
Downtown San Francisco: Market Demand, Growth Projections and Capacity Analysis

Prepared for:

San Francisco Planning Department

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Seifel
CONSULTING INC

221 Main Street
Suite 420
San Francisco CA
94105

415.618.0700
fax 415.618.0707
www.seifel.com

Table of Contents

San Francisco Planning Department Transit Center District Plan

I.	Background	I-1
A.	Purpose and Organization	I-1
B.	Methodology	I-2
II.	Historical Trends.....	II-1
A.	Population over Time	II-1
B.	Employment over Time.....	II-4
C.	Changes in Land Use.....	II-9
III.	Current Market Statistics	III-1
A.	Office	III-1
B.	Residential.....	III-13
IV.	Future Demand, Supply and Constraints	IV-1
A.	Demand	IV-1
B.	Supply and Constraints.....	IV-14
C.	Comparison of Downtown Demand, Supply and Capacity	IV-19

Table of Figures

Figure I-1 Downtown Study Area San Francisco Transit Center District Plan.....	I-3
Figure I-2 Transit Center District Plan Area San Francisco Transit Center District Plan	I-4
Figure IV-1 Historic and Soft Sites San Francisco Transit Center District Plan.....	IV-17

Table of Tables

Table IV-1 Potential Office Space Demand, 2007–2035 San Francisco	IV-5
Table IV-2 Future Downtown Supply ⁽¹⁾ Downtown San Francisco.....	IV-14
Table IV-3A Baseline Demand Scenario, 2007–2035	IV-22
Table IV-3B Smarth Growth Demand Scenario, 2007–2035	IV-22
Table IV-4 Unmet Demand Under Baseline and Smart Growth Demand Scenarios, 2007–2035.....	IV-25
Table IV-5 Potential Development Capacity Under Different Scenarios	IV-29
Table IV-6 Capacity and Unmet Baseline and Smart Growth Demand, 2007-2035	IV-31
Table IV-7 Share of 2035 Citywide Demand Accommodated in Downtown San Francisco	IV-32

Table of Contents

San Francisco Planning Department

Transit Center District Plan (cont.)

Table of Graphs

Graph II-1 Historical Population, 1980–2007 San Francisco	II-2
Graph II-2 Percent Change in Population, 2000–2006 San Francisco, Downtown and Transit Center District Plan Area	II-3
Graph II-3 Comparison of Regional and Citywide Employment Trends, 1969–2004 Bay Area and San Francisco	II-6
Graph II-4 Citywide Employment Trends, 1969–2005 San Francisco	II-7
Graph II-5 Comparison of Office Employment Trends, 2001–2005 San Francisco and Financial District	II-8
Graph II-6 Distribution of Citywide Office Space, 1997 and 2007 San Francisco, Downtown and Transit Center District Plan Area	II-10
Graph II-7 Approved Office Square Footage, 1990–2007 San Francisco.....	II-11
Graph II-8 Housing Stock, 1980–2007 San Francisco.....	II-13
Graph II-9 Housing Development Trends, 1980–2005 San Francisco.....	II-14
Graph II-10 Distribution of New Housing Units, 2000–2006 San Francisco, Downtown and Transit Center Plan Area	II-15
Graph III-1 Citywide Office Vacancy Rate & Class A Lease Rents, 1Q99–3Q07 San Francisco	III-2
Graph III-2 Office Vacancy Rate & Class A Lease Rents, 1Q99–3Q07 South Financial District	III-4
Graph III-3 Citywide Office Space Sales, 1999–2007 San Francisco.....	III-5
Graph III-4 Comparison of Office Space Net Absorption, 1999–2007 San Francisco Citywide, Central Business District and South Financial District *.....	III-6
Graph III-5 Net Office Absorption vs. Vacancy Rate, 1Q03–3Q07 South Financial District	III-7
Graph III-6 Regional Comparison of Class A & B Office Space, 2007 San Francisco, Silicon Valley and East Bay	III-9
Graph III-7 Regional Comparison of Class A Office Space, 2007 San Francisco, Silicon Valley and East Bay	III-10
Graph III-8 Regional Comparison of Class A & B Office Space Lease Rates, 2007 San Francisco, Silicon Valley and East Bay.....	III-11
Graph III-9 Regional Comparison of Vacancy Rates for Class A & B Office Space, 2007 San Francisco, Silicon Valley and East Bay.....	III-12
Graph III-10 Median Housing Prices, June–November 2007 San Francisco and Financial District.....	III-14
Graph III-11 Comparison of Average Monthly Rents by Bedroom Type, 2007 SOMA/South Beach/Financial District and San Francisco.....	III-16
Graph III-12 Regional Comparison of Median Home Sales Prices, November 2007 Bay Area Counties	III-17
Graph III-13 Regional Comparison of Average Monthly Apartment Rents and Vacancy Rates, Fall 2007 Bay Area Counties	III-18
Graph IV-1 Citywide Employment Projections, 2008–2035 San Francisco.....	IV-3
Graph IV-2 Citywide Projected Cumulative Office Space Demand, 2007–2035 San Francisco.....	IV-4
Graph IV-3 Venture Capital Investments, 1995–2007 * United States.....	IV-7
Graph IV-4 Citywide Households Projected, 2005–2035 San Francisco.....	IV-11
Graph IV-5 Historical and Projected Annual Housing Units San Francisco	IV-13
Graph IV-6 Historical and Projected Annual Office Space and Annual Office Limitations San Francisco	IV-18
Graph IV-7 Office Space Demand Under Baseline and Smart Growth Demand Scenarios, 2007–2035 San Francisco and Downtown San Francisco.....	IV-23
Graph IV-8 Housing Unit Demand Under Baseline and Smart Growth Demand Scenarios, 2007–2035	IV-24

Table of Contents

San Francisco Planning Department

Transit Center District Plan (cont.)

Table of Graphs (cont.)

Graph IV-9 Remaining Development Capacity Under Existing Height and Bulk Controls by Zoning District Downtown San Francisco	IV-27
Graph IV-10 Potential Land Distribution by Capacity Scenario	IV-30
Graph IV-11 Office Development: Comparison of Unmet Office Demand by Capacity Scenario, 2007– 2035 Downtown San Francisco	IV-34
Graph IV-12 Residential Development: Comparison of Unmet Residential Demand by Capacity Scenario, 2007–2035 Downtown San Francisco	IV-35

Appendices

Appendix A: Summary of San Francisco Transit Center District Plan Development Focus Group
Appendix B: Map of San Francisco Submarkets, Grubb & Ellis
Appendix C: San Francisco Planning Department: Calculating Buildout Capacity

I. Background

The San Francisco Planning Department is in the process of preparing a comprehensive plan for the area around the Transbay Transit Center. The Transit Center District Plan will build on the City's 1985 Downtown Plan that envisioned the area around the Transbay Terminal as the heart of the new downtown. The Transit Center District Planning effort will potentially modify policies and controls governing downtown urban form, land use, public space, historic preservation, circulation and impact fees, among others.

In order to inform this planning effort, the Planning Department wants to understand the potential demand for land uses in Downtown San Francisco over the coming decades. To this end, Seifel Consulting Inc. (Seifel) has worked with the Planning Department to analyze growth capacity and potential demand for office and residential land uses in Downtown through 2035.

A. Purpose and Organization

This Report summarizes Seifel's findings regarding demand for office and residential space, as well as existing capacity for development within Downtown San Francisco. It includes an assessment of historical trends in Downtown San Francisco and the Plan Area and recent real estate market indicators, with comparisons to other parts of the Bay Area and peer cities as appropriate. The Report closes with a look to future demand and supply, and compares unmet demand to the potential space available for development under various regulatory controls and constraints.

The Report is organized as follows:

I. Background

II. Historical Trends

III. Current Market Statistics

IV. Future Demand, Supply and Constraints

Appendix A. Summary of SF Transit Center District Plan Development Focus Group

Appendix B. Map of San Francisco Office Submarkets, Grubb & Ellis

Appendix C. San Francisco Planning Department: Calculating Buildout Capacity

B. Methodology

1. Sources

This Report utilizes a wide range of information sources, including demographic, economic and market data, real estate industry publications, and interviews with real estate industry experts. Seifel and the Planning Department also conducted a development focus group in late November 2007, comprised of developers active in and around the Transit Center District Plan Area. This Report includes relevant findings, and Appendix A contains a memorandum summarizing the November 2007 discussion. Specific sources and methodologies are described throughout the Report as appropriate.

2. Geographies Used

The focus of this Report is on Downtown San Francisco and, secondarily, the Transit Center District Plan Area. Downtown San Francisco extends along Market Street from the San Francisco Bay to Van Ness Avenue, spanning from the historic financial district to South Beach at its eastern edge and narrowing to the area just along and south of Market Street to the west (see Figure I-1). This definition of Downtown is consistent with the Planning Department's Downtown Monitoring Reports.

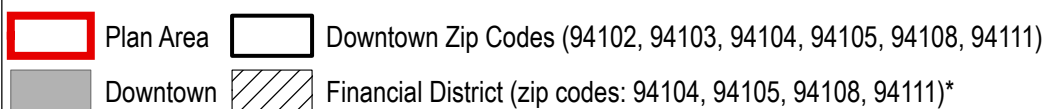
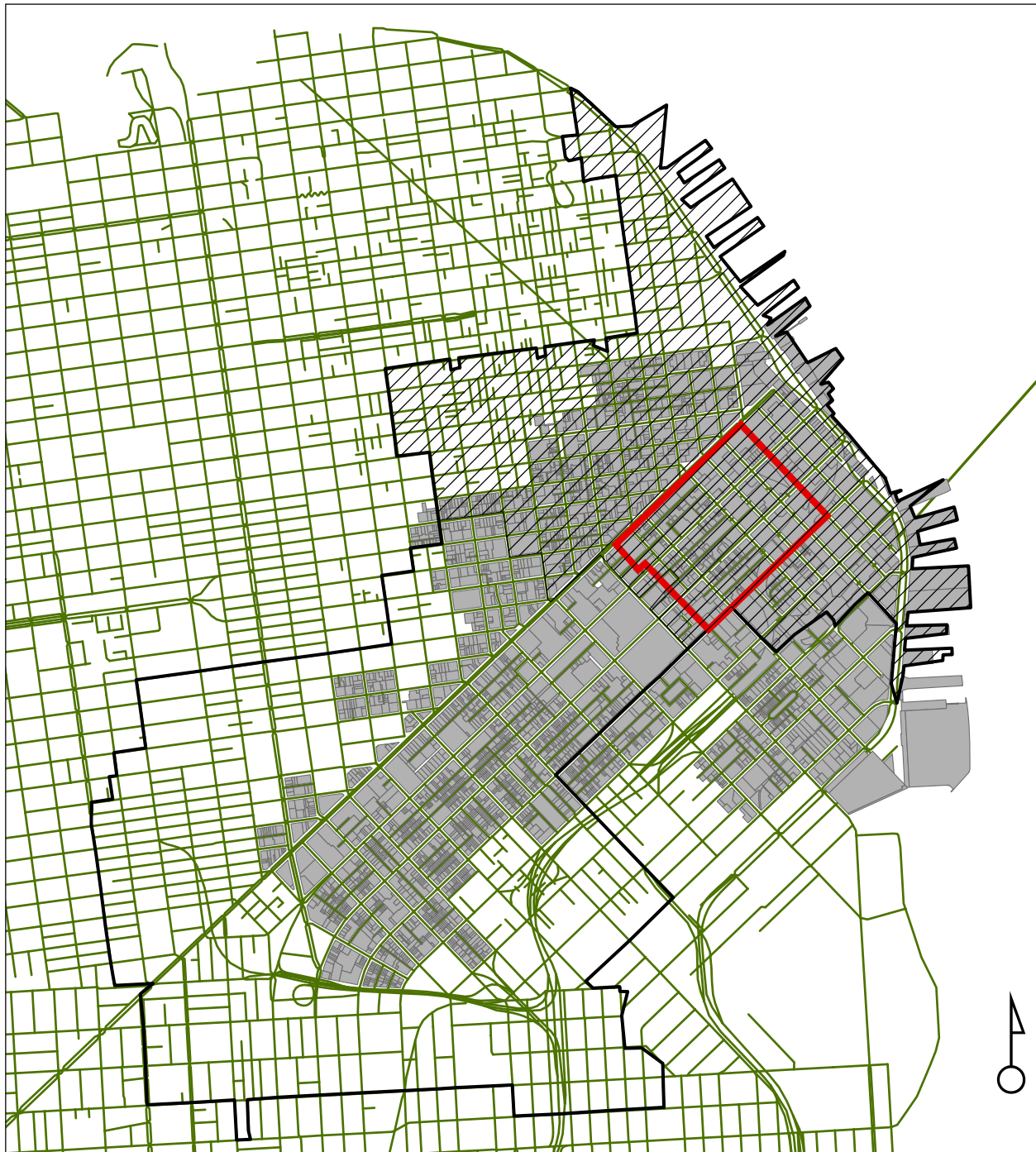
The Financial District is a subset of the Downtown, generally its eastern portion around the Montgomery and Embarcadero BART Stations.¹ The San Francisco Planning Department's *Commerce & Industry Inventory 2006* defines the Financial District using zip codes, also illustrated in Figure I-1.

The Financial District is frequently divided into north and south components. The North Financial District lies north of Market Street, while the South Financial District includes areas to the south of Market Street. The Transit Center District Plan Area is completely contained within the South Financial District, centered on the Transbay Terminal. For the purposes of this study, the Plan Area is defined as the area generally bounded by Market, Main, Folsom, and Hawthorne/Annie Streets, as shown in Figure I-2.

Real estate industry sources like brokerage and investment firms typically employ their own definitions of submarkets and neighborhoods (for example, see Appendix B for Grubb & Ellis's map of San Francisco Office Submarkets). While these do not precisely align with the Downtown, Plan Area or Financial District as defined by the Planning Department, they are sufficiently parallel to provide insight into the market for office and residential uses within the focus areas.

¹ The Financial District is also referred to as the Central Business District (CBD). The Planning Department uses zip codes 94104, 94105, 94108, and 94111 to define the Financial District.

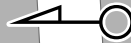
Figure I-1
Downtown Study Area
San Francisco Transit Center District Plan



* Boundaries do not precisely align with Financial District as used by Grubb & Ellis.

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Figure I-2



Plan Area
Downtown

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II. Historical Trends

Past performance is an important indicator of future trends. In order to assess development likely to occur over the next few decades, we begin with an assessment of population, employment and land use changes over time.

A. Population over Time

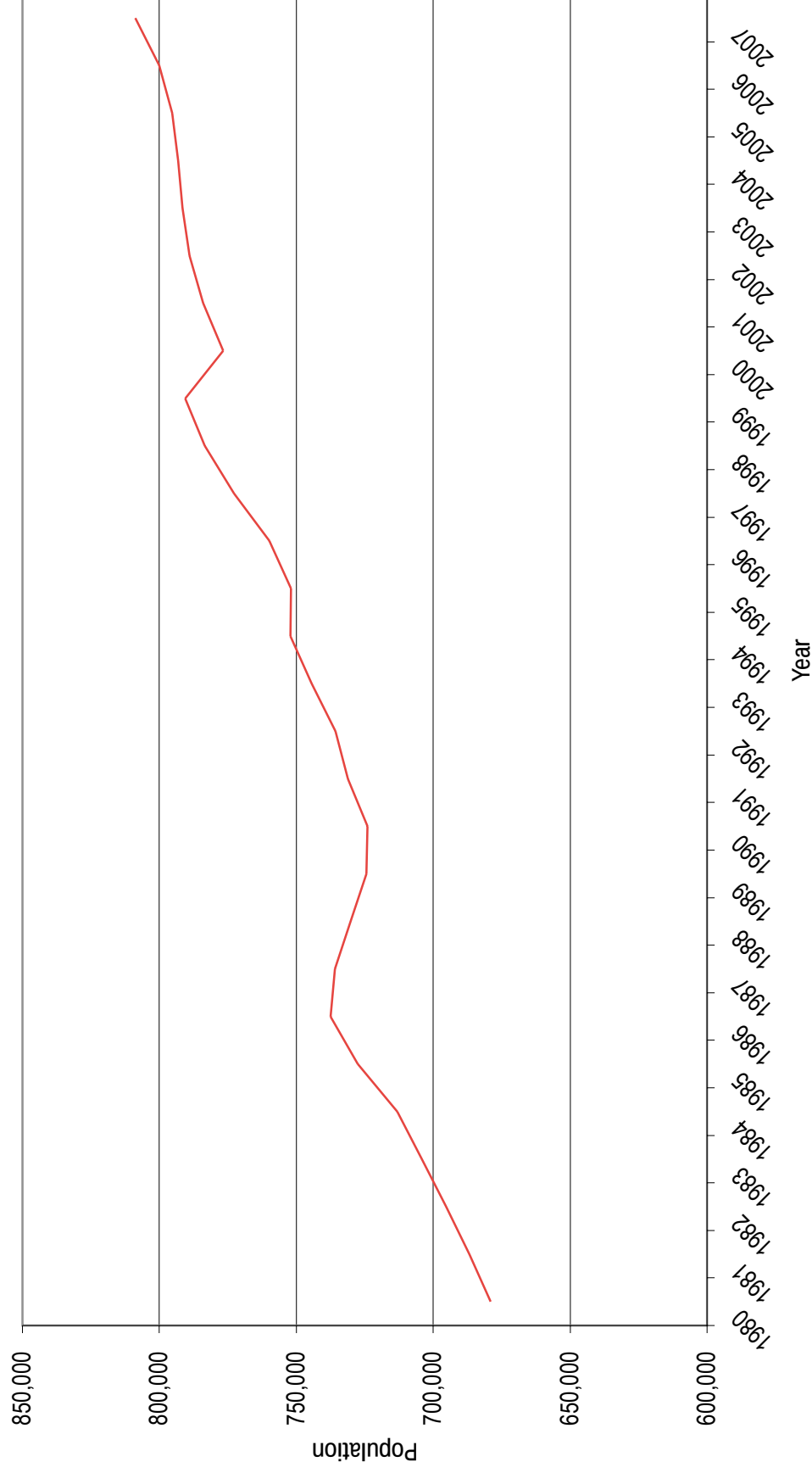
San Francisco's population has increased over the past three decades, but that increase has been uneven. Some areas of the City have grown much more rapidly than others, and population growth has occurred in fits and starts overall. On occasion, population has actually declined.

San Francisco's population has increased modestly between 1980 and 2007, averaging an annual increase of approximately 0.7 percent, as shown in Graph II-1. Population dipped in the late 1980s, but picked back up starting in the early 1990s. The City also experienced a population decline in 2000 during the dotcom bust. Over the last two years, San Francisco's population has increased markedly, with nearly 13,500 more residents in 2007 than in 2005. The California Department of Finance (DOF) estimates San Francisco residents numbered 808,844 in 2007.

Downtown San Francisco and the Transit Center District Plan Area are two portions of the City that have grown more rapidly than other areas, particularly in recent years. While citywide population increased 3.0 percent since 2000, the Downtown grew by approximately 5,900 residents or 30 percent and the Plan Area by nearly 550 residents or 400 percent (Graph II-2).² In 2006, the Downtown and Plan Area were home to approximately 35,100 and 700 residents respectively, 4.4 percent and 0.1 percent of total City population. Downtown San Francisco saw 18 percent of citywide population growth between 2000 and 2007.

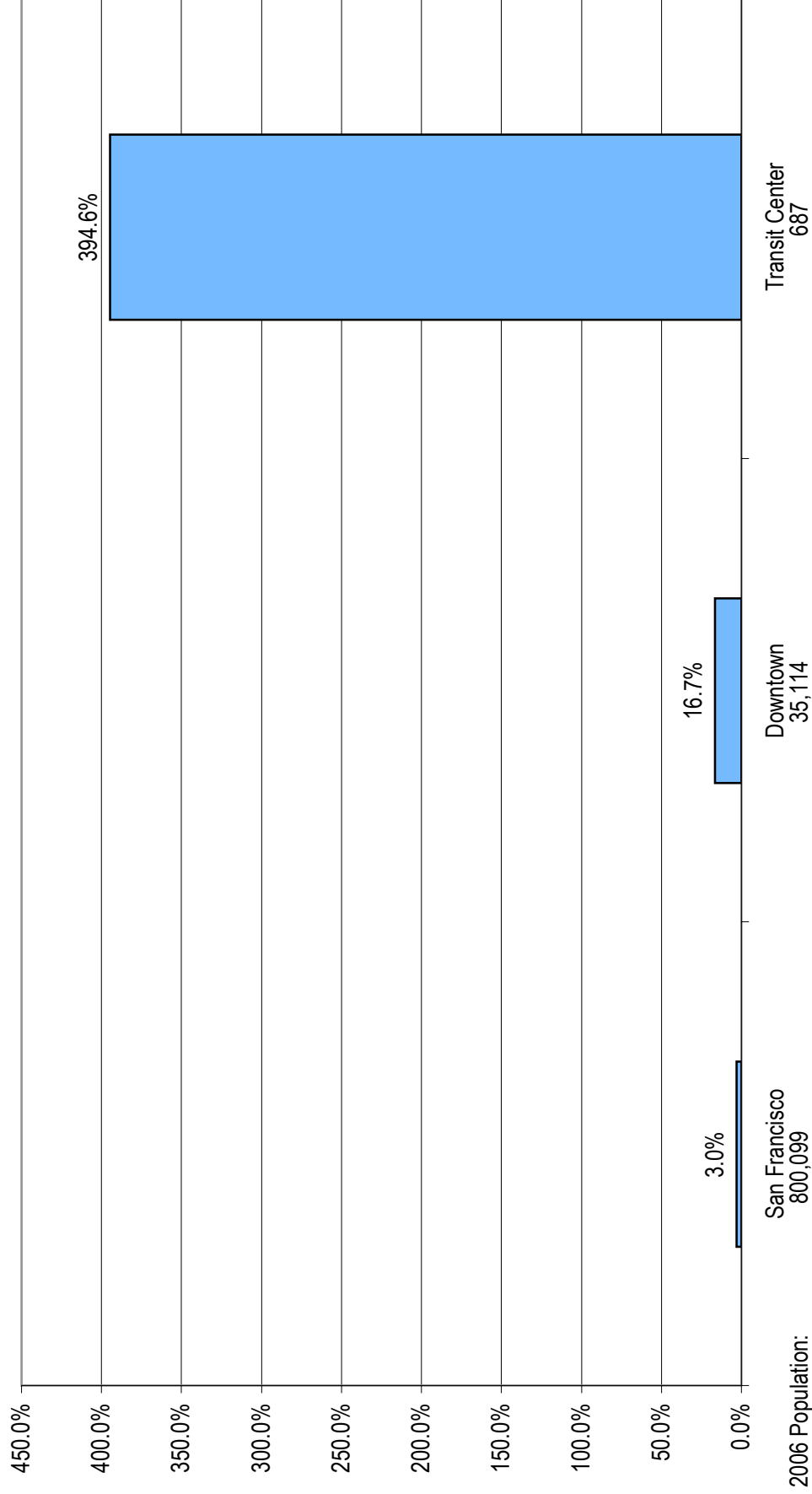
² Due to data limitations, figures for the City and Downtown represent changes between 2000 and 2007, while Transit Center District Plan Area estimates are for 2000 to 2006. Citywide population was based on DOF annual estimates and benchmarked by the decennial U.S. Census. Claritas estimated population for the Downtown and Transit Center District Plan Area geographies for 1990, 2000 and 2007. Seifel estimated annual population based on these Claritas figures, distributing growth evenly over years between estimates except for recent growth within the Plan Area. For the Transit Center District Plan Area, Seifel estimated population between 2001 and 2006 by multiplying the estimated persons per household (Claritas) by the amount of housing in the area on a yearly basis. The San Francisco Planning Department provided yearly housing unit counts.

Graph II-1
Historical Population, 1980–2007
San Francisco



Source: U.S. Census; Race/Ethnic Population with Age and Sex Detail, 1980–1999, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001–2007, California Department of Finance .

Graph II-2
 Percent Change in Population, 2000–2006
 San Francisco, Downtown and Transit Center District Plan Area



Source: U.S. Census, California Department of Finance, Claritas, San Francisco Planning Department, Seifel Consulting Inc.

B. Employment over Time

Since the 1970s, strong job growth has fueled the Bay Area economy, population increases and local real estate development. The driving sectors behind this growth have been primarily knowledge and information oriented, sparking growth in industries that support businesses and people working in these sectors as well. Understanding how employment has changed over time in San Francisco and the Downtown provides a lens through which to assess future economic potential and constraints.

While San Francisco has experienced overall increases in the number of jobs over the past few decades, its employment growth has been lackluster in comparison with the Bay Area region, as shown in Graph II-3. In 1970, the City held over 26 percent of regional employment, but by 2004 that figure had dropped to 16 percent, as regional jobs grew by an average annual rate of 2 percent, and San Francisco jobs by only 0.5 percent.

Graph II-4 illustrates trends in San Francisco's historical employment, illustrating the difference between total employment with and without the self-employed. San Francisco has added roughly 116,000 jobs since 1970. Much of this growth is due to increasing levels of self-employment, which grew from 8 to 20 percent of the City's employment between 1970 and 2005. Self-employment in this analysis includes owners-operators of sole proprietorships and partners of partnership business structures not assumed to be limited partners.³ According to the U.S. Census' American Community Survey (2006), roughly 33 percent of San Francisco's self-employed residents work at home, with the remainder commuting to another place of employment.⁴

³ Definition according to the Bureau of Economic Analysis. The self-employment estimates resemble wage and salary employment estimates in that both series measure jobs (as opposed to workers) on a full-time and part-time basis. However, because of limitations in source data, two important measurement differences exist between the two sets of estimates. First, the self-employment estimates are largely based on place-of-residence rather than on the preferred place-of-work basis. Second, the self-employment estimates reflect the total number of sole proprietorships or partnerships active at any time during the year as opposed to the annual average measure used for wage and salary employment.

⁴ According to the 2006 American Community Survey, 32.8 percent of San Francisco's self-employed workers work from home. These workers comprise approximately 4.5 percent of total San Francisco employment. Self-employed workers comprise a large share of the total number of residents who work from home: 59.4 percent of the 7.6 percent of San Francisco residents who work from home are self-employed. In contrast, 3.6 percent of San Francisco's wage and salary workers work from home. Source: U.S. Census Bureau, 2006 American Community Survey, Means of Transportation to Work by Class of Worker.

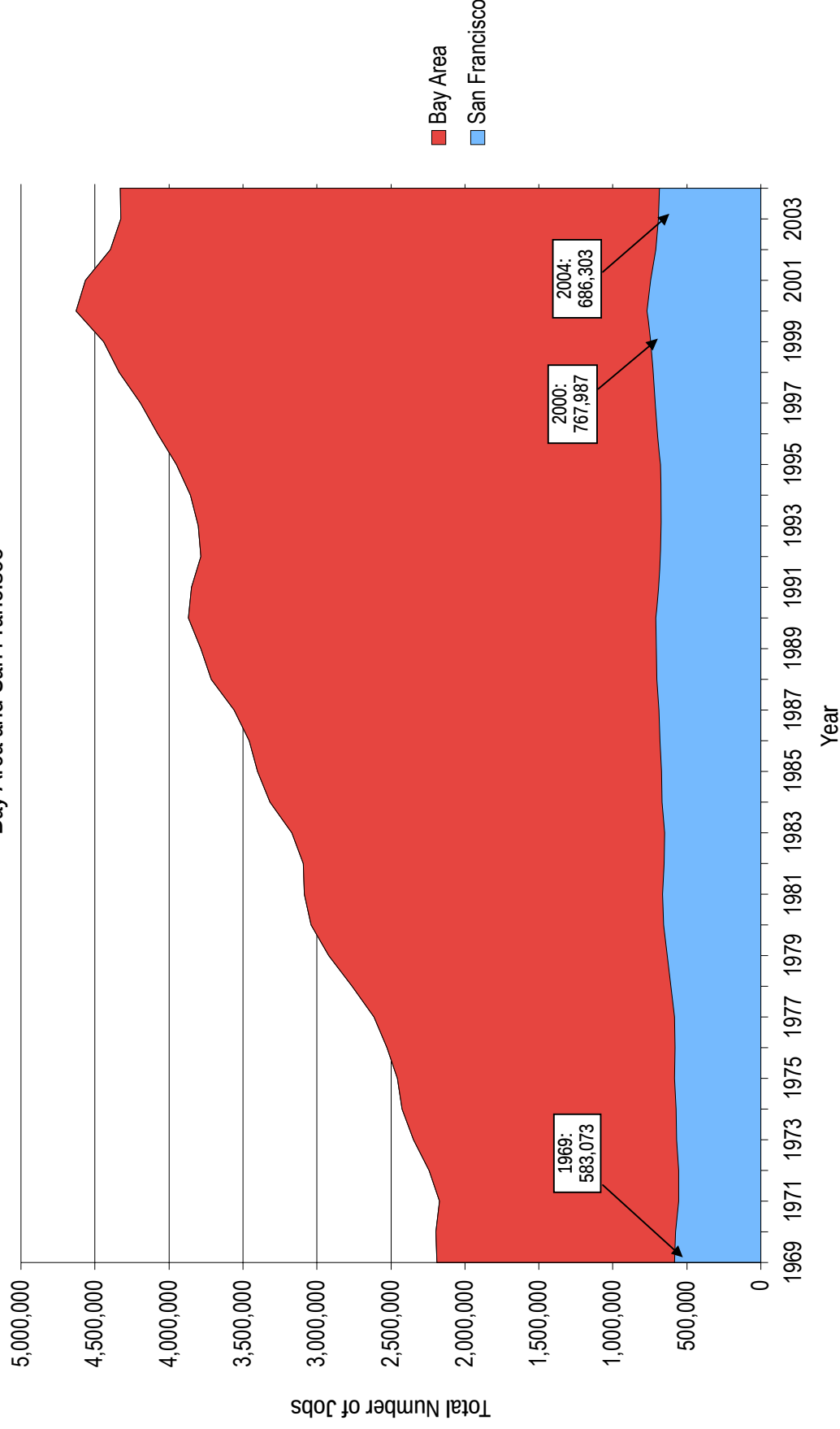
Major dips in employment coincide with national economic recessions, the most recent and pronounced of which was the dotcom bust.⁵ San Francisco employment began to recover from the bust during 2004, with almost 2 percent growth between 2004 and 2005. While more recent citywide employment figures are not available, estimates for the San Francisco/San Mateo metropolitan division over the past two years show that growth has continued, with annual increases of 2.7 and 1.5 percent in 2006 and 2007. This recent job growth has helped the City recover somewhat from the dotcom bust, although employment remains roughly equivalent to employment levels found in the late-1980s and early-1990s, far below historic highs.

Graph II-5 depicts total and estimated office employment since 2001 for the Financial District and City as a whole.⁶ In the aftermath of the dotcom bust, employment and office employment dropped through 2003, with slight increases beginning in 2004. The Financial District has remained relatively strong, losing proportionately fewer jobs during the economic downturn than the City overall. Over half of all San Francisco office employment is in the Financial District.

⁵ The dotcom bust refers to the crash in the market and employment linked primarily to internet-related technology firms between 2000 and 2002. The decline in office employment between 2000 and 2001 is likely due not only to the dotcom bust, but also to the switch from the Standard Industrial Classification (SIC) and North American Industrial Classification System (NAICS). Under SIC, office employment was defined as Finance, Insurance and Real Estate and a portion of the Services category attributable to office. Under NAICS, office employment is defined as Information, Finance and Insurance, Real Estate, Professional and Technical Services, and Management of Companies and Enterprises.

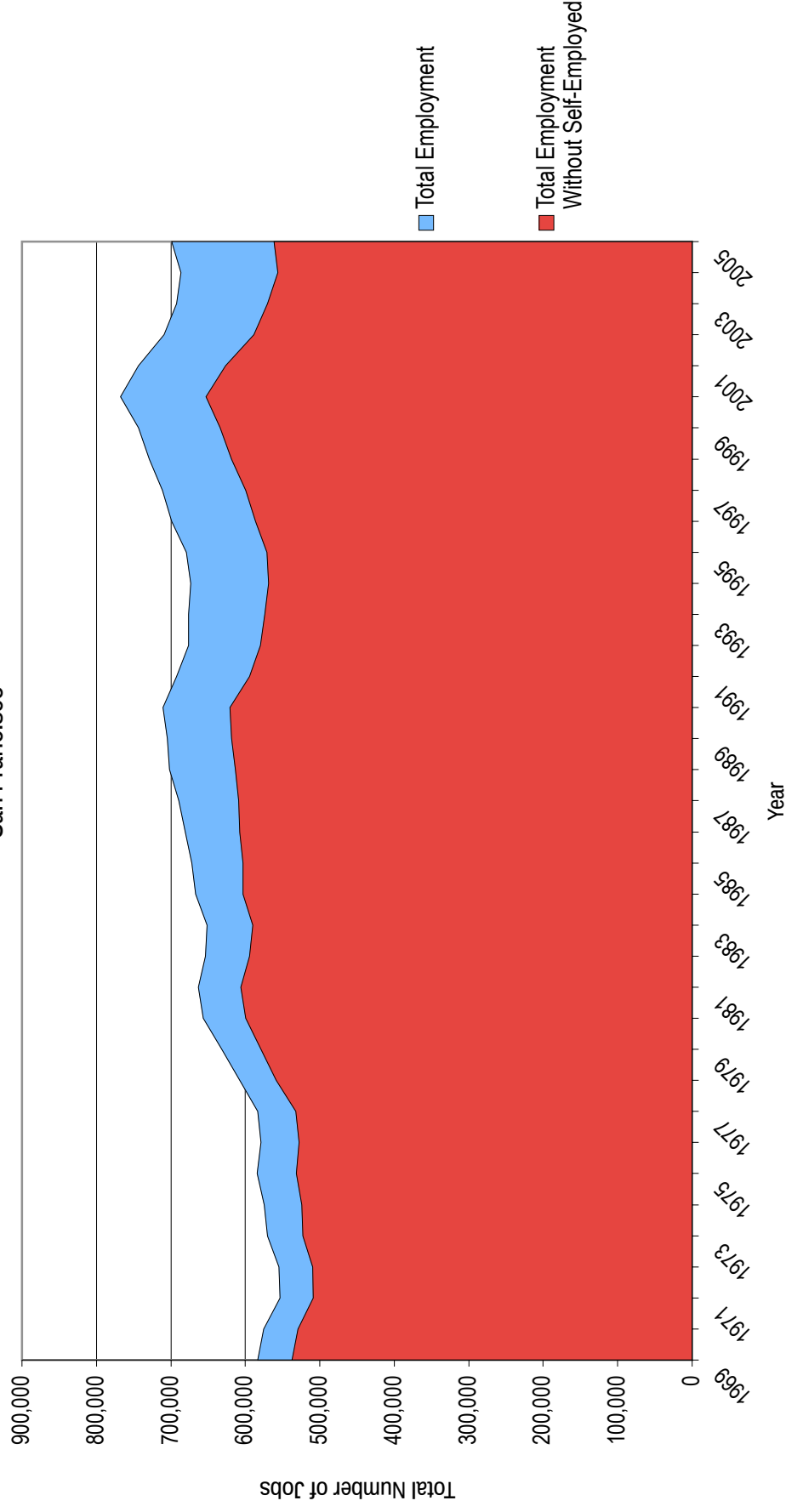
⁶ Office employment within Downtown San Francisco is currently concentrated in the C-3-O zoning district, the area that most closely aligns with the Financial District as defined by zip code in the Planning Department's Commerce and Industry Report (2006).

Graph II-3
Comparison of Regional and Citywide Employment Trends, 1969–2004
Bay Area and San Francisco



Source: Bureau of Economic Analysis (BEA); originally compiled by San Francisco Planning and Urban Research (SPUR).

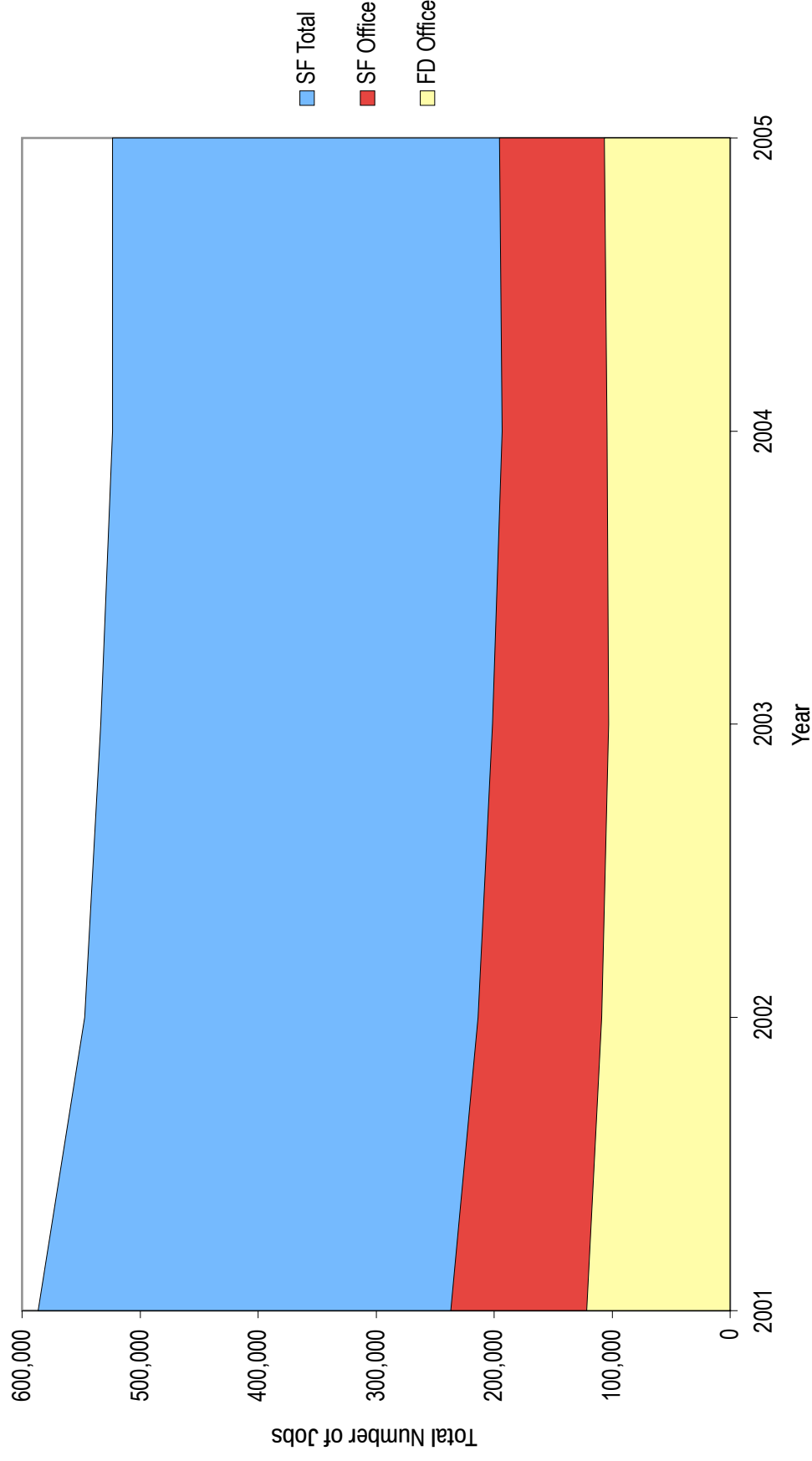
Graph II-4
Citywide Employment Trends, 1969–2005
San Francisco



Note: Office employment was estimated using Standard Industrial Classification (SIC) categorizations for the years 1969–2000, and North American Industrial Classification System (NAICS) categorizations after 2000.

Source: U.S. Department of Commerce Bureau of Economic Analysis (BEA), Seifel Consulting Inc.

Graph II-5
Comparison of Office Employment Trends, 2001–2005
San Francisco and Financial District



Source: San Francisco Planning Department (C&I Inventory, December 2006), California Economic Development Department (EDD),
Seifel Consulting Inc.

C. Changes in Land Use

This section investigates how the changes in population and employment have translated into new office space and residential development. While we focus here on office and residential development, it is worth noting that since the mid 1980s many non-office uses within Downtown San Francisco have diversified and expanded. New visitor, hotel and retail uses, such as the Sony Metreon, Yerba Buena Gardens, the San Francisco Centre, and AT&T Park (formerly SBC Park) have further solidified Downtown San Francisco as an entertainment and tourist destination. Likewise, cultural, institutional and residential offerings have expanded within the Downtown. Between 1994 and 2002, retail and visitor uses comprised 26 percent of total new construction, cultural and institutional uses represented 14 percent, residential 17 percent, and office only 43 percent.⁷

1. Office Square Footage

According to estimates by the CoStar Group, San Francisco currently contains 103.2 million square feet of office space, including 75.3 million within the Downtown and 17.7 million within the Transit Center District Plan Area (Graph II-6).⁸ Since 1997, 7.1 million square feet of new office development has occurred, of which 4.4 million is located within the Downtown. Office space within the Transit Center District Plan Area grew by 2.8 million, nearly two-thirds of Downtown's growth and about 40 percent of new office space citywide.

The amount of new office space approved in San Francisco has fluctuated dramatically since 1990, as shown in Graph II-7. Although little to no space was approved through 1996, office applications and approvals have intensified since then, with a total of 12 million square feet approved.⁹ This represents an average of just over 700,000 square feet approved annually from 1990 to 2007, below the City's annual limit of 950,000.¹⁰ However, over the 1997 to 2007 timeframe, average annual approvals have reached 1.1 million square feet.

Currently, 2.3 million square feet of office space is under construction in San Francisco, of which nearly half is within the Transit Center District Plan Area.¹¹ Office developments under construction in the Plan Area include 555 Mission Street (555,000 square feet) and 400 Howard Street (335,000 square feet).

⁷ San Francisco Planning Department Downtown Monitoring Report, 2004.

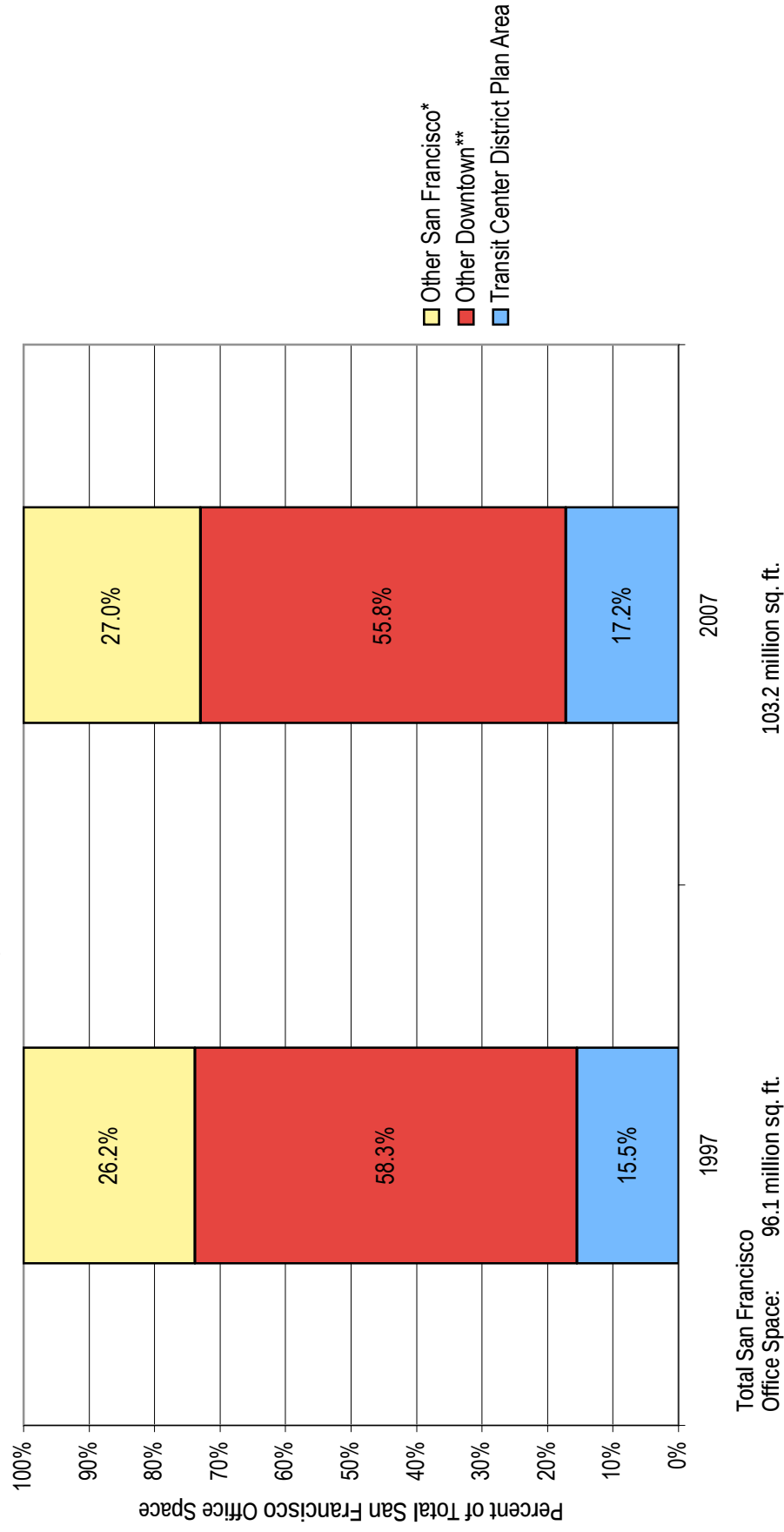
⁸ Estimates as of the 4th Quarter 2007 from the CoStar Group, Inc., as provided by the San Francisco Planning Department (December 2007).

⁹ While the approved office space presented is a citywide total, most of the approved office space is in the Downtown.

¹⁰ San Francisco limits annual office approvals to 875,000 for large office developments (individual projects over 50,000 gross square feet) and 75,000 for small office developments (25,000 to 49,999 gross square feet). Unallocated square footage is "banked" for potential future use. The San Francisco Downtown Plan (Ordinance 414-85, 9/17/1985) imposed these limits. Federal, state, or regional governmental office space is counted against annual limits.

¹¹ Estimates as of 3rd Quarter 2007 from NAI BT Commercial's "The Corporate Real Estate Letter" includes new office development and renovation and expansions.

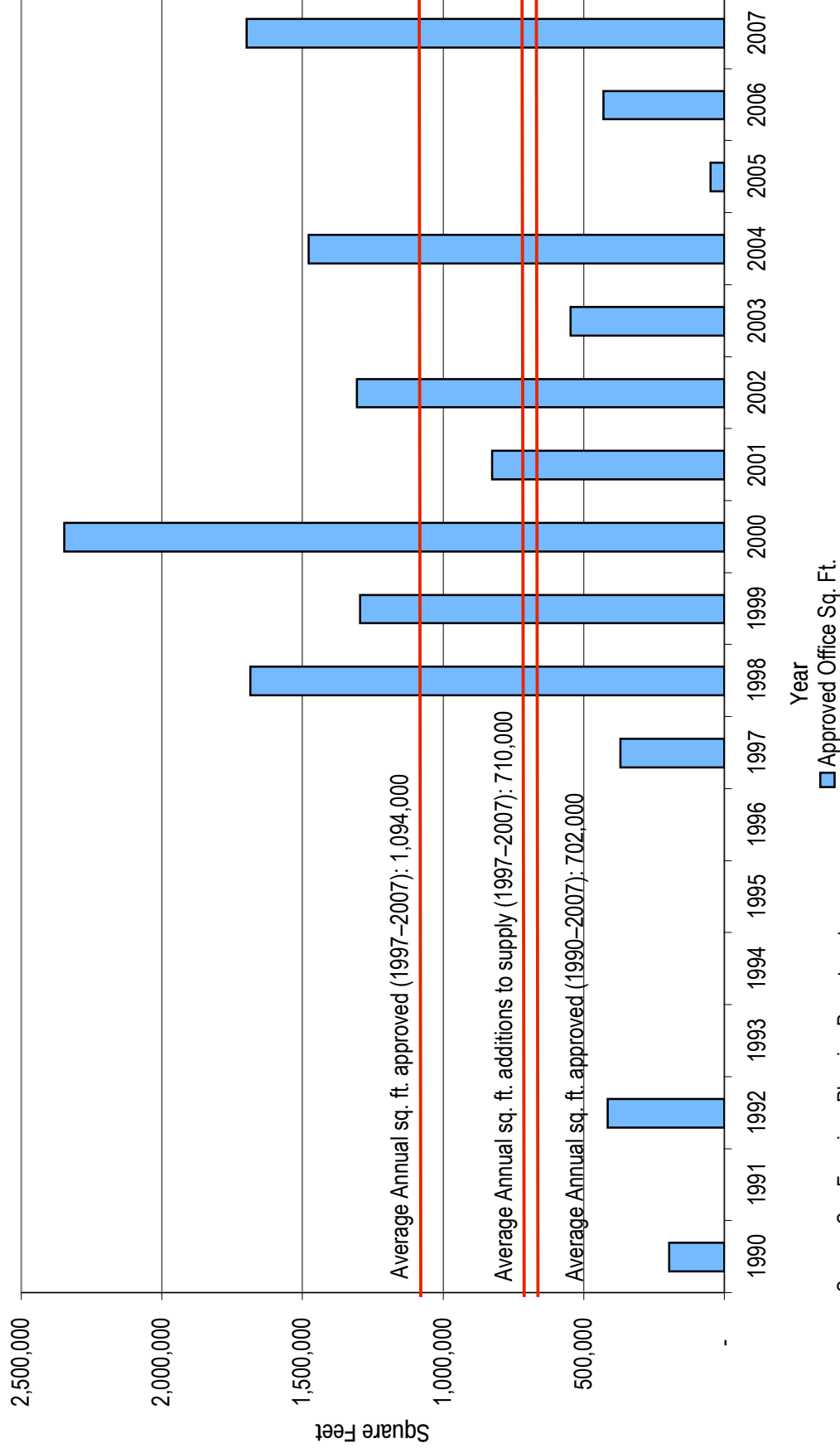
Graph II-6
Distribution of Citywide Office Space, 1997 and 2007
San Francisco, Downtown and Transit Center District Plan Area



* Excludes Downtown and Transit Center District Plan Area
** Excludes Transit Center District Plan Area

Source: CoStar, San Francisco Planning Department.

Graph II-7
Approved Office Square Footage, 1990–2007
San Francisco



Source: San Francisco Planning Department.

2. Residential Units

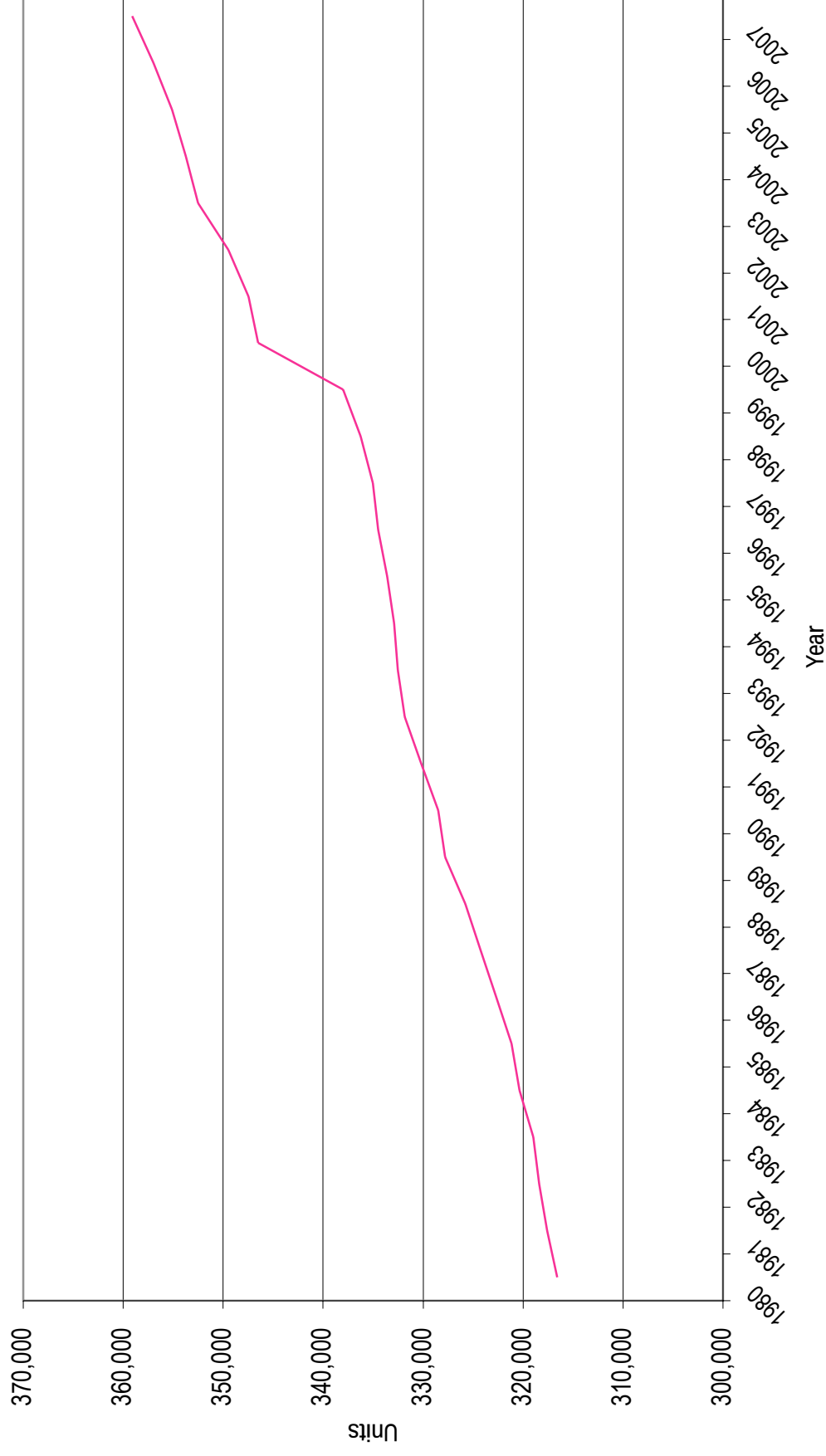
San Francisco contains roughly 360,000 housing units, an increase of almost 49,000 units since 1970 or approximately 0.4 percent annually. Residential approval and construction rates vary over time. In the 1980s, about 1,100 units were constructed each year, whereas housing construction slowed in the 1990s to roughly 950 units annually. Housing construction has picked up since 2000, with an average of over 1,500 units constructed per year.¹² Generally, residential units are completed one to two years after receiving approval, although that fluctuates as developers attempt to time the market or cancel projects altogether.¹³ Graph II-8 illustrates trends in residential development since 1980, and Graph II-9 compares approvals and completed construction over the same timeframe.

As noted above, Downtown San Francisco land uses have diversified greatly in recent years. The Downtown and Transit Center District Plan Area have witnessed much more significant increases in housing construction than the rest of San Francisco. Whereas between 2000 and 2006 the City experienced a 3.0 percent increase in the number of housing units, Downtown housing grew by roughly 780 housing units annually and accounted for nearly 40 percent of citywide growth. Over the same time frame, housing in Transit Center Area Plan Area grew from 42 to 267 units, an average of 38 housing units per year and 2 percent of citywide growth. See Graph II-10. These trends indicate that the Downtown and Plan Area, historically considered employment centers, are increasingly becoming residential areas as well.

¹² Housing unit counts were determined using the Planning Department's annual housing inventory data, and benchmarked with the decennial Census, the same methodology employed by the Planning Department. The large increase in housing units from 1999 to 2000 is due to the resetting with the decennial Census and not due to an actual housing construction count.

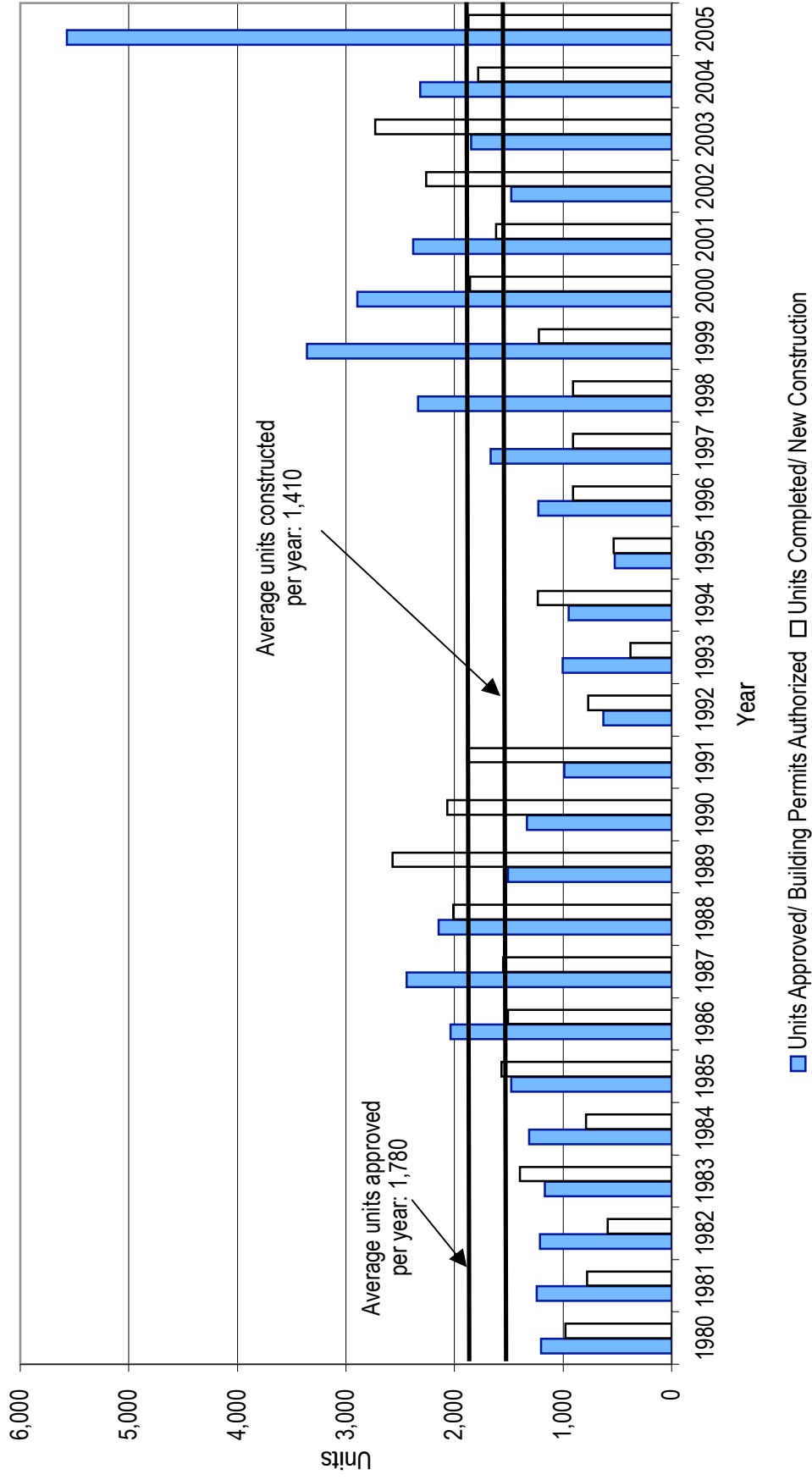
¹³ Close to 1,700 units approved between 1980 and 2003 were not completed as of the end of 2005, and another 7,900 were approved during 2004 and 2005. Many of those units may have been built since 2005 or will still be constructed, but others will likely not move forward due to the recent downturn in the residential market.

Graph II-8
Housing Stock, 1980–2007
San Francisco



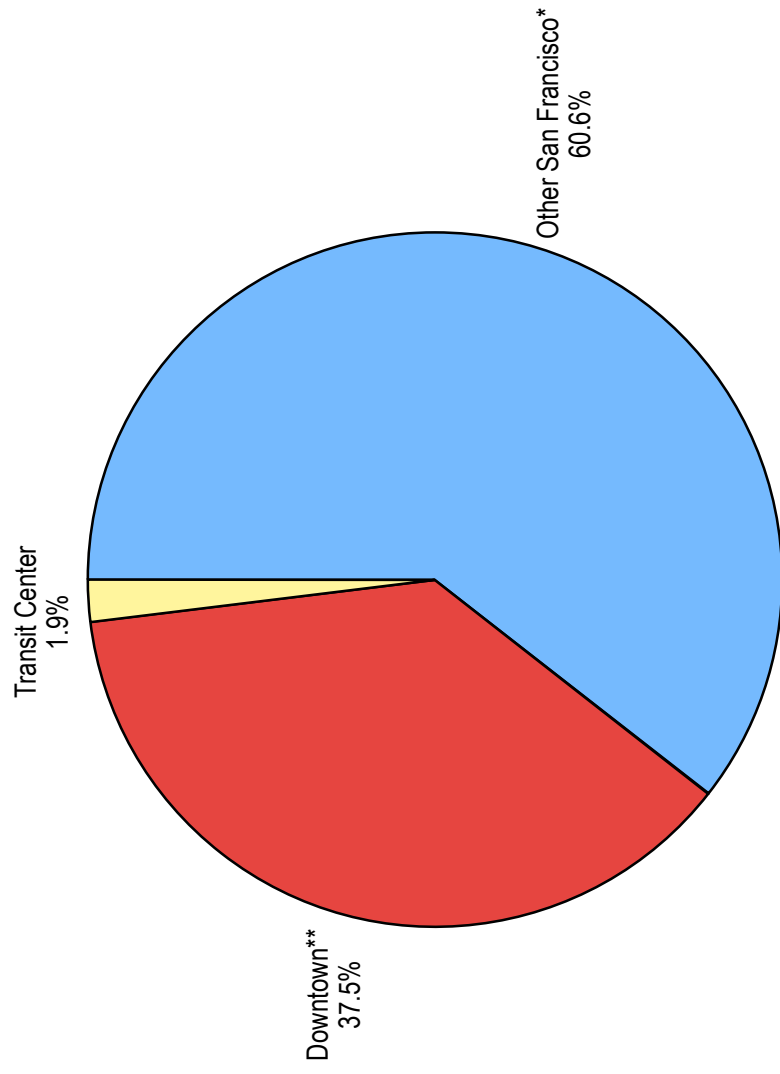
Source: San Francisco Planning Department, Housing Inventory.

Graph II-9
Housing Development Trends, 1980–2005
San Francisco



Source: 1996, 2006 Housing Inventory Reports, San Francisco Planning Department.

Graph II-10
 Distribution of New Housing Units, 2000–2006
 San Francisco, Downtown and Transit Center Plan Area



Total New Units in San Francisco 2000–2006: 11,822

* Excludes Downtown and Transit Center District Plan Area

** Excludes Transit Center District Plan Area

Source: San Francisco Planning Department, Housing Inventory Report.

III. Current Market Statistics

This section focuses on market conditions for office and residential land uses within San Francisco, and particularly the Downtown and Transit Center District Plan Area. Recent and current market conditions are discussed, followed by a brief comparison to other comparable markets.

A. Office

1. San Francisco Office Market

Since the early 1980s, the Downtown office market has seen two business cycles, marked by rising and falling vacancy rates and rents. Vacancy rates were at one to two percent in 1982 and increased to 14 percent by the end of the decade. As vacancy rates increased into the late 1980s, rents declined, and between 1989 and 1993, average rental rates in the Downtown declined from \$26 to \$20 per square foot. In the early 1990s vacancy rates declined to approximately 10 percent, due in part to the removal of earthquake damaged buildings and an increase in average space per employee. During the mid 1990s, growth in key industries drove vacancy rates down again and rents back up.¹⁴

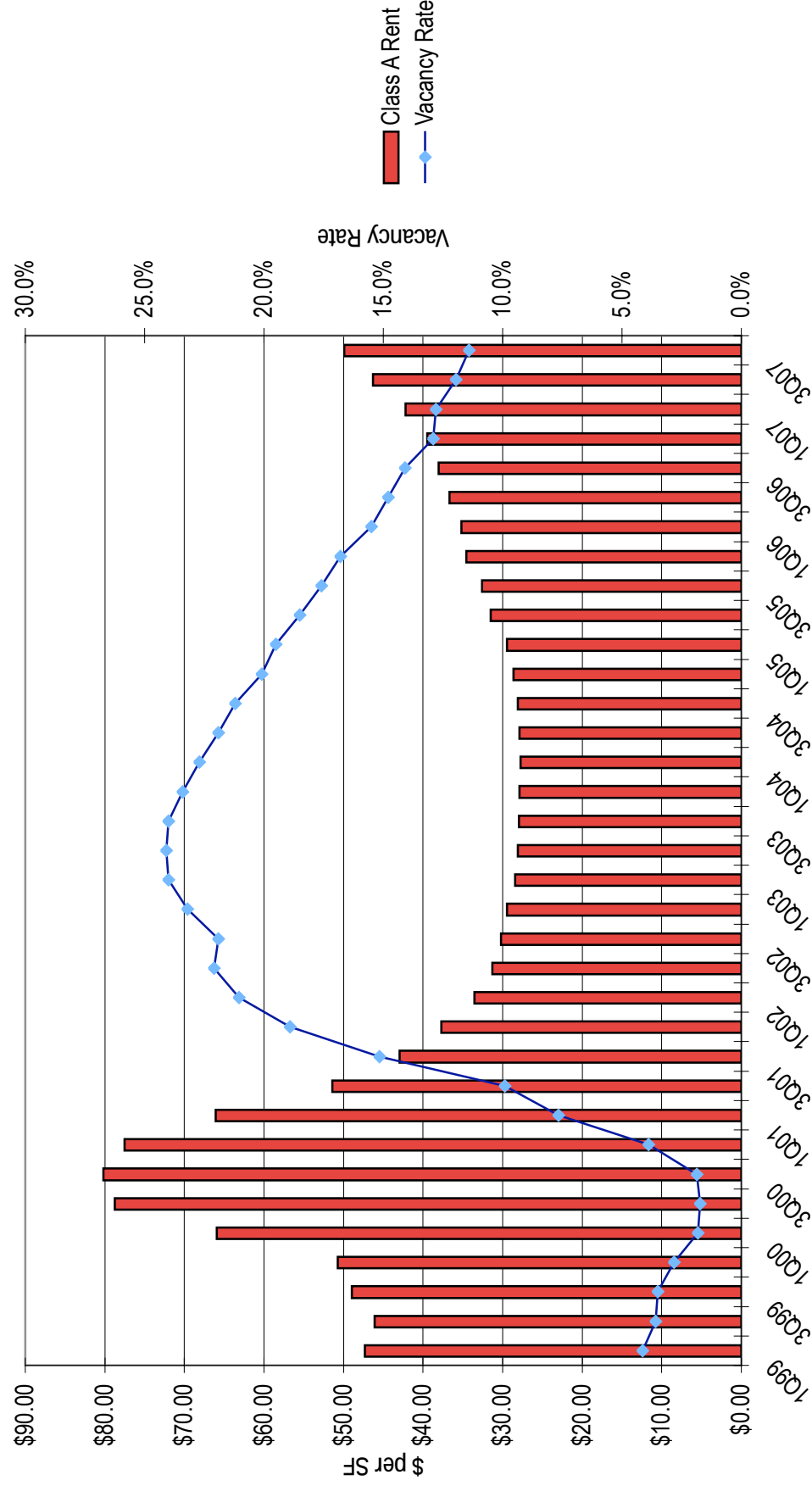
Graphs III-1 through III-5 illustrate trends in key office market indicators for San Francisco since 1999 based on Grubb & Ellis information as of the end of the 3rd Quarter 2007. See Appendix B for Grubb & Ellis' map of San Francisco Office Submarkets.

The San Francisco office market has fluctuated greatly since the late 1990s, first experiencing the rapid run up of the dotcom boom, and then downturn of the bust. As shown in Graph III-1, San Francisco rents skyrocketed in 2000 while vacancy rates dropped to below 2 percent. This sharp escalation was followed by an equally rapid decline, with vacancy rates hitting nearly 24 percent at their height in 2003.

Since that time, vacancy rates have slowly declined and rents have climbed back to 62 percent of their highest boom-time levels. As of the third quarter of 2007, San Francisco citywide vacancy rate was 11.4 percent, with Class A space at 10.0 percent and Class B space at 14.6 percent. Citywide lease rates have risen to \$47 per square foot for Class A space and \$34 for Class B space as of the third quarter of 2007. Although the dotcom era's extreme highs and subsequent lows serve as reminders of the cyclical nature of the office market and how quickly conditions can change, San Francisco's recent, more gradual recovery stands in contrast with the rapid escalation of the dotcom boom.

¹⁴ Based on data presented in the 1994 and 2004 Downtown Plan Monitoring Reports. Annual market data starting from 1980 is unavailable.

Graph III-1
Citywide Office Vacancy Rate & Class A Lease Rents, 1Q99-3Q07
San Francisco



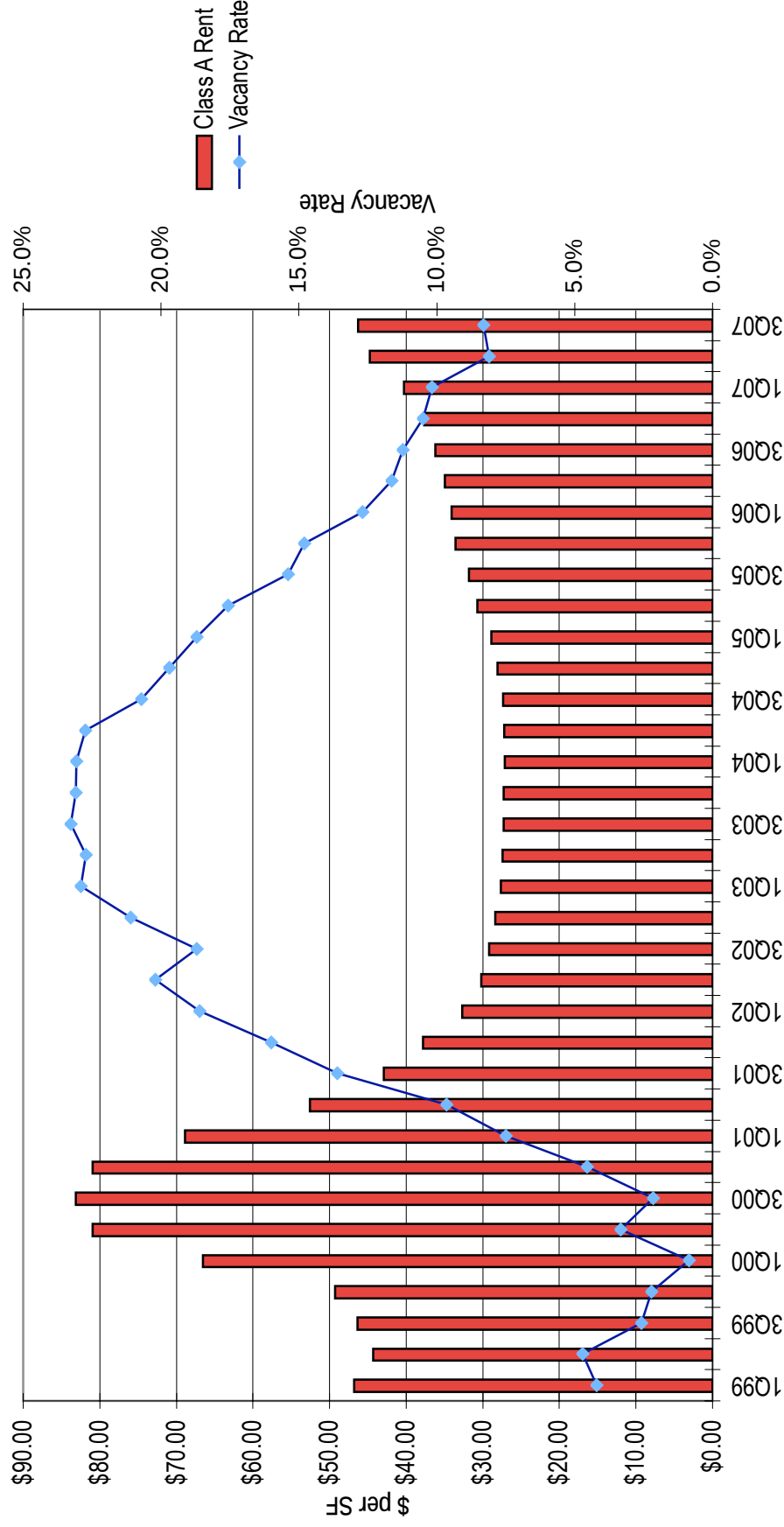
Source: Grubb and Ellis.

Sales prices for office space citywide have risen dramatically in recent years, with price per square foot increasing since 2003 and large volumes of space being purchased (Graph III-3).¹⁵ Although sales prices have reached record levels, likely reflecting buyers' anticipation that rents will continue to rise, they are significantly below the cost of developing new office space. As shown in Graph III-4, the City has also experienced positive net absorption since the middle of 2003, with over 6 million square feet absorbed in the course of roughly 4 years.

The South Financial District has followed citywide trends, performing well in recent years (Graphs III-2 and III-5). South Financial District vacancy rates tend to be slightly lower and currently stand at 8.3 percent. The North Financial District continues to command higher than average rents, with \$53 and \$36 per square foot for Class A and B space respectively, while South Financial District lease rates stand at \$46 and \$36 per square foot, slightly below those found in the rest of the City and the North Financial District.

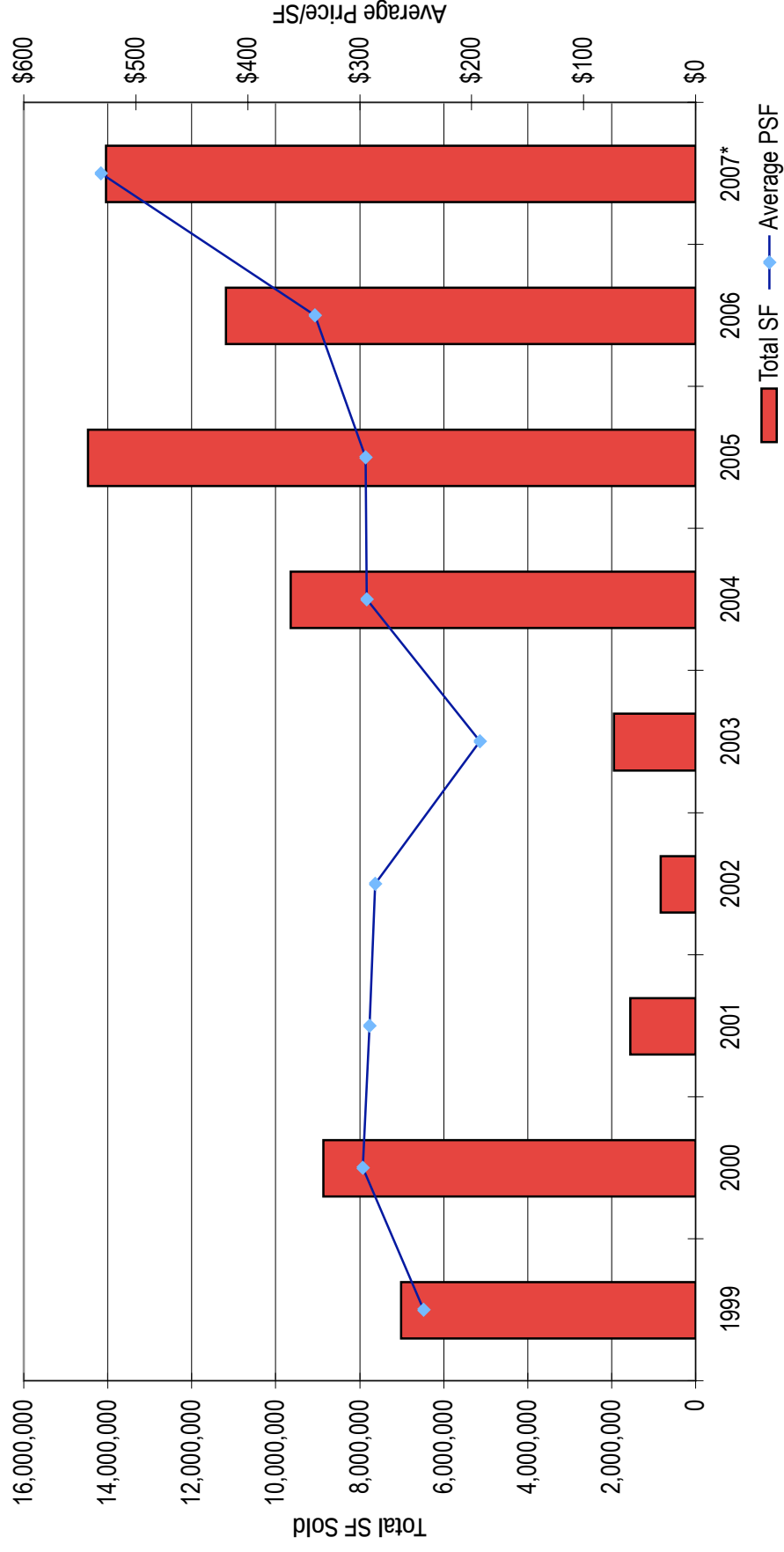
¹⁵ The average price per square feet for the first half of 2007 was \$531, an increase of 56 percent over 2006 levels. However, the sale of 3.4 million square feet for \$2.6 million (\$784/sf) from the Blackstone portfolio to Morgan Stanley greatly influences these figures.

Graph III-2
Office Vacancy Rate & Class A Lease Rents, 1Q99-3Q07
South Financial District



Source: Grubb and Ellis.

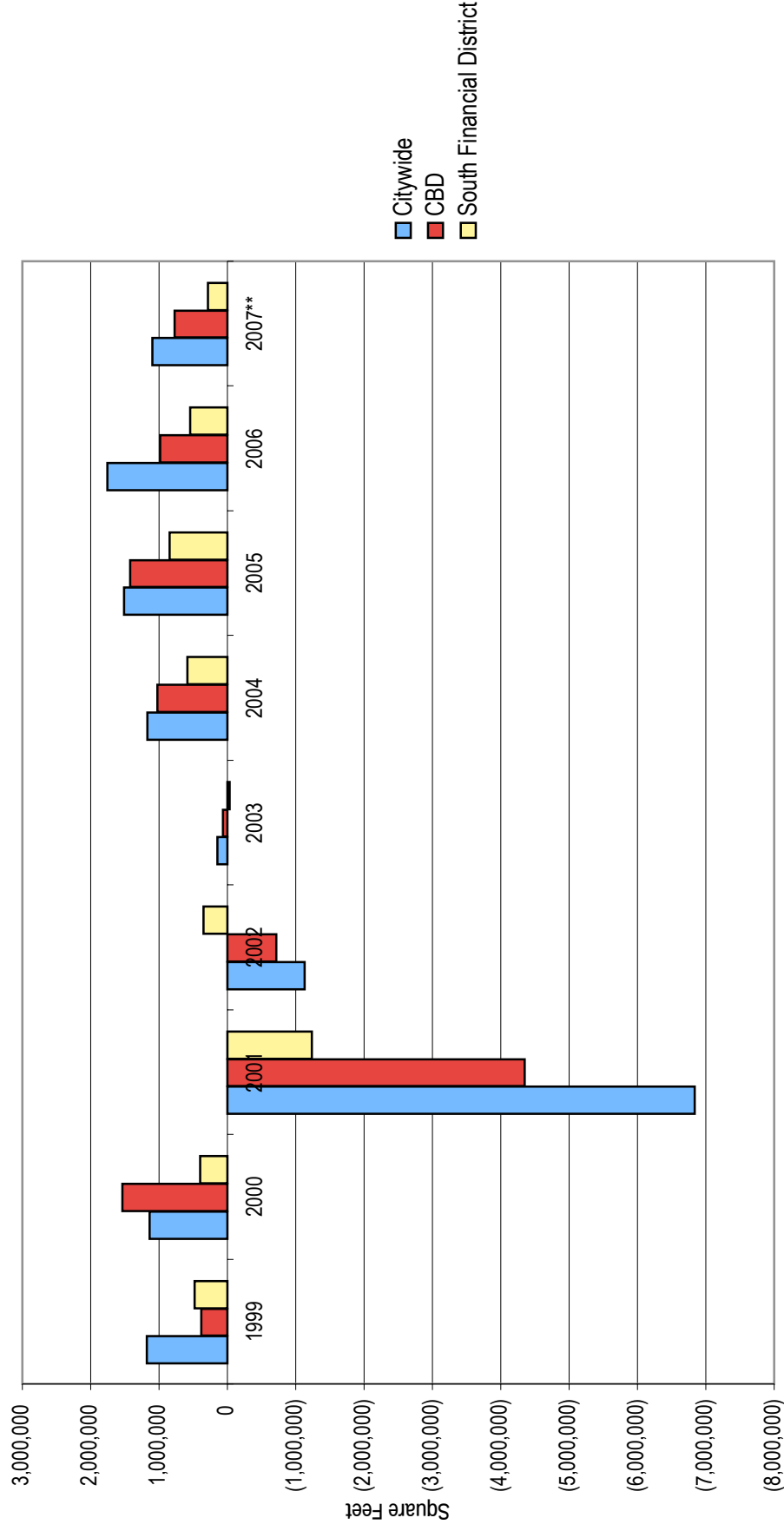
Graph III-3
Citywide Office Space Sales, 1999–2007
San Francisco



* Through August 1, 2007.

Source: Grubb and Ellis.

Graph III-4
Comparison of Office Space Net Absorption, 1999–2007
San Francisco Citywide, Central Business District and South Financial District *

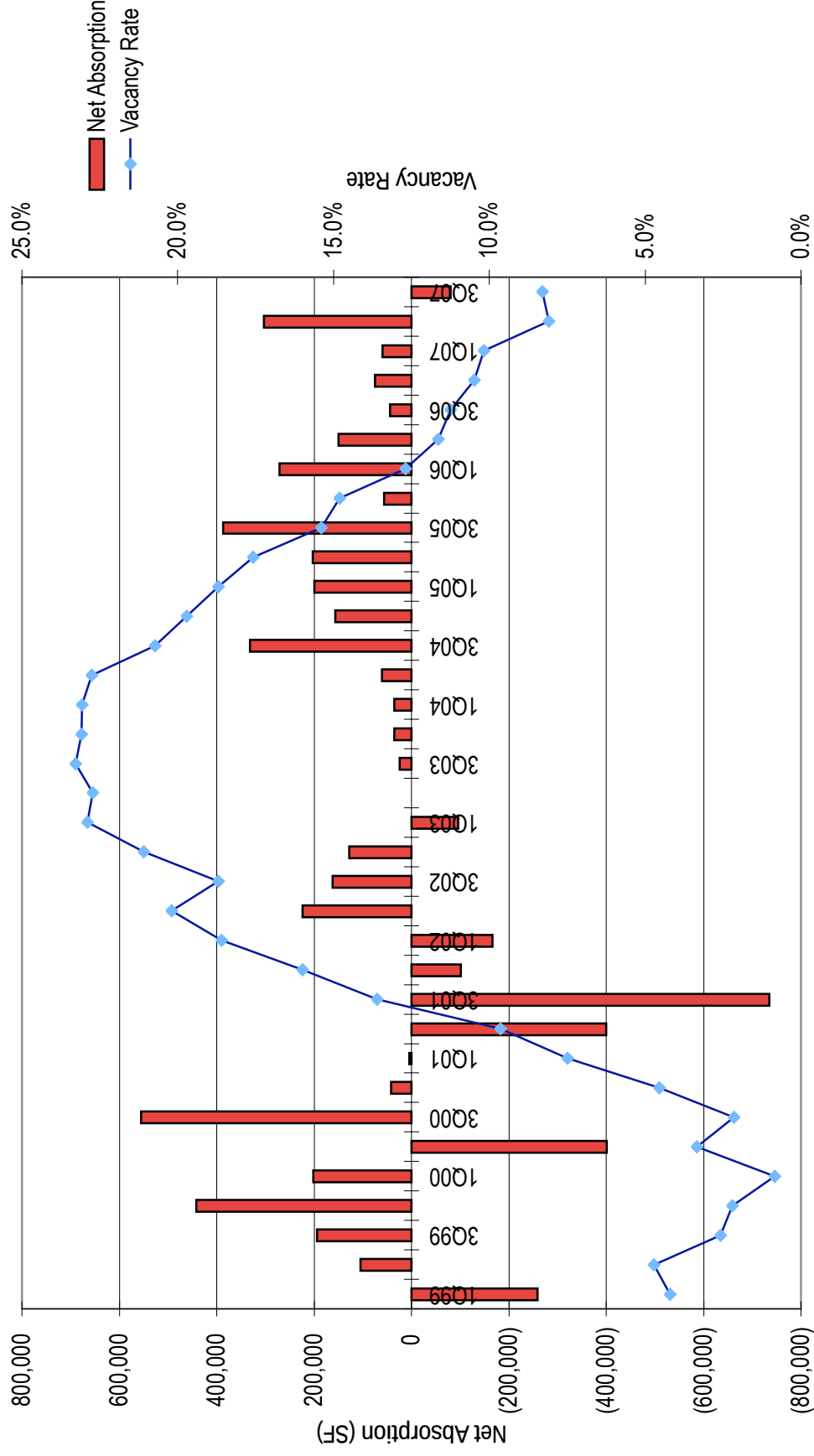


* The Central Business District includes the North and South Financial District.

** Through third quarter 2007.

Source: Grubb and Ellis.

Graph III-5
Net Office Absorption vs. Vacancy Rate, 1Q03-3Q07
South Financial District



Source: Grubb and Ellis.

2. Office Market Comparison

Graphs III-6 through III-9 compare San Francisco to other Bay Area office markets. Of the major Bay Area office markets, San Francisco serves as the central Class A market, with the most Class A space, highest lease rates and lowest vacancies for Class A. Downtown San Francisco contains the most sought-after top-tier space due to its location and amenities, with unsurpassed transit access, waterfront views, and proximity to other businesses, restaurants, cultural institutions, and hotels.

Looking at downtown versus non-CBD/suburban markets (Graph III-7), the most expensive office space is concentrated in downtown San Francisco and downtown Oakland. In Silicon Valley, suburban employment hubs like Palo Alto and Mountain View command higher prices than downtown San Jose.¹⁶

Silicon Valley is home to the most Class B office space in the region. San Francisco has the highest Class B office lease rates in the region, followed by Silicon Valley's suburbs. While Class A vacancy rates across the region are similar, between 10 and 10.8 percent, Class B vacancy varies greatly, from a low of 7.9 percent in Silicon Valley to roughly 15 percent in San Francisco and the East Bay.

In comparison with peer cities outside the Bay Area, San Francisco is generally seen as a strong office market. In its *2008 Emerging Trends in Real Estate*, the Urban Land Institute (ULI) ranked the San Francisco/San Mateo metropolitan area as the second best U.S. market for real estate investment and development, tied with Seattle and after New York City. Newmark Knight Frank (NKF) named San Francisco the strongest office market in all of North and South America, followed by Los Angeles, New York City and Toronto.¹⁷ In Grubb & Ellis' forecast of the top 10 office markets for 2007–2012, San Francisco comes in tenth, behind Oakland/East Bay (seventh) but ahead of the San Jose/Silicon Valley which did not make the top 10.¹⁸

According to ULI, New York leads the U.S. office market with lease rates that average \$60 per square foot, and reach as high as \$150, making other major markets like San Francisco, Washington D.C. and Boston appear affordable.¹⁹ However, New York's rates do not approach those found in Tokyo and London, or Europe generally.

New York City currently has the nation's lowest office vacancy rate, at 5.3 percent, or roughly half San Francisco's vacancy rate of 11.4 percent for Class A and B office space. In contrast, vacancy rates are 7.6 percent in the Los Angeles office market, 9.3 percent in Boston, 10 percent in Washington D.C., and 14 percent in Chicago.²⁰

¹⁶ Grubb & Ellis, *Office Market Trends Silicon Valley*, Third Quarter 2007.

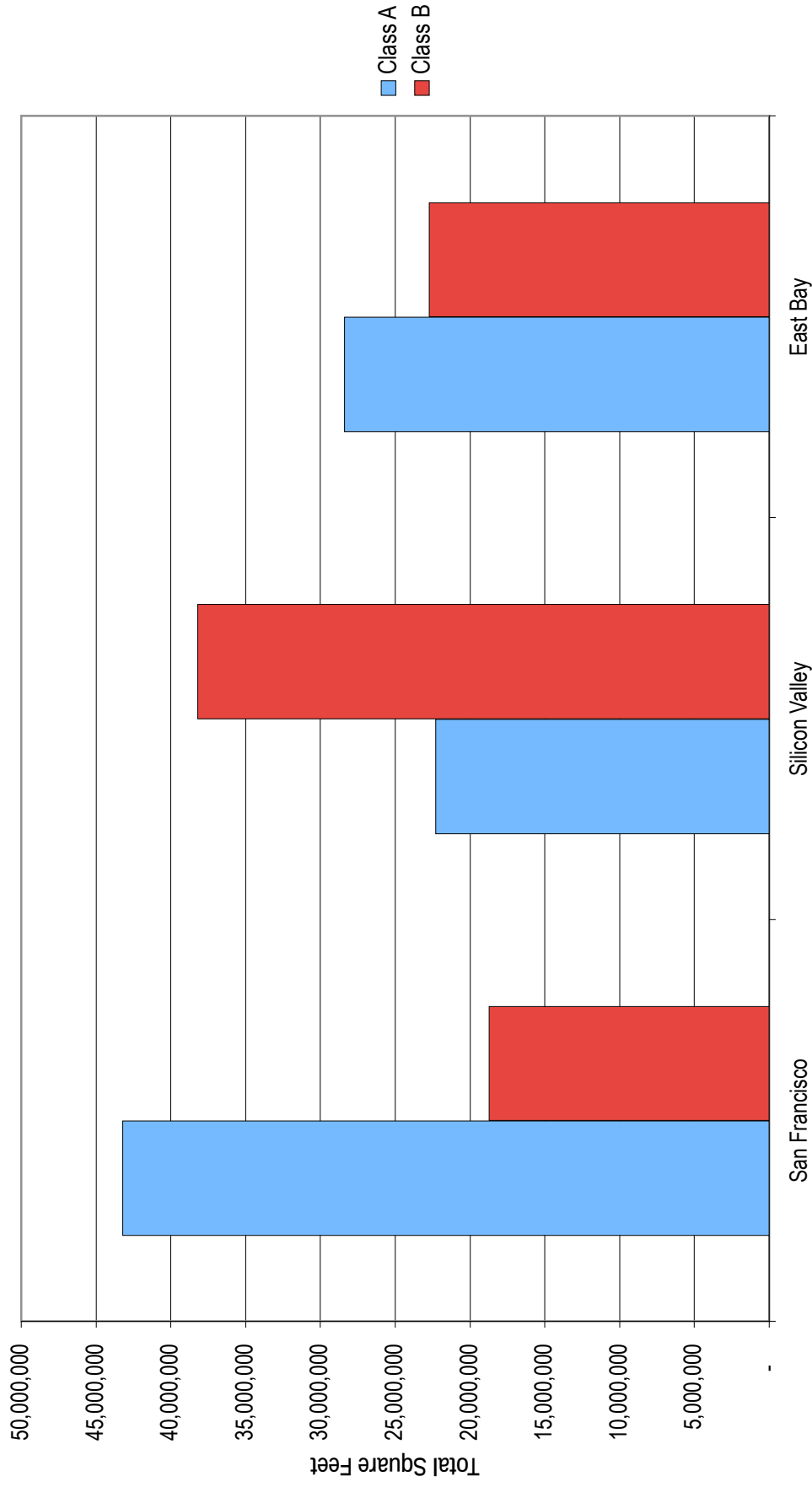
¹⁷ NKF, *Global Real Estate Markets Annual Review & Forecast*, 2007.

¹⁸ Grubb & Ellis, *2008 Real Estate Forecast*, "Market Strength Forecast, 2007-2012" (<http://www.grubb-ellis.com/research/forecast2008/reports.htm>).

¹⁹ According to Newmark Knight and Frank (NKF), average lease rates in Washington D.C. and Boston were \$45 and \$30 per square foot respectively in 2007.

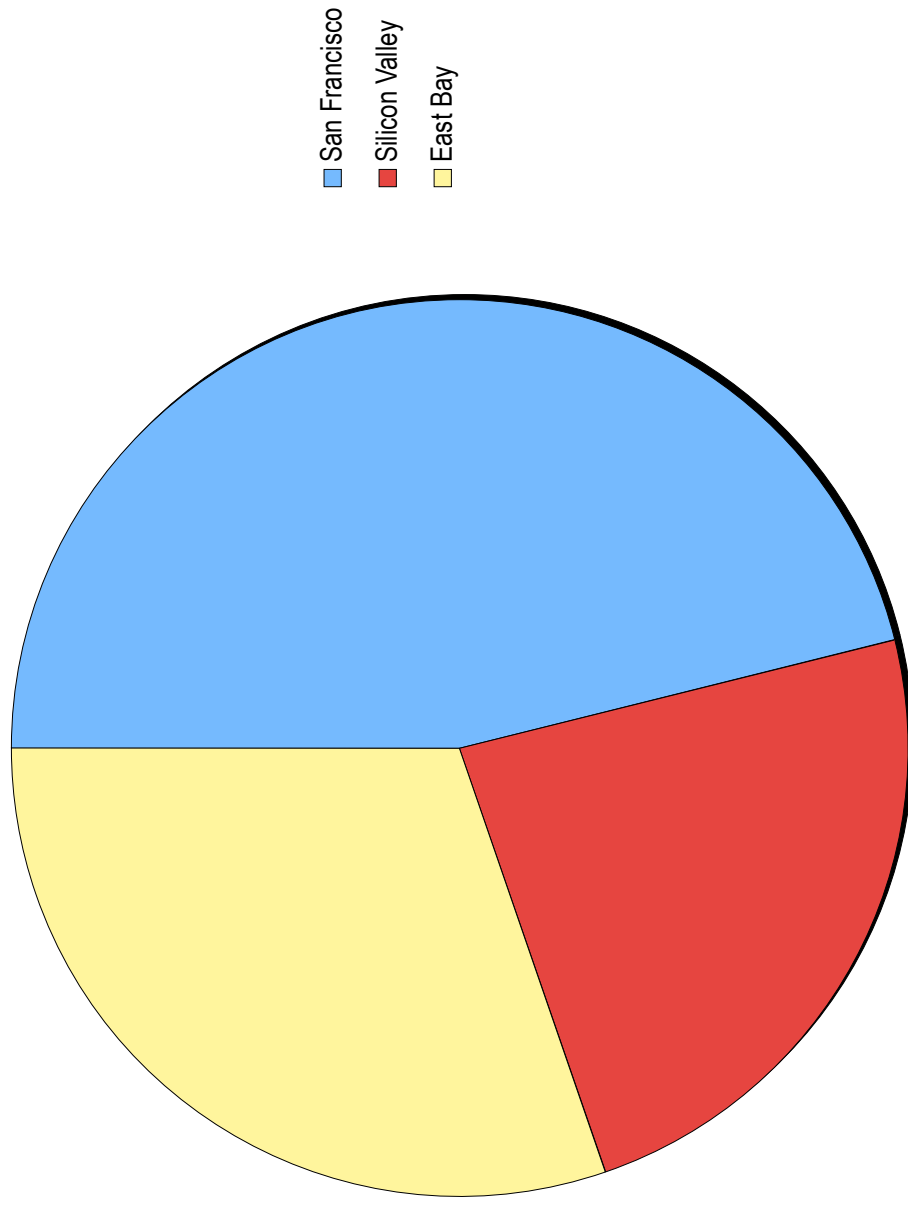
²⁰ Newmark Knight and Frank (NKF), *U.S. Office Property Sector 2008 Market Outlook*.

Graph III-6
Regional Comparison of Class A & B Office Space, 2007
San Francisco, Silicon Valley and East Bay



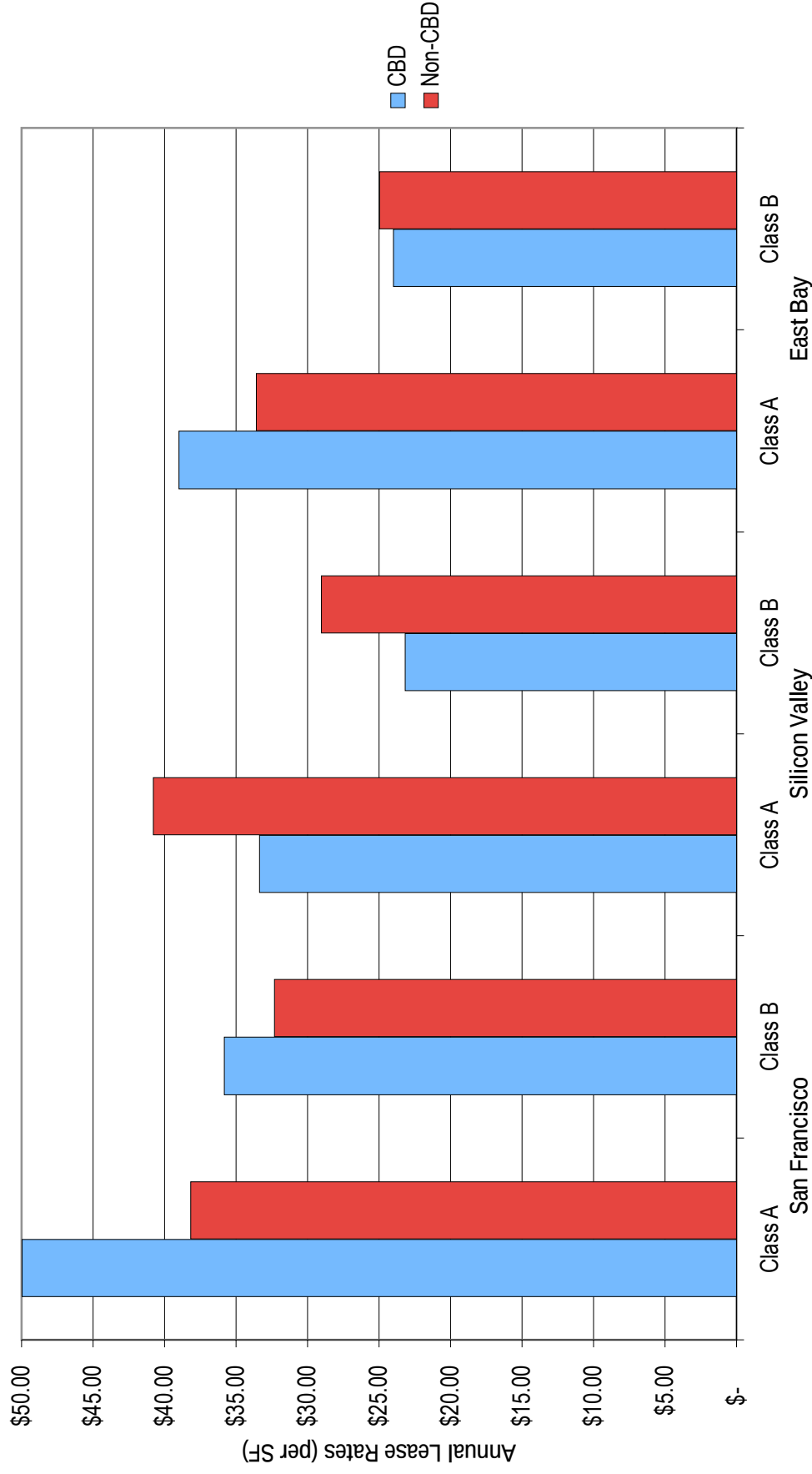
Source: Grubb & Ellis Office Market Trends reports for San Francisco, Silicon Valley and East Bay (Third Quarter 2007).

Graph III-7
Regional Comparison of Class A Office Space, 2007
San Francisco, Silicon Valley and East Bay



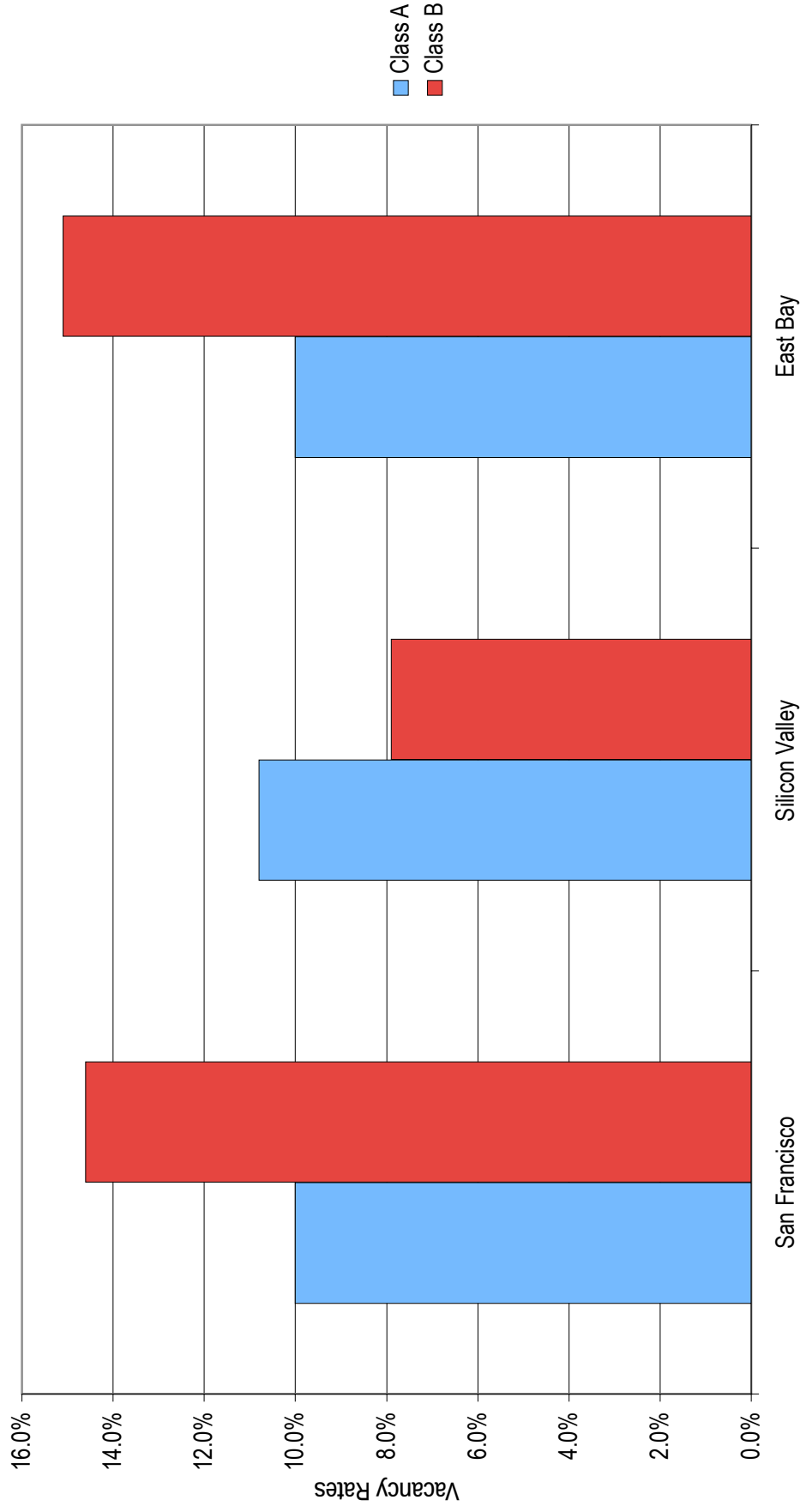
Source: Grubb & Ellis Office Market Trends reports for San Francisco, Silicon Valley and East Bay (Third Quarter 2007).

Graph III-8
Regional Comparison of Class A & B Office Space Lease Rates, 2007
San Francisco, Silicon Valley and East Bay



Note: Downtown San Jose and Downtown Oakland are the Central Business Districts for Silicon Valley and East Bay respectively. Source: Grubb & Ellis Office Market Trends reports for San Francisco, Silicon Valley and East Bay (Third Quarter 2007).

Graph III-9
Regional Comparison of Vacancy Rates for Class A & B Office Space, 2007
San Francisco, Silicon Valley and East Bay



Source: Grubb & Ellis Office Market Trends reports for San Francisco, Silicon Valley and East Bay (Third Quarter 2007).

B. Residential

1. San Francisco Residential Market

As described in Section II, housing is becoming an increasingly important part of the landscape in Downtown San Francisco and the Transit Center District Plan Area. While the Plan Area currently contains a small share of the City's housing stock, new developments underway or planned in the vicinity of the Plan Area indicate that it is becoming a key new residential neighborhood.

Housing in San Francisco has continued to perform well relative to other markets as the U.S. experiences a major downturn in the residential market fueled by subprime and higher risk lending practices. In terms of for-sale housing, monthly sales volumes across San Francisco have decreased 6 percent on average in the second half of 2007 and dropped sharply to 278 in January 2008 compared to 610 in June 2007. However, median home sales prices citywide have remained relatively stable.²¹

Within the Downtown, the monthly sales volume has hovered between 34 and 47 sales per month between June 2007 and January 2008. Downtown housing sales represented 17 percent of citywide sales in January, up from an average of 7 percent in other months analyzed. Median housing values decreased from roughly \$775,000 to \$650,000 between June and January.²² However, the volume of sales within Downtown remains much smaller than the city as a whole, with an average of 40 units sold each month in contrast to approximately 480 units sold monthly across San Francisco. Drops in housing prices may reflect changes in specific projects, product types and sizes as much as market declines in value.

Recent residential developments in Downtown near the Plan Area like the Millenium, Infinity, and One Rincon indicate that developers find the area an attractive locale for new housing aimed at higher end residents. Moreover, residential brokers and buyers are showing great interest in the projects and future of the South Downtown/Rincon Hill neighborhood.²³ According to developers active in the area, for-sale housing development will continue to be profitable for developers in the future when the current downturn passes, but needs to be priced at \$1,000/square foot or higher in order to be financially viable.²⁴

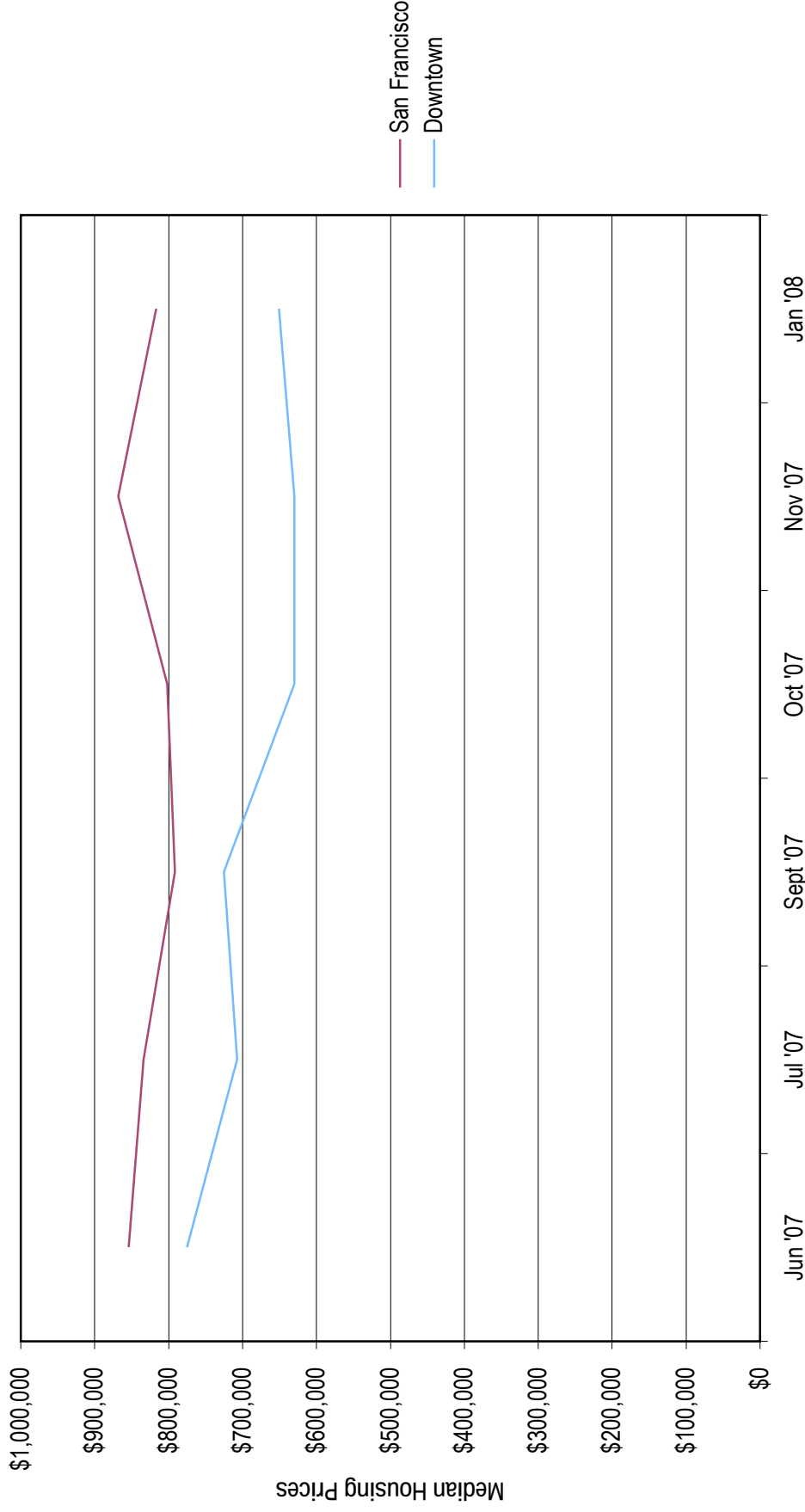
²¹ DataQuick Information Services, Bay Area Home Sale Activity for June 2007 to January 2008. Information for August and December 2007 is unavailable.

²² Within this section, the Downtown is defined as Zip Codes 94102, 94103, 94105, 94108, 94111 and 94104, although no sales were reported for 94104 within the timeframe analyzed.

²³ Alan Mark, President of the Mark Company, speaking about the Infinity and area at "A Taller San Francisco" event (January 2008); J.K. Dineen, "New residents unpack at S.F. condo towers," *San Francisco Business Times*, February 29, 2008; www.socketsite.com.

²⁴ Participants in development focus group held jointly by the Planning Department and Seifel Consulting Inc., 11/29/2007.

Graph III-10
Median Housing Prices, June 2007–January 2008
Citywide and Downtown



Note: Downtown includes zip codes 94102, 94103, 94105, 94108, and 94111. Data for 94104 was not available.

Source: DataQuick News, Bay Area Home Sale Activity, June 2007–January 2008. Data for August and December 2007 unavailable.

The San Francisco apartment market is enjoying an upsurge, although whether this will lead to substantial new development is still questionable. Graph III-11 illustrates average rents by unit type for San Francisco and Downtown neighborhoods, defined as the Financial District, SOMA and South Beach. According to data provided by rent-sf.com, average rents across the City for all unit types increased 10 to 15 percent between 2006 and 2007.²⁵ Vacancy rates are low, and decreased slightly from 4 percent in 2005 and 2006 to 3 percent in 2007. Rents in the Downtown neighborhoods tend to be 25 to 40 percent higher than the citywide average. This is likely a reflection of both their location and relative age, as they tend to be newer than most San Francisco apartments.

New, market rate apartment buildings have not generally been constructed in San Francisco since the dotcom bust. Of the nearly 10,000 multifamily housing units constructed between 2001 and 2005, roughly 8,800 or 90 percent were condominium projects, and most apartment units constructed over that timeframe were affordable.²⁶ While San Francisco developers are beginning to consider building apartments due to the downturn in the for-sale market and the strong rental market, apartment development is still typically not as profitable as office or condominium development when value is weighed against construction costs, entitlement hurdles and affordable housing requirements. Some developers are making apartments “pencil” by utilizing bond financing available to projects with a significant affordable housing component, and others cite mixed-use and transit-oriented developments as the future of new apartment development.²⁷

2. Residential Market Comparison

The Bay Area is among the nation’s most expensive housing markets, and San Francisco is among the more costly portions of this high-priced region. As shown in Graph III-12, Marin County had the highest median home sales prices in the region in November 2007, followed closely by San Francisco, and then San Mateo and Santa Clara counties. Graph III-13 compares Bay Area rental and vacancy rates. San Francisco was home to the highest average apartment rents in the Bay Area, followed by San Mateo and Santa Clara counties. The City also had the Bay Area’s lowest vacancy rates, with Marin and Santa Clara counties only slightly higher.

²⁵ Rent-sf.com is a website that culls data from various rental listing sources such as Craigslist, the SF Chronicle, sf4rent and MetroRent.

²⁶ *San Francisco Housing Inventory* (Planning Department, 2005). Comparison of new construction completed by building type to new condominiums recorded by building type.

²⁷ Participants in development focus group held jointly by the Planning Department and Seifel Consulting Inc., 11/29/2007.

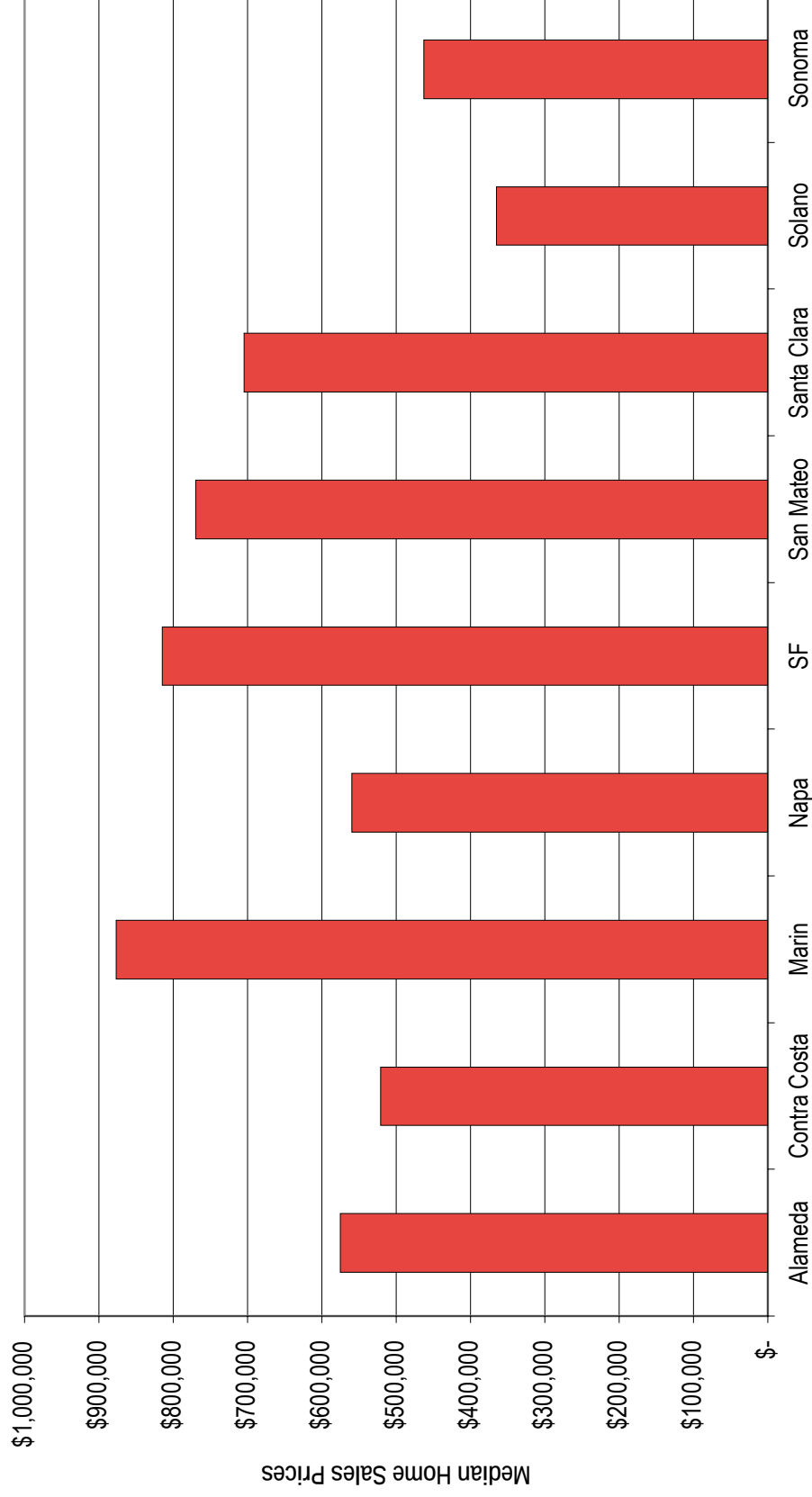
Graph III-11
Comparison of Average Monthly Rents by Bedroom Type, 2007
SOMA/South Beach/Financial District and San Francisco



Note: The percentages above each bar graph indicate the percent change in average rents from 2006 to 2007 for each bedroom type.

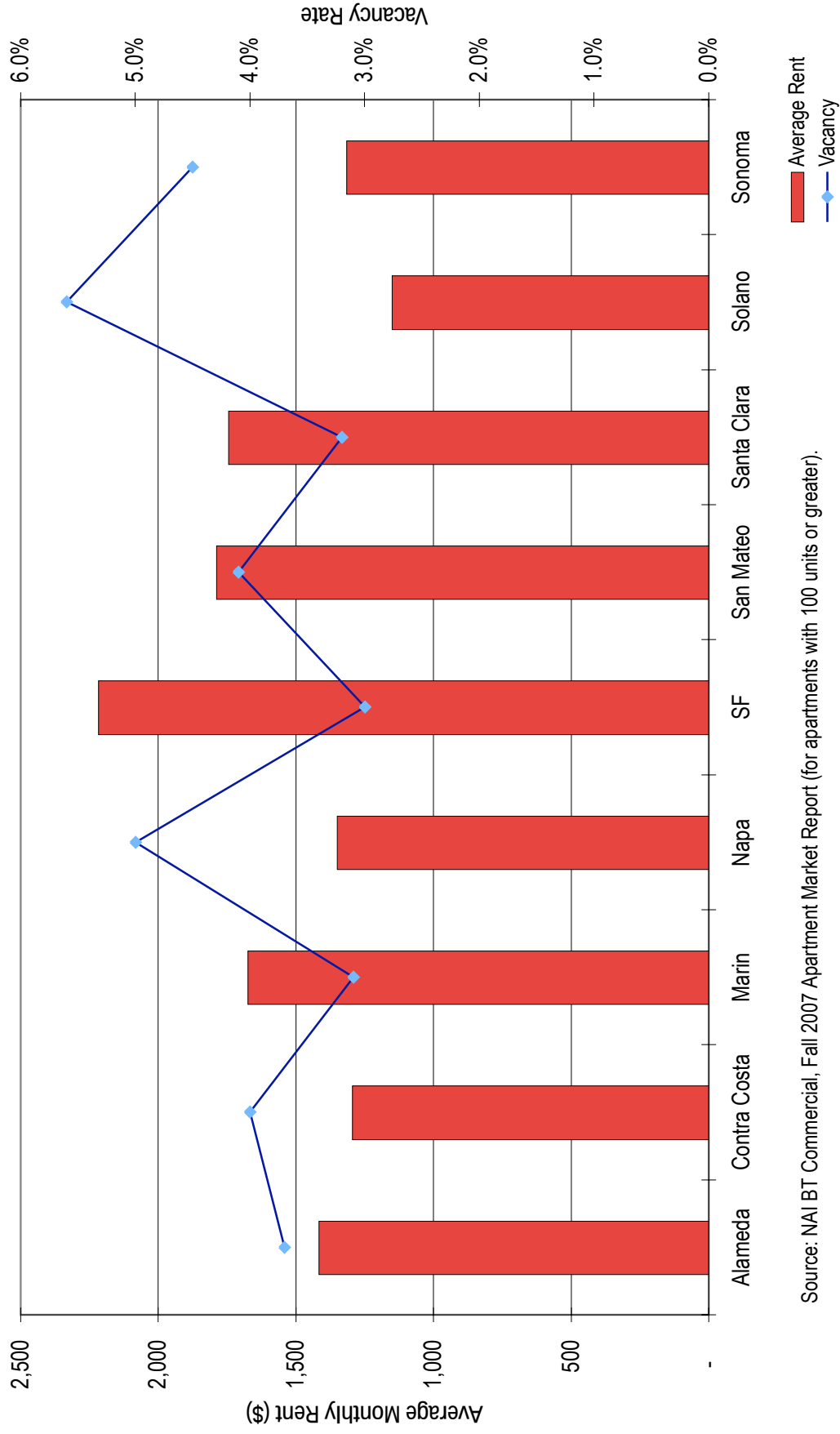
Source: <http://www.rent-sf.com>.

Graph III-12
Regional Comparison of Median Home Sales Prices, November 2007
Bay Area Counties



Source: DataQuick News, California Home Sale Price Medians by County, November 2007.

Graph III-13
Regional Comparison of Average Monthly Apartment Rents and Vacancy Rates, Fall 2007
Bay Area Counties



IV. Future Demand, Supply and Constraints

This final section draws on market and economic trends, projections and industry experts to assess long-term demand for office and residential development. The section then analyzes potential supply and the factors that constrain supply and demand, concluding with a comparison of potential demand, supply and capacity in Downtown San Francisco.

A. Demand

1. Office

Future demand for office space in San Francisco is dependent upon regional economic performance and job growth, as well as the extent to which businesses choose to locate in the City. Regional performance is in turn tied to global economic forces, as the Bay Area economy becomes increasingly interdependent with international producers and suppliers, particularly in the Pacific.

This section draws on a wide variety of economic and industry sources, including economic forecasts, venture capital investments, local real estate developers and brokers, and reports from the Urban Land Institute (ULI) and national and global real estate investment and brokerage firms.

Employment Growth

Seifel investigated San Francisco employment projections from three sources: Moody's, Regional Economic Models, Inc. (REMI) and the Association of Bay Area Governments (ABAG).

The methodologies for all three employment projections begin with econometric models that simulate the input and output flow of goods and services in the economy between industry sectors, consumers, governments, investors, and purchasers outside of the region. The models divide the economy into various industry sectors and predict the labor demand, capital needs and output of each sector. National forecasts inform the growth assumptions for the different industry sectors. The demand for the area's goods and services, which determines the level of economic activity and employment, is modeled using feedback mechanisms and key assumptions about spending, investments and exports. For example, an increase in local wages or benefits will raise the price of products, negatively impacting the area's competitiveness and lowering its market share in impacted industries.

How the models differ:

- While the Moody's and REMI models simulate the San Francisco economy, the ABAG model simulates the Bay Area regional economy and then distributes regional employment projections to the various counties based on a land allocation method that uses "Smart Growth" policy assumptions and takes into account the availability of space. This methodology increases the capacity of growth in more urbanized areas such as San Francisco compared to the rest of the region.

- The ABAG model places constraints on employment growth based on the availability of space, such as vacant and under-utilized land as well as sites that can be redeveloped, using land use data collected from local governments. The other models may take space issues into account indirectly as part of the cost of living and conducting business.
- The models rely on many types of assumptions, and differences in key assumptions lead to the variations in employment projection results. The REMI and ABAG models use assumptions that are tailored more specifically to San Francisco and the region. The REMI model was developed specifically for San Francisco, and takes many complex and interdependent variables into account. According to the City of San Francisco's Office of the Controller, the conservative estimates seen in the REMI model are likely due to some of the local variables such as the high costs of living and conducting business in the City that may contribute to future periods of flat or no growth in employment. While Moody's indicates that these factors are also taken into account, the Moody's model evaluates the outcomes differently.
- Self-employment is taken into account in the REMI and ABAG models' employment projections. The ratio of self-employed to wage and salary workers is held constant for ABAG but varies over time in the REMI model. The Moody's projections do not include self-employment.
- ABAG predicts greater job growth in non-office (e.g. retail and construction) categories than the other two projections, resulting in a lower share of office job growth as compared to overall job growth.²⁸

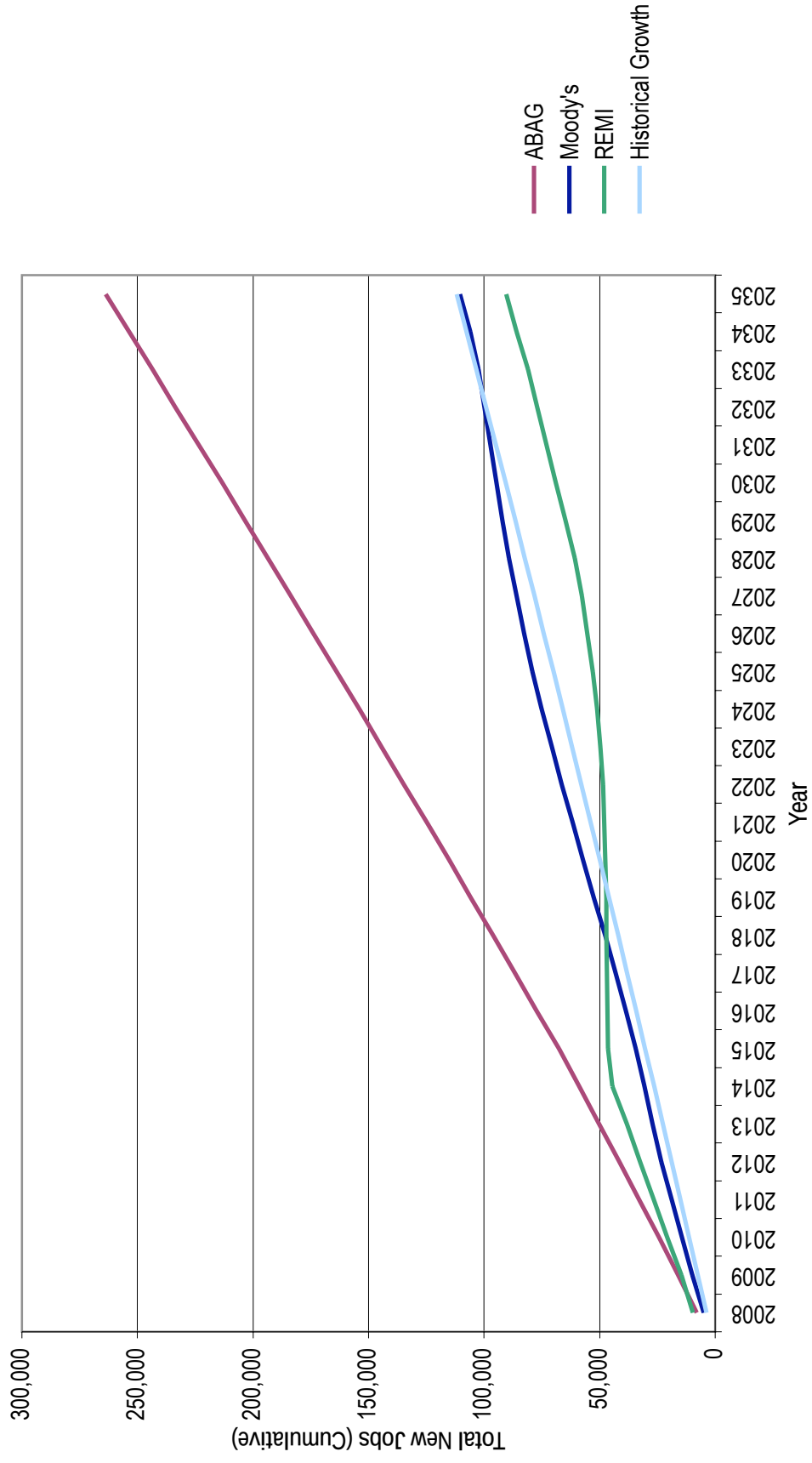
Graph IV-1 shows the results from the three employment projection models for San Francisco, as well as a trend line based on average historical employment growth. ABAG projects the most optimistic growth in employment (1.4 percent average annual growth), followed by Moody's (0.8 percent) and REMI (0.5 percent). REMI is the only model of the three that projects periods of no growth through 2035. The Moody's projection most closely aligns with historical employment growth from 1969 to 2005 as reported by the Bureau of Economic Analysis (BEA).

Seifel used these employment projections to estimate demand for office space through 2035, as shown in Graph IV-2.²⁹ The calculation methodology for projected office job growth and resulting space demand, as well as the list of industries included in office jobs, are shown in Table IV-1. By 2035, based on ABAG data, San Francisco will require roughly 32 million square feet of new office space citywide, while projections from Moody's indicate that 20 million square feet will be needed. REMI projections yield similar growth through 2014, at which time office employment drops off, resulting in total demand of 14 million square feet of new office space citywide.

²⁸ The current share of office workers as a portion of total citywide employment is similar for all three models and ranges between 38 and 42 percent. However, both Moody's and REMI models show a higher share of job growth captured by office jobs, 56 percent and 63 percent, respectively. Moody's projections show the greatest increase in the percentage of office workers over time while REMI and ABAG show smaller relative increases.

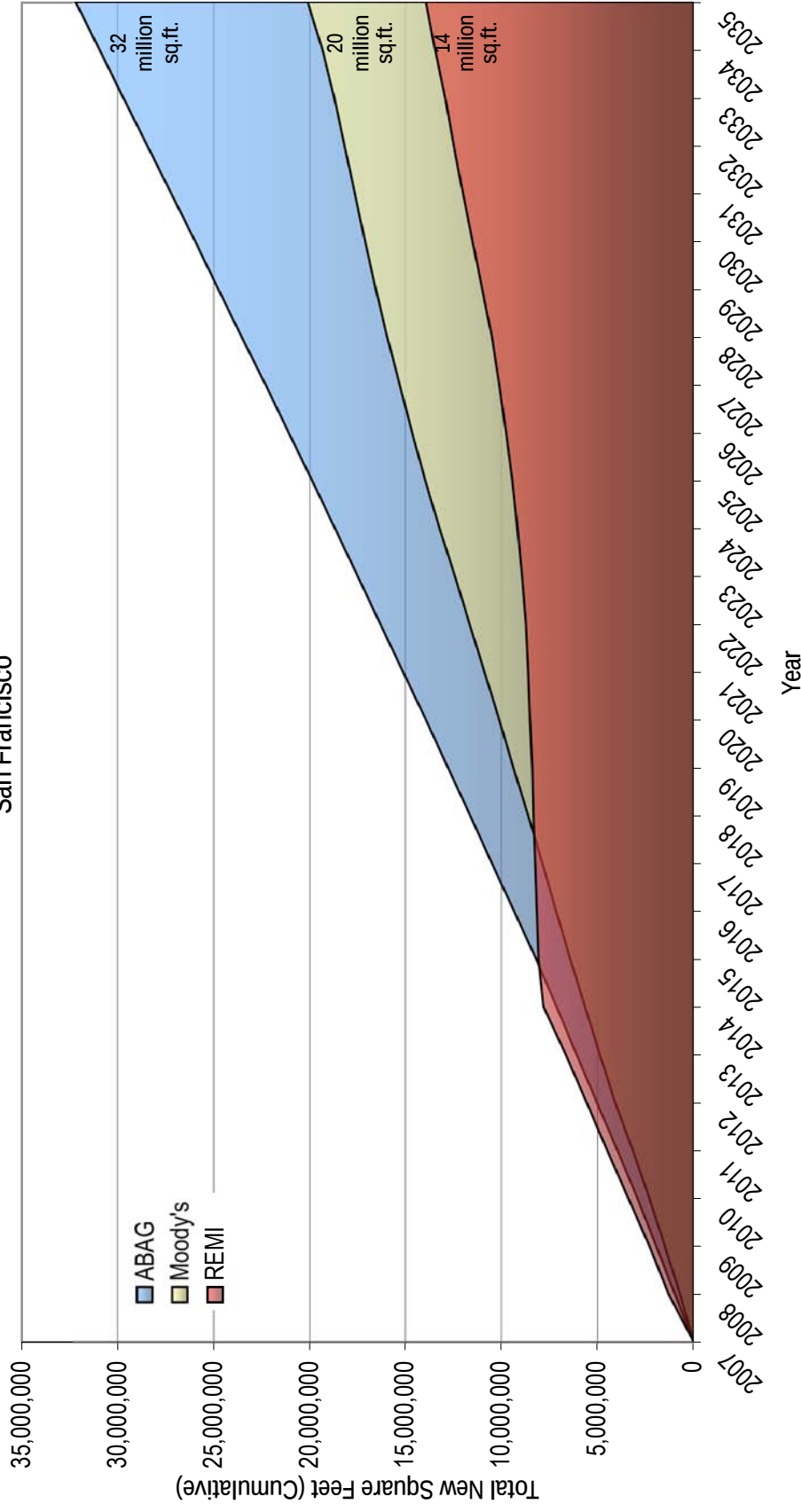
²⁹ Projections include employment by major industry. Seifel separated employment in industries likely to occur in office settings and applied a percentage to capture office workers in each industry, and projected demand for office space by multiplying estimated number of new office employees by 300 square feet per employee, as detailed in Table IV-1.

Graph IV-1
Citywide Employment Projections, 2008–2035
San Francisco



Source: ABAG Projections 2007, Moody's, Regional Economic Models, Inc. (REMI), City and County of San Francisco, Seifel Consulting Inc.

Graph IV-2
Citywide Projected Cumulative Office Space Demand, 2007–2035
San Francisco



Note: ABAG, Moody's and REMI provide three versions of employment projections by industry. Office space demand is projected by multiplying estimated number of office employees by 300 SF per employee which takes into account an 8 percent vacancy rate.

Source: ABAG Projections 2007, Moody's, Regional Economic Models, Inc. (REMI), National Center for Real Estate Research (2007), City and County of San Francisco, Seifel Consulting Inc.

Table IV-1
Potential Office Space Demand, 2007–2035
Transit Center District Plan Area

	ABAG	Moody's	REMI
Job Growth	263,658	110,470	90,350
% of Job Growth Captured by Office Jobs (1)	44%	63%	56%
Growth in Office Jobs	116,622	69,834	50,519
% of Workers Working from Home (2)	8%	4%	8%
Office Job Growth Outside the Home	107,292	67,041	46,478
SF/New Office Job (Gross Sq. Ft.) (3)	300	300	300
Office Space Demand (Gross Sq. Ft.)	32,187,705	20,112,170	13,943,258

Industry Categories Included in Office Employment and Percentages Applied (4)

Broad Industry Categories	ABAG	Moody's	REMI
Information	Information 67%	Information 67%	Information 67%
Financial Activities	Finance and Insurance; Real Estate and Rental and Leasing 80%	Financial Activities 80%	Finance, Insurance 96%
			Real Estate, Rental and Leasing 46%
Professional and Managerial Services	Professional, Scientific, and Technical Services; Administrative Support, Waste Management, and Remediation Services; Management of Companies and Enterprises 87%	Professional and Business Services 87%	Professional, Technical Services 89%
			Management of Companies and Enterprises 84%
			Administrative Support, Waste Management Services 89%
Health & Educational Services	Educational Services; Health Care and Social Assistance 52%	Education and Health Services 52%	Educational Services 57%
			Health Care, Social Assistance 49%
Government	Government 44%	Government 44%	Public Administration 44%

Notes:

- (1) The difference in the share of office job growth from overall job growth among the projections is due to the fact that ABAG predicts greater job growth in non-office (e.g. retail and construction) categories than the other two projections. See table above for industry categories included in office employment.
- (2) The percentage of workers working from home is different for Moody's as self-employment is not included in the projection figures. As discussed in Section II.B of this Report, 7.6 percent of all San Francisco workers work from home, while 3.6 percent of wage and salary workers work from home (2006 American Community Survey).
- (3) Office space demand is projected by multiplying estimated number of office employees by 300 SF per employee which takes into account a market equilibrium or "natural" vacancy rate of roughly 8 percent (Federal Reserve Bank of San Francisco estimates San Francisco's natural vacancy rate as 7.9 percent, "Natural Vacancy Rates in Commercial Real Estate Markets," FRBSF Economic Letter Number 2001-27, October 5, 2001). Adjusted for this vacancy rate, new San Francisco office employees are expected to occupy 276 sf/employee, equivalent to estimates used by the San Francisco Planning Department and Transportation Authority.
- (4) Percentages applied are estimates of office jobs in each industry. Percentages are based on national data.

Source: National Center for Real Estate Research (2007), Seifel Consulting Inc.

Market Opportunities

Developers and brokers familiar with the San Francisco office market look favorably on the City's long term future, on the basis that San Francisco is a highly desirable place to live and work, and will continue to draw residents and businesses. The San Francisco economy is resilient and continually reinvents itself. From a center of trade and shipping, to banking and financial services, to technology, art and new media, biotechnology, and tourism, the City has been at the forefront of innovation and industrial change. As long as it continues to attract talented, creative individuals and businesses that seek them, local real estate professionals believe that the City's long-range economic future is bright. Even if no one can foresee precisely what industries and businesses will drive the City's economy over the next few decades, they feel confident that Downtown San Francisco office space will continue to be in high demand over the long term.

Venture Capital (VC) flows support this belief in the regional economy's long-term vitality.³⁰ The Bay Area, including both San Francisco and the Silicon Valley, is at the epicenter of the venture capital world, the largest recipient of VC investment in the nation, as shown in Graph IV-3. Venture capital investments in the region command one-quarter to one-third of all VC investments nationwide, with over \$21.6 billion dollars invested through the third quarter of 2007. The software and semiconductor industries are the top two industries currently receiving venture capital investment, followed by industrial/energy and biotechnology industries. This investment indicates that the region will continue to lead the nation in technological innovation, and thus experience employment growth in associated sectors and demand for office and research and development space.

While the Silicon Valley is still the center of the Bay Area high tech industry, San Francisco is seeing increasing interest from technology and information firms. According to Grubb & Ellis, more than 475 technology firms have committed to roughly 5.6 million in San Francisco office space since 2004.³¹ Google, Yahoo, Sun Microsystems, and Microsoft are among the high tech leaders that have added San Francisco locations along with smaller "web 2.0" and start up firms.³² These moves appear to be motivated primarily by an interest in being closer to San Francisco's pool of highly skilled, talented workers. This increased interest among high technology firms bodes well for the San Francisco office market, given high expectations for the future of the industry in the Bay Area and beyond and its high level of office-based employment.³³

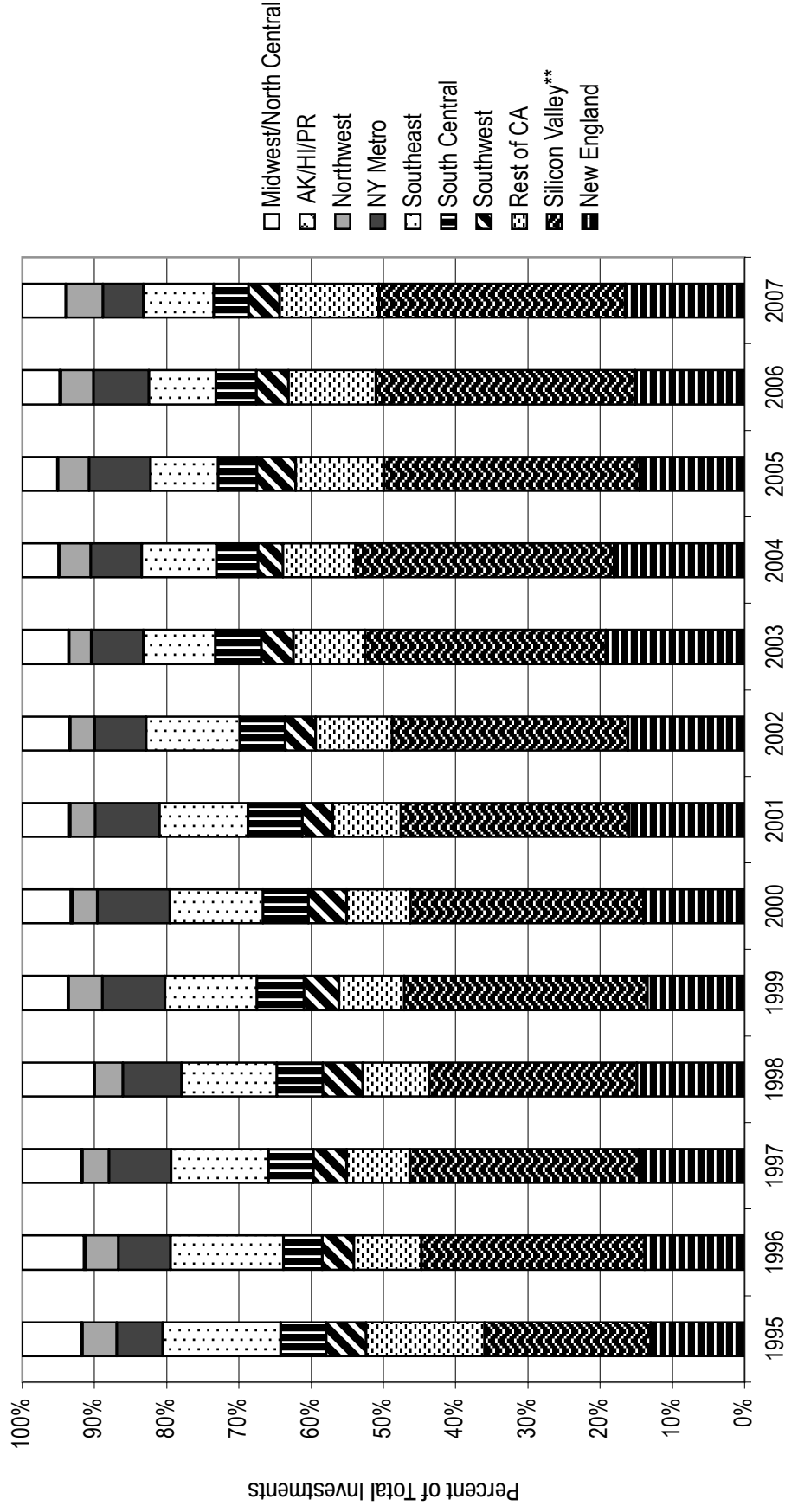
³⁰ Venture Capital funding is an investment in future growth and development, allowing firms to hire employees and make capital purchases to develop their ideas, services and/or products. As such, it serves as an indicator of future economic trends and performance.

³¹ Grubb & Ellis, Fourth Quarter 2007 San Francisco Office Market Trends.

³² J.K. Dineen, "Google subleases San Francisco Gap Space," *Silicon Valley / San Jose Business Journal*, January 12, 2007.

³³ According to the National Center for Real Estate Research, 67 percent of Information industry employees work in offices, and that number is expected to grow to 69 percent by 2014. Moreover, employment within the computer and mathematical science occupation is projected to increase by 31 percent between 2004 and 2014. Source: "Who are Your Future Office Tenants? Office Employment in the United States, 2004-2014," prepared for the National Association of Realtors by John Burns Consulting Company, January 2007.

Graph IV-3
Venture Capital Investments, 1995–2007 *
United States



* Through third quarter 2007.

** Silicon Valley includes the Bay Area and greater northern California region.

Source: PricewaterhouseCoopers National Venture Capital Association, Money Tree Report.

Similarly, major investment and brokerage firms view San Francisco's future for office development and investment favorably. As discussed in the previous section, San Francisco compares quite well to other major office markets, named the strongest office market in North and South America by NKF, tied for second place in ULI's *2008 Emerging Trends in Real Estate* and ranked tenth in Grubb & Ellis' ranking of top office investment markets. While these firms typically only speculate about the near term future (one to three years), they point to some fundamental characteristics of San Francisco and its economy in assessing future prospects, including strong employment, its coastal location and connections to global markets, as well as its status as a "24-hour city." For instance, Jones Lang LaSalle cites strong employment figures, with low unemployment rates and continued growth expected through the near-term.³⁴ Its relative proximity to and cultural and business connections with strong, emerging economies in the Pacific indicate future promise, as does a high quality of life that attracts highly skilled workers.

In its Fourth Quarter 2007 report on San Francisco Office Market Trends, Grubb & Ellis summarizes the potential impact of these trends on local demand for office space:

The Bay Area remains, by a wide margin, the nation's leader in intellectual property and venture capital spending as a result of its incredible talent pool, high quality of life and proximity to the nation's premier education and research institutions. As a global gateway city, San Francisco, along with the greater Bay Area, moves toward the future with a strong leadership position in several key industries, including biotechnology and high technology. The capital being funneled into the area will only continue to support and grow existing businesses and create new ones, thus sustaining the strong demand for space.

Market Constraints

San Francisco's office market does not have the depth of other major national office markets, particularly as it lacks a base of large corporate tenants committed to staying in the City. In contrast, San Francisco primarily caters to business support firms, with a disproportionate share of information, financial activities and professional and business services.³⁵ According to Dun & Bradstreet data for 2005 provided by the San Francisco Planning Department, six industries occupy 56 percent of space within the City's C-3 District: Engineering, Accounting, Research, Management and Related Services (SIC Code 87, 16.5 percent of square footage in the C-3); Business Services (SIC Code 73, 9.9 percent); Real Estate (SIC Code 65, 9.6 percent); Legal Services (SIC Code 81, 8.3 percent); Depository Institutions/Banks (SIC Code 60, 6.7 percent); and Security and Commodity Brokers, Dealers, Exchanges and Services (SIC Code 62, 5.0 percent).³⁶

³⁴ Jones Lang LaSalle, *Smart Market Report for San Francisco*, 2nd Quarter 2007.

³⁵ The San Francisco-Oakland Metropolitan Area has a high concentration of firms in these industries, defined as a location quotient of 1.2 or greater in comparison with the national average. Source: "Who are Your Future Office Tenants? Office Employment in the United States, 2004-2014," prepared for the National Association of Realtors by John Burns Consulting Company, January 2007.

³⁶ Dun & Bradstreet business information for 2005 provided with neighborhood classifications by the San Francisco Planning Department (Fall 2007). Seifel analyzed space occupied (SQFT) by firms within the C-3 neighborhood.

This high concentration of client firms within financial service, law and other professional and business service firms underscores the local office market's dependence on the success of major corporate tenants elsewhere in the region. Most tenants typically choose between locating in San Francisco and somewhere else in the Bay Area, rather than other U.S. or international locations, and thus compare San Francisco lease rates to other parts of the region, rather than to global norms.³⁷

Developers and other industry experts caution that the high cost of doing business in San Francisco could dampen office market demand. Primary factors contributing to the high cost of doing business are real estate and labor prices. Labor costs include both wages, which must be high enough to compensate workers for the region's high cost of living, particularly housing, and financial obligations associated with employing workers in San Francisco like the City's payroll tax and employee benefit requirements.³⁸ The *San Francisco Economic Strategy* also cites the City's perception as unfriendly to business as a factor that deters firms from location or expanding in San Francisco.³⁹

Others fear that some tenants will turn away from Downtown San Francisco due to potential design constraints under consideration by the City. Large tenants, especially those in the high tech sector accustomed to suburban style office layouts, generally prefer contiguous office space on a single floor to avoid having personnel divided among many floors. In order to attract these tenants to San Francisco, developments need sizable floor plates, ideally at or above 25,000 square feet.

Recent trends towards San Francisco locations by technology firms may signal that high tech companies are becoming more comfortable with urban office developments. However, the center of the information industry in San Francisco remains in SOMA, and developers hope to attract firms to larger floorplate, campus-like developments in Mission Bay. Whether technology firms will be attracted spaces within the tall, skinny tower design concept that is being proposed for Downtown San Francisco remains to be seen. These buildings will not only have small floor plates unattractive to larger tenants, they are also more expensive to develop and construct and have lower proportions of usable space than comparably sized developments with larger floorplates.

³⁷ Development focus group participants and interview with Frank Fudem, Senior Vice President with NAI BT Commercial (11/26/2007).

³⁸ *San Francisco Economic Strategy* (2007) and participants in development focus group held jointly by the Planning Department and Seifel Consulting Inc., 11/29/2007.

³⁹ *San Francisco Economic Strategy* (2007).

Market Segmentation

Developers will add to San Francisco's office supply if tenant demand supports the cost of developing new space. Average San Francisco rents, approximately \$50 per square foot for Class A office within the CBD, do not currently support Downtown San Francisco development costs.⁴⁰ Thus, in order to be financially feasible, new development must be targeted to the top tier of the market for office space.

Tenants willing and able to pay rents at the high end of the spectrum will be those who value being in Downtown San Francisco, seek premium views and amenities, and wish to be located near transit, clients, business partners, cultural institutions, business hotels, etc. To date, San Francisco's highest paying firms have been centered within the financial and legal services industries.⁴¹ If current trends continue, most of the firms attracted to newly developed space in the Downtown and Transit Center District Plan Area will likely be relocated from existing space within San Francisco or another part of the region.

2. Residential

Demographic trends, economic forces, as well as less tangible factors like quality of life contribute to the demand for housing. This section draws on population and employment projections as well as local industrial professionals and publications to assess long term demand for housing in San Francisco.

ABAG projections, based on land availability, smart growth principles, and national and regional projections, estimates that the Bay Area's population will increase by over 1.9 million people between 2005 to 2035, with San Francisco expected to add 156,000 people between 2007 and 2035. The California Department of Finance (DOF), using fertility, survival and migration rates to model population growth, projects San Francisco's population growth much more conservatively. DOF estimates San Francisco will grow by about 48,000 new residents through 2035, an average annual growth rate of 0.2 percent, far below the historical average of 0.4 percent experienced between 1970 and 2006.⁴² As shown in Graph IV-4, ABAG and DOF population projections translate into 22,000 to 54,000 new households requiring housing, or 800 to 2,000 housing units annually.⁴³

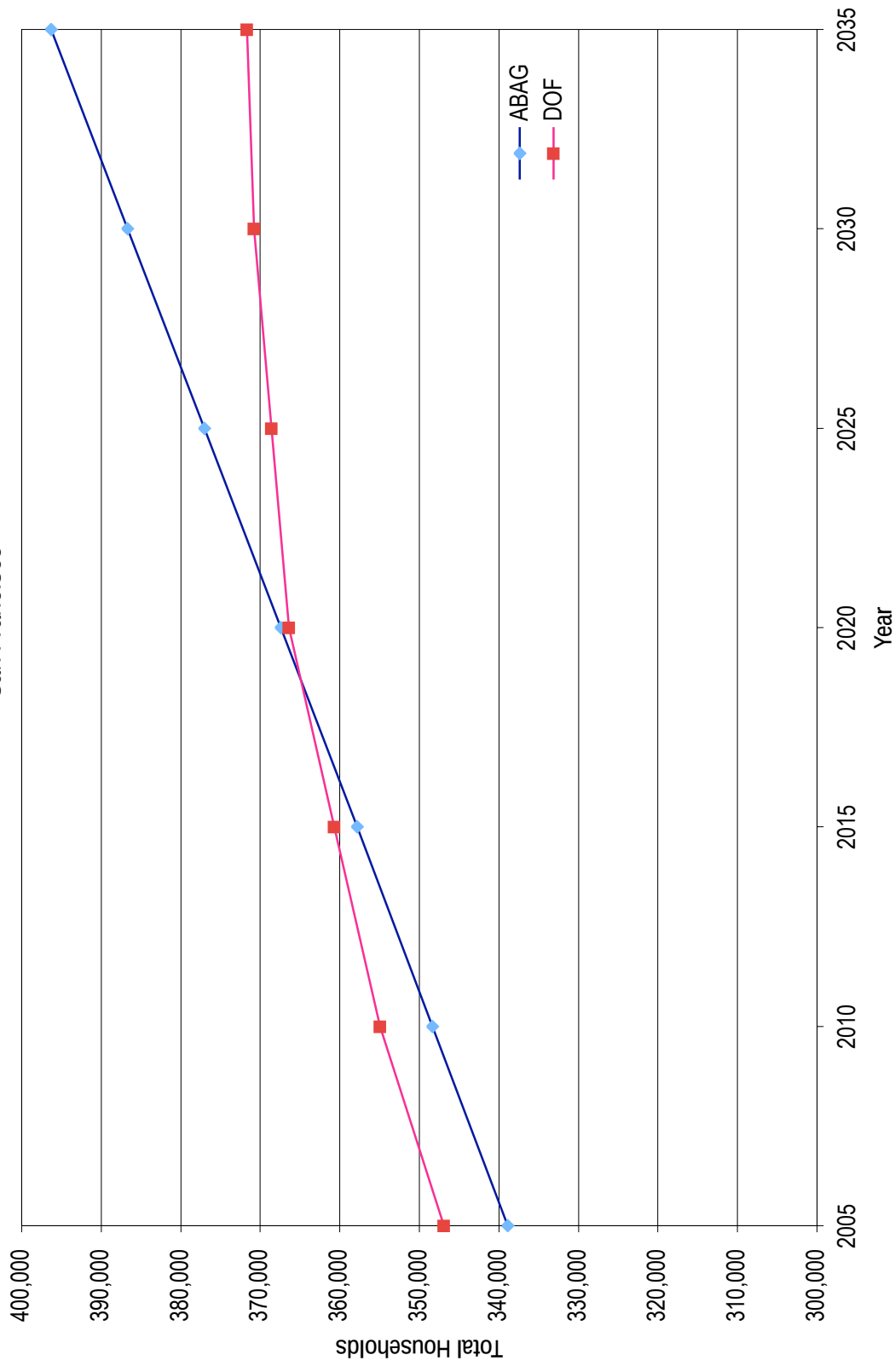
⁴⁰ Development focus group participants estimate rents needed to make new office development feasible in Downtown San Francisco at \$70 to \$100 per square foot. Although construction costs may level off, they are not likely to drop significantly.

⁴¹ Jim Gardner, "Another 2000 election that turned out badly: DiFi's S.F. office lease," *San Francisco Business Times*, Friday, January 26, 2007. While the highest paying leases in San Francisco range from \$90 to \$100 per square foot, major technology firms like Google and Microsoft are reportedly paying \$35 to \$45 per square foot for Downtown San Francisco office space.

⁴² DOF projections are benchmarked to 2000 U.S. Census population.

⁴³ Household demand is inflated by 5 percent to provide enough housing given normal residential vacancy rates. The housing needed to accommodate the new residents is affected by household size. ABAG projects households as well as population, and estimates that the average San Francisco household size will increase from 2.35 in 2005 to 2.41 by 2035. As DOF does not project households, Seifel used DOF estimates of persons per household for 2007 (an average of 2.30) to estimate future households.

Graph IV-4
Citywide Households Projected, 2005–2035
San Francisco



Source: Association of Bay Area Governments (ABAG), California Department of Finance (DOF), Seifel Consulting Inc.

The San Francisco Housing Element (2004) reports that the State Department of Housing and Community Development (HCD) and ABAG have estimated San Francisco must provide more than 2,700 units annually from 1999 to 2006 in order to meet its share of the Bay Area's projected housing need. As shown in Graph II-9, 2003 was the only year during this time frame in which the number of housing units constructed met this production goal. These repeated shortages contribute to pent up demand for housing in San Francisco.

Employment is also a key driver of residential demand, particularly within the apartment market. As discussed in previous portions of this report, employment growth has been strong in recent years and is expected to remain healthy. Between 90,000 and 264,000 new jobs are projected for the 2007 to 2035 period.⁴⁴ If the current ratio of workers who both live and work in San Francisco holds true over this timeframe, this would mean 38,000 to 110,000 workers seeking housing within the City, or 1,400 to over 4,100 housing units annually.⁴⁵ ABAG employment projections yield demand for over 4,100 new units annually, much higher than ABAG's estimate of household demand, indicating that ABAG expects more employed San Francisco residents per household in the future, a higher share of San Francisco workers to live outside the City, and/or a greater share of San Francisco residents to also work within the City.

Graph IV-5 illustrates annual housing units based on historical trends, population projections, and employment projections. Employment projections were adjusted to account for the share of workers who also live in San Francisco and the number of employed persons per household.⁴⁶

Market Segmentation

As with office space, developers will build new housing in San Francisco if market sales prices are high enough to support the cost of new development. Developers estimate that building high-rise housing in Downtown San Francisco currently requires sales prices in excess of \$1,000 per square foot to be financially feasible.⁴⁷ According to residential brokers familiar with the area, sales prices per square foot in new construction throughout San Francisco are currently at an average of \$797 per square foot, but sales prices in high-end Downtown projects like the Infinity exceed this amount.⁴⁸ This translates to upwards of \$1 million for a typical two-bedroom unit. As such, other than affordable housing required by San Francisco's inclusionary housing policy or within the Transbay Redevelopment Area, new Downtown development is likely to target higher end users in order to recover high development costs.

⁴⁴ ABAG's *Projections 2007* and REMI economic model, provided by the City of San Francisco Controller's Office. The mid-range projection by Moody's estimates total employment growth of roughly 129,000 jobs.

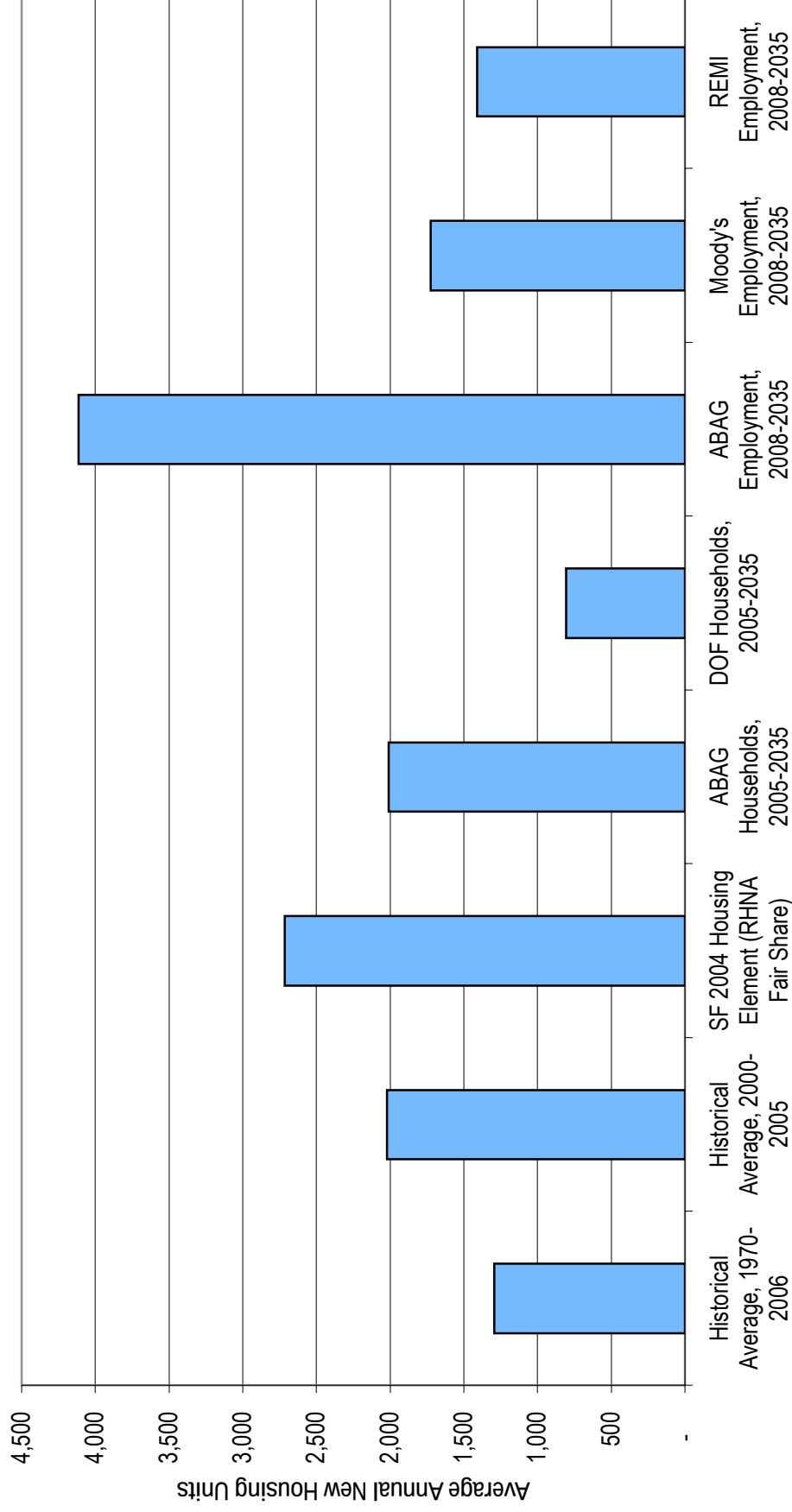
⁴⁵ Based on Journey to Work data from the U.S. Census 2000, 55.2 percent of San Francisco workers also live in the City.

⁴⁶ In 2000, households in San Francisco averaged 1.3 employed residents per household. (ABAG, *Projections 2007*)

⁴⁷ Estimates provided by development focus group participants varied from low \$1,000 to as high as \$2,000 per square foot. Per square foot costs are highly variable depending on building type, unit size, type and configuration.

⁴⁸ Alan Mark, President of the Mark Company, speaking about the Infinity and area at "A Taller San Francisco" event (January 2008) and "On the Market: A Residential Real Estate Report," The Mark Company, Third Quarter 2007.

Graph IV-5
Historical and Projected Annual Housing Units
San Francisco



Source: San Francisco Planning Department Housing Inventory, San Francisco Housing Element (2004), ABAG, DOF, Moody's, REMI. Employment projections adjusted for the share of workers also living in the City (55.2 percent) and employed workers per household (1.3 for San Francisco, 2000, according to ABAG).

Most recent buyers of downtown housing are affluent Bay Area households choosing to either relocate to Downtown or purchase a second home.⁴⁹ Twenty percent of Bay Area households (over 500,000 households) earn at least \$137,000, with median incomes of roughly \$233,000. Within San Francisco, incomes for the nearly 65,000 households in this highest bracket are slightly higher, with minimum household incomes of \$140,000 and median incomes of \$242,000.⁵⁰ These individuals and families are the primary source of demand for high-rise housing in Downtown San Francisco.

B. Supply and Constraints

1. Future Supply

Based on current projects in the development process, the Planning Department reports nearly 1.5 million square feet of office development and 5,800 housing units approved or under construction within Downtown as of the end of the fourth quarter 2007.⁵¹ Another 1.1 million square feet of office space and nearly 3,500 housing units are anticipated as part of new development within the Transbay Redevelopment Project Area and Piers 30–32.⁵² This amounts to 2.6 million gross square feet of office development and over 9,300 housing units expected in Downtown San Francisco through 2035, as shown in Table IV-2.

Table IV-2
Future Downtown Supply⁽¹⁾
Downtown San Francisco

Development Type	Approved or Under Construction	Programmed (2)	Future Downtown Supply
Office Space (GSF)	1,458,000 GSF	1,135,000 GSF	2,593,000 GSF
Housing (Units)	5,840 Units	3,470 Units	9,310 Units
Housing (GSF)	7,008,000 GSF	4,164,000 GSF	11,172,000 GSF
Total Office/Residential GSF	8,466,000 GSF	5,299,000 GSF	13,765,000 GSF

Note: Space (GSF) rounded to the nearest 1,000, and housing units to the nearest 10.

(1) Future office square footage and residential units within Downtown that are under construction, approved or "programmed" as of Q4 2007, after taking into account any existing space lost during redevelopment.

(2) Programmed figures are for the Transbay Redevelopment Area and Piers 30-32. The Transbay Redevelopment Area is assumed to include 765,000 square feet of new office development.

Source: San Francisco Planning Department, Seifel Consulting Inc.

⁴⁹ The resident profile of buyers from Urban West Associate's One Rincon Hill development indicates that 86 percent of buyers previously lived elsewhere in the Bay Area, with 36 percent from San Francisco. (Pacific Marketing Associates, 8/24/2007). Similarly, early reports regarding pre-sales at the Millenium indicate that 98 percent of contract holders are from the Bay Area and 70 percent intend to make the Millenium their primary residence (http://www.socketsite.com/archives/2008/02/millennium_tower_san_francisco_301_mission_sales_update.html).

⁵⁰ American Community Survey, 2006, U.S. Census Bureau, Seifel Consulting Inc.

⁵¹ These figures are net new supply for office and residential development, accounting for existing development that may be redeveloped as part of new construction. San Francisco Planning Department, February 2008.

⁵² For this analysis of future supply, the Transbay Area is assumed to include 765,000 square feet of new office development, an amount allowed under current zoning.

In addition to the office and residential development shown in Table IV-2, the San Francisco Planning Department estimates that 55,000 gross square feet of cultural, institutional or educational, 534,000 gross square feet of visitor and 198,000 square feet of retail space are under construction or approved and will be available between now and 2012.⁵³ Appendix A, Exhibit B details key development projects in the South Financial District to occur the next 10 to 20 years.

2. Supply Constraints

Physical capacity, the amount of land available for development as either office or housing, or a combination of other land uses, is a major constraint to new development in San Francisco. Very few large vacant lots remain available for development in and around the Transit Center District Plan Area, as shown in Figure IV-1.⁵⁴

However, some sites are under-developed relative to their development potential, referred to as “soft sites” that may be redeveloped to higher intensities. The San Francisco Planning Department assessed the prevalence of soft sites within Downtown, after taking into account development already approved or under construction.⁵⁵ Of the 3,250 parcels within Downtown, 806 are considered “soft” and therefore likely to be redeveloped.⁵⁶ These 806 parcels could potentially yield a net new 26.8 million square feet of development under current zoning.⁵⁷ See Appendix C for detailed information on the methodology the Planning Department utilized to calculate build out capacity.

⁵³ This estimate assumes that no changes are made to current development applications and includes approved plans, approved, reinstated or issued building permits, and developments under construction. Based on San Francisco Planning Department’s pipeline data as of February 2008.

⁵⁴ Figure IV-1 does not show any developments currently under construction, approved or programmed, as having potential capacity. The one sizable vacant/nearly vacant site remaining, at the corner of Howard and 2nd Streets, contains a proposed although not yet approved office development, 222 Howard, according to Planning Department pipeline project information.

⁵⁵ Parcels with projects under construction or approved within Downtown and/or listed in Exhibit B were not included in the Planning Department’s soft site analysis. Of those listed under potential development in Exhibit B, the following Plan Area projects were considered soft sites: 222 2nd Street, 350 Mission Street and 41 Tehama Street.

⁵⁶ These 806 sites are currently developed to less than 30 percent of their total development potential under current zoning and height regulations. Appendix C notes that the Planning Department calculates capacity on soft sites at the 5, 30 and 40 percent level. This analysis only considers capacity at the 5 and 30 percent level, as these are more likely to actually redevelop.

⁵⁷ Current land use and zoning regulations places limitations on height (up to 550 feet) and bulk in the Downtown. San Francisco currently employs a hierarchical or cumulative zoning scheme within the Downtown, allowing residential and other uses within the Downtown, although much of it is primarily designated for office and other commercial uses. This capacity does not take into account all restrictions associated with historic preservation, as such a designation does not necessarily preclude redevelopment. Approximately 29 percent of the soft sites in the Downtown (232 out of 806 soft sites) are subject to some historic designation. Without including these sites, potential capacity within the Downtown drops to 18.0 million square feet.

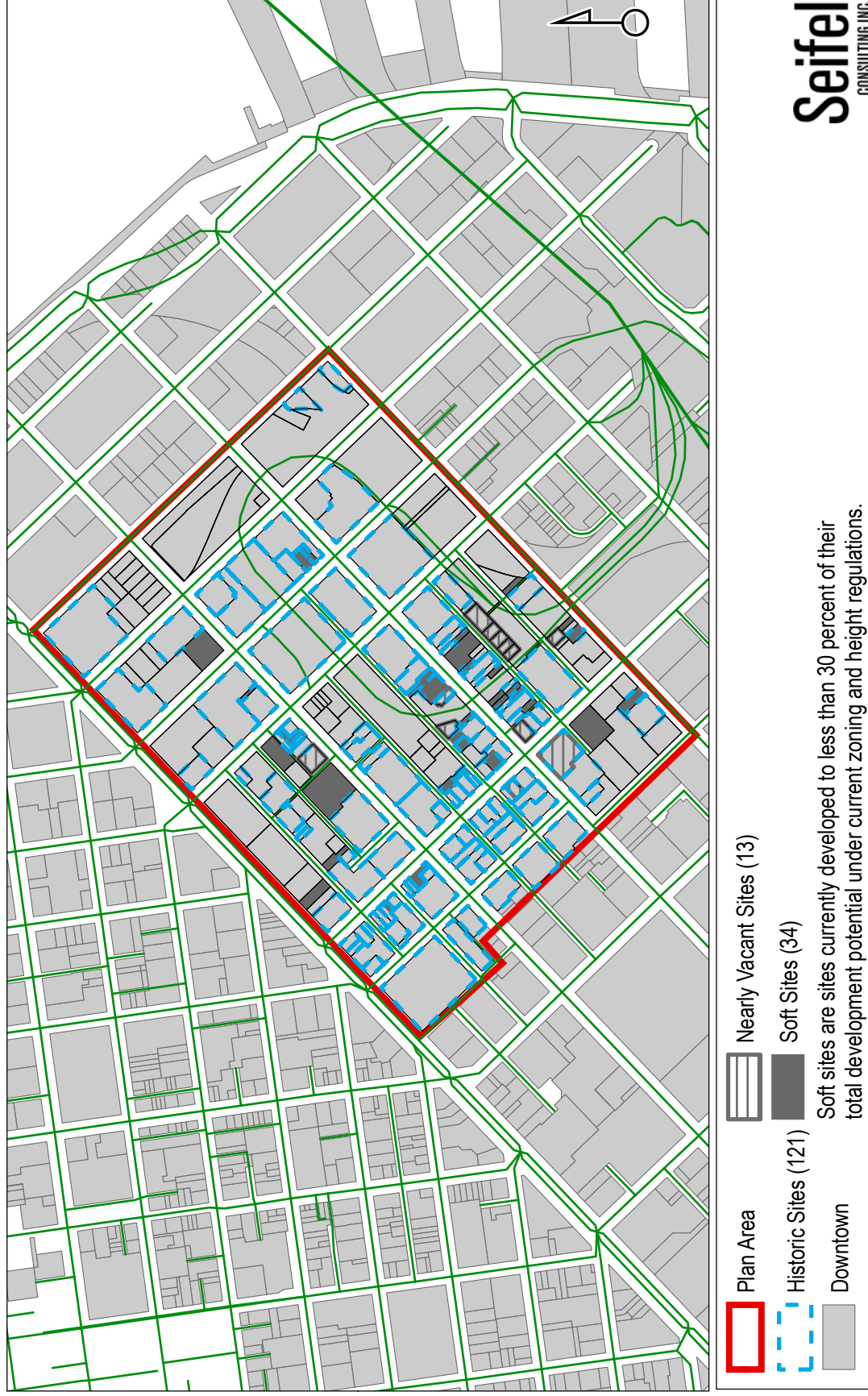
San Francisco also has limit on annual the amount of office space that can be developed annually, which also impacts development potential in Downtown San Francisco. The 1985 Downtown Plan established annual limits on office developments larger than 25,000 gross square feet. The total amount of office development approved annually is limited to 950,000 square feet, of which 75,000 square feet is earmarked for developments smaller than 50,000 square feet. As illustrated in Graph IV-6, these limits do not appear to pose an issue if office space estimates based on either REMI or Moody's employment projections are borne out, but they are hit under ABAG employment projections.

In analyzing whether annual office limits will restrict development, the cyclical nature of office development must also be considered. As illustrated in Graph II-7, office development has fluctuated greatly over time, with no office space constructed in some years and as much as 2.3 million square feet (2000), for an average of roughly 700,000 square feet per year. Given that historical office development has averaged less than the annual limits, over 900,000 square feet in potential approvals for small developments and 1.8 million for large developments is currently available.⁵⁸

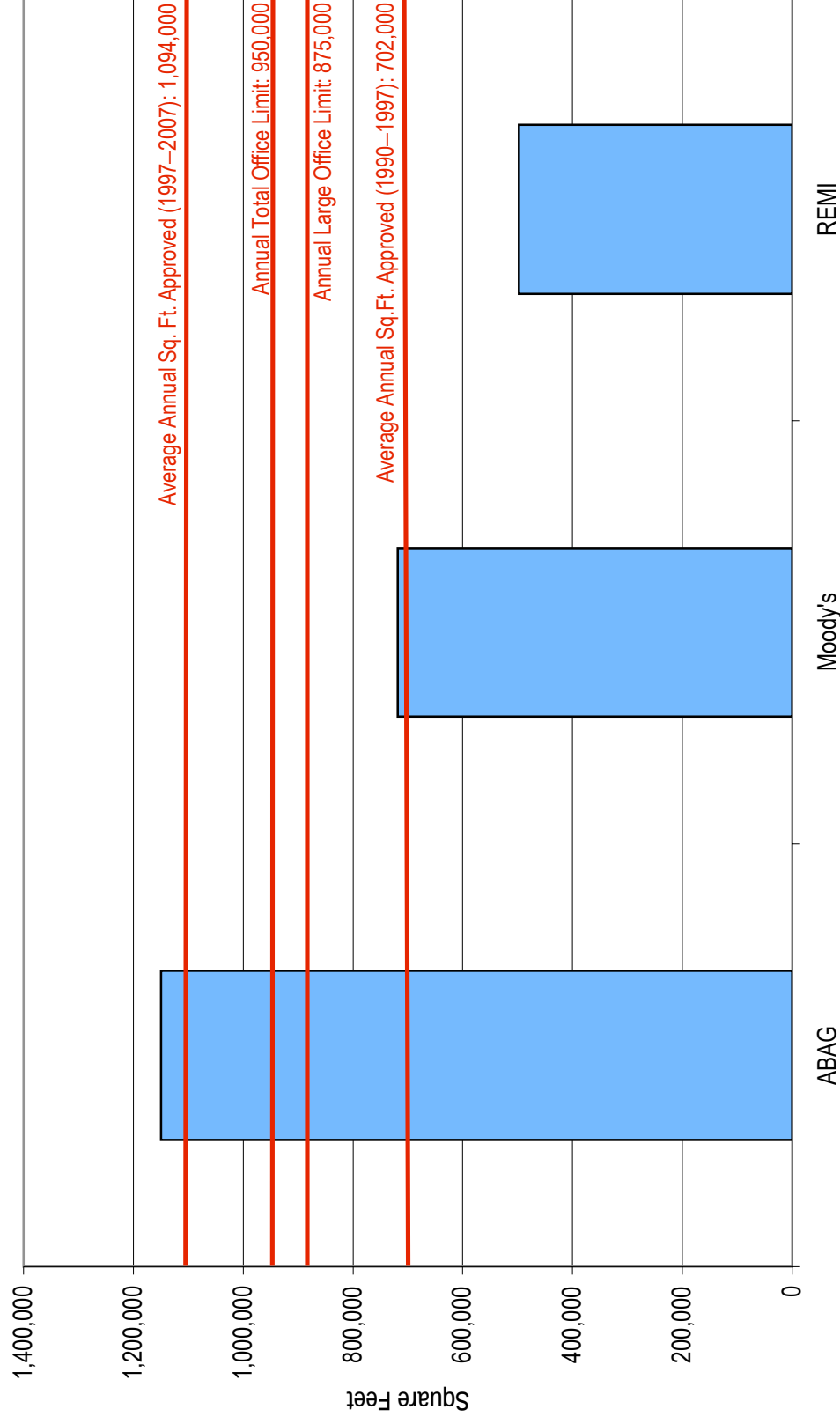
Since 1997, office development has intensified, with nearly 1.1 million square feet of space permitted per year. Looking forward, the proposed Transbay Tower alone could contain up to 1.8 million square feet of office space, roughly equivalent to two years of the annual office allocation for large developments. As such, depending upon the timing of development proposals and how the limits are administered, office development under any employment scenario could be constrained by existing limits in certain years.

⁵⁸ San Francisco Planning Department Annual Office Development Limits, updated as of the beginning of the 2007–2008 Annual Limit review and approval period (10/17/2007).

Figure IV-1
Historic and Soft Sites
San Francisco Transit Center District Plan



Graph IV-6
Historical and Projected Annual Office Space and Annual Office Limitations
San Francisco



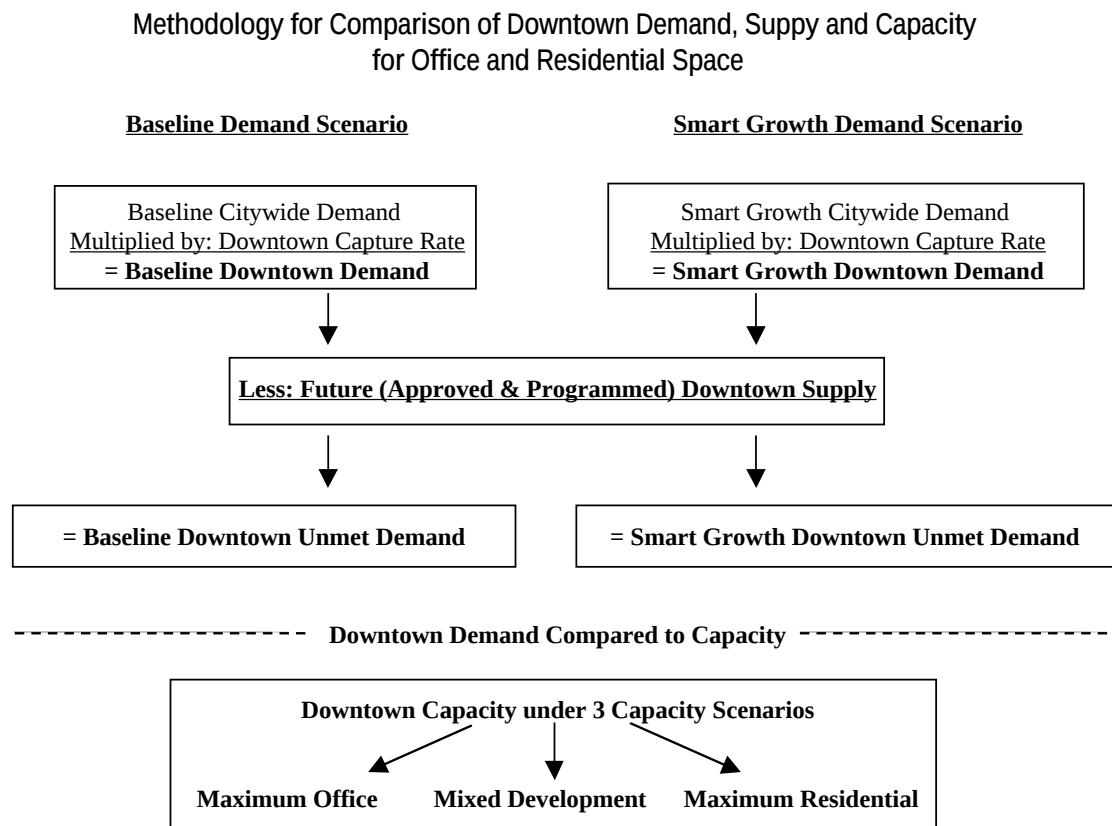
Source: San Francisco Planning Department, ABAG Projections 2007, Moody's, Regional Economic Models, Inc. (REMI), Seifel Consulting Inc.

C. Comparison of Downtown Demand, Supply and Capacity

This section quantifies and compares estimates of future demand for office and residential uses to potential supply and capacity in Downtown San Francisco. Using assumptions supported by findings throughout this Report, the following key steps were taken in the analysis:

- Estimate demand for office and residential development in Downtown San Francisco under Baseline and Smart Growth Demand scenarios,
- Assess future Downtown supply and remaining or unmet demand, and
- Compare unmet demand to Downtown capacity as a whole and under three potential land use scenarios.

The figure below illustrates the methodology underlying the comparative analysis:



1. Demand in Downtown San Francisco

Seifel and the San Francisco Planning Department estimate the potential demand for office and residential development in San Francisco and the Downtown through 2035 based on two viewpoints on future growth, referred to as Baseline and Smart Growth. Baseline demand estimates are based on historic growth trends while the Smart Growth demand is estimated using ABAG projections, as further described below.

Baseline Demand Scenario

REMI and Moody's estimates of San Francisco job growth roughly align with the City's historic employment growth, as shown in Graph IV-1. This analysis therefore utilizes REMI and Moody's employment projections to estimate citywide office space demand through 2035. For residential development, citywide housing unit demand is estimated using 0.4 percent annual growth, equivalent to average annual housing unit growth citywide from 1970 to 2006. These assumptions provide a conservative baseline estimate of demand, as REMI and Moody's projections are influenced by historical limitations on supply and annual residential growth rates have been greater than 0.4 percent in recent years. Under the Baseline Demand Scenario, San Francisco is projected to need 17.0 million square feet of office space and over 41,000 housing units.⁵⁹

Smart Growth Demand Scenario

The Smart Growth Demand Scenario is based on ABAG projections of employment and household growth. While ABAG projections anticipate greater increases in employment and population than other projections reviewed in this Report, they are reasonable in comparison to recent trends. Moreover, ABAG estimates are supported by San Francisco's strong fundamentals and locational attributes, including its position as a global gateway and vibrant, "24-hour" city, and the real estate community's recognition of those strengths. The City's commitment to its Economic Strategy will reinforce San Francisco's attractiveness and growth potential. Furthermore, in planning for the future of Downtown San Francisco, the Bay Area's most transit-rich and dense area, employing smart growth principles as in the ABAG projections, represents the responsible approach to land utilization and development. Under the Smart Growth Demand Scenario, San Francisco is expected to need an estimated 32.2 million square feet of office space and over 56,000 housing units through 2035.⁶⁰

⁵⁹ As shown in Tables IV-3A and IV-3B, demand estimates use employment projections, the share of future jobs considered office jobs under each projection and the percent of workers expected to work from home to estimate office jobs. Office space needs are estimated at 300 square feet per employee. Residential unit demand assumes a 5 percent vacancy rate, considered standard for a healthy residential market, as needed to translate household growth to demand for housing units.

⁶⁰ See footnote 59.

Downtown Demand Capture

Downtown San Francisco is expected to capture a share of citywide growth, with specific “capture rates” estimated based on historical trends, market conditions and future expectations discussed throughout this Report. Downtown is assumed to capture 73 percent of new office development in San Francisco, in rough proportion to Downtown’s current share of total San Francisco office space (Graph II-6), and 21 percent of new residential development, equivalent to the Downtown’s share of pipeline and programmed new units.⁶¹

Given these capture rates, Downtown San Francisco is projected to need between 12.4 and 23.5 million square feet of office space under Baseline and Smart Growth Demand Scenarios through 2035 (an average of 444,000 and 840,000 square feet annually). Downtown residential demand is estimated at nearly 8,600 housing units under the Baseline Demand Scenario and over 11,700 housing units under Smart Growth (roughly 300 and 420 housing units per year). Tables IV-3A and IV-3B contain Baseline and Smart Growth Demand Scenario calculations. Graphs IV-7 and IV-8 illustrate office and residential demand under these scenarios.

⁶¹ Rather than assume the Downtown will capture 6 percent of citywide growth, in line with its current proportion of citywide housing stock, the Downtown capture rate is based on its share of pipeline and programmed new units for the following reasons. Downtown has become an increasingly important destination for housing given its location near transit, the waterfront and key employment centers, as evidenced by the fact that Downtown is home to roughly 40 percent of new housing units built in San Francisco between 2000 and 2006. Moreover, a relatively large proportion of new residential development in San Francisco’s pipeline is slated for the Downtown, and constraints on remaining build out capacity in other parts of the City limit their potential to accommodate significant new housing. Pipeline and programmed units for San Francisco as a whole and Downtown provided by the San Francisco Planning Department (April 2008).

Table IV-3A
Baseline Demand Scenario, 2007–2035
San Francisco and Downtown San Francisco

	REMI	Moody's	Source
San Francisco Job Growth	90,350	110,470	REMI, Moody's
% Office Jobs	55.9%	63.2%	Table IV-1
Growth in Office Jobs	50,520	69,830	
% of Workers Working from Home	8.0%	4.0%	U.S. Census, American Community Survey (2006), as adjusted
Office Job Growth Outside the Home	46,480	67,040	for difference in self-employment (1)
SF/New Office Job	300	300 GSF	ULI, San Francisco Planning Department (2)
Office Space Demand	13,944,000	20,112,000 GSF	
Office Space Demand (Average)		17,028,000 GSF	Average of REMI and Moody's results
San Francisco Household Growth		N/A	
Residential Vacancy Rate		N/A	
Housing Unit Demand		41,170 Units	Based on 0.4% historical annual growth in housing units from 1970 to 2006, as shown in Graph IV-5 (3)

Development Type	Baseline Demand		
	San Francisco (Citywide)	Downtown	
		Capture Rate (4)	SF/Units
Office Space (GSF)	17,028,000 GSF	73%	12,430,000 GSF
Housing (Units)	41,170	21%	8,580 Units
Housing (GSF)		@ 1,200 GSF/Unit:	<u>10,296,000 GSF</u>
Total Office/Residential GSF			22,726,000 GSF

Note: Space (GSF) rounded to the nearest 1,000, and jobs and housing units to the nearest 10.

- (1) The percentage of workers working from home is different for Moody's as self-employment is not included in the projection figures. As discussed in Section II.B of this Report, 7.6 percent of all San Francisco workers work from home, while 3.6 percent of wage and salary workers work from home (2006 American Community Survey).
- (2) This estimate of 300 square feet per employee takes into account an 8 percent vacancy rate, as explained in Table IV-1.
- (3) Historical housing unit data provided by San Francisco Planning Department.
- (4) The 73 percent office capture rate based on Downtown's existing share of San Francisco office space, according to CoStar (February 2008); the 21 percent residential capture rate based on Downtown's share of citywide pipeline and programmed development as of April 2008 (San Francisco Planning Department).

Table IV-3B
Smart Growth Demand Scenario, 2007–2035
San Francisco and Downtown San Francisco

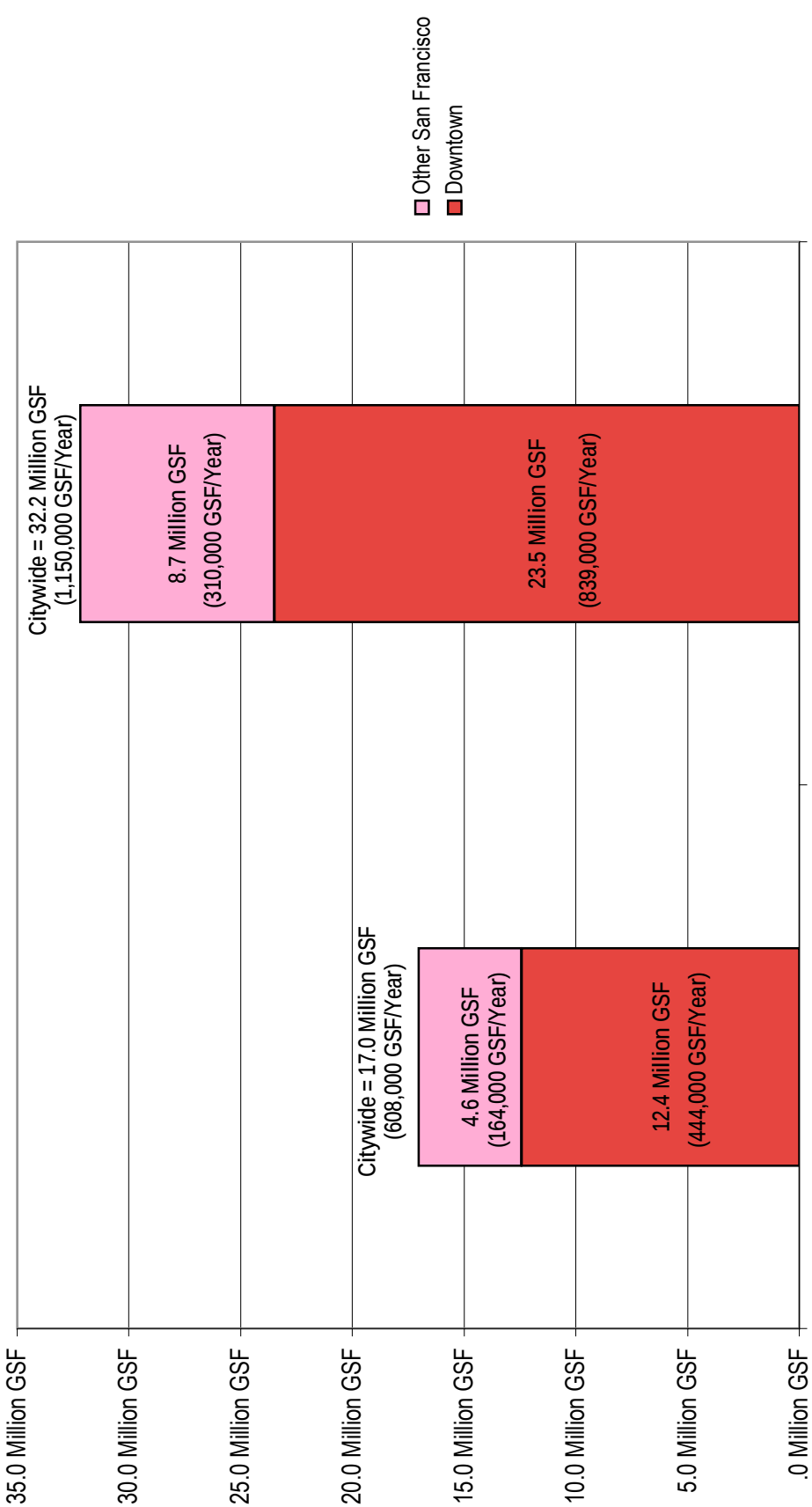
		Source
San Francisco Job Growth	263,660	ABAG, 2007 Projections
% Office Jobs	44.2%	Table IV-1
Growth in Office Jobs	116,620	
% of Workers Working from Home	8.0%	U.S. Census, American Community Survey (2006)
Office Job Growth Outside the Home	107,290	
SF/New Office Job	300 GSF	ULI, San Francisco Planning Department (1)
Office Space Demand	32,187,000 GSF	
San Francisco Household Growth	53,630	ABAG, 2007 Projections
Residential Vacancy Rate	5.0%	Typical residential vacancy rate
Housing Unit Demand	56,310 Units	

Development Type	Smart Growth Demand		
	San Francisco	Downtown	
		Capture Rate (2)	SF/Units
Office Space (GSF)	32,187,000 GSF	73%	23,497,000 GSF
Housing (Units)	56,310	21%	11,740 Units
Housing (GSF)		@ 1,200 GSF/Unit:	<u>14,088,000 GSF</u>
Total Office/Residential GSF			37,585,000 GSF

Note: Space (GSF) rounded to the nearest 1,000. Jobs, households and housing units rounded to the nearest 10.

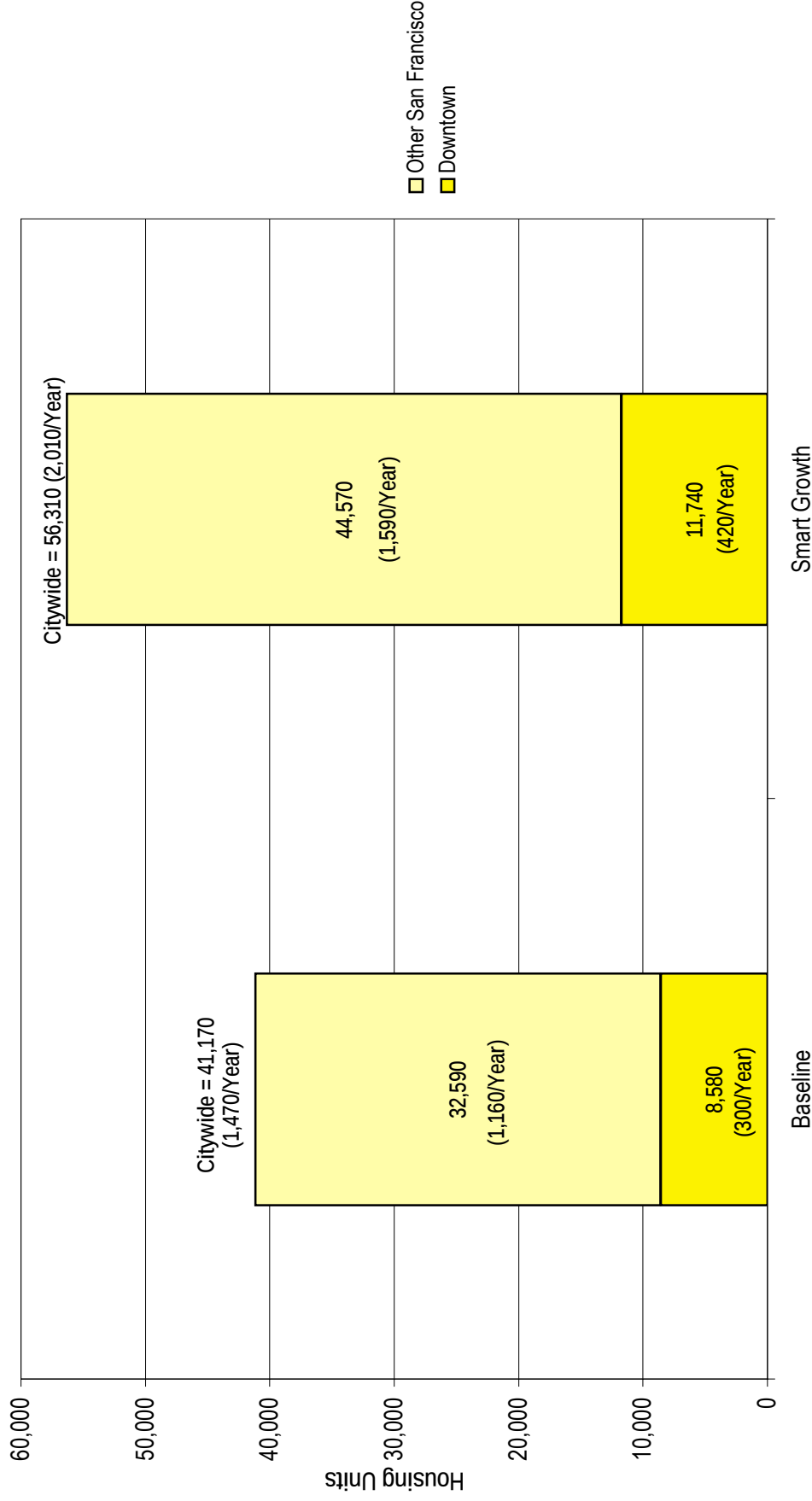
- (1) This estimate of 300 square feet per employee takes into account an 8 percent vacancy rate, as explained in Table IV-1.
- (2) The 73 percent office capture rate based on Downtown existing share of San Francisco office space, according to CoStar (February 2008); the 21 percent residential capture rate based on Downtown's share of citywide pipeline and programmed development as of April 2008 (San Francisco Planning Department).

Graph IV-7
Office Space Demand Under Baseline and Smart Growth Demand Scenarios, 2007-2035
San Francisco and Downtown San Francisco



Source: San Francisco Planning Department, Seifel Consulting Inc.

Graph IV-8
Housing Unit Demand Under Baseline and Smart Growth Demand Scenarios, 2007-2035
San Francisco and Downtown San Francisco



Source: San Francisco Planning Department, Seifel Consulting Inc.

2. Downtown San Francisco Future Supply and Unmet Demand

As discussed in Section B and shown in Table IV-2, the San Francisco Planning Department anticipates roughly 2.6 million gross square feet of office development and over 9,300 housing units in Downtown San Francisco through 2035 based on projects currently approved, under construction or “programmed” for specific areas like the Transbay Redevelopment Project Area and Piers 30–32.⁶²

Baseline Unmet Demand

Demand for office development within Downtown San Francisco, estimated at 12.4 million square feet, exceeds future supply by roughly 9.8 million square feet, given the projected future supply of office space, as illustrated in Table IV-4. Demand for residential development is met by future downtown supply of residential units.

Smart Growth Unmet Demand

Under the Smart Growth assumptions, estimated Downtown demand for office space and residential units exceeds future supply by over 23.8 million gross square feet, with unmet demand for 20.9 million gross square feet of office space and 2,430 residential units, as shown in Table IV-4.

Table IV-4
Unmet Demand Under Baseline and Smart Growth Demand Scenarios, 2007–2035
Downtown San Francisco

Development Type	Baseline			Smart Growth		
	Downtown Demand	Future Downtown Supply	Unmet Demand	Downtown Demand	Future Downtown Supply	Unmet Demand
Office Space (GSF)	12,430,000 GSF	2,593,000 GSF	9,837,000 GSF	23,497,000 GSF	2,593,000 GSF	20,904,000 GSF
Housing (Units)	8,580 Units	9,310 Units	0 Units (1)	11,740 Units	9,310 Units	2,430 Units
Housing (GSF)	10,296,000 GSF	11,172,000 GSF	0 GSF (1)	14,088,000 GSF	11,172,000 GSF	2,916,000 GSF
Total Office/Residential GSF	22,726,000 GSF	13,765,000 GSF	9,837,000 GSF	37,585,000 GSF	13,765,000 GSF	23,820,000 GSF

Note: Space (GSF) rounded to the nearest 1,000, and housing units to the nearest 10.

(1) As future Downtown supply is greater than demand, there is no unmet demand for residential space.

Source: San Francisco Planning Department, Seifel Consulting Inc.

⁶² San Francisco Planning Department, February 2008.

3. Capacity Scenarios

Seifel compared this unmet demand to capacity for new development within Downtown San Francisco.⁶³ As discussed in the previous section, Downtown San Francisco has capacity for roughly 26.8 million square feet of new development, excluding parcels with new development under construction, approved or “programmed.”⁶⁴ Current zoning limits overall development capacity by regulating allowable heights, bulks and floor to area ratios (FAR). It also controls where certain land uses can be located. For example, office development is only permitted within certain districts under current zoning.⁶⁵ These districts contain 17.2 million square feet of capacity for new development, or 62 percent of total Downtown capacity (Graph IV-9).

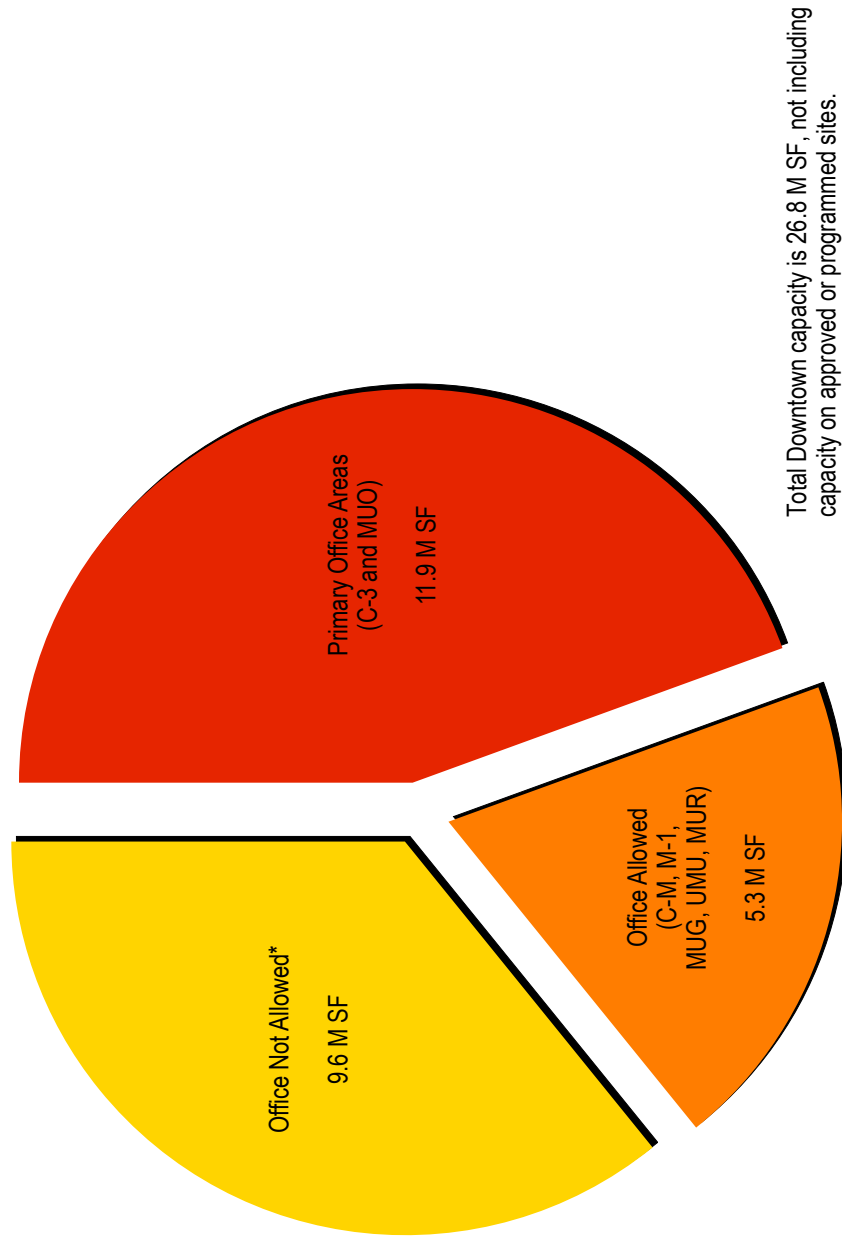
The Planning Department and Seifel developed three capacity scenarios to assess potential land use policies and their impact on Downtown’s ability to absorb estimated demand for office and residential development. These scenarios represent a spectrum of land use capacity possibilities going from primarily office to primarily residential, based on the range of uses allowed under existing zoning. The scenarios were developed for analytical purposes only and do not represent policy choices.

⁶³ As discussed in Chapter 1, Downtown San Francisco is defined by the area analyzed in the Planning Department’s Downtown Monitoring Report, and as shown in Figure I-1. This geography is used as it encompassed a larger C-3 district and other immediate adjacent areas where office uses have been generally allowed.

⁶⁴ San Francisco Planning Department soft site analysis, February 2008. Capacity is net new development possible for parcels currently developed to less than 30 percent of their potential under existing zoning, as described in Appendix C. Without potentially historic sites, capacity falls to 18.0 million square feet.

⁶⁵ Capacity calculation assumes adoption of proposed Eastern Neighborhoods zoning for East SoMa as of May 2008.

Graph IV-9
 Remaining Development Capacity Under Existing Height and Bulk Controls by Zoning District
 Downtown San Francisco



* Zoning Districts where office use is not allowed include CCB, DTR-S, NC-T, RC-4, RED, RH DTR, RH-3, RSD, SLI, SLR, VNMDR-SUD.
 Source: San Francisco Planning Department.

Each capacity scenario is based on the total Downtown capacity of 26.8 million square feet, in line with existing height and FAR policies. Under each scenario, 20 percent of total capacity or 5.4 million square feet is set aside for retail, visitor, cultural, institutional and other non-office, non-residential development.⁶⁶ Office and residential capacity varies under each scenario, as explained below and shown in Table IV-5 and Graph IV-10:

- ***Scenario 1: Maximum Office***
Allocates to office 100 percent of capacity within the primary office districts (C-3 and MUO) and 25 percent of capacity within other districts that allow office development (C-M, M-1, MUG, UMU, and MUR). Non-office/non-residential uses are allocated 20 percent of Downtown capacity. Remaining capacity is allocated to residential development. Scenario 1 is a benchmark of the maximum amount of office space that could be physically accommodated in areas zoned to allow office.
- ***Scenario 2: Mixed Development***
Allocates 70 percent of capacity within primary office districts (C-3 and MUO) to office, 10 percent to residential and 20 percent to non-office/non-residential. In other districts that allow office development, 25 percent is allocated to office, 20 percent to non-office/non-residential and 55 percent to residential. Space in remaining districts is split 80 percent to residential and 20 percent to non-office/non-residential.
- ***Scenario 3: Maximum Residential***
Provides the greatest amount of residential capacity with 40 percent of capacity within primary office districts (C-3 and MUO) allocated to residential, 40 percent to office and 20 percent to non-office/non-residential. Of the remaining capacity, 80 percent is allocated to residential and 20 percent to non-office/non-residential space.

⁶⁶ As discussed in Chapter II, Section C, the 2004 Downtown Monitoring Report reports that 40 percent of new Downtown construction between 1994 and 2002 occurred in retail, visitor, cultural, and institutional uses. Major projects like the Moscone Center expansion, SFMoMA, Yerba Buena Gardens, the Metreon, Westfield Center, and other large-scale entertainment and visitor-oriented developments were constructed over this timeframe, largely as part of the Yerba Buena Center Redevelopment Area, which is now nearly complete. Downtown San Francisco is not expected to sustain this high level of non-office, non-residential development given remaining Downtown capacity and competition for space from office and residential users. Therefore, Seifel and the Planning Department have estimated needed space for non-office, non-residential uses at 20 percent of Downtown capacity and applied this constant share of non-office, non-residential space to all three capacity scenarios in order to explore the trade-offs between the two primary variables under investigation, housing and offices.

Table IV-5
Potential Development Capacity Under Different Scenarios
Downtown San Francisco

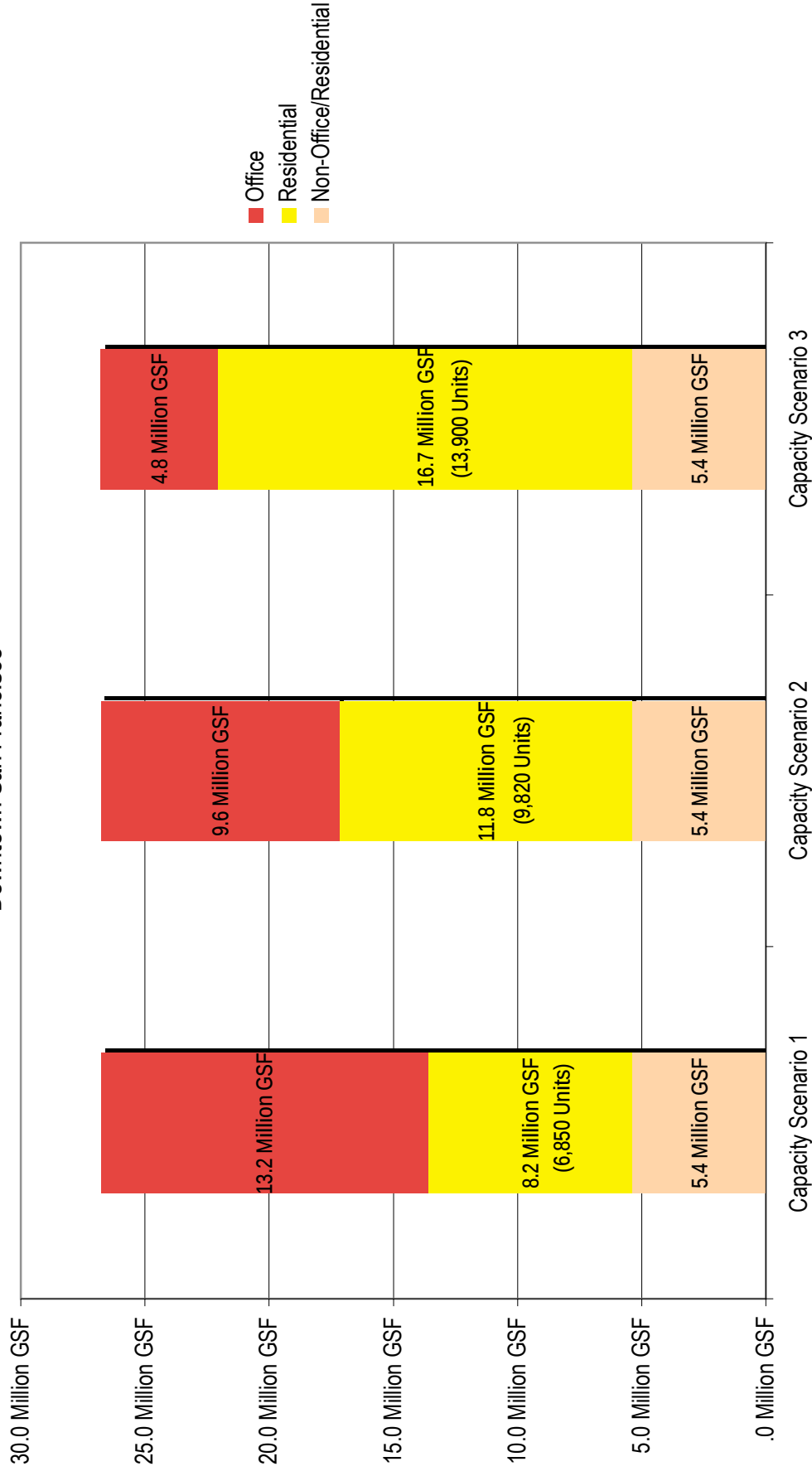
Development Type	Potential Development Capacity (1)		
	Scenario 1: Maximum Office	Scenario 2: Mixed Development	Scenario 3: Maximum Residential
Office Space (GSF)	13,208,000 GSF	9,645,000 GSF	4,751,000 GSF
Housing (Units)	6,850 Units	9,820 Units	13,900 Units
Housing (GSF)	8,219,000 GSF	11,782,000 GSF	16,676,000 GSF
Total Office/Residential GSF	21,427,000 GSF	21,427,000 GSF	21,427,000 GSF
Non-Office/Residential GSF	5,357,000 GSF	5,357,000 GSF	5,357,000 GSF
Total GSF	26,784,000 GSF	26,784,000 GSF	26,784,000 GSF

Note: Space (GSF) rounded to the nearest 1,000, and jobs and housing units to the nearest 10.

(1) Potential development capacity on soft sites, defined as sites currently developed at 30 percent or less, given existing height and bulk controls according to the San Francisco Planning Department (February, 2008). See Appendix C for Department methodology for calculating development capacity and text for development and zoning conditions used to define capacity scenarios.

Source: San Francisco Planning Department, Seifel Consulting Inc.

Graph IV-10
Potential Land Distribution by Capacity Scenario
Downtown San Francisco



Source: San Francisco Planning Department, Seifel Consulting Inc.

4. Comparison of Unmet Demand and Capacity

This section compares unmet demand for office and residential space under the two demand scenarios, Baseline and Smart Growth Demand, with capacity under the three development capacity scenarios, Maximum Office, Mixed Development and Maximum Residential. It also describes how much of overall citywide demand for office and residential could be accommodated in the Downtown under each capacity scenario.

As shown in Table IV-6 and illustrated in Graphs IV-11 and IV-12, Downtown San Francisco has the capacity to accommodate projected Baseline or Smart Growth demand for residential development under any of the three capacity scenarios. However, the Downtown only accommodates unmet Baseline demand for office under Scenario 1: Maximum Office.

Table IV-6
Capacity and Unmet Baseline and Smart Growth Demand, 2007-2035
Downtown San Francisco

Development Type	Scenario 1: Maximum Office		Scenario 2: Mixed Development		Scenario 3: Maximum Residential	
	Baseline	Smart Growth	Baseline	Smart Growth	Baseline	Smart Growth
Downtown Capacity Satisfies Unmet Demand? (1)						
Office	Y	N (7,696,000 GSF)	N (192,000 GSF)	N (11,259,000 GSF)	N (5,086,000 GSF)	N (16,153,000 GSF)
Residential	Y	Y	Y	Y	Y	Y
	-	-	-	-	-	-

Source: San Francisco Planning Department, Seifel Consulting Inc.

Scenario 1: Maximum Office

Under Scenario 1, Downtown has sufficient capacity to accommodate unmet demand for both office and residential space under the Baseline Demand Scenario. However, Downtown does not have enough capacity to accommodate the unmet Smart Growth demand for office space, falling short by approximately 7.7 million gross square feet. As illustrated in Table IV-7, Downtown would be able to accommodate over 90 percent of the citywide demand for office space and nearly 40 percent of residential units under the Baseline Demand Scenario. Less than half of citywide office demand and 30 percent of residential units could be accommodated in Downtown under the Smart Growth Demand Scenario.

Scenario 2: Mixed Development

Scenario 2 accommodates demand for housing units under both the Baseline and Smart Growth Demand Scenarios, but does not provide sufficient capacity for needed Downtown office space. Table IV-7 shows the proportion of citywide demand for office and residential space accommodated in the Downtown under Scenario 2 given Baseline and Smart Growth Demand Scenarios.

Scenario 3: Maximum Residential

Similar to Scenario 2, Scenario 3 provides sufficient capacity for residential demand but does not accommodate unmet demand for office space under either the Baseline or Smart Growth Demand Scenario. Of the three capacity scenarios, Scenario 3 accommodates the least amount of needed office space, satisfying only 43 percent and 23 percent of citywide Baseline and Smart Growth demand within the Downtown. This scenario means that 57 to 77 percent of San Francisco office demand either goes unsatisfied, further driving up the cost of San Francisco office space, or is met in other parts of the City and region. Neither situation is desirable. The former would discourage business development and economic growth in San Francisco, while the latter results in office jobs dispersed throughout the City and surrounding jurisdictions, rather than concentrated in the relatively transit-rich and high-density downtown.

Table IV-7
Share of 2035 Citywide Demand Potentially Accommodated in
Downtown San Francisco⁽¹⁾

	Scenario 1: Maximum Office		Scenario 2: Mixed Development		Scenario 3: Maximum Residential		Downtown Current Share (2)
	Baseline	Smart Growth	Baseline	Smart Growth	Baseline	Smart Growth	
Office	93%	49%	72%	38%	43%	23%	73%
Residential	39%	29%	46%	34%	56%	41%	6%

(1) Downtown future supply plus downtown capacity as a share of citywide demand.

(2) Downtown San Francisco current share of citywide office space and housing units according to Planning Department Housing Inventory and CoStar data.

Source: CoStar, San Francisco Planning Department, Seifel Consulting Inc.

Summary

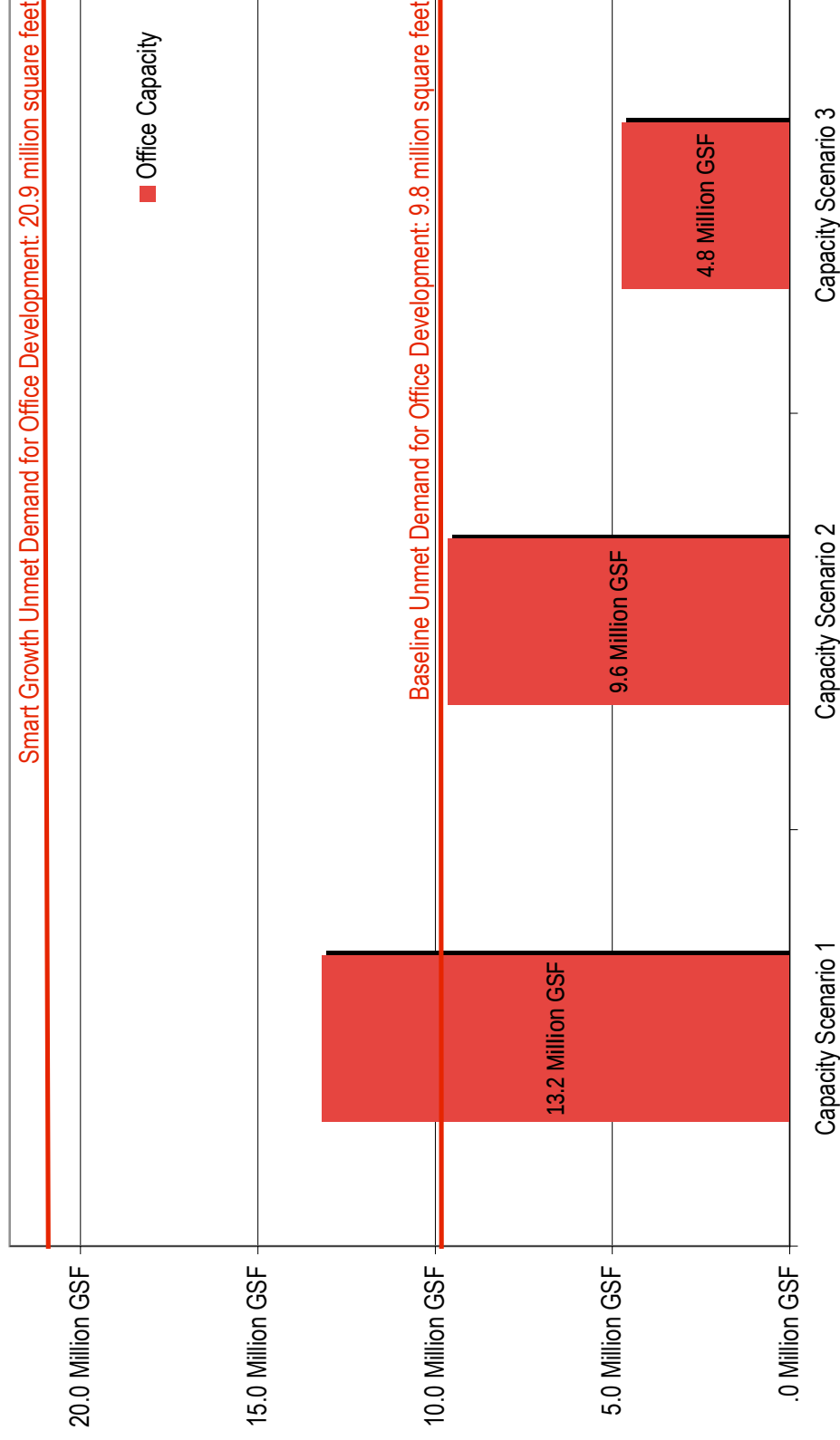
As illustrated in Graph IV-11, none of the capacity scenarios will be able to accommodate the unmet Smart Growth demand for office space. Scenario 1 is expected to accommodate unmet Baseline demand for office, while both Scenarios 2 and 3 would fall short of unmet Baseline demand for office space given current height and bulk controls. Accommodating this unmet demand for office space would require additional capacity for Downtown office space through policy changes that permit office development in more areas and/or increase density by allowing additional height and bulk.

Under either the Baseline or Smart Growth Demand Scenario, there is more than enough capacity for residential development in Downtown San Francisco, as shown in Graph IV-12. Even under the most aggressive office scenario, the Downtown accommodates a larger share of new citywide housing stock than the current 6 percent of citywide housing stock it contains.

Under the Baseline Demand Scenario, unmet demand for office space could be met by the excess capacity for residential development in the Downtown. However, under the Smart Growth Demand Scenario, unmet demand for office and residential development as a whole exceeds the Downtown's overall capacity for office and residential space by 2.4 million gross square feet.

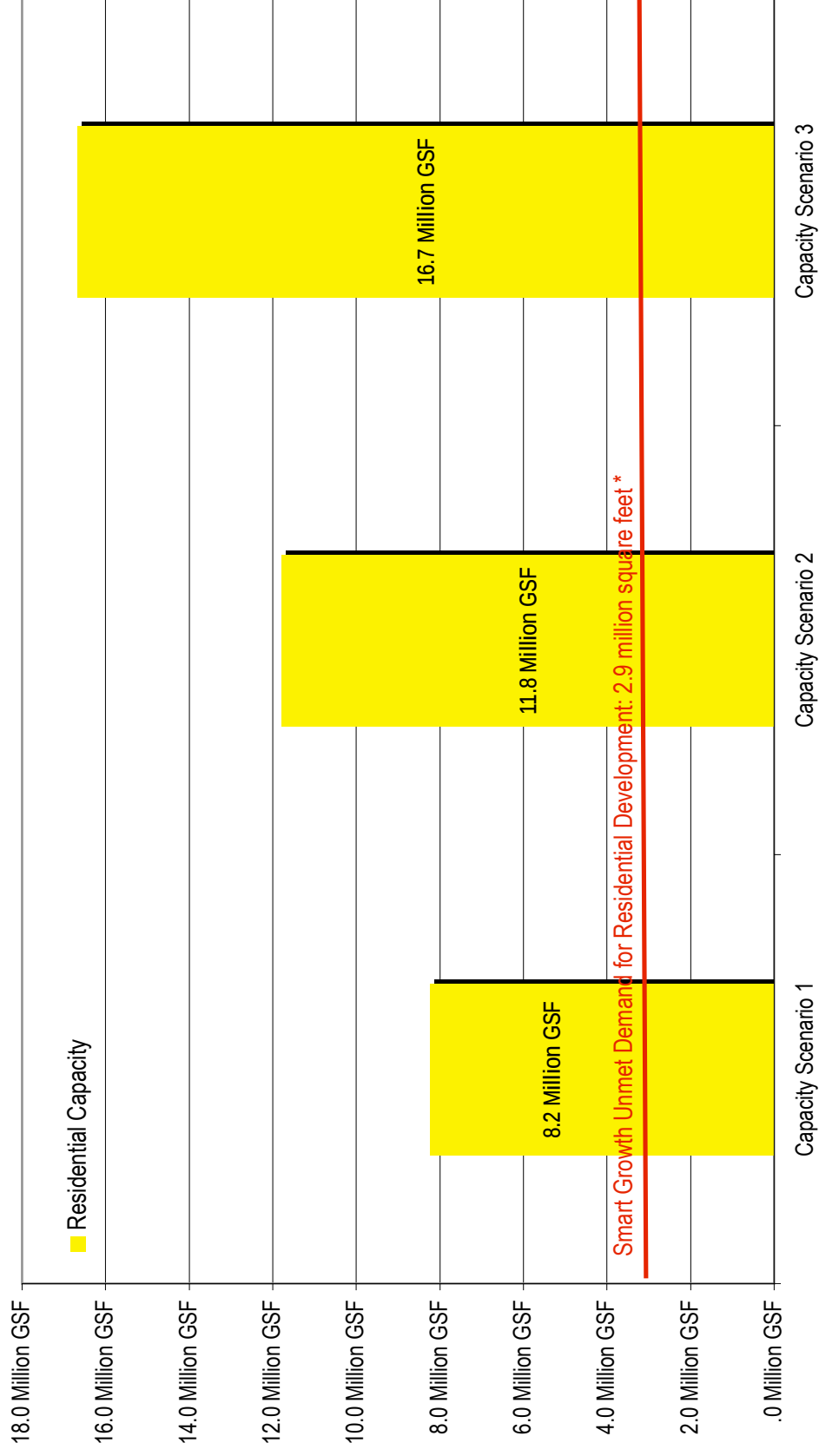
As shown in Table IV-7, the share of office demand potentially accommodated in Downtown San Francisco is significantly less than Downtown's current share of citywide office space under most demand and capacity scenarios. Capacity Scenarios 1 and 2 under Baseline Demand are the only two options in which Downtown has capacity for at least 73 percent of citywide demand. If, as indicated in Table IV-7, Downtown San Francisco only accommodates 20 to 50 percent of future citywide office demand, less central and transit-friendly neighborhoods will be subject to increasing pressure for office development and the cost of doing business in San Francisco will rise and dampen the local economy. Neighborhood, economic development and transportation planning efforts within San Francisco would need to account for these changes in land use, economic conditions and commute patterns. Downtown San Francisco's ability to accommodate demand for office space also impacts the region, with changes in commute patterns, economic competitiveness and regional sustainability if jobs move into more suburban areas or out of the Bay Area altogether.

Graph IV-11
Office Development: Comparison of Unmet Office Demand by Capacity Scenario, 2007–2035
Downtown San Francisco



Source: San Francisco Planning Department, Seifel Consulting Inc.

Graph IV-12
Residential Development: Comparison of Unmet Residential Demand by Capacity Scenario, 2007–2035
Downtown San Francisco



*Under the Baseline growth scenario, there is no unmet demand for residential development within the Downtown.
Source: San Francisco Planning Department, Seifel Consulting Inc.

Appendix A

Summary of San Francisco Transit Center District Plan Development Focus Group

Memorandum



VIA EMAIL

December 19, 2007

To: Joshua Switzky, Planner, City of San Francisco
Focus Group Participants

From: Libby Seifel, Jessica Zenk, Jackie Tsou and Helen Lee

Subject: Summary of SF Transit Center District Plan Development Focus Group

221 Main Street
Suite 420
San Francisco CA
94105

415.618.0700
fax 415.618.0707
www.seifel.com

Seifel Consulting Inc. is pleased to deliver this memorandum summarizing the discussion and input from the Development Focus Group held jointly with the San Francisco Planning Department on Thursday, November 29, 2007. This memorandum is organized into three parts:

- Background for Focus Group
- Neighborhood Assets and Constraints
- Development Climate and Market Observations

A list of attendees and development projects in the South Financial District are attached as Exhibits A and B respectively.

1. Background for Focus Group

The City's Planning Department has initiated studies for a Transit Center District Plan to produce new planning policies and controls for land use, urban form, building design, and public realm improvements for both private and public properties in and around the adopted Transbay Redevelopment Project Area and Transbay Terminal.

The purpose of this focus group was to gain a better understanding of the development climate and key market factors influencing the development and investment decisions of San Francisco's real estate community. Fifteen individuals representing twelve firms involved in real estate projects already developed or in the process of being developed within the vicinity of the Transit Center District attended the meeting (Exhibit A).

2. Neighborhood Assets and Constraints

When asked to discuss the key factors that drove their decisions to initiate projects in the area, as well as the constraints that limit real estate development and investment, participants noted the following:

- The Transit Center District has a high potential to absorb new growth in San Francisco due to its proximity to jobs and downtown amenities such as cultural venues, shopping districts and restaurants.
- Public transit will be a key ingredient to the success of the Transit Center District. The new Transbay Terminal and other transit improvements will lead development and investment decisions in the area similar to the impact of public transportation along Market Street.
- The Transit Center is surrounded by successful neighborhoods such as Rincon Hill and the Yerba Buena arts district. The revitalization of the South Financial District has created a positive environment for the development of the Transit Center District.
- In order to be competitive with other cities, San Francisco should create assets for the “end-users,” the residents and workers, like Chicago is currently doing with projects such as Millennium Park.
- In the past, the quality of design and architecture for some buildings in and around the Transit Center District has been poor and a higher standard should be put in place.

3. Development Climate and Market Observations

Participants were asked to share their insights on the current and future development climate in San Francisco, focusing on office and residential development. The following is a synopsis of their observations:

General

- On the whole, San Francisco is a highly desirable place to live and work, and will continue to draw residents and businesses to the city.
- While developers expressed concern regarding the near-term market for new development, particularly for residential development, long-term demand for space in the Transit Center District will be sufficient to support potential development at higher densities.
- Although construction costs may level off, they are not likely to drop significantly. Thus, in order to be financially feasible, development must be targeted to the top of the market for both residential and office space. Participants suggested that the development process be streamlined to decrease some of the costs.

Office

- Over the years, San Francisco has lost many of its major corporate tenants. Unlike New York City, which attracts big corporations, San Francisco’s office market caters more to a “boutique” clientele such as financial service and law firms. Some developers observed that the tenant pool is shrinking, and that future office market growth will depend on expansion by existing tenants.
- Participants were concerned about the growing costs of running a business in San Francisco due to taxes and labor, which could dampen future demand for office space.
- However, inflation-adjusted rents are comparatively cheap in San Francisco from a historic standpoint despite steady increases in recent years. Some developers noted that many of San Francisco’s existing office tenants are price insensitive and will pay more in order to stay in the city.

- San Francisco's regional share of the office market has decreased as many tenants have moved to surrounding areas like Oakland and San Jose. However, rent stratification across the Bay Area is flattening as more growth control is being established in these cities. On average, San Francisco's lease rates are now more comparable to suburban markets as the price differential has decreased. Participants noted that regional considerations regarding San Francisco's share of the office market should be factored into the Transit Center District's development plan.
- Potential exists for a high-tech submarket in San Francisco. For example, Google and other tech companies have been subleasing space in the city as part of a recruiting strategy to hire talented workers. However, technology and engineering firms are accustomed to the type of office layouts, large floorplates, and rental prices typically found in Silicon Valley.
- Concerns were expressed regarding the tall, skinny tower design concept that is being proposed for Downtown San Francisco. These buildings will have small floor plates that will generally attract only small-sized tenants, thereby increasing the costs for developers in leasing up space. In mixed-use buildings, common area, equipment and circulation (e.g. lobbies, elevators, stairways, HVAC, etc.) take up the majority of the core, decreasing usable square footage and leaving little room for retail space on the ground floor.
- In order to attract high tech and large office space users to San Francisco, large floor plates of about 25,000 square feet or greater will be needed as these users prefer contiguous office space on a single floor.

Residential

- The residential market is closely linked to job growth. In the years following the tech bubble, 600-700 units were built annually. In the last three years, developers have been producing about 2,000 units annually as jobs have increased.
- In the current real estate cycle, participants anticipate few new residential projects. Some developers noted that rental projects are not feasible in the current market without creative financing tools such as bond financing and tax credits.
- Developers are marketing newly constructed units to a wide geographic area including foreign countries; however, buyers are mainly those who already live in the Bay Area. One developer noted that 86% of purchasers are from the Bay Area, 7% from Other California, and 7% from Outside California.
- Developers are mainly creating products for young professionals and empty nesters without children as families do not typically move into their buildings. One factor cited is San Francisco's school system.
- Zoning should allow flexible commercial uses or live/work units on the ground floor, rather than strictly retail, as ground floor retail spaces have remained empty for many years in certain areas.

Exhibit A
List of Focus Group Attendees
San Francisco Transit Center District Plan

	Firm	Name	Project (s)
1	CMA - Rockefeller	Keith Brown	Transbay Tower - Proposed
2	Fritzi Realty	Bob Tandler Valli Benesh Tandler	41 Tehama St.
3	Jackson Pacific	Ezra Mersey	45 Lansing 340 Fremont 1 Hawthorne
4	SKS Investments	Paul Stein	181 Fremont
5	Solit Interests Group	Mark Solit	50 1st St
6	Tishman Speyer	Carl Shannon	555 Mission 222 Second Infinity
7	Urban West Associates	David Kriozere	1 Rincon Hill
8	Reuben & Junius	Andrew Junius	350 Mission 50 1st Street The Palace Hotel 41 Tehama St.
9	Cerberus	Jeffrey Snyder	The Palace Hotel
10	Hines Hines Ellman Burke - Hines	Paul Paradis Cameron Falconer Mike Burke	Transbay Tower - Awarded
11	Emerald Fund	Oz Erickson	Harrison / Fremont
12	CMR Capital	Richard Johnson	50 1st St

Exhibit B
Projects Under Construction, Approved Development & Potential Development in the South Financial District
San Francisco Transit Center District Plan

Project Name/Address	Gross Sq. Ft.	Residential	Commercial			Expected Delivery Date
		Units	Office S.F.	Retail S.F.	Hotel Rooms	
PROJECTS UNDER CONSTRUCTION						
400 Howard St. Foundry Square I	335,000		295,000	14,200		2007
555 Mission St.	555,000		550,000	4,000		2008
301 Mission St. Millenium Tower	907,000	420		9,400		2008
1 Ecker	60,000	51				TBD
Total	1,857,000	471	845,000	27,600	0	
APPROVED DEVELOPMENT ¹						
120 Howard	71,324					2009
1 Hawthorne	252,700	165		2,700		TBD
524 Howard Street	209,990		200,000			TBD
505 Howard Street Foundry Square III	196,693		178,000	7,400		TBD
535 Mission	356,400		293,750	2,680		TBD
Total	1,087,107	165	671,750	12,780	0	
POTENTIAL DEVELOPMENT ²						
Harrison/Fremont	266,000	252				TBD
41 Tehama Street ³	526,000	339				TBD
181 Fremont ³	796,933	140	530,000			TBD
50 1st Street ³	TBD	600	520,000	30,000	470	TBD
222 2nd Street	430,000		430,000			TBD
350 Mission	559,310		503,000	7,300		TBD
2 New Montgomery ⁴	720,000	255			69	TBD
19 Tehama	8,933	5		931		TBD
48 Tehama	70,525	63				TBD
217 2nd Street	89,040	73		1,720		TBD
201 2nd Street	TBD	102		929		TBD
Total	3,466,741	1,829	1,983,000	40,880	539	

Exhibit B
Projects Under Construction, Approved Development & Potential Development in the South Financial District
San Francisco Transit Center District Plan

Project Name/Address	Gross Sq. Ft.	Residential	Commercial			Expected Delivery Date
		Units	Office S.F.	Retail S.F.	Hotel Rooms	
TJPA PROPOSED REDEVELOPMENT PROGRAM						
Block 1	448,336	355		10,000		2010-2022
Block 2	242,640	221		13,000		2010-2022
Block 4	658,014	252		6,000		2010-2022
Block 5	823,514	659		6,000		2010-2022
Block 6	448,336	355		10,000		2010-2022
Block 7	145,560	123				2010-2022
Block 8	816,846	651		10,000		2010-2022
Block 9	543,200	432		4,000		2010-2022
Block 11	121,600	101		3,000		2010-2022
Block 12	75,500	64				2010-2022
Parcel F ⁴	235,000 - 1,000,000		235,000 - 1,000,000		150 - 250	2010-2022
Parcel M	99,000		82,500	16,500		2010-2022
Transit Tower (Parcel T) ⁴	768,000 - 1,800,000		768,000 - 1,800,000			2010-2022
Total	5,425,546 - 7,222,546	3,213	1,085,500 - 2,882,500	78,500	150 - 250	
TOTAL NEW DEVELOPMENT						
Grand Total	11,836,394 - 13,633,394	5,678	4,585,250 - 6,382,250	159,760	689 - 789	

1. Approved developments are projects that have been granted planning approval or building permits.
2. Potential developments are in the planning or entitlement stage. These projects are not necessarily consistent with or approvable under current zoning. The Planning Department has not made a recommendation on these projects, and as such they are listed here for informational purposes only.
3. As they are currently proposed, these projects do not conform with existing zoning regulations.
4. The lower figures for these parcels are as projected in the adopted Transbay Redevelopment Plan. The upper figures are based on a building massing scenario under consideration which does not conform with current zoning or the Transbay Redevelopment Plan.

Source: San Francisco Planning Department, TJPA, Department of Building Inspection, focus group surveys, and broker interviews.

Appendix B

Map of San Francisco Submarkets

Appendix B
Map of San Francisco Submarkets, Grubb and Ellis¹



¹ Provided to Seifel by Grubb & Ellis, August 2007.

Appendix C

San Francisco Planning Department: Calculating Buildout Capacity



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

Calculating Buildout Capacity

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Introduction

The Planning Department faces many policy questions relating to the future development and its location and type within the city. To inform this discussion, the Department relies on a number of data sources compiled into key databases to analyze existing and future land use trends and possibilities. The “buildout” database is a collection of parcel-based data which quantifies existing conditions and, given the zoning and height information, estimates for each parcel the potential for additional development. The database is set up with a series of scripts enabling testing of possible rezoning scenarios with relative ease.

Capacity

The buildout database uses zoning information to estimate the potential development for each of more than 150,000 parcels in the city. Given the number of parcels in the city, it is not feasible to calculate capacity for parcels individually. Accordingly, a batch treatment, and thus larger datasets of information, is needed.

Potential development is counted in residential units and in commercial gross square feet. A parcel may have residential, commercial or residential and commercial capacity depending on the specific combination of zoning and height district.

Once the potential for residential and commercial space is calculated, information on existing housing units and commercial square footage can be used to calculate the net new potential for each parcel. For near-empty sites like parking lots or one story buildings in, for example, 80-foot height districts, most of the potential capacity remains unused; two-story buildings in most residential neighborhoods, conversely, would be considered built out.

The degree to which a parcel is considered built out is measured as its *softness*, a percentage measure of how utilized the parcel is, aggregating residential and non-residential uses, relative to its potential. The softness categories in use are 5%, 30% and 40%; the categories are mutually exclusive, and a parcel’s softness is counted in the category it falls immediately beneath. This way, should a parcel be used to 20% of its zoned capacity, it will fall in the 30% softness bracket. The total remaining potential is measured in the field *Netsqft*, while remaining housing potential is recorded in *Netunits*. *Netsqft* is total potential square feet less total existing square feet. *Netunits*, similarly, is total potential units less total existing units. Rather than being

mutually exclusive measures, or *Netunits* being contained in *Netsqft*, they measure different things.¹

The Planning Department does not consider any parcel developed to more than 40% of its capacity as a soft site, or a candidate for additional square footage or intensification. While we do tally separately net units as the difference between potential and existing units, we only categorize the site as soft if the actual building size is small enough to warrant a softness classification.²

DATA

The Department relies on a number of sources to provide the key information that forms the basis for the capacity calculations. While each data set is subject to errors in substance and time, we are confident that the method is meaningful in the aggregate assuming that errors are geographically randomly distributed. We have not found evidence that errors exhibit clustering.

Table 1 Data Inputs

Data	Source(s)
Housing Units	Assessor's office, Dept. of Building Inspections, Mayor's Office of Housing, Planning Department, San Francisco Housing Authority, San Francisco Redevelopment Agency
Zoning	Planning Department
Height	Planning Department
Building Square Footage	Assessor's Office, LIDAR* 3D data set
Commercial Square Footage	Dun & Bradstreet, LIDAR* 3D data set
Historic Survey Rating Status	Planning Department
Public Facilities	Department of Telecommunications and Information Services
Transfer of Development Right status	Planning Department
Development Pipeline	Dept. of Building Inspection, Planning Department

Notes:

* Light Detection and Ranging, a remote sensing system used to collect three-dimensional topographic data, was used to estimate existing building square footage.

¹ *Netsqft* is the better actual net capacity measure of the two as it returns potential building envelope minus existing building envelope. While *Netunits* is calculated in an analogous fashion of potential units less existing units, it is a rather different measure because *Netunits* only focuses on existing *residential* uses and could thus end up being larger than the net buildable space if the existing unit count happens to be small. For the net residential units to be developed, then, would, apart from an expansion of the building, *also* require a conversion of *existing* commercial uses to residential. This principle is illustrated in Attachment 1.

² In other words, a building could conceivably have a potential for more residential units, but if it is already built to capacity in terms of square footage, we do not consider it soft as an increase in residential units would come at the expense of existing uses in the building, and not through building expansion.

Calculating Capacity

Table 2 summarizes the algorithm for getting at residential and commercial square footage, respectively, for each district. Most districts were grouped together and treated in bulk, as was the case for all of the 20+ distinct neighborhood commercial districts in the city. One story was considered on average 10 feet, and new dwelling unit size was estimated at a gross 1,200 feet, including circulation space, building inefficiencies, parking etc.

The purpose of the buildout has been to determine buildable capacity, and—given the variety of land uses allowed in most districts—only at the most basic level categorize this space as residential or non-residential/commercial. Accordingly, commercial space is treated as a generic category for the purposes of calculating potential non-residential space.³

LIMITATIONS

For reasons of data architecture, Special Use Districts overlaid on top of zoning districts were generally not included for buildout calculation, with the exception of the Van Ness Market Downtown Residential Special Use District, which could easily be mapped to and treated as a Downtown Residential district. All occurrences of this Special Use District/C-3 zoning combination could thus be treated the same way.

Another shortcoming of the buildout script is that it does not at this time estimate the possibility of a Planned Unit Development (PUD) option available to parcels larger than ½ acre in single ownership. While PUDs allow slightly greater density, they allow less than the density allowed by a district one class denser in order to not qualify as a rezoning. Capacity, this way, for sites eligible for PUD is estimated on the conservative side.

Finally, inaccuracies crop up where lots are split into multiple zoning and/or height districts. The lot proportions in each district cannot be determined at the database level.⁴ In most of these cases, the more conservative zoning or height district was picked, and capacity calculated accordingly. For some larger sites, the height to be used by the script was assigned manually to better reflect actual conditions.

It is important to note that the buildout lacks a time dimension and makes no assumptions or claims about economic or political conditions. Construction on sites may or may not happen depending on economic conditions, and would need to go through the normal review channels prior to realization.

³ For some districts the script accounts for different commercial categories separately to better reflect specific district limitations on certain uses.

⁴ Once we digitize a citywide height layer, this issue can be better addressed within a Geographic Information System.

Table 2 Buildout Calculation Algorithm, by District

District	District Class	Algorithm	Constraint
RH-1, RH-1(D), RH-2, RH-3	Residential	The suffix of the district determines number of possible units. A test is performed to see if lot is large enough for Conditional Use additional units. No commercial allowed. No non-residential assumed for these districts.	If average unit size times units is larger than buildable envelope, subtract one unit until units fit in envelope.
RM-1, RM-2, RM-3, RM-4	Multi	The suffix of the district determines the allowable density. RM-1, for example, allows one unit per 800 square feet of lot area. No non-residential assumed for these districts.	If average unit size times units is larger than buildable envelope, subtract one unit until units fit in envelope.
RTO (proposed new class)	Residential	Calculate buildable envelope by taking 55% of lot area times stories. Divide envelope by average unit size. No non-residential assumed for these districts.	If average unit size times units is larger than buildable envelope, subtract one unit until units fit in envelope.
RC, CRNC, CVR, CCB	Mixed	Divide lot area by residential density limit to arrive at number of units. Multiply by the average unit size to arrive at residential square footage. Commercial square footage is determined by district FAR.	If average unit size times units plus commercial square footage is larger than buildable envelope, subtract one unit until units fit in envelope.
C-2	Downtown	Commercial square footage is determined by FAR. Remaining portion of envelope given to residential use.	If average unit size times units plus commercial square footage is larger than buildable envelope, subtract one unit until units fit in envelope.
C-3	Downtown	Envelope is determined by FAR. ⁵ Assign 90% to commercial, 10% to residential. Divide residential space by average unit size to get unit count. Lots smaller than 7,500 square feet are assigned only half FAR.	
DTR	Mixed	Envelope is determined by height, not by FAR. Height less than 24 stories results in floor plate of 7,500 sf, less than 30, 8,500, less than 35, 9,000, 36 and higher, 10,000 sf floor plate. Upper third of tower has a reduced floor plate by 10%. Residential to commercial space is	Because floor plate for this zone type is constrained regardless of lot size, a check was included to allow extra towers on very large lots to approximate square footage if lot was split. The constant used was 4, meaning that lots more than four

⁵ Maximum FAR per §123 was used. This will likely overstate capacity, depending on availability of actual TDR credits.

District	District Class	Algorithm	Constraint
		assigned 6:1.	times the floor plate would be candidates for a second tower, thereby ensuring that bulk controls in these districts would not be artificially limited on oversize lots.
MUO, UMU, MUR (proposed new classes)	Eastern Neighborhood Mixed	Envelope is set to stories times FAR. FAR in turn varies by height district. (Portion of) FAR is used, rest is residential. If four stories, set retail, office=1 FAR each. If five-six stories, set retail =1 FAR, office=2 FAR. If 8 stories or more, set retail =1, office=3 FAR.	
MUR, DTR-S (new classes)	Eastern Neighborhood Mixed	Envelope is stories times lot area. We assign most space to residential use here. 25% Commercial, 75% residential.	
M-1, M-2 (most of these considered for rezoning)	Industry	Assign residential square footage based on half of residential density allowed for district. Commercial is FAR times commercial share of development.	
NC-1, NC-2, NC-3, NCT-3, named NC's	Mixed	Commercial square footage is determined by FAR. Remaining portion of envelope given to residential use.	If average unit size times units plus commercial square footage is larger than buildable envelope, subtract one unit until units fit in envelope.
PDR-1, PDR-2 (proposed new classes)	PDR	Envelope is FAR times lot area. FAR varies by height district. No residential space.	
RED, RSD, SLI, SLR, SPD, SSO	South of Market Mixed Use	Multiply the commercial share of the lot by FAR to arrive at commercial square footage. The FAR varied for SSO lots depending on height limit. Divide the product of the share, number of buildable stories and .75 lot cover by the average size of a unit; this yields the number of units. Multiply this number by the average unit size to arrive at	

District	District Class	Algorithm	Constraint
		residential square footage. For RSD lots, set commercial square footage equal to the lot area, residential space equal to 3 times the lot area, with the number of units equal to the residential square footage divided by the average unit size.	

Exceptions

There were sites which would qualify for a softness label on metrics alone, but for a number of reasons were excluded from the overall softness tally. These cases are listed in Table 3.

Table 3 Softsite Exceptions

Override Type	Description
Lot functions as open space for or otherwise connected to adjacent property	Lot is deeded open space for adjacent development.
Public or other large facility not likely to change	Fire stations, museums, schools etc.
Historic designation or otherwise significant	Exclusion from the softsite tally includes Category I and Category II buildings as well as California Historic Resource Status Codes 1 thru 5, all suffixes.
Incorrect (too low) base data	If existing square footage information is incorrect on the low side, the net capacity figure can be overstated.
TDR Used	If a Certificate of Transfer was issued, lot was marked as not soft as capacity has been transferred under §128.
Residential units	If more than 10 residential units were on site, the site was considered not soft.
Pipeline	A development event is in the pipeline. Site is assumed not soft after construction.
ROW	Freeway or other dedicated rights-of-way.

Attachment 1: Building Envelope and Net Square Feet

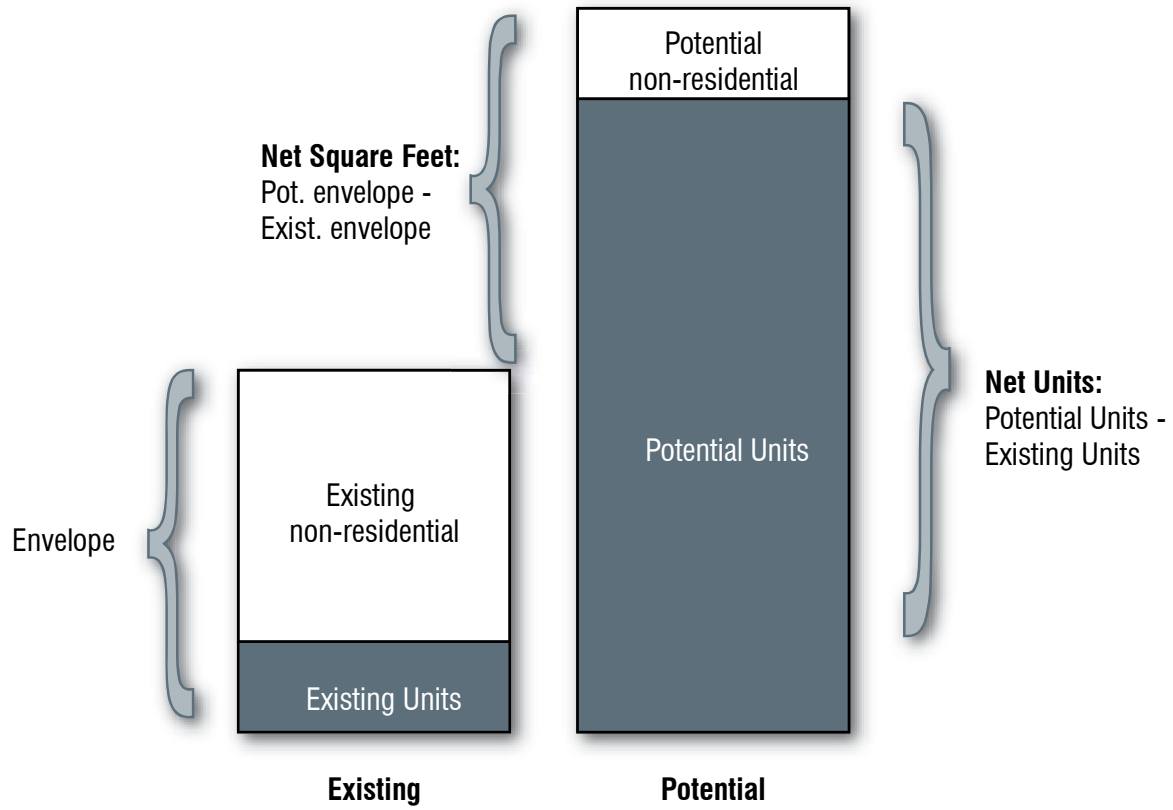


Figure 1 Relationship between NETUNITS and NETSF

Attachment 2: Main Buildout Functions

Note: These functions were used for the actual calculations in Microsoft Access's Visual Basic for Applications interface.

```
1 Option Compare Database
2 Option Explicit
3
4 Sub testCapacity()
5
6 'return a sanity check value of 0 or 1. 1 means that what the buildout
7 'script has produced for lot in question is greater than lot size times height.
8 'These lots are suspicious and should be checked for indications of script
9 problems.
10
11 Dim rst As New ADODB.Recordset
12 Dim strSql As String
13 Dim i As Long
14     strSql = "select shape_area, Totalsqft, Height_Stories, testcap " & _
15             "From buildout;"
16     rst.ActiveConnection = CurrentProject.Connection
17     rst.CursorType = adOpenDynamic
18     rst.LockType = adLockOptimistic
19     rst.Open strSql
20     rst.MoveFirst
21     Do Until rst.EOF
22     If (rst!shape_area * rst!height_stories) * 1.02 > rst!Totalsqft Then
23         rst!testcap = 0
24     Else
25         rst!testcap = 1
26     End If
27     rst.Update
28     Debug.Print i
29     i = i + 1
30     rst.MoveNext
31 Loop
32 End Sub
33
34
35
36 Function netComml(netSf As Long, netUnits As Integer) As Long
37 'estimates netcommercial from netsf. Gives precedence to units.
38
39 If netSf - (netUnits * new_unit_size(False)) > 0 Then
40     netComml = netSf - (netUnits * new_unit_size(False))
41
42 Else
43     netComml = 0
44 End If
45 Debug.Print netComml
46 End Function
47
48 Function EN_Com(inStories As Integer, inLotArea As Long)
49 Dim retail As Long
50 Dim office As Long
51 Dim resSf As Long
52 Dim FAR As Single
53 Dim envelope As Long
54 Dim totComSf As Long
55 '***returns commercial square footage for eastern neighborhood zoning districts.
56 Allocates commercial primarily based on & _
57 '***FAR (variable by height district) and leaving the rest to residential.
58 envelope = inStories * inLotArea
59
60 Select Case inStories
61     Case Is <= 4
```

```

62         FAR = 3
63         retail = inLotArea * 1
64         office = inLotArea * 1
65         totComSf = retail + office
66         resSf = FAR * inLotArea - totComSf
67     Case Is = 5
68         FAR = 4
69         retail = inLotArea * 1
70         office = inLotArea * 2
71         resSf = FAR * inLotArea - totComSf
72     Case Is = 6
73         FAR = 5
74         retail = inLotArea * 1
75         office = inLotArea * 2
76         resSf = FAR * inLotArea - totComSf
77     Case Is = 8
78         FAR = 6
79         retail = inLotArea * 1
80         office = inLotArea * 3
81         resSf = FAR * inLotArea - totComSf
82     Case Is > 8
83         FAR = 7.5
84         retail = inLotArea * 1
85         office = inLotArea * 3
86         resSf = FAR * inLotArea - totComSf
87 End Select
88 EN_Com = retail + office
89 End Function
90
91
92
93 Function EN_PDR_com(inStories As Integer, inLotArea As Long)
94 Dim retail As Long
95 Dim office As Long
96 Dim resSf As Long
97 Dim PDR As Long
98 Dim FAR As Single
99 Dim totComSf As Long
100 '''Returns commercial square footage for eastern neighborhoods PDR districts.
101
102 If inLotArea < 2500 Then
103     Select Case inStories
104         Case Is <= 4
105             FAR = 3
106             retail = inLotArea * 1
107             office = inLotArea * 1
108             PDR = FAR * inLotArea - (retail + office)
109             totComSf = retail + office + PDR
110         Case Is = 5
111             FAR = 4
112             retail = inLotArea * 1
113             office = inLotArea * 1
114             PDR = FAR * inLotArea - (retail + office)
115             totComSf = retail + office + PDR
116         Case Is = 6
117             FAR = 5
118             retail = inLotArea * 1
119             office = inLotArea * 1
120             PDR = FAR * inLotArea - (retail + office)
121             totComSf = retail + office + PDR
122         Case Is = 8
123             FAR = 6
124             retail = inLotArea * 1
125             office = inLotArea * 1
126             PDR = FAR * inLotArea - (retail + office)
127             totComSf = retail + office + PDR
128         Case Is > 8
129             FAR = 7.5
130             retail = inLotArea * 1
131             office = inLotArea * 1
132             PDR = FAR * inLotArea - (retail + office)

```

```

133         totComSf = retail + office + PDR
134     End Select
135
136 ElseIf inLotArea >= 2500 And inLotArea < 5000 Then
137     Select Case inStories
138     Case Is <= 4
139         FAR = 3
140         retail = 2500
141         office = inLotArea * 1
142         PDR = FAR * inLotArea - (retail + office)
143         totComSf = retail + office + PDR
144     Case Is = 5
145         FAR = 4
146         retail = 2500
147         office = inLotArea * 1
148         PDR = FAR * inLotArea - (retail + office)
149         totComSf = retail + office + PDR
150     Case Is = 6
151         FAR = 5
152         retail = 2500
153         office = inLotArea * 1
154         PDR = FAR * inLotArea - (retail + office)
155         totComSf = retail + office + PDR
156     Case Is = 8
157         FAR = 6
158         retail = 2500
159         office = inLotArea * 1
160         PDR = FAR * inLotArea - (retail + office)
161         totComSf = retail + office + PDR
162     Case Is > 8
163         FAR = 7.5
164         retail = 2500
165         office = inLotArea * 1
166         PDR = FAR * inLotArea - (retail + office)
167         totComSf = retail + office + PDR
168     End Select
169
170 ElseIf inLotArea >= 5000 Then
171     Select Case inStories
172     Case Is <= 4
173         FAR = 3
174         retail = 2500
175         office = 5000
176         PDR = FAR * inLotArea - (retail + office)
177         totComSf = retail + office + PDR
178     Case Is = 5
179         FAR = 4
180         retail = 2500
181         office = 5000
182         PDR = FAR * inLotArea - (retail + office)
183         totComSf = retail + office + PDR
184     Case Is = 6
185         FAR = 5
186         retail = 2500
187         office = 5000
188         PDR = FAR * inLotArea - (retail + office)
189         totComSf = retail + office + PDR
190     Case Is = 8
191         FAR = 6
192         retail = 2500
193         office = 5000
194         PDR = FAR * inLotArea - (retail + office)
195         totComSf = retail + office + PDR
196     Case Is > 8
197         FAR = 7.5
198         retail = 2500
199         office = 5000
200         PDR = FAR * inLotArea - (retail + office)
201         totComSf = retail + office + PDR
202     End Select
203 End If

```

```

204
205 EN_PDR_com = retail + office + PDR
206 End Function
207
208
209
210 Function EN_res(inStories As Integer, inLotArea As Long)
211 Dim retail As Long
212 Dim office As Long
213 Dim resSf As Long
214 Dim FAR As Single
215 Dim envelope As Long
216 Dim totComSf As Long
217 '***returns commercial square footage for eastern neighborhood zoning districts.
218 '***Allocates commercial primarily based on FAR
219 '***(variable by height district) and leaving the rest to residential.
220 envelope = inStories * inLotArea
221
222 Select Case inStories
223     Case Is <= 4
224         FAR = 3
225         retail = inLotArea * 1
226         office = inLotArea * 1
227         totComSf = retail + office
228         resSf = FAR * inLotArea - totComSf
229     Case Is = 5
230         FAR = 4
231         retail = inLotArea * 1
232         office = inLotArea * 2
233         totComSf = retail + office
234         resSf = FAR * inLotArea - totComSf
235     Case Is = 6
236         FAR = 5
237         retail = inLotArea * 1
238         office = inLotArea * 2
239         totComSf = retail + office
240         resSf = FAR * inLotArea - totComSf
241     Case Is = 8
242         FAR = 6
243         retail = inLotArea * 1
244         office = inLotArea * 3
245         totComSf = retail + office
246         resSf = FAR * inLotArea - totComSf
247     Case Is > 8
248         FAR = 7.5
249         retail = inLotArea * 1
250         office = inLotArea * 3
251         totComSf = retail + office
252         resSf = FAR * inLotArea - totComSf
253 End Select
254 EN_res = resSf
255 End Function
256
257
258
259 Function ceil(innumber As Double)
260 '***Returns the next integer up; used for calculating number of stories
261 '***given the lot area and building square footage
262 If Int(innumber) > innumber Then
263     ceil = Int(innumber) + 1
264 Else
265     ceil = Int(innumber)
266 End If
267 End Function
268
269
270
271 Function old_unit_size()
272 '***Used for assumptions about square footage of existing units
273 old_unit_size = 765 * 1.2

```

```

274 End Function
275
276
277
278 Function new_unit_size(in_option As Boolean)
279     '***Use for calculating square footage of new residential units.
280     '***Case true for live-work, case false for everything else.
281     If in_option Then
282         new_unit_size = 1000
283     Else
284         new_unit_size = 1000 * 1.2
285     End If
286 End Function
287
288
289
290 Function height_stories(in_limit As String)
291     '***Returns number of stories allowed given the height limit
292     Dim varstring As String
293     Dim varheight As Integer
294
295     If (InStr(1, in_limit, "OS/") = 1) _
296         And (InStr(1, in_limit, "-" ) > 0) Then
297         varstring = Mid(in_limit, 4, InStr(1, in_limit, "-") - 4)
298         varheight = CInt(varstring)
299     ElseIf InStr(1, in_limit, "-" ) > 0 Then
300         varstring = Left(in_limit, InStr(1, in_limit, "-") - 1)
301         varheight = CInt(varstring)
302     ElseIf InStr(1, in_limit, "X") > 0 Then
303         varstring = Left(in_limit, InStr(1, in_limit, "X") - 1)
304         varheight = CInt(varstring)
305     Else
306         varheight = 0
307     End If
308
309     height_stories = Int(varheight / 10)
310 End Function
311
312
313
314 Function RH_units(inzoning As String, inStories As Integer, _
315     inLotArea As Double, rearYard As Single)
316     '***Projects number of units on RH-zoned lots
317     Dim varunits As Single
318     Dim varressqft As Double
319     Dim vartotsqft As Double
320     Const rh1nxt As Integer = 3000
321     Const rh2nxt As Integer = 1500
322     Const rh3nxt As Integer = 1000
323     Dim rhzoning As Integer
324     Dim rhnumber As Integer
325
326     rhzoning = InStr(1, inzoning, "RH-")
327
328     If rhzoning = 1 Then
329         rhnumber = (CInt(Mid(Nz(inzoning, 0), 4, 1)))
330     End If
331     'first of three blocks testing whether lot is large enough for CU units
332     If rhnumber = 1 Then
333         If inLotArea >= 1 * rh1nxt And InStr(1, inzoning, "RH-1(D)") = 0 Then
334             varunits = Int(inLotArea / (rh1nxt))
335             varressqft = varunits * new_unit_size(False)
336             vartotsqft = varressqft
337             Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > inStories
338                 varunits = varunits - 1
339                 varressqft = varunits * new_unit_size(False)
340                 vartotsqft = varressqft
341             Loop
342             RH_units = varunits
343         Else

```

```

344     varunits = rhnumber
345     varressqft = varunits * new_unit_size(False)
346     vartotsqft = varressqft
347     Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > inStories
348         varunits = varunits - 1
349         varressqft = varunits * new_unit_size(False)
350         vartotsqft = varressqft
351     Loop
352     RH_units = varunits
353 End If
354 'second of three blocks testing whether lot is large enough for CU units
355 ElseIf rhnumber = 2 Then
356     If inLotArea >= 2 * rh2nxt Then
357         varunits = Int(inLotArea / rh2nxt)
358         varressqft = varunits * new_unit_size(False)
359         vartotsqft = varressqft
360         Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > inStories
361             varunits = varunits - 1
362             varressqft = varunits * new_unit_size(False)
363             vartotsqft = varressqft
364         Loop
365         RH_units = varunits
366     Else
367         varunits = rhnumber
368         varressqft = varunits * new_unit_size(False)
369         vartotsqft = varressqft
370         Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > inStories
371             varunits = varunits - 1
372             varressqft = varunits * new_unit_size(False)
373             vartotsqft = varressqft
374         Loop
375         RH_units = varunits
376     End If
377 'third of three blocks testing whether lot is large enough for CU units
378 ElseIf rhnumber = 3 Then
379     If inLotArea >= 3 * rh3nxt Then
380         varunits = Int(inLotArea / (rh3nxt))
381         varressqft = varunits * new_unit_size(False)
382         vartotsqft = varressqft
383         Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > inStories
384             varunits = varunits - 1
385             varressqft = varunits * new_unit_size(False)
386             vartotsqft = varressqft
387         Loop
388         RH_units = varunits
389     Else
390         varunits = rhnumber
391         varressqft = varunits * new_unit_size(False)
392         vartotsqft = varressqft
393         Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > inStories
394             varunits = varunits - 1
395             varressqft = varunits * new_unit_size(False)
396             vartotsqft = varressqft
397         Loop
398         RH_units = varunits
399     End If
400 Else
401     RH_units = 0
402 End If
403
404 End Function
405
406
407
408 Function RM_Units(inStories As Integer, _
409     inLotArea As Double, inresdensity As Double, rearYard As Single) As Integer
410 '***Projects number of units on RM-zoned lots
411 Dim varunits As Integer
412 Dim vardensity As Double
413 Dim varressqft As Double

```

```

414 Dim vartotsqft As Double
415
416     vardensity = inLotArea / inresdensity
417     varunits = Int(vardensity)
418     varressqft = varunits * new_unit_size(False)
419     vartotsqft = varressqft
420     Do While (vartotsqft / (inLotArea * (1 - rearYard))) > inStories
421         varunits = varunits - 1
422         varressqft = varunits * new_unit_size(False)
423         vartotsqft = varressqft
424     Loop
425
426     RM_Units = varunits
427
428 End Function
429
430
431
432 Function RTO_Units(inzoning As String, inStories As Integer, _
433     inLotArea As Double, rearYard As Single)
434     ***Projects number of units on RM-zoned lots
435     Dim envelope As Double
436     Dim varunits As Integer
437     Dim varressqft As Double
438     Dim vartotsqft As Double
439
440     If InStr(1, inzoning, "RTO") Then
441         envelope = inLotArea * 0.55 * inStories
442         varunits = envelope / new_unit_size(False)
443         vartotsqft = varressqft
444
445         Do While ceil(vartotsqft / (inLotArea * (1 - rearYard))) > Nz(inStories, 0)
446             varunits = varunits - 1
447             varressqft = varunits * new_unit_size(False)
448             vartotsqft = varressqft
449         Loop
450         RTO_Units = varunits
451     Else
452         RTO_Units = Null
453     End If
454
455 End Function
456
457
458
459 Function Mixed_units(inStories As Integer, inLotArea As Double, _
460     inresdensity As Integer, inFar As Single, rearYard As Double)
461     ***Projects number of units on mixed-zoned lots
462     Dim varunits As Integer
463     Dim varressqft As Double
464     Dim varcommsqft As Double
465     Dim vartotsqft As Double
466
467     varunits = Int(inLotArea / inresdensity)
468     varressqft = varunits * new_unit_size(False)
469     varcommsqft = inLotArea * inFar
470     vartotsqft = varressqft + varcommsqft
471
472     Do While Int(vartotsqft / (inLotArea * (1 - rearYard))) > inStories _
473         And varunits > 0
474         varunits = varunits - 1
475         varressqft = varunits * new_unit_size(False)
476         vartotsqft = varressqft + varcommsqft
477     Loop
478
479     'If Int(vartotsqft / (inLotArea * (1 - rearyard))) > inStories Then
480     '    varcommsqft = inLotArea * (1 - rearyard) * instories
481     '    vartotsqft = varcommsqft
482     'End If
483     Mixed_units = varunits

```

```

484 End Function
485
486
487
488 Function Mixed_units_options(inStories As Integer, instories2 As Integer, _
489     inLotArea As Double, _
490     inFar As Single, inresdensity As Integer, _
491     in_neighborhood As String, inzoning As String, rearYard As Double)
492     ***Projects number of units on mixed-zoned lots
493     Dim varunits As Integer
494     Dim varressqft As Double
495     Dim varcommsqft As Double
496     Dim vartotsqft As Double
497
498     If instories2 = 0 Then
499         vartotsqft = inStories * inLotArea
500     Else
501         vartotsqft = (inStories * inLotArea * 0.5) _
502             + (instories2 * inLotArea * 0.5)
503     End If
504
505     varcommsqft = inLotArea * inFar
506     varressqft = vartotsqft - varcommsqft
507     If (Nz(inresdensity, 0) = 0) Then
508         varunits = Int(varressqft / new_unit_size(True))
509     Else
510         If instories2 = 0 Then
511             varunits = Mixed_units(inStories, inLotArea, inresdensity, inFar, CDBl(rearYard))
512         Else
513             varunits = Mixed_units(inStories, inLotArea * 0.5, inresdensity, inFar,
514 CDBl(rearYard)) _
515             + Mixed_units(instories2, inLotArea * 0.5, inresdensity, inFar,
516 CDBl(rearYard))
517         End If
518     End If
519
520     'If (in_neighborhood = "Central Waterfront") _
521     '    And (Int(inLotArea / 600) > varunits) Then
522     '    varunits = Int(inLotArea / 600)
523     'ElseIf (inzoning = "NC-T") _
524     '    And (Int(inLotArea / 600) > varunits) Then
525     '    varunits = Int(inLotArea / 600)
526     'Else
527     '    If (Int(inLotArea / 1000) > varunits) Then
528     '        varunits = Int(inLotArea / 1000)
529     '    End If
530     'End If
531     Mixed_units_options = varunits
532 End Function
533
534
535
536 Function C2_sqft(inStories As Integer, inLotArea As Double, _
537     inFar As Single)
538     Dim varcommsqft As Double
539     varcommsqft = inLotArea * inFar
540     If ceil(varcommsqft / inLotArea) > inStories Then
541         varcommsqft = inLotArea * inStories
542     End If
543     C2_sqft = varcommsqft
544 End Function
545
546
547
548 Function C2_resunits(inStories As Integer, inLotArea As Double, _
549     inFar As Single) As Integer
550     'returns residential units for C2 districts. Full FAR is given to commercial,
551     'any remaining square footage given to residential. Residential rear yard
552     requirement

```

```

553 'NOT implemented in this function.
554
555 Dim varressqft As Long
556 Dim varresunits As Long
557 Dim envelope As Long
558 Dim varcommsqft As Long
559
560     varcommsqft = inLotArea * inFar
561     envelope = inLotArea * inStories
562     varresunits = Int(inLotArea / 800)
563     varressqft = varresunits * new_unit_size(False)
564
565 If ceil(varcommsqft / inLotArea) > inStories Then
566     varcommsqft = inLotArea * inStories
567
568 End If
569 Do While varcommsqft + varressqft > envelope And varresunits > 0
570     varresunits = varresunits - 1
571     varressqft = varresunits * new_unit_size(False)
572 Loop
573
574 C2_resunits = varresunits
575 End Function
576
577
578
579 Function C3_ressqft(inStories As Integer, inLotArea As Double, _
580     inFar As Single, inZoning As String)
581
582 'returns residential square feet for c3 districts by designating envelope
583 'as FAR times lotsize (when height limit allows) and distributing 90% to
584 commercial.
585 'Limits potential for lots smaller than 7500 sqft to half the FAR otherwise
586 used.
587
588 Dim varunits As Integer
589 Dim varressqft As Double
590 Dim varcommsqft As Double
591 Dim varlotsqft As Double
592
593 varlotsqft = inLotArea * inStories
594 If inLotArea <= 7500 And (inZoning = "C-3-0" Or inZoning = "C-3-0(SD)") Then
595     Select Case inStories < 9
596     Case True
597         varcommsqft = inLotArea * inStories * 0.9
598         varressqft = inLotArea * inStories * 0.1
599     Case Else
600         varcommsqft = inLotArea * (0.5 * inFar) * 0.9
601         varressqft = inLotArea * (0.5 * inFar) * 0.1
602     End Select
603 Else
604     If inStories > inFar Then
605         varcommsqft = inLotArea * inFar * 0.9
606         varressqft = inLotArea * inFar * 0.1
607     Else
608         varcommsqft = inLotArea * inStories * 0.9
609         varressqft = inLotArea * inStories * 0.1
610     End If
611 End If
612 C3_ressqft = varressqft
613
614 End Function
615
616
617
618 Function MUR_DTR_S_Ressqft(inStories As Integer, inLotArea As Double, inShare As Single,
619     rearYard As Single) As Long
620
621 Dim varressqft As Double
622 Dim varlotsqft As Double

```

```

623
624     '***companion function to MUR_comsqft. Com share set in separate lookup table
625     and passed in.
626     vartotsqft = inLotArea * inStories * (1 - rearYard)
627
628     varressqft = (vartotsqft * inShare)
629     MUR_DTR_S_Ressqft = varressqft
630
631     End Function
632
633
634
635     Function MUR_DTR_S_Comsqft(inStories As Integer, inLotArea As Double, inShare As Single,
636     rearYard As Single) As Long
637
638     Dim varcomsqft As Double
639     Dim vartotsqft As Double
640
641     '***companion function to MUR_Ressqft. Com share set in separate lookup table
642     and passed in.
643
644     vartotsqft = inLotArea * inStories * (1 - rearYard)
645     varcomsqft = (vartotsqft * (1 - inShare))
646     MUR_DTR_S_Comsqft = varcomsqft
647
648     End Function
649
650
651
652     Function DTR_Commsqft(inStories As Integer, inLotArea As Double, inShare As Double,
653     rearYard As Single)
654
655     Dim varTowerEnvelope As Long
656     varTowerEnvelope = towerEnvelope(inStories, inLotArea, inShare, rearYard)
657
658     DTR_Commsqft = (varTowerEnvelope * (1 - inShare))
659     End Function
660     Function DTR_ressqft(inStories As Integer, inLotArea As Double, inShare As Double,
661     rearYard As Single)
662
663     Dim varTowerEnvelope As Long
664     varTowerEnvelope = towerEnvelope(inStories, inLotArea, inShare, rearYard)
665
666     DTR_ressqft = (varTowerEnvelope * (inShare))
667     End Function
668
669
670
671     Function towerEnvelope(inStories As Integer, inLotArea As Double, inShare As Double,
672     rearYard As Single) As Long
673
674     Dim varLowerTowerFloorplateSqft As Double
675     Dim varLowerTowerStories As Byte
676     Dim varlowertowersqft As Double
677
678     Dim varTowerstories As Byte
679     Dim varTowerEnvelope As Double
680
681     Dim varUpperTowerFloorPlateSqft As Double
682     Dim varUpperTowerStories As Double
683     Dim varUpperTowerSqft As Double
684
685     Dim varPodiumStories As Byte
686     Dim varPodiumSqft As Double
687
688     Dim varTowers As Integer
689     Dim varNextTower As Double
690
691     Const areaFactor As Byte = 5
692

```

```

693 If inStories <= 12 Then
694     varPodiumStories = inStories
695     varPodiumSqft = varPodiumStories * inLotArea * (1 - rearYard)
696 Else
697     If inStories <= 24 Then
698         varLowerTowerFloorplateSqft = 7500
699         varPodiumStories = 8
700         varLowerTowerStories = inStories - varPodiumStories
701         varUpperTowerStories = 0
702
703     ElseIf inStories <= 30 Then
704         varLowerTowerFloorplateSqft = 8500
705         varPodiumStories = 8
706         varLowerTowerStories = inStories - varPodiumStories
707         varUpperTowerStories = 0
708
709     ElseIf inStories <= 35 Then
710         varLowerTowerFloorplateSqft = 9000
711         varUpperTowerFloorPlateSqft = varLowerTowerFloorplateSqft - (0.1 *
712 varLowerTowerFloorplateSqft)
713         varPodiumStories = 12
714         varTowerStories = inStories - varPodiumStories
715         varUpperTowerStories = (1 / 3) * varTowerStories
716         varLowerTowerStories = (2 / 3) * varTowerStories
717
718     ElseIf inStories > 35 Then
719         varLowerTowerFloorplateSqft = 10000
720         varUpperTowerFloorPlateSqft = varLowerTowerFloorplateSqft - (0.1 *
721 varLowerTowerFloorplateSqft)
722         varPodiumStories = 12
723         varTowerStories = inStories - varPodiumStories
724         varUpperTowerStories = (1 / 3) * varTowerStories
725         varLowerTowerStories = (2 / 3) * varTowerStories
726     End If
727
728 varNextTower = (varLowerTowerFloorplateSqft * areaFactor)
729 varTowers = Int(inLotArea / varNextTower)
730     If varTowers < 1 Then
731         varTowers = 1
732     End If
733
734 ***podium envelope
735     varPodiumSqft = (varPodiumStories * inLotArea) * (1 - rearYard)
736
737 ***lower tower envelope
738     Select Case inLotArea
739     Case Is >= varLowerTowerFloorplateSqft
740         varlowertowersqft = (varLowerTowerStories * varLowerTowerFloorplateSqft) *
741 varTowers
742     Case Else
743         varlowertowersqft = (varLowerTowerStories * inLotArea) * varTowers
744     End Select
745
746 ***upper tower envelope
747     Select Case inLotArea
748     Case Is >= varUpperTowerFloorPlateSqft
749         varUpperTowerSqft = (varUpperTowerStories * varUpperTowerFloorPlateSqft) *
750 varTowers
751     Case Else
752         varUpperTowerSqft = (varUpperTowerStories * inLotArea) * varTowers
753     End Select
754 End If
755
756 varTowerEnvelope = varPodiumSqft + varlowertowersqft + varUpperTowerSqft
757 towerEnvelope = varTowerEnvelope
758 End Function
759
760
761
762 Function C3_commsqft(inStories As Integer, inLotArea As Double, _

```

```

763         inFar As Single, inZoning As String)
764
765     'returns residential square feet for c3 districts by designating envelope
766     'as FAR times lotsize (when height limit allows) and distributing 90% to
767     commercial.
768     'Limits potential for lots smaller than 7500 sqft to half the FAR otherwise
769     used.
770
771     Dim varUnits As Integer
772     Dim varResSqft As Double
773     Dim varCommsSqft As Double
774     Dim varTotSqft As Double
775
776     varTotSqft = inLotArea * inStories
777     If inLotArea <= 7500 And (inZoning = "C-3-0" Or inZoning = "C-3-0(SD)") Then
778         Select Case inStories < 9
779             Case True
780                 varCommsSqft = inLotArea * inStories * 0.9
781                 varResSqft = inLotArea * inStories * 0.1
782             Case Else
783                 varCommsSqft = inLotArea * (0.5 * inFar) * 0.9
784                 varResSqft = inLotArea * (0.5 * inFar) * 0.1
785             End Select
786         Else
787             If inStories > inFar Then
788                 varCommsSqft = inLotArea * inFar * 0.9
789                 varResSqft = inLotArea * inFar * 0.1
790             Else
791                 varCommsSqft = inLotArea * inStories * 0.9
792                 varResSqft = inLotArea * inStories * 0.1
793             End If
794         End If
795         C3_commsSqft = varCommsSqft
796
797     End Function
798
799
800
801     Function SOM_commsSqft(inZoning As String, inLotArea As Double, inStories As Integer, _
802         inFar As Single, inShare As Single)
803
804         Dim varCommsSqft As Double
805         Dim varFar As Single
806         varFar = 0
807
808         If InStr(1, inZoning, "SS0") > 0 Then
809             Select Case inStories
810                 Case 4, 5
811                     varFar = 3
812                 Case 6, 8
813                     varFar = 4
814                 Case 13
815                     varFar = 4.5
816                 Case Else
817                     varFar = inFar
818             End Select
819         End If
820         If varFar = 0 Then
821             varFar = inFar
822         End If
823         varCommsSqft = inLotArea * inShare * varFar
824         If inStories < varFar Then
825             varCommsSqft = inLotArea * inShare * inStories
826         End If
827         SOM_commsSqft = varCommsSqft
828     End Function
829
830     Function Mixed_totSqft_options(inStories As Integer, inStories2 As Integer, _
831         inLotArea As Double)
832         Dim varCommsSqft As Double

```

```

833 Dim varcommsqft2 As Double
834
835 If instories2 = 0 Then
836     varcommsqft = inLotArea * inStories
837     Mixed_totsqft_options = varcommsqft
838 Else
839     varcommsqft = inLotArea * inStories * 0.5
840     varcommsqft2 = inLotArea * instories2 * 0.5
841     Mixed_totsqft_options = varcommsqft + varcommsqft2
842 End If
843 End Function
844
845
846
847 Function Commshare(inLotArea As Double, _
848     inStories As Integer, inShare As Single)
849     Commshare = inLotArea * inStories * inShare
850 End Function
851
852 Function Resshare_units(inLotArea As Double, _
853     inStories As Integer, instories2 As Integer, inShare As Single)
854 If instories2 = 0 Then
855     Resshare_units = Int((Nz(inLotArea, 0) * (Nz(inStories, 0) * Nz(inShare, 0) * 0.5 /
856 new_unit_size(False)) _
857     + Int(Nz(inLotArea, 0) * Nz(instories2, 0) * Nz(inShare, 0) * 0.5 /
858 new_unit_size(False))))
859 Else
860     Resshare_units = Int(inLotArea * inStories * inShare / new_unit_size(False))
861 End If
862 End Function
863
864
865
866 Function calc_softness(intotsqft As Double, insqft As Double)
867 Select Case Nz(insqft, 0)
868     Case 0 To (intotsqft * 0.05)
869         calc_softness = 5
870     Case (intotsqft * 0.05) To (intotsqft * 0.3)
871         calc_softness = 30
872     Case (intotsqft * 0.3) To (intotsqft * 0.4)
873         calc_softness = 40
874     Case (intotsqft * 0.4) To (intotsqft * 0.5)
875         calc_softness = 50
876     Case Else
877         calc_softness = 0
878 End Select
879 End Function

```