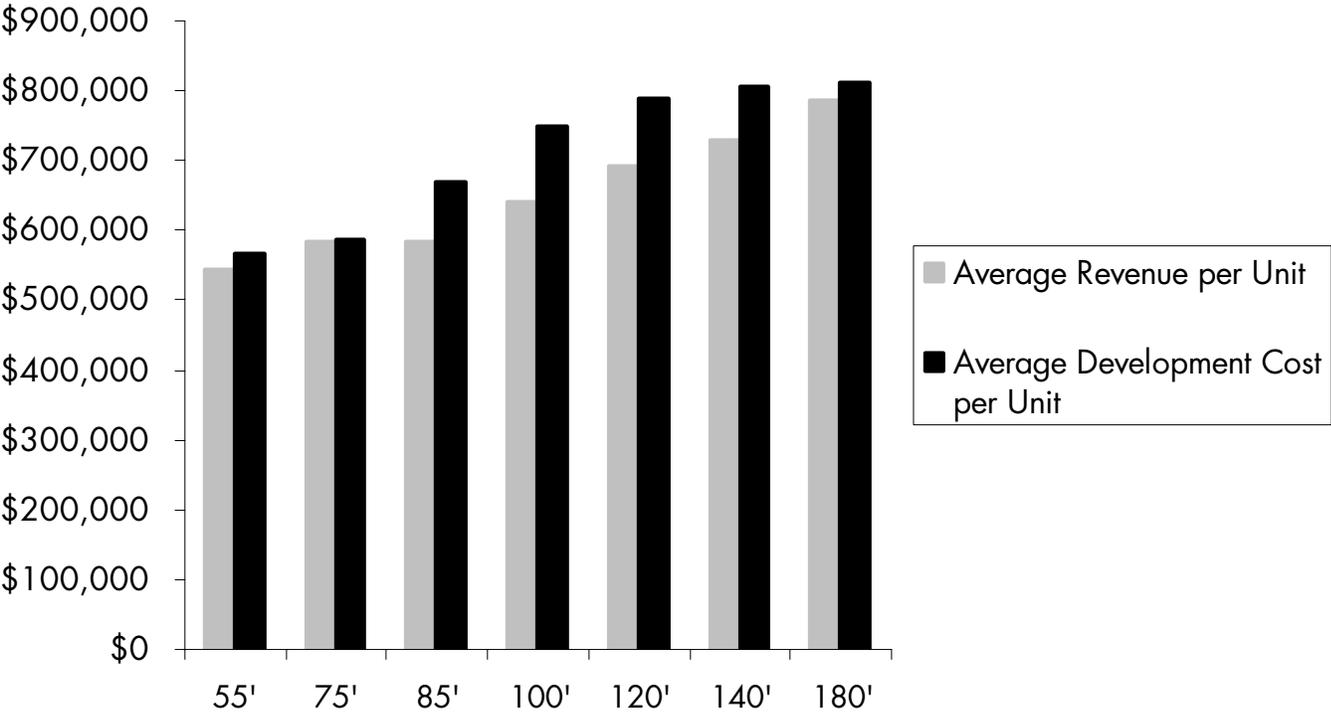
IV. CONDOMINIUMS: KEY FINDINGS

Table 6: Feasibility of Condominium Development

Building Height	55'	75'	85'	100'	120'	140'	180'
Number of Stories	5	7	7	9	11	13	17
Feasible Under Current Market Conditions	No	No	No	No	No	No	No
Revenue Increase Needed to Be Feasible	12%	10%	24%	26%	23%	19%	11%
Potential Feasibility Overtime	5-10 years	5-10 years	Not in the Foreseeable Future	Not in the Foreseeable Future	Not in the Foreseeable Future	10+ years	5-10 years

For the parcel size tested, mixed-use condominium buildings that are 75 feet (7 stories) and less and those that are 180 feet (17 stories) are expected to be viable in the next market cycle (5-10 years); 140 feet (13 stories) may become viable in 10-15 years. Under current market conditions, condominium development is not feasible at any of the tested heights. Figure 1 below shows the average revenue and costs per unit associated with each building height. It illustrates that for projects in the current market costs exceed revenue at every height.

Figure 1: Average Revenue and Cost per Units



A study of historic trends in construction costs and sales prices suggests buildings under 8 stories (75 feet and less) are likely to be viable in the next 5 to 10 years. Seventeen-story buildings could also become viable to develop in 5 to 10 years, as described in Table 6. Buildings of 140 feet are likely to take longer, over 10 years, to become feasible because they require a greater increase in revenues to support the cost of construction.

In order for the other building heights to be feasible, expected revenues from condominium sales would need to be 23 to 26 percent higher than current market prices (given current construction costs). While potential condominium prices are expected to increase in the future, construction costs are also expected to increase. As a result, the analysis concludes that it is unlikely that buildings between 76 and 120 feet will be financially feasible to build in downtown Berkeley in the foreseeable future.

Unique factors, such as site size and the cultural bonus in combination with the State Density Bonus, can impact feasibility.

While condominium projects on the prototype sites evaluated were not found to be financially feasible in the current market, construction on the 9-story Arpeggio condominium project in downtown Berkeley presents a significant exception. One of the reasons the Arpeggio project is possible is because the site is approximately 23,500 square feet, or nearly twice the size of the hypothetical site tested. The larger site affords some important construction savings because more parking can be accommodated on one level, meaning that the project is not forced to build as much costly underground parking as required by the test site. It is also important to note that the Arpeggio project also received density bonuses totaling 4 additional stories through the State of California Density Bonus program and the City of Berkeley Cultural Density Bonus program. The combination of these two programs resulted in the project being permitted to exceed the 5-story height limit. The combined utilization of these two programs also afforded the project financial advantages through the addition of more market-rate units, and the reduction in the effective rate of inclusionary housing units necessary. Furthermore, the land for the Arpeggio project was purchased in 2003 under different market circumstances. The project was conceived of and underwritten during the housing boom when developers and investors would have been optimistic about expected revenues from the sale or rental of the units, and when construction costs were lower. It is possible that if the project's financials were run today, it would not be considered feasible to finance. It is also possible that developers are proceeding with the project in the hope that the market will improve significantly by the time construction is complete.

The tallest buildings studied are only viable as condominiums (and not as apartments). Condominiums can support the high cost of taller building construction better than apartments for several reasons. First and foremost, the capitalized value of condominium units is greater than for apartments, making it easier for the developer to cover high construction costs and absorb fees (see Tables 14 & 15 for more information on the apartment valuations). Apartment rents have reached all-time highs, and it is unlikely that they will experience the additional increases necessary to close the gap in value between apartments and condominiums. In downtown Berkeley, for example, there are currently apartments that rent for \$3,300 a month, the equivalent of a \$500,000 mortgage. And although rents will increase with inflation, it is

unlikely that the market will support much more of an increase in rents, as rents are already high enough to be put toward a mortgage.

Tall buildings are most viable as condominiums but these projects will take some time to become feasible. Sales prices have declined recently, though they are expected to recover in the near- to mid-term. The increases in sales prices necessary to support condominium development at the most feasible heights, 75 feet or less and 180 feet or more, range from 10 to 12 percent, which could be achievable in 5 to 10 years as the market recovers. Aside from improvement in the regional housing market, local efforts to improve the urban design character of downtown Berkeley will also be important factors in generating a value premium for these units and attracting a market of condo buyers to downtown. Projects at the 140 feet (13-story level) need to experience a 19 percent increase in revenue to become viable. An increase in rents of this scale is most likely to occur in 10 or more years, rather than in the near- or mid-term.

Even though projects at the tallest height only need only achieve a 10 percent increase in revenue, this is equivalent to very high sales prices (in the \$900,000 to \$1 million range when above 10 stories). There are not many examples of new condominium projects in downtown Berkeley, and none that target these price points. Currently, the market for these types of units is by-and-large centered in downtown San Francisco (where units above 10 stories start between \$750,000 and \$900,000). High-rise projects were also proposed during the housing boom in places outside of San Francisco, including some now under construction in Downtown San Jose. However, in less urbanized locations such as Santa Rose and Union City, projects are not yet under construction, and their future feasibility is unclear. On the other hand, the recent apartment construction in downtown Berkeley has seeded the market for condominium development, and the overall pent-up demand for housing in the Bay Area supports the notion that there is demand for very high-end condominiums downtown. A project that targeted these price points would be pioneering, but if one project were successful, it is likely that other projects will follow.

V. REGULATORY FACTORS INFLUENCING FEASIBILITY

The lot coverage requirements necessitate the use of a street-facing setback or a mid-block courtyard. Open space at the perimeter can help meet this requirement but it is unlikely to achieve a satisfying building configuration under the 20 percent setback considering the needs of the developer and good urban design practice. For taller condominium projects, only street-facing setbacks provide the efficient parking arrangement needed for project feasibility (which has urban design implications).

DAPAC's recommendation for maximum lot coverage requirements are:

- For heights 65 feet and less: 90 percent maximum with in-lieu fee option for small lots & historic preservation;
- 66 to 100 feet: 90 percent maximum with no in-lieu fee option;
- 101 feet and greater: 80 percent maximum lot coverage with no in-lieu fee option.

If the minimum open space necessitated by these lot coverage recommendations can be applied at the perimeter of the site, they have only a modest impact on the type of building that can be built, but when 20 percent of the lot must be open space, a deep streetside setback or rear courtyard must be used. Use of a streetside setback is preferable from the standpoint of arranging parking in an efficient way.

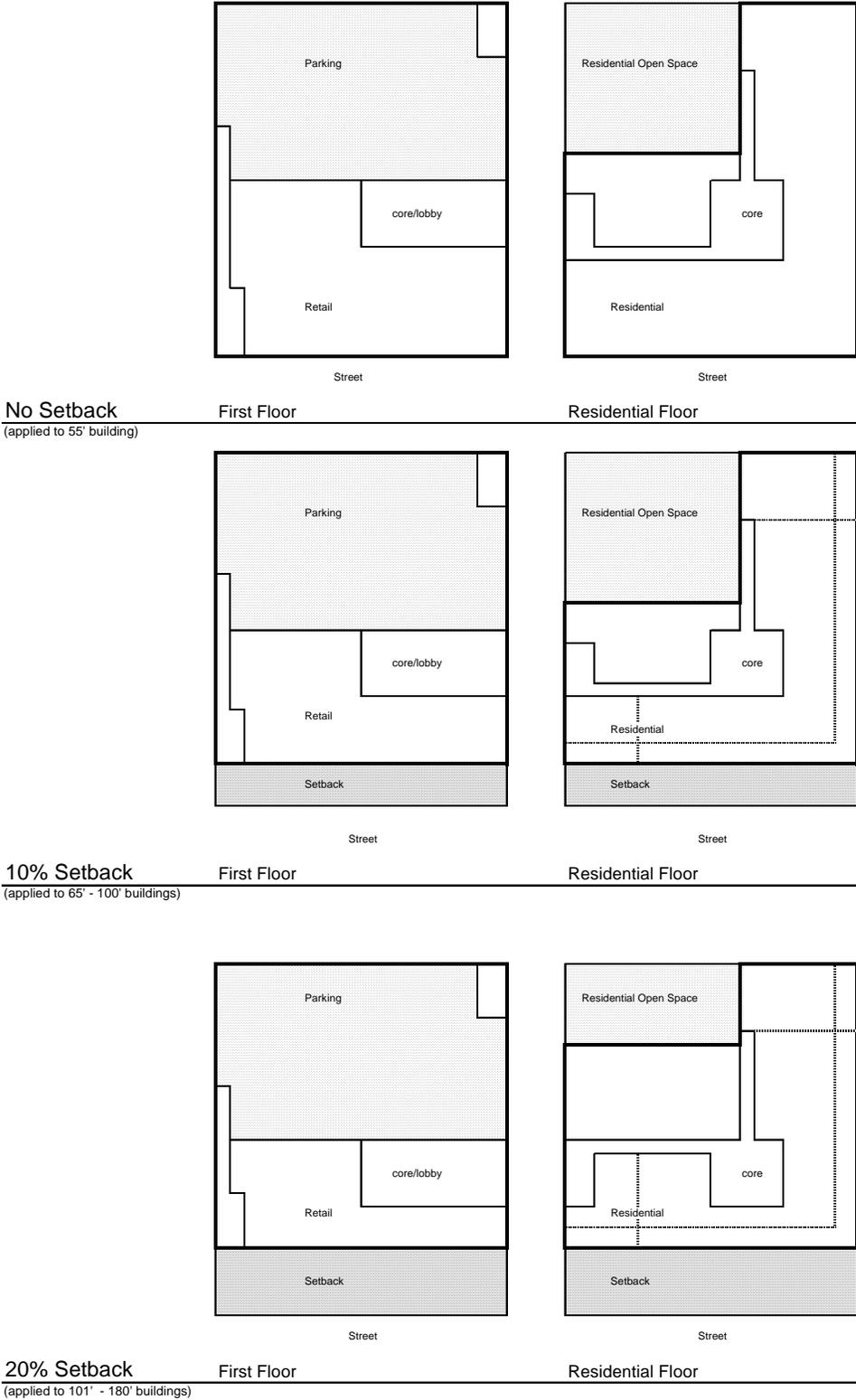
For condominium projects over 55 feet, the use of street-facing setbacks is considerably more feasible than the use of midblock courtyards, because midblock courtyards preclude an efficient parking layout. For condominiums above this height but less than 9 stories, a midblock courtyard changes the shape of the building floorplate to the point that the building cannot be parked with ground floor mechanical parking alone – making underground parking necessary and resulting in an increased cost in the range of \$25,000 a car. For condominiums above 100 feet, the buildings already require underground parking and the additional expense borne by the midblock courtyard ranges from \$5,000-\$10,000 a car.

This need for large street-facing setbacks may have major urban design implications, as downtown buildings have been traditionally built to front property lines – resulting in spatially defined streetscapes and continuous retail frontage. However, this study adheres to DAPAC's lot coverage recommendations, without regard to their urban design implications.

For condominium projects up to 55 feet and all apartment projects, the location of groundfloor open space on constructions costs has significantly less impact, and an efficient parking arrangement is still possible with the mid-block courtyard. See Figure 2 for a description of the setback requirements used for this analysis.

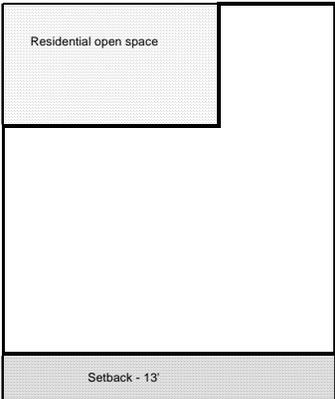
Figure 2: Setback Concepts

Front Setback



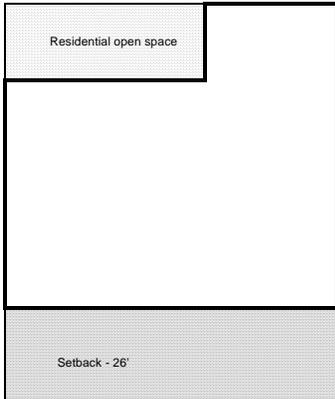
Setback Options

10% Setback

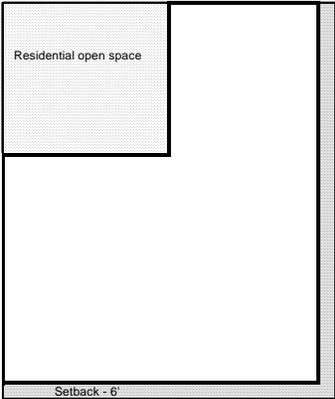


Front Setback 9,200

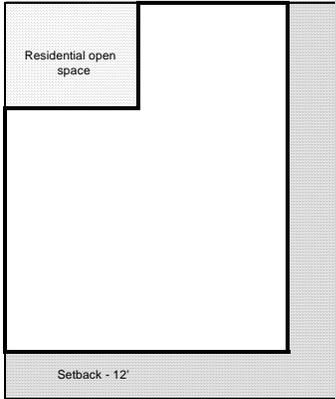
20% Setback



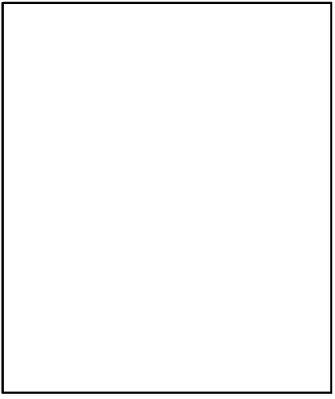
Front Setback 8,600



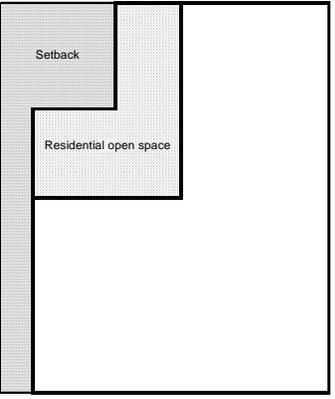
Two Side Setback 9,200



Two Side Setback 8,500



Mid-block Setback not applicable



Mid-block Setback 8,400

DAPAC did not consider maximum FARs for 140-foot and 180-foot buildings, but DAPAC discussion suggested a maximum FAR of 6.5 for all building heights -- which would make development at the 140- and 180-foot heights infeasible to build. DAPAC's recommendations for maximum FARs were applied to buildings up to 120 feet (see Table 7). Analysis shows that 120-foot buildings on a 13,000 square foot lot can be expected to have an FAR of 6.5. However, the 6.5 maximum FAR suggested by some DAPAC members is too low to allow enough gross building square footage to construct a 140- or 180-foot building. In order to test feasibility at these two heights, this study estimated FARs for 140-foot and 180-foot buildings based on site area, lot coverage, and upper-story setback assumptions. FARs of 7.5 and 9.5 were assumed for the 140-foot and 180-foot heights, respectively, and are essential for making projects physically and financially feasibility at these heights. The FAR assumptions are based on physical analysis of a typical 13,000 square foot site, and include an upper-story setback to increase solar access at the street.

Table 7: DAPAC-Recommended FARs vs. Those Used in this Analysis

Building Height	DAPAC	
	Recommended FAR	FAR Used in this Analysis
55'	4.0	4.0
75'	4.9	4.9
85'	4.9	4.9
100'	5.6	5.6
120'	6.5	6.5
140'	6.5	7.5
180'	6.5	9.5

Green building requirements have a marginal impact on feasibility. On its own, a green building requirement is not enough to render a project infeasible. However, combined with other regulations for public amenities and market conditions at the time of construction, green building could play a role in making a project infeasible. In a strong real estate market, green building requirements alone will not be enough to make a development infeasible. However, if a project is pinched by rising construction costs and/or falling sales prices, the cumulative effect of green building and other costs to the project could have a negative impact on net revenues. For this reason, it will be important to consider green building requirements in concert with other regulations. Table 8 shows that revenues need to be at least three percent higher to support a green project.

It is possible that the premium paid for green construction could be a neutral cost to the project if developers are able to sell or rent the units at a premium because they were constructed according to green standards. If developers are able to achieve a premium of this type, it could negate the impact of green building on feasibility.

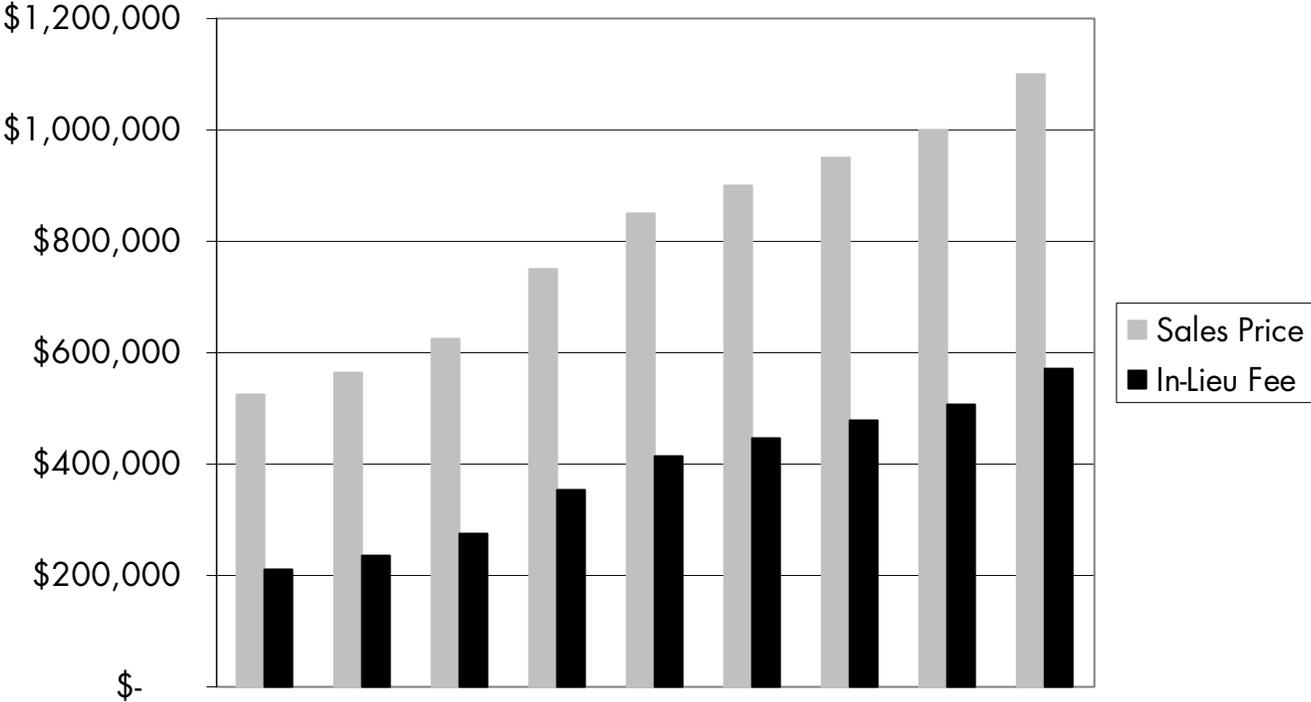
Table 8: Impact of Green Building on Condominium Feasibility

Building Height	55'	75'	85'	100'	120'	140'	180'
Revenue Increase Needed to Make Project Feasible Without Green Building	12%	10%	24%	26%	23%	19%	11%
Additional Revenue Increase Needed to Support Project With Green Building	3%	3%	3%	3%	3%	3%	3%
Total Revenue Increase to make Green Building Project Feasible	15%	12%	27%	29%	26%	22%	14%
Potential Feasibility Overtime	5-10 years	5-10 years	Not in the Foreseeable Future	Not in the Foreseeable Future	Not in the Foreseeable Future	10+ years	5-10 years

The way Berkeley’s Inclusionary Housing Policy is calculated plays a significant role in influencing the feasibility of condominium development in downtown Berkeley. The City’s Inclusionary Housing Policy requires that condominium projects pay significant in-lieu fees,⁹ which can mean the difference between a feasible or infeasible project. Fees are currently calculated as 62.5 percent of the difference between the allowable Inclusionary Sales Prices (set by the City) and the market rate sales price for the unit. For the unit size tested in this analysis, the Inclusionary Sales Price is set at \$186,000. As building heights increase and more luxury units are possible in a building, the resultant in-lieu fee from development rises. For example, in a 5-story building, if the averages sales price per unit is \$545,000, the average inclusionary fee per unit is \$224,375. For a 17-story building, if the average sales price per unit is \$790,000, the average inclusionary fee per unit is \$377,500. As a result, the taller buildings pay a larger total in-lieu fee because they have more units but also because they have more expensive units. The size of the resultant fee has a significant impact on overall feasibility. Figure 3 illustrates the relationship between unit price and the amount of in-lieu fee required by the City of Berkeley.

⁹ While the city’s policy does allow projects to provide the required affordable units on site, this analysis found that paying an in-lieu fee was preferable for condominium projects from a financial feasibility perspective; therefore, the conclusions in this memorandum that pertain to condominiums assume the payment of an in-lieu fee. For the purposes of this analysis, projects tested using the State Density Bonus are the only type to provide affordable units on-site because they are required to do so by law (see the methodological overview and methodology sections for more detailed explanation of these assumptions).

Figure 3: Impact of Green Building on Condominium Feasibility



None of the condominium projects are currently feasible when tested under current market conditions and with the entire Inclusionary Housing In-Lieu fee. When the fee is reduced to 50 percent of its current level, the 55- and 75-foot projects approach feasibility under current market conditions. Table 9 shows how development costs are impacted by the application of the entire Inclusionary Housing In-Lieu fee and a hypothetical in-lieu fee reduced by 50 percent. As shown, the in-lieu fee increases development costs by 9 to 11 percent for the building types tested.

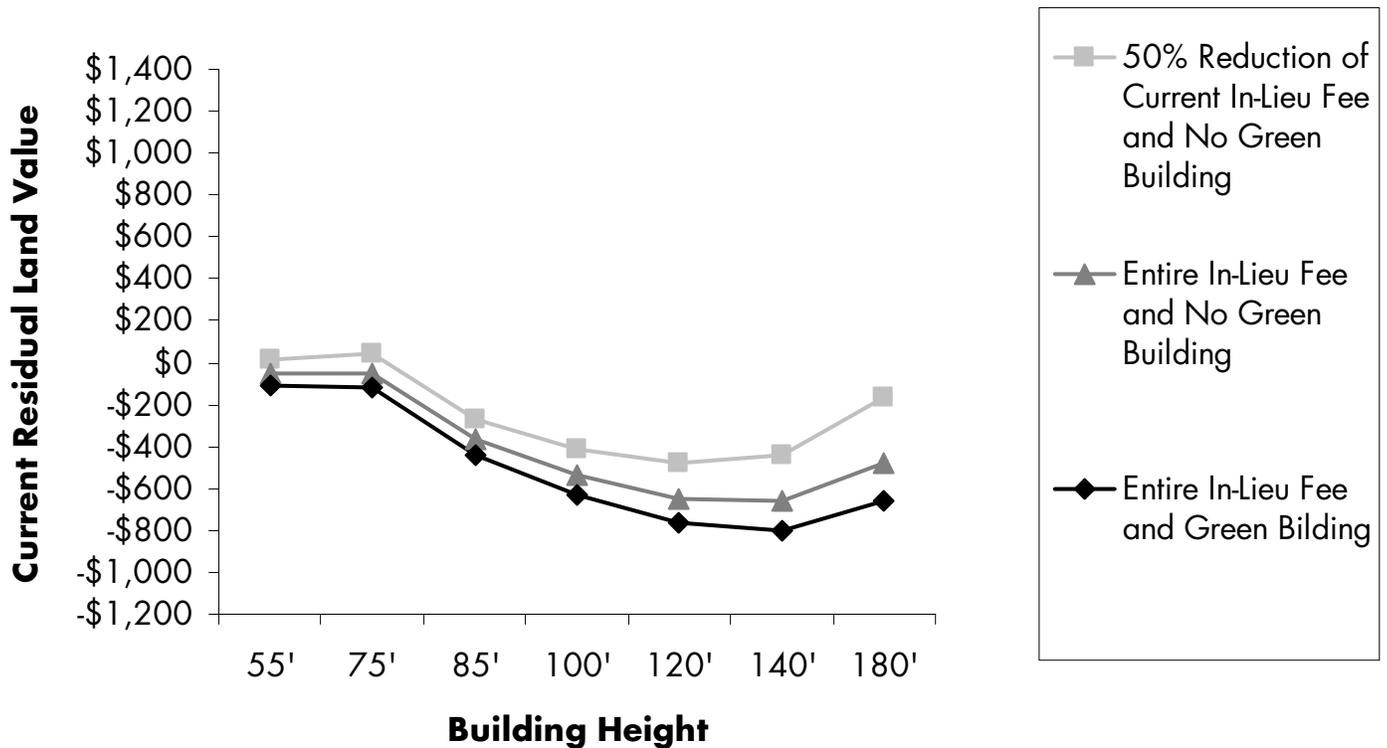
Table 9: Increase in Development Costs from Paying Inclusionary Housing In-Lieu Fees

Building Height	55'	75'	85'	100'	120'	140'	180'
When paying 50% of the In-Lieu Fee	4%	5%	4%	4%	4%	5%	5%
When paying 100% of the In-Lieu Fee	9%	10%	9%	9%	9%	10%	11%

Figure 4 illustrates the impact of green building and two in-lieu fee scenarios (the full in-lieu fee and 50 percent of the full in-lieu fee) on the residual value of land in the current market. The Land Residual Method is a means of assessing the feasibility of a development project by determining

the price that a development can afford to pay for land.¹⁰ When the land residual value equals current land values, the project is feasible. More information on the Land Residual Method of analysis is on page 30.

Figure 4: Residual Land Value of Development in the Current Market and the Impact of Green Building & Inclusionary Fees



* The Land Residual Method is described in more detail in the Methodology Section of this report.

Figures 5 and 6 illustrate a range of possible residual land values 7 years from now. These scenarios were derived from an analysis of historic trends in construction and sales prices. More detail on this analysis is provided in the methodology section on page 36. The following two curves depict potential feasibility under the same three criteria illustrated above in Figure 4; payment of the entire in-lieu fee; payment of the entire in-lieu fee and green building premiums; and a 50 percent reduction of the in-lieu fee and no green building premium. The two charts illustrate likely future conditions under conservative and optimistic scenarios.

The charts show that some projects paying the full in-lieu fee and green building premiums are unlikely to become feasible under the scenarios tested in the next 7 years under conservative projections but could become feasible under a more optimistic scenario. Projects required to pay the full in-lieu fee alone will near feasibility at the 55-, 75-, and 180-foot levels only in the most

¹⁰ Every method of financial analysis has pros and cons. Please see the Comprehensive Methodology and Appendix sections for a description of the Residual Land Method, descriptions of other methods for determining financial analysis, and an explanation of why the Residual Land Method was selected for this analysis.

auspicious market climate; that of high sales-price growth and low construction-cost growth. Projects paying half of the existing inclusionary fee fair the best of the three scenarios tested and have a good chance of becoming feasible at the 55-, 75- and 180-foot heights in the next 7 years even under the conservative scenario. At these three heights, these projects are feasible at more modest growth rates. Therefore, these projects are the best suited of the three scenarios tested to weather changes in the both the real estate and construction materials markets.

Figure 5: 7-year Projections of Future Residual Land Value (Conservative Scenario)

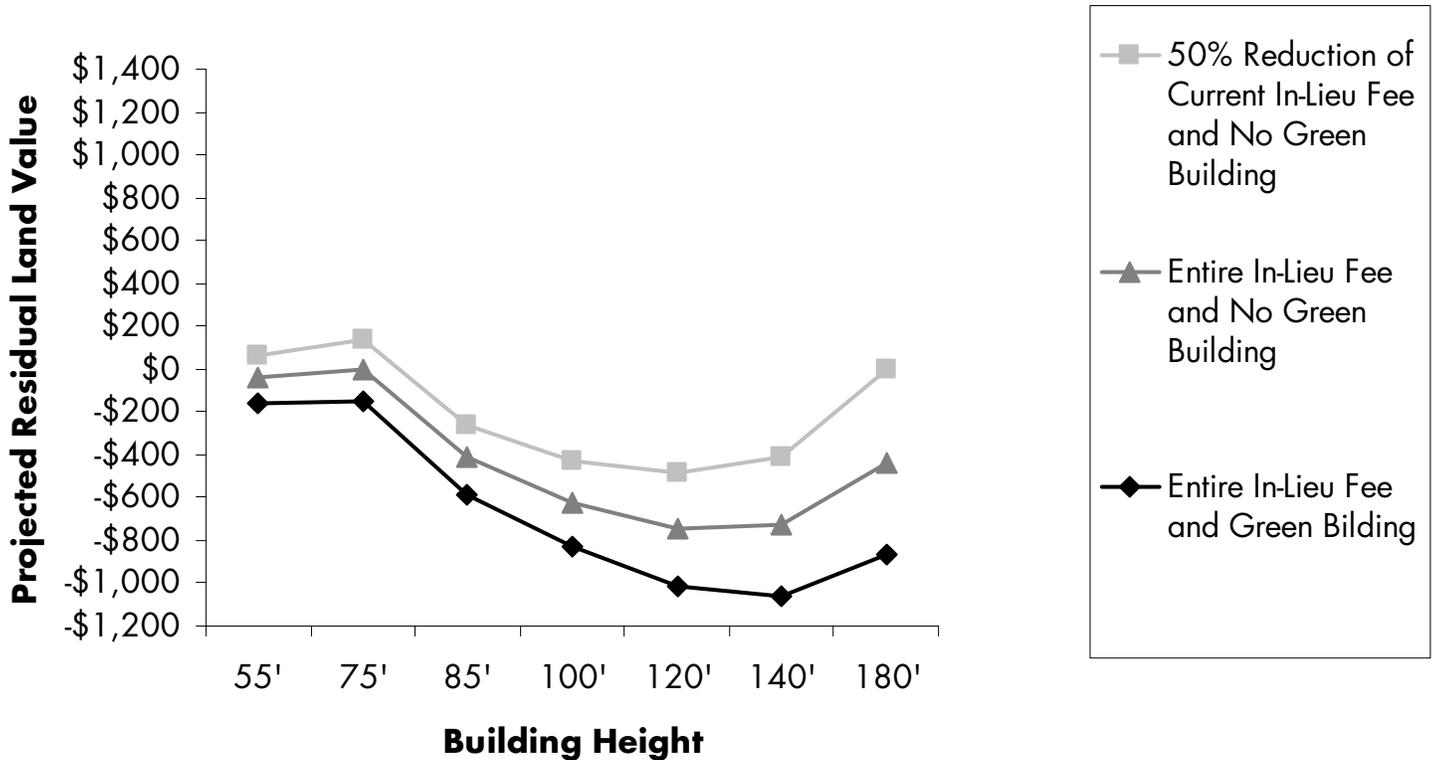
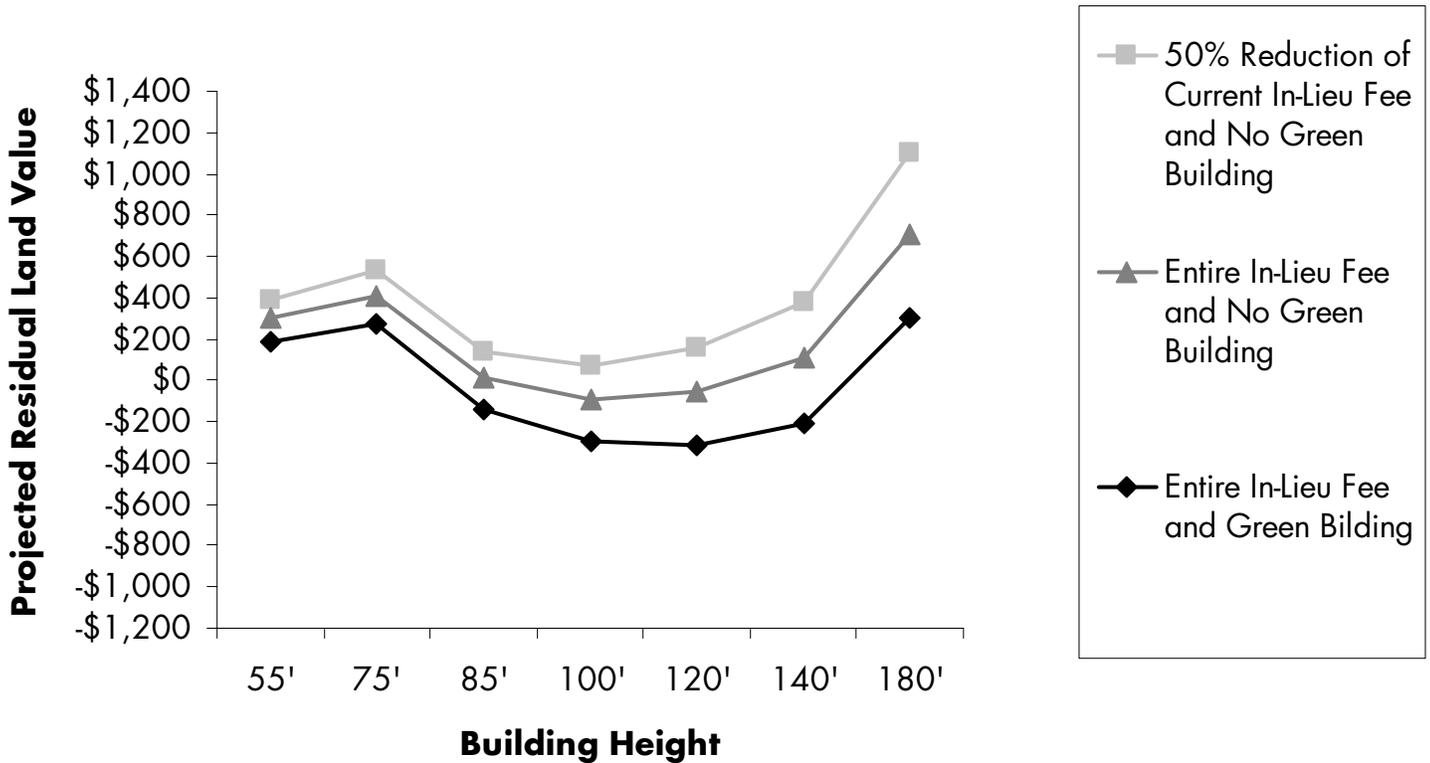


Figure 6: 7-year Projections of Future Residual Land Value (Optimistic Scenario)



While developments in downtown Berkeley are likely to become feasible at certain heights, viable projects are highly sensitive to changing market conditions and fees and exactions for public purposes should be considered carefully. Buildings at the 180-foot height are best equipped to pay fees to support public amenities. The results of this analysis show that the financial feasibility of development projects is sensitive to current conditions in the housing market, construction materials market and land markets. DAPAC proposed a number of new fees, including fees for open space improvements and transportation services, as well as a tax on retail vacancies. While projects can be expected to support some amount of public amenities, requirements should be considered strategically and comprehensively because profit margins are modest for most feasible building heights. Green building and lot coverage requirements were tested as a part of this analysis and were found to have a relatively small effect on feasibility, but adherence to the full requirements of the Inclusionary Housing policy taxes these developments nearly to their fullest extent and additional fees and exactions beyond the Inclusionary policy could make projects infeasible.

The height with the best potential for generating additional revenue for public purposes is the 180-foot building. Projections of likely future market conditions show that buildings at the 180-foot height generate more revenue than buildings at the other heights tested. In these scenarios, buildings at this height would be better equipped to support public amenities than building at the

other heights tested in this analysis. This is illustrated in Figure 6, which shows how the 180-foot project is able to achieve higher land values than the others.

The State Density Bonus does not have a major impact on feasibility.

The California State Density Bonus Program, SB 1818, allows developers to receive entitlements to build additional market rate units in excess of height limits when they also include a State-determined number of affordable housing units in the project. The potential bonus increases as the number of affordable units in the project increases (up to a bonus of 35 percent of the original project size). SB 1818 also differentiates between levels of affordability and the density bonus is based on whether affordable units are targeted to “very low” or “lower” income families. Projects in Berkeley that receive bonus units through this program must also meet the requirements of the City of Berkeley’s Inclusionary Housing program. Figure 7 shows various concessions and bonuses available.

Figure 7: Possible Density Bonuses and Concessions

Targeted for VERY LOW Income Families (I.e., up to 50% of Area Median Income)			Targeted for LOWER Income Families (I.e., up to 80% of Area Median Income)			Condominium Projects -- Targeted for MODERATE Income Families (I.e., up to 120% of Area Median Income)		
% of base project Units 65915(g)(1)	Density Bonus 65915(g)(1)	# of Incentive or Concessions 65915(d)(2)	% of base project Units 65915(g)(1)	Density Bonus 65915(g)(1)	# of Incentive or Concessions 65915(d)(2)	% of base project Units 65915(g)(2)	Density Bonus 65915(g)(2)	# of Incentive or Concessions 65915(d)(2)
percent	percent	#	percent	percent	#	percent	percent	#
5	20.0	1	10	20.0	1	10	5.0	1
6	22.5	1	11	21.5	1	11	6.0	1
7	25.0	1	12	23.0	1	12	7.0	1
8	27.5	1	13	24.5	1	13	8.0	1
9	30.0	1	14	26.0	1	14	9.0	1
10	32.5	2	15	27.5	1	15	10.0	1
11	35.0	2	16	29.0	1	16	11.0	1
12	35.0	2	17	30.5	1	17	12.0	1
13	35.0	2	18	32.0	1	18	13.0	1
14	35.0	2	19	33.5	1	19	14.0	1
15	35.0	3	20-29	35.0	2	20	15	2
			30	35	3	21	16	2
						22	17	2
						23	18	2
						24	19	2
						25	20	2
						26	21	2
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						29	24	2
						30	25	3
						31	26	3
						32	27	3
						33	28	3
						34	29	3
						35	30	3
						36	31	3
						37	32	3
						38	33	3
						39	34	3
						40	35	3

Source: City of Berkeley

When tested at several bonus levels, this study concludes that the state density bonus can slightly improve the feasibility of some apartment projects, but reduces the feasibility of most condominium projects. More explanation is provided in the following sections.

For apartment development, the State Density Bonus will be most useful in improving the feasibility of 75-foot buildings. Seven-story, mixed-use buildings (with 6 residential stories) are infeasible in current markets but are not out of the realm of possibility. The density bonus does not make the difference between a feasible or infeasible project but combined with other factors, like increased rents or decreased construction costs, it could be a positive factor in helping a 55-foot building by-right achieve a 75-foot height and improved feasibility.

In the case of condominiums, the State Density Bonus on its own fails to improve the financial feasibility of any of the buildings tested. The density bonus does not offer enough additional market rate units to overcome the cost of selling otherwise highly priced units at a below-market prices. As mentioned earlier in the methodological overview, the State Density Bonus regulations require that affordable units are built on-site and there is no option to pay a fee in-lieu of this requirement. Because there is such a dramatic differential between the “allowable” sales price and market rate sales prices, it is typically not in the developer’s best interest to seek a State Density Bonus for a condominium project.

The potential for a project to receive a cultural bonus through the City of Berkeley Cultural Density Bonus program was not included as part of this analysis. It is possible that when the cultural bonus is combined with a density bonus, projects achieve a critical mass of market rate units that could ultimately help improve feasibility. The Arpeggio project offers some circumstantial evidence that this may be true.

VI. OTHER FINDINGS

The market for land in downtown Berkeley is unpredictable. In all development projects, land prices are a major factor in determining development potential. Downtown Berkeley is no exception. Downtown land prices vary widely and are influenced by a wide variety of circumstances. A survey of transactions shows that sales prices for downtown land range from \$80 to \$200 per square foot. This range was derived from a multi-pronged analysis of land values in Downtown Berkeley. The project team first studied land transactions since 2000 in Downtown Berkeley. The project team studied transactions where the improvement-to-land value ratio was 1 or less, inclusive of vacant land. Because of some missing records in the tax assessor's data, only a limited number of viable transactions emerged from this analysis. To further substantiate and vet the transaction data, the project team then spoke with several developers and brokers with recent experience purchasing land Downtown. This feedback was used to help establish the final range included in this report. This range represents variability in location, lot size, corner v. interior lots, and value of existing buildings that could be on the site.

Another complicating factor in determining land values is that the current development potential of these sites is constrained by a 65-foot height limit and past transactions do not reflect how land values could be impacted if a site's development potential was increased through a higher height limit. For example, land prices could increase if property owners believe that taller buildings, if allowed, convey greater value (even though this study concludes that taller buildings add little or no additional value). Additionally, much of the land in downtown Berkeley that has not been developed already is being held by landowners who up to this point have not stood to make enough revenue from a development project to overcome the opportunity cost of lost income from the site during construction. This introduces another element of uncertainty and individual circumstance into the equation for valuing land in downtown Berkeley. The combination of these factors means that the value of land in Berkeley is highly dynamic and is the main reason why the team chose to use the Land Residual Method of analysis to determine financial feasibility.

Developments on lots larger than 13,000 square feet are more likely to be feasible than developments on smaller lots because parking is more expensive to provide on smaller lots. However, few larger lots exist in Downtown and their creation would generally require three or more parcels to be acquired and assembled. While multi-level parking is physically feasible on a 13,000 square foot site, the limited site size makes the parking inefficient and therefore more expensive. Standard underground parking on a 13,000 square foot site requires over 450 square feet per car. If the size of the site were doubled, the expense of building the elevators, stairs and ramps necessary on every floor would be spread over a larger building area and the space requirements of each car would be reduced to approximately 380 square feet per car because of more efficient circulation patterns. Furthermore, the additional units in a taller building drive a need for additional parking. A larger site can accommodate more cars on one level and potentially avoid additional floors of underground construction and the cost premium associated with providing elevators, stairs and ramps to the additional floors, thereby reducing overall construction costs.

Apartment projects may benefit from an in-lieu fee option for parking. Condominium projects would not benefit from an in-lieu fee option for parking as on-site parking is likely to be necessary to achieve project feasibility for higher-priced units. Because parking is expensive to provide, one strategy for reducing costs for a development would be to provide an in-lieu fee option that would allow developers to pay a fee to assist in providing centralized parking for the district, rather than providing parking on site. From a market perspective, shared parking in an off-site location could work for apartments, particularly given the high number of student tenants in the downtown, and the availability of car sharing programs. However, since apartments already have such a low parking requirement it is unlikely that this strategy would have a significant impact on costs.

While condominiums construction costs could be reduced if parking was not required on-site, the high condominium sales prices necessary to support development would be difficult to attain without one on-site parking space per dwelling unit. In theory, this issue could be resolved with an on-site valet service but this in a highly unusual arrangement and this study does not test that scenario.

VII. COMPREHENSIVE METHODOLOGY

This section provides the methodology and key development assumptions used in the financial feasibility analysis, including a description of the process used to create the hypothetical development programs tested.

DEVELOPMENT PROGRAM ASSUMPTIONS:

Determining the Building Parameters

The project team utilized the lot coverages and FARs shown in Table 2 on page 6. At each height, the team first tested site capacity for the seven height options by designing a series of prototype plans at the ground floor, underground parking levels, and residential levels to estimate attainable floor areas and configurations for each height. This analysis determined how much parking (and of what type) the ground floor footprint could hold and still leave useable retail space on the ground floor. The number of parking spaces and the building height became the parameters for determining the number of residential units possible in the building.

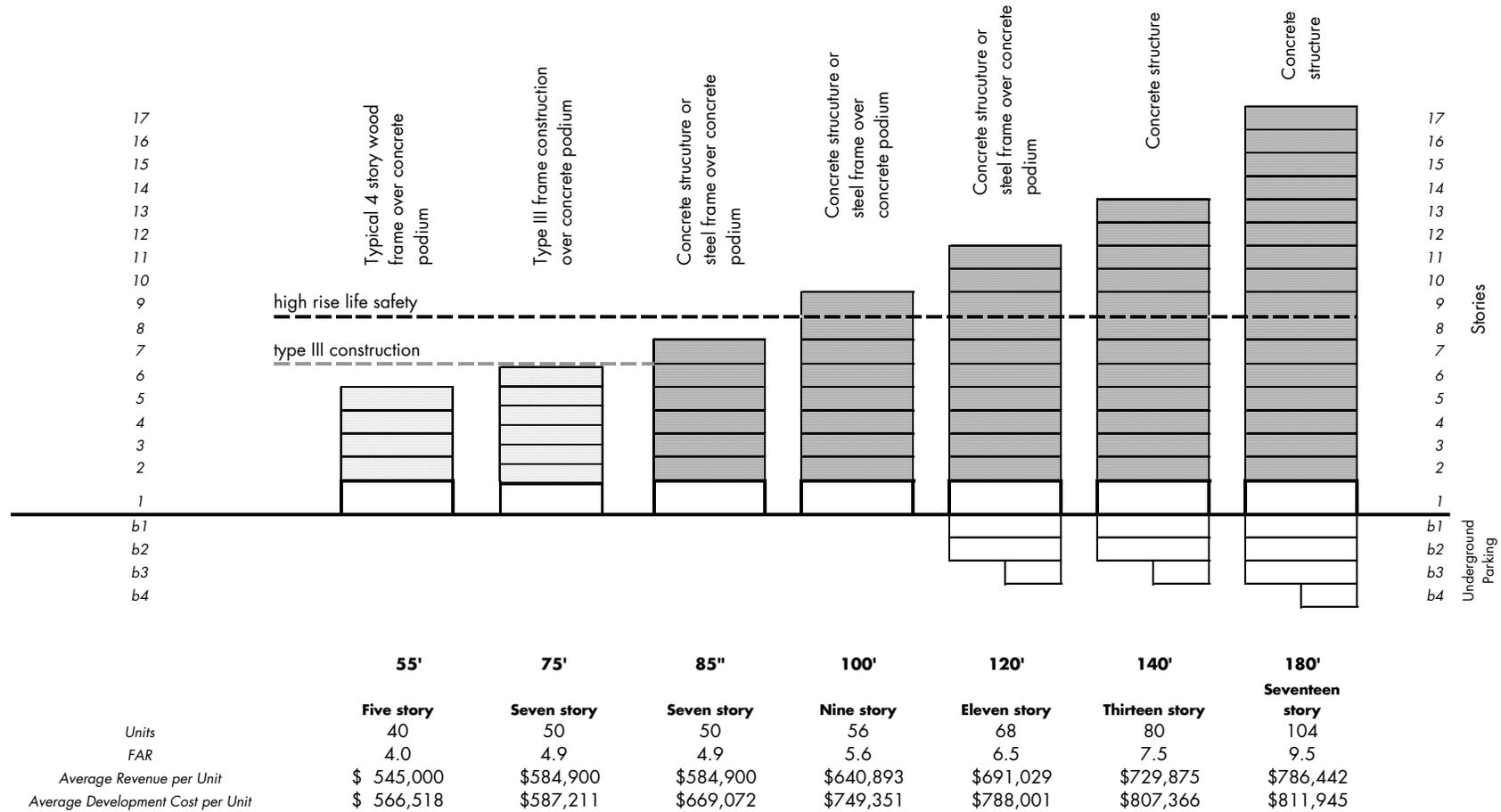
Mechanical and underground parking were both considered for the purpose of this analysis. The preferred and most cost-effective scenario was where all the parking needs could be accommodated on the first level using mechanical parking because it eliminates the need for additional floors of underground parking. First floor mechanical parking significantly reduces per car space demands; cars can be accommodated in as little as 120 square feet a space. A 13,000 square foot site could hold 55 cars parked in this manner. In this analysis, first floor mechanical parking is no longer sufficient to park the entire building by the 120-foot scenario, so this analysis tested underground parking in the development programs of buildings of 120-feet and above. Mechanical parking could also be used below grade but once underground parking is necessary the difference in cost between this and standard parking is much less, in the range of \$10,000 to \$15,000 per unit. In this case, the team assumed a market preference for traditional pull-in parking rather than mechanical parking.

The conceptual building types and heights analyzed are depicted in Figures 8 and 9. These are planning-level diagrams and should not be considered building designs. They are an illustration of the general configuration, relative size and distribution of spaces at each level.

Typical Unit Size & Layout

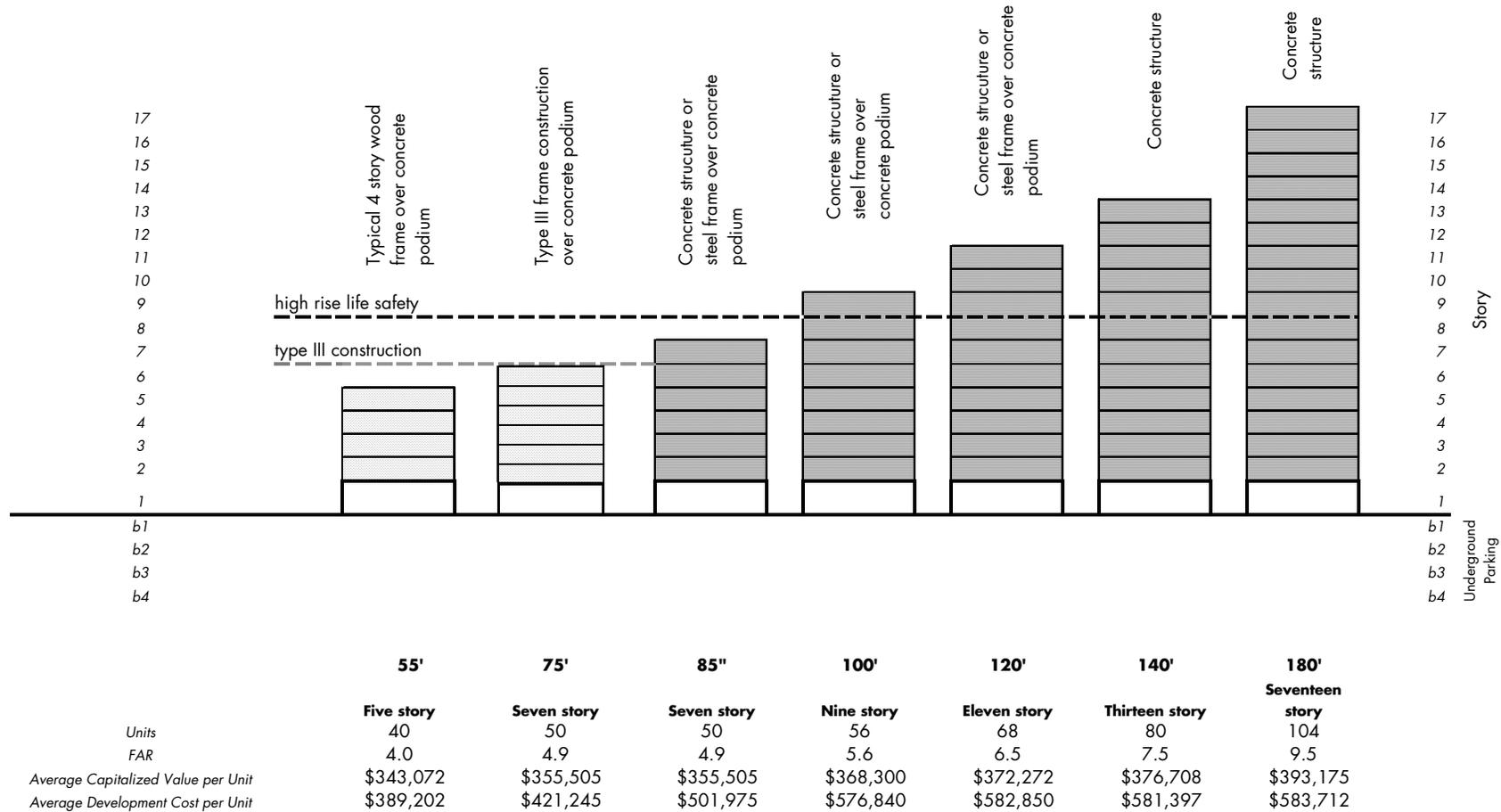
For the residential floors of the development, several simplifying assumptions were made. A target average unit size of 825 net square feet was identified. This size was determined based on a survey of comparable unit sizes in the East Bay market and is consistent with local trends observed in the marketplace.

Figure 8: Condominium Building Type Diagram



*Costs and revenues provided are under current market conditions.

Figure 9: Apartment Building Type Diagram



PARKING

Parking is an important factor that often determines whether or not a project is financially feasible. On one hand, parking is costly to build, especially in an urban environment where land is limited and expensive. In most cases, it does not yield enough revenue to cover its cost. On the other hand, if developers do not provide enough parking spaces, their ability to sell a project suffers. Developers determine how much parking should be provided in any given project based on their perception of market demand. It is possible that the demand for parking in Downtown will change as redevelopment efforts continue. The parking assumptions used in this analysis are described below:

1 Parking Space Per Condominium

The City of Berkeley currently does not have a parking ratio requirement for condominium developments. The parking ratio of one space per unit was selected because it is an aggressively low parking ratio but one that developers considered realistic and achievable in transit-rich downtown Berkeley. Despite the proximity to transit, there was consensus from the development community that the market will not support the development of units with sales prices of this magnitude without providing at least one parking space per unit.

0.25 Parking Spaces Per Apartment

This analysis used the City's current parking requirement for apartments of one-quarter parking space per apartment. This number reflects high-quality transit nearby, the availability of car-sharing, the self-selection of apartment dwellers in Berkeley who choose not to own cars, and the large student population in Berkeley. It is also market-tested in the sense that it is the parking ratio for used for many of the apartment projects recently developed in Downtown.

Retail Uses Have On-Street Parking

The financial feasibility analysis assumes no dedicated parking on the site for retail uses. (This does not necessarily mean that there will be no parking requirement but that it might be met through contributions to an off-site facility). This assumption is largely driven by the physical constraints of the site that simply do not allow for any additional parking. Further, since the residential uses are more valuable to the developer than commercial ones, the economics of these real estate transactions do not compel developers to build commercial parking spaces in-lieu of residential ones.

The complete development programs are described in Table 10.

Table 10: Development Programs

	55'	75'	85'	100'	120'	140'	180'
Lot Coverage	100%	90%	90%	90%	80%	80%	80%
Floor Area Ratio	4.0	4.9	4.9	5.6	6.5	7.5	9.5
Total Floors	5	7	7	9	11	13	17
Total Residential Floors	4	6	6	8	10	12	16
Total Residential Units	40	50	50	56	68	80	104
Number of Residential Parking Spaces	40	50	50	56	68	80	104
Type of Parking	First Floor Mechanical	First Floor Mechanical	First Floor Mechanical	Underground	Underground	Underground	Underground
Construction Type	Woodframe over Podium	Framebuilt over Podium	Concrete or Steelframe over Podium				
Life/Safety Construction Premium	No	No	No	Yes	Yes	Yes	Yes
Ground Floor Retail Square Footage	4,400	3,100	3,100	3,100	1,800	1,800	1,800
Total Gross Square Footage	52,000	63,700	63,700	72,800	104,000	116,996	155,988

TESTING FINANCIAL FEASIBILITY

Residual Land Value Method

Financial feasibility was tested using the Residual Land Value Method. Many pro forma analyses are structured to solve for the financial return for the developer or investors (Developer Profit or IRR). In contrast, the Residual Land Value Method of analysis solves for the value of the land. This method recognizes that the value of land is inextricably linked to what can be built on it and that development potential is heavily influenced by zoning as well as the size and shape of the lot, the development context of the site, and other factors. The land residual can be calculated using a static or multi-year model. In a static analysis, all project costs are tallied, a fixed amount of developer profit is included as a cost, and land costs are *excluded* from total costs. Revenues are also summed and the total costs are then subtracted from the total revenue. The remaining amount is the residual value of the land specific to the development type being tested. This amount is effectively the price a developer could afford to pay for the land given the particular development project tested. (In a multi-year analysis, the land residual can be calculated as a Net Present Value based on an assumed discount rate, or desired IRR).

The residual land value is typically expressed as a per square foot cost. In order to understand what this measure says about feasibility, the residual value or Net Present Value of the land is compared with the expected sales price for a particular piece of land. If the residual value is higher than the asking price, the project is feasible. If the residual value is lower than prevailing land prices, then the project is infeasible. One benefit of this method is that it can also be used to calculate the amount of subsidy that would be required to make a project feasible. While precise land values may not always be available, the order of magnitude of the residual land value is often sufficient to include feasibility. A more detailed description other approaches to testing feasibility is provided in the Appendix.

The Land Residual Method allows us to avoid the pitfalls of having to assume a fixed land value that has the potential to be wrong. Instead, by solving for the land value, or price of land that a project can carry, we can easily do sensitivity testing to see how individual developments fare under a variety of different land value (or price) scenarios. This allows for a determination of whether a project is feasible at the low and high ends of the spectrum of land costs recently seen in downtown Berkeley.

FINANCIAL ANALYSIS ASSUMPTIONS

Following is a discussion of key assumptions about development costs and project value used to analyze the financial feasibility of the development scenarios.

DEVELOPMENT COSTS

Development costs include the hard costs of construction (e.g., materials and labor); soft costs such as permits, fees and taxes; and financing costs. Major assumptions about development costs are described below.

Hard Costs

Project construction costs are based on Hixson & Associates and Strategic Economics' internal construction cost databases and informal surveys of a number of area contractors actively engaged in building the wide range of construction types represented by this analysis. The objective of this exercise was to establish an average construction cost. One could expect that this average rate is roughly in the middle third of actual costs, though it is possible to envision specific projects that would have costs outside of this range.

Under Berkeley's new construction code both the 55-foot (4 stories above podium) and 75-foot buildings (6 stories above podium) can be "stick built" wood or metal frame. Because of the impact of the height and the seismic zone, this study assumes that the framing costs in the 7-story option (6 stories of residential) are approximately \$10/gsf (gross square foot) more than the traditional 4-story wood frame option. This translates to approximately \$13/nsf (net square foot) or \$10K/unit.

Above the 6-story residential limit, this study assumes concrete construction. While there are substantial structural costs to this option, there are also cost reductions on other building elements. This study assumes that the premium to go from traditional wood frame to concrete is approximately \$20/gsf with an additional premium for the smaller upper floor plates. This translates to approximately \$26/nsf or \$20K/unit.

Building above the 85-foot range requires the entire building meet high-rise safety standards. The allowance assumed for this requirement is approximately \$22/gsf. This translates to approximately \$33/nsf or \$27K/unit. Table 11 shows the net and gross condominium hard costs used for this analysis.

Table 11: Condominium Hard Costs per Square Foot

Building Height	55'	75'	85'	100'	120'	140'	180'
Cost per Gross Square Foot	\$ 249	\$ 261	\$ 302	\$ 331	\$ 295	\$ 304	\$ 299
Cost per Net Square Foot	\$ 354	\$ 371	\$ 429	\$ 477	\$ 521	\$ 519	\$ 532

Hard Costs for Apartments

The estimated development cost for apartments was generated by taking a \$20,000 per unit deduction from the condominium costs to account for a reduction in the finishes provided. The cost of parking was also reduced to reflect the lower apartment parking ratio.

Soft Costs

Estimated soft costs include permits, development fees, architectural fees, engineering fees, developer overhead, insurance, taxes, legal, accounting fees, and marketing costs. Permits and development impact fees were estimated based on typical fee schedules in Berkeley. The remainder of the soft costs were estimated based on standard industry ratios and conversations with local developers, and calculated as a percentage of hard costs. The developer fee was estimated as fifteen percent of total development costs.

Financing Costs

Financing costs were estimated assuming that a construction loan would be obtained for 80 percent of the cost of development (not including the developer fee), for a term of 12 months, with a 7.5 percent interest rate and a 1 percent loan fee. Given that the construction loan would be drawn down over the course of the project, the total financing cost was estimated assuming an average outstanding loan balance of 55 percent.

Developer Profit

The land residual method requires making an assumption about expected developer profit, since projects will not be built unless a developer feels that they have the potential to generate a return. The analysis assumes developer profit equal to 15 percent of other development costs, not including land. This assumption is a frequently used planning rule-of-thumb. While profit margin expectations change depending on a variety of factors including market conditions, expected timeframes to receive entitlements, and other factors, 15 percent is considered a reasonably standard assumption for a threshold that would attract developers to Berkeley. Like all numbers used as inputs in the financial analysis, this number was vetted with local developers and was determined to be realistic.

Inclusionary Housing Requirements

The City of Berkeley requires that 20 percent of units in a new development be affordable to people with incomes that are 80 percent of the Area Median Income. Inclusionary units are to be provided in both rental and for-sale properties. For the purposes of this analysis, we assumed the developer would pay the in-lieu fee rather than provide inclusionary units in the condominium project. The inclusionary in-lieu fee is calculated as 62.5 percent of the difference between the market rate of the unit and the "Inclusionary Sales Price," as identified by the City of Berkeley. More information is provided on the Inclusionary Housing Requirements in the Methodological Overview at the beginning of this report.

PROJECT VALUE

As mentioned earlier, the residual land value of a property is calculated by subtracting the estimated development costs (described above) from the estimated value of the property. The value of condominium units was estimated based on their expected sale prices. The value of apartments and retail space were estimated using the income capitalization approach, wherein the value is estimated based on expected ongoing revenues from the space.

Condominiums

The estimated sale price of condominium units varies depending on the floor. On the bottom floors, sales prices are based on comparable projects in Oakland and Berkeley where comparable units are priced from \$400,000 to \$600,000. For the upper floors, prices are based on comparable tower projects in Oakland, Emeryville and San Francisco because similar projects have not been built recently in Berkeley. View premiums were applied to these units because they will have views of San Francisco Bay and the Berkeley Hills.

Table 12: Condominium Sales Prices

	Sales Price	Unit Size
Floors 2-3	\$525,000	825
Floor 4-5	\$565,000	825
Floor 6	\$625,000	826
Floor 7	\$750,000	826
Floor 8-9	\$850,000	826
Floor 10	\$900,000	826
Floor 11-16	\$950,000	826
Floor 17	\$1,050,000	826

Apartments

Apartment rents were estimated at \$3.35 a square foot, or \$2,764 a month, for the first four floors of the building. For the higher floors, the per square foot costs ranged from \$3.50 to \$4.75 for apartments on the two highest floors. The net income from apartments was estimated assuming 5 percent vacancy and operating expenses equal to 30 percent of gross income. The value of the units was estimated using a 5.5 percent capitalization rate. The capitalization rate is a standard industry ratio that represents the relationship between the net operating income of an income-producing property and its current estimated value.

Table 13: Apartment Rents

	Unit Size (Square Feet)	Monthly Rent
Floors 2-5	825	\$2,764
Floor 6-7	826	\$2,892
Floor 8-10	826	\$3,098
Floor 11-13	826	\$3,305
Floor 14-15	826	\$3,511
Floor 16-17	826	\$3,924

To project the rents out over the length of the project, SE assumed that units would turn over every 4 years. Every year the unit turned over, the rent was increased by 5 percent.

Table 14: Apartment Operating and Valuation Assumptions

Apartments	Rent #1	Rent #2	Rent #3	Rent #4	Rent #5	Rent #6
<i>Assumptions</i>						
Vacancy	5%	5%	5%	5%	5%	5%
Operating Expenses	30%	30%	30%	30%	30%	30%
Capitalization Rate	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
Monthly Rent	\$3.35	\$3.50	\$3.75	\$4.00	\$4.25	\$4.75
Unit Size (SF)	825	826	826	826	826	826
Monthly Rent	\$2,764	\$2,892	\$3,098	\$3,305	\$3,511	\$3,924
Gross Annual Res. Income	\$33,170	\$34,699	\$37,178	\$39,656	\$42,135	\$47,092
Less Vacancy	(\$1,659)	(\$1,735)	(\$1,859)	(\$1,983)	(\$2,107)	(\$2,355)
Less Operating Expenses	(\$9,951)	(\$10,410)	(\$11,153)	(\$11,897)	(\$12,640)	(\$14,127)
Net Operating Income	\$21,561	\$22,554	\$24,165	\$25,776	\$27,387	\$30,609
Capitalized Value per Unit	\$392,009	\$410,079	\$439,370	\$468,662	\$497,953	\$556,536
Capitalized Value per SF	\$475	\$496	\$532	\$567	\$603	\$674

Retail

Based on comparable properties in the market area and conversations with local real estate experts, the rent for the retail component of the mixed-use project was estimated at \$2.75 per square foot per month (triple net), with an average vacancy rate of 5 percent. Operating expenses not paid by the tenant were estimated at 10 percent of revenue. The value of the retail component was estimated assuming an 8.5 percent capitalization rate. Based on this calculation, the value of retail development was estimated to be \$330 per rentable square foot.

Table 15: Retail Operating and Valuation Assumptions

Retail		Current Rents
<i>Assumptions</i>		
Monthly Rent (NNN)	Per SF	\$2.75
Vacancy	Percent GPI	10.0%
Non-Reimbursable Expenses	Percent GPI	10.0%
Capitalization Rate	Percent	8.0%
<i>Estimated Value</i>		
Gross Annual Retail Income	Per SF	\$33.00
Less Retail Vacancy	Per SF	(\$3.30)
Less Non-Reimbursable Exp	Per SF	(\$3.30)
Net Operating Income	Per SF	\$26.40
Capitalized Value	Per SF	\$330.00

VIII. FINANCIAL FEASIBILITY OVER TIME

PROJECTING DEVELOPMENT COSTS

Construction Costs

In order to project future trends in construction costs, SE analyzed historic construction price trends. From 1978 to 2008, construction costs in the Bay Area have increased at an annual growth rate of 3 percent a year. Although there are periods of more rapid or slower change in construction prices, the 3 percent figure represents a longer-term average that is more useful in projections since it is less volatile than changes over shorter time periods.

To project how construction prices might rise in the future, SE created two trajectories for construction cost. In the first, SE applied the 3 percent annual growth rate to the current construction prices for the buildings tested; this was considered the low-growth rate. To create a high-growth rate scenario, costs were projected into the future at a 5 percent annual growth rate.

Development Costs

Construction costs were then inflated to include the other costs a project must support, exclusive of land costs. For each height tested, SE calculated the proportion of the total soft cost to the total development costs and inflated the construction costs by this percentage.

Land Costs

SE added a land cost to the total development costs to reflect the full scope of costs a project must carry. Land costs were estimated as 20 percent of the sales prices.

Sales Prices

SE projected future sales price growth in a similar way as construction costs. We analyzed trends in home prices in the Bay Area from 1975 to 2007. An average annual rate of home price appreciation was determined to be 8 percent.

As with construction costs, Strategic Economics created a high- and low-growth scenario for sales prices. The low-growth scenario foresees zero growth in the next two years as the Bay Area housing market recovers from the current downturn. After those first two years, the rate of appreciation increases slowly until it reaches the 8 percent annual average in Year 10. The high-growth scenario foresees a quicker recovery in the housing market and a faster ascent back to the average annual 8 percent appreciation rate in Year 4. From there, the scenario sees years of somewhat higher appreciation of 9 percent and 10 percent. See Table 16 for a year-by-year description of growth rates used in this analysis.

Table 16: Appreciation Schedule

<i>Low-Growth</i>		<i>High-Growth</i>	
Year 1 (2009)	0%	Year 1 (2009)	0%
Year 2	0%	Year 2	4%
Year 3	4%	Year 3	4%
Year 4	4%	Year 4	8%
Year 5	4%	Year 5	8%
Year 6	4%	Year 6	8%
Year 7	5%	Year 7	8%
Year 8	5%	Year 8	9%
Year 9	5%	Year 9	9%
Year 10	8%	Year 10	9%
Year 11	8%	Year 11	10%
Year 12	8%	Year 12	10%

Determining the Likelihood of Future Feasibility

In order to determine the likely timing of future development, SE compared the total development cost over time to the project sales prices. When these sales prices exceeded costs, the project could be expected to be financially feasible. The timing of feasibility for the buildings at each height is shown in Tables 5 and 6.

IX. APPENDIX

OTHER METHODS FOR TESTING FINANCIAL FEASIBILITY

In preparation for this analysis, SE considered using several means of testing financial feasibility. They are: Developer Profit; Internal Rate of Return (IRR); Residual Land Value; and Net Present Value. Following is a description of these approaches:

Developer Profit is an overarching term used to describe the return to the developer from a real estate project (not including developer overhead). In a pro forma analysis, developer profit is most simply expressed as a percentage of costs but it can also be expressed as an IRR or a flat fee. Developers use their preferred measure of Developer Profit as a way to evaluate the return on their investment of time and capital and to be assured that the profit they can earn on a given development project exceeds what they could reasonably expect from a more traditional investment. In other words, a project needs to have a profit that is higher than a return they could receive from another kind of investment with a similar risk-return profile, i.e., if they could invest money in the stock market and get a 8-9 percent return, the project's anticipated profit must exceed that return in order to be viable.

Although Developer Profit can be calculated in many ways, Strategic Economics typically derives Developer Profit using a static model that looks at the financial performance of a project based on total costs and revenues, rather than the cash flows associated with a project over time, as with IRR, described below. In this static model, Developer Profit is calculated as a percentage of total development costs. The profit threshold required by a developer may vary depending on several factors including the perceived risk level associated with the project. The benefit of this planning-level method of analysis is that it does not include assumptions about equity investors and long-term financing, and therefore, can easily be conducted before all investors and their terms are defined. One of the drawbacks to using Developer Profit as a measure of feasibility is that it includes a fixed cost for land. Where actual land cost or the purchase price for a specific site is known, this is an easy assumption to include. But for a more open-ended analysis, like the one being conducted for downtown Berkeley, land costs are often unknown and can vary.

Internal Rate of Return (IRR), also called discounted cash-flow (DCF), is a dynamic measure used to calculate the expected return of a development project **over time**, since real estate projects usually span several years and the amount and timing of capital investments vary throughout the life of a project. In practice, the developer's calculation of IRR would typically reflect all of the investors in the deal as well as the timing and amounts of their payouts, which would vary according to the perceived riskiness of the investment. While Developer Profit is a good planning-level tool for estimating the feasibility of a project, a developer with a more defined project would likely use IRR to estimate their return since key aspects of the project financing will already be identified. Like Developer Profit, the evaluation of whether a development project is a worthy investment rides on the comparative opportunity cost of capital and whether a similar return could be earned from another more traditional and less labor-intensive form of investment. Since IRR incorporates more project-specific assumptions about the

length of the development period and absorption, developers may accept an IRR that is lower than if they were calculating a straight profit on costs as in the Developer Profit method. A higher Developer Profit number allows for some cushion to the project and is especially important when a development is expected to occur over several years.

FIRM DESCRIPTIONS

Strategic Economics

Strategic Economics is a consulting and research firm specializing in urban and regional economics and planning. The firm helps local governments, community groups, developers, and non-profit organizations to understand the economic and development context in which they operate in order to take strategic steps towards creating high quality places for people to live and work.

Strategic Economics is a fifteen-person firm located in Berkeley, California. The firm, a sole proprietorship, is led by its founding President, Ms. Dena Belzer. Ms. Nadine Fogarty and Ms. Shanti Breznau are the firm's Principals. Ms. Abigail Thorne-Lyman and Ms. Nancy Eaton are the firm's Senior Associates. Additional staff includes four Associates, three Research Analysts, and two Office Administrators. Strategic Economics is financially stable with virtually no long-term debt, revenues that have increased annually since the firm was founded in 1998, and a strong financial management system that ensures that each project stays on budget and on schedule. Although the firm is relatively small, it has successfully managed a number of large-scale jobs simultaneously through close communication and coordination among all staff members.

Strategic Economics' work style is characterized by creativity, flexibility, and close collaboration with clients. Through its work on numerous public processes Strategic Economics has developed a specialization in making economic information legible and relevant to both public and private stakeholders. The firm's team members bring extensive experience and expertise in a number of disciplines, including urban economics, city planning, regional economic development, public policy, public finance, and real estate economics. Examples of past work include: downtown revitalization and neighborhood planning efforts, economic baseline studies and economic development strategies, regional growth management projects, retail development strategies, transit-oriented development, and real estate feasibility analyses.

In addition to our main consulting practice, Strategic Economics is also a partner in the Center for Transit Oriented Development (C-TOD), a non-profit venture. The C-TOD was formed to conduct ongoing research and advance the state of practice related to creating development around transit that supports transit ridership, creates a greater array of housing and workplace choices, and delivers the many economic, environmental, and social benefits associated with reduced auto-dependency. Strategic Economics leads major research initiatives for the C-TOD and has an ongoing role in many C-TOD projects. This creative partnership is enabling Strategic Economics to develop unique expertise in a wide range of TOD related topics that also informs our standard consulting assignments.

Hixson & Associates

Development and Project Management

Hixson & Associates was established in 1991 as a consultant for Real Estate Development and Transactions. We also act as project managers and construction managers with comprehensive responsibility for project delivery as well as performing specific limited project assignments. While we are located in the San Francisco Bay Area, we participate in projects throughout the Western United States.

Our clients include real estate developers, investors and lenders taking an active role in developing investment opportunities, assisting in transactions, coordinating entitlements and managing/monitoring design and construction activities. Other clients include corporations, educational institutions and other non-profit organizations.

We have been active in a broad range of projects

- Residential
- Office
- Retail
- Hotel/Restaurant/Golf
- Higher Educational
- Historic Renovation
- Tenant Improvements
- Urban Infill Development
- Suburban Land Development