4TH AND KING STREET RAILYARDS

FINAL SUMMARY MEMO

DECEMBER 2012

SAN FRANCISCO PLANNING DEPARTMENT
EPS
AECOM

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1. Introduction

This memo provides a summation of the findings of a study for transit-oriented development at the 4th and King Street Railyards, the scope of which was to document the conditions, opportunities, and development capacity, feasibility and economic value of the site and to serve as a reference for future planning, design, and implementation efforts that can take place once the ultimate configuration of the railyards is more certain. The findings of this study may also inform decisions made about rail investments and alignments themselves that would affect layout and development of the site. The overarching purposes of the study are to evaluate the potential for transit-oriented development on the site and related potential for both one-time and ongoing revenue to support both the Downtown Rail Extension and High Speed Rail investments as well as to improve physical conditions in the neighborhood. Future development of this site can take advantage of a major transit-oriented development opportunity, promote a major mixed-use development center, help forge new connections in the fabric of the city, provide much-needed open space amenities and public realm improvements, and fund rail infrastructure improvements and facilities.

The purpose of this study for was not to create a specific land use proposal for adoption or endorsement by any decision-making body, but should be regarded as an informational study intended as an important step in determining the potential for, feasibility of, and likely parameters for future development of the site and to inform future decision-making regarding this site.

This memo is organized into the following sections:

1.1 Background

In 1999, San Francisco voters adopted Proposition H, calling for Caltrain to be extended into a new intermodal transit center on the site of the former Transbay Terminal that connects regional bus and rail service (including Muni, AC Transit, BART, and Caltrain) and eventually High Speed Rail. An important element of this program is the extension of Caltrain 1.3 miles via a downtown extension subway tunnel ("DTX") to the new Transbay Transit Center from its current terminus at 4th and King Streets. The DTX alignment from 4th and King to the Transbay Center will be designed to facilitate a critical element of the California High Speed Rail (CHSR) system, which will be an electrified train network that will connect California's major metropolitan areas.

The site evaluated in this study is comprised of three blocks between 4th Street to 7th Street bounded by King Street and Townsend Street in the City of San Francisco. The 19.1-acre site includes existing station and railyards, which serve Caltrain. Currently, the railyards form a ½-mile long physical and visual barrier between the South of Market (SOMA) neighborhood north of the site and the Mission Bay neighborhood to the south.

1.2 Site Ownership and Jurisdiction

The purpose of this study is to evaluate issues, opportunities, and potential value generated by more intensive use of the railyards site, and not to adjudicate legal rights to direct the development on the site or assert parties' specific rights to share in the revenues derived therefrom. Preliminary research by the Planning Department[1] has indicated the following:

(1) The underlying railyards parcels are owned by ProLogis/Cattellus, the entity that is the master developer/owner of Mission Bay; and

(2) The Joint Powers Board (i.e. Caltrain) owns a railroad operating easement to the property that allows them to construct and operate a railroad and make any investments and improvements thereto, and that this easement extends to 30 feet above the level of the railroad tracks.

The proceeds of any development on the site will certainly and necessarily be the subject of future negotiation, due to the site's complicated ownership and easement structure. The property owner, ProLogis, will not derive economic value from the property without the ability to change the current conditions. Caltrain does not own the underlying property, and therefore may not have a claim on economic benefits resulting from future development of the site, if the rail footprint was reduced or

[1] Subject to verification. Planning Department makes no claims of correctness. These findings are based on informal conversations with and review of documentation in the possession of representatives of Caltrain JPB, ProLogis/Cattellus, and the former San Francisco Redevelopment Agency.

vacated. The incentive for Caltrain to entertain development on the site is for the possibility of development to yield major financial benefit to Caltrain for capital investment and ongoing operating revenue purposes. A major motivation for this study is to assess what value might be generated by development on the site in order to fund investment in rail infrastructure. Any outcome that does not achieve this would unlikely be worth pursuing.

The westernmost block of the site between 6th Street/I-280 overpass and 7th Street is located within the Mission Bay Redevelopment Area. This block is designated as Public Facility on the Mission Bay North Land Use Plan in the Redevelopment Plan and in the Mission Bay North Design for Development. The remainder of the site is subject to the Planning Code requirements and Planning Department review and oversight.

1.3 Planning Process Overview

The planning process studied the potential development capacity of the railyards based on two different conditions and sets of assumptions. The purpose of evaluating two scenarios is to bracket the study and identify high-level constraints and opportunities under both conditions:

1. **Railyards Scenario 1–** Initiated and completed in 2010, evaluated the potential for development to occur within air-rights above the railyards as currently envisioned according to documentation from the California High Speed Rail Authority and Caltrain.
2. **Railyards Scenario 2–** Initiated and completed in 2012, evaluated the development potential for the site assuming that the site is essentially a “blank slate” for development. This analysis did not explore how rail operations or facilities would be adjusted to enable this scenario, however the presumption is that the mid-line subway station under Townsend Street between 4th and 5th Street planned as part of the DTX is the only Caltrain/HSR rail facility at or adjacent to the site. Rail storage and other functions of the current railyards are presumed to be handled off-site. Two different roadway concepts were analyzed as part of this scenario (discussed in detail in this memo).

2. Existing Conditions Overview

2.1 Setting and Site Importance

As illustrated on **Figure 1** and **Figure 2,** the 4th and King Railyards site is composed of three city blocks located between 4th Street and 7th Street east to west, and between Townsend Street and King Street north to south. The site enjoys an excellent regional location due to its proximity to the transportation network, including transit opportunities and immediate access to Highway 280. The Caltrain station is located at the of 4th Street edge of the property between Townsend and King Streets. This station serves as the northern terminus of the Caltrain commuter rail line that serves the San Francisco Peninsula and Santa Clara Valley, and is a major regional transit hub. The Caltrain station is also a major hub for local Muni rail lines - the N-Judah and the T-Third converge here. The T-Third will soon be extended as the Central Subway, which will run on the surface of 4th Street before heading underground at Bryant Street en route to Yerba Buena, Union Square and Chinatown. There are plans for additional Muni rail service along the waterfront (the "E" line) which will further reinforce this location as a rail hub. In addition, several Muni bus lines also connect to the Caltrain station. The light rail and bus lines provide direct connections to downtown San Francisco and Bay Area Rapid Transit (BART).

In addition to the extensive transportation network, the mix and intensity of surrounding land uses contribute to the site's future development potential. Mission Bay, to the south, includes existing and planned high density residential and employment uses, as well as continued expansion of the UCSF campus and medical uses. AT&T Park, home of the San Francisco Giants, is located one block east of the 4th and King Railyards. On days with baseball games or entertainment events, the ballpark draws heavy pedestrian and transit traffic, contributing to the future development potential of the area, particularly supporting entertainment, visitor and retail uses. The SOMA district to the north of the site and the Showplace Square area to the west are a mix of moderate density office, retail, light industrial, and residential uses. These areas are currently hotbeds of economic activity, mostly related to the high tech industries that are key drivers of the City's economy.

Just to the south of Mission Creek, opposite AT&T Park, the Giants have secured exclusive negotiating rights with the Port of San Francisco to redevelop Seawall Lot 337, which currently is a large surface parking lot serving the ballpark. This potential development, currently in planning stages, would contain substantial amounts of offices, housing, structured replacement parking, and new public open space. Additionally, the Warriors basketball team is in planning stages for a new 17,000-seat basketball and entertainment arena on Piers 30-32, northeast of the railyards.

Future development of the site should capitalize on the existing and planned transportation infrastructure and the activity and interest in the surrounding neighborhoods to create and support a major transit-oriented hub with a mix of uses and opportunities, while creating connections between the SOMA and Mission Bay neighborhoods. A transit-oriented development hub would generate additional riders for the

Caltrain/HSR rail system, but could also potentially generate revenue for investment and sustenance of the rail system.

FIGURE 1: STUDY AREA LOCATION

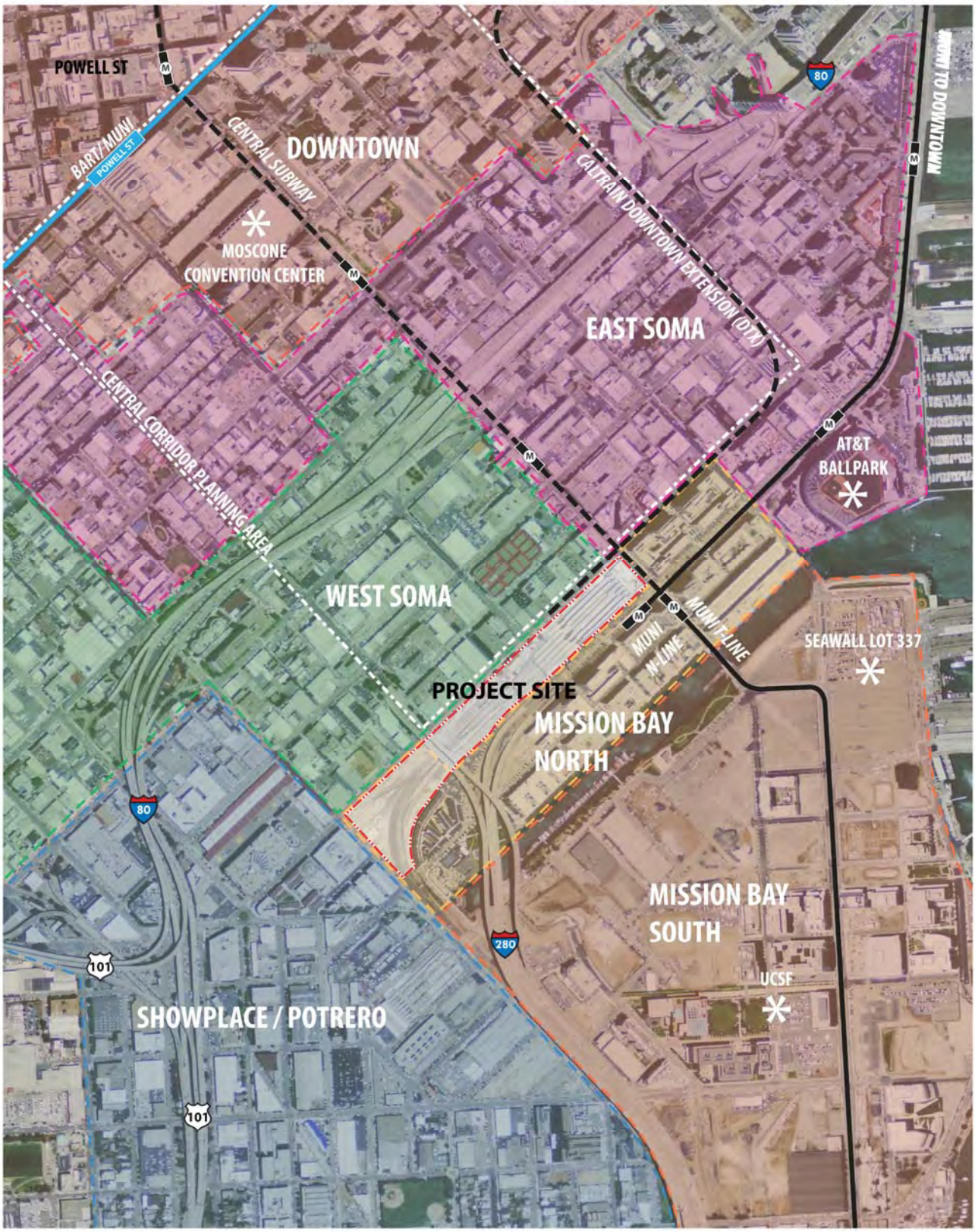


FIGURE 2: SITE CONTEXT AND PLANNING AREAS ADJACENT TO RAILYARDS

2.2 Existing Land Use

Currently, the use of the entire 4th and King site is dedicated to the Caltrain station and the rail facilities, including storage of vehicles. The Caltrain station, which opened in 1975, is a stub-end terminal with six platforms – each providing access to two tracks – offering a total of 12 active tracks. The small station building and platforms are located at the eastern end of the site, and the remainder of the site contains at-grade rail alignments. Current weekday Caltrain service includes 46 arrivals and 46 departures daily, for a total of 92 scheduled train movements. Weekend service includes 16 arrivals and 16 departures on Saturdays, and 14 arrivals and 14 departures on Sundays.

As described in the previous section, the site is surrounded by heavily trafficked land uses (illustrated in **Figure 3**). AT&T Park is located to the east of the site, with the SOMA district to the north. The SOMA district is currently the fastest growing office market in the city, and the epicenter of the San Francisco high-tech industry. It includes a mix of uses, including office, residential, service and light industrial uses, as well as retail and entertainment uses located throughout the district. The Western SOMA Community Plan was approved by the Planning Commission in December 2012 and awaits review and action by the Board of Supervisors in early 2013. The plan contains zoning and height proposals for the parcels directly north of the study area. Currently, these parcels are zoned Service/Light Industry (SLI), but the proposed zoning as part of the draft Western SOMA plan effort is for a Mixed-Use Office district along Townsend with preservation of the industrial district (renamed "SALI") to the north of Brannan. There is also a planning effort underway for the southern portion of the Central Subway rail corridor, bounded by 2nd and 6th Streets between Market Street and Townsend Street. This ongoing planning effort, initiated in 2011, overlaps with portions of the Western SOMA Plan area. Current draft concept proposed zoning recommendations as part of this effort include rezoning of most of the SALI and SLI parcels in this area (south of Bryant Street) for high density commercial uses, while allowing some housing and other uses.

Mixed-use office and multi-family residential uses predominantly surround the site on the remaining borders of the railyards. Residential and retail uses are concentrated in the northern part of Mission Bay, just south and east of the site. Biotechnology, medical and office-based employment uses are located in the southern portion of Mission Bay, including a new UCSF campus and medical center. To the immediate southwest of the railyards is the Showplace Square district, which includes a mix of large office uses (including high-tech uses such as Adobe and Zynga), as well as the San Francisco Design Center, California College of Arts, industrial uses, and small amounts of residential development.

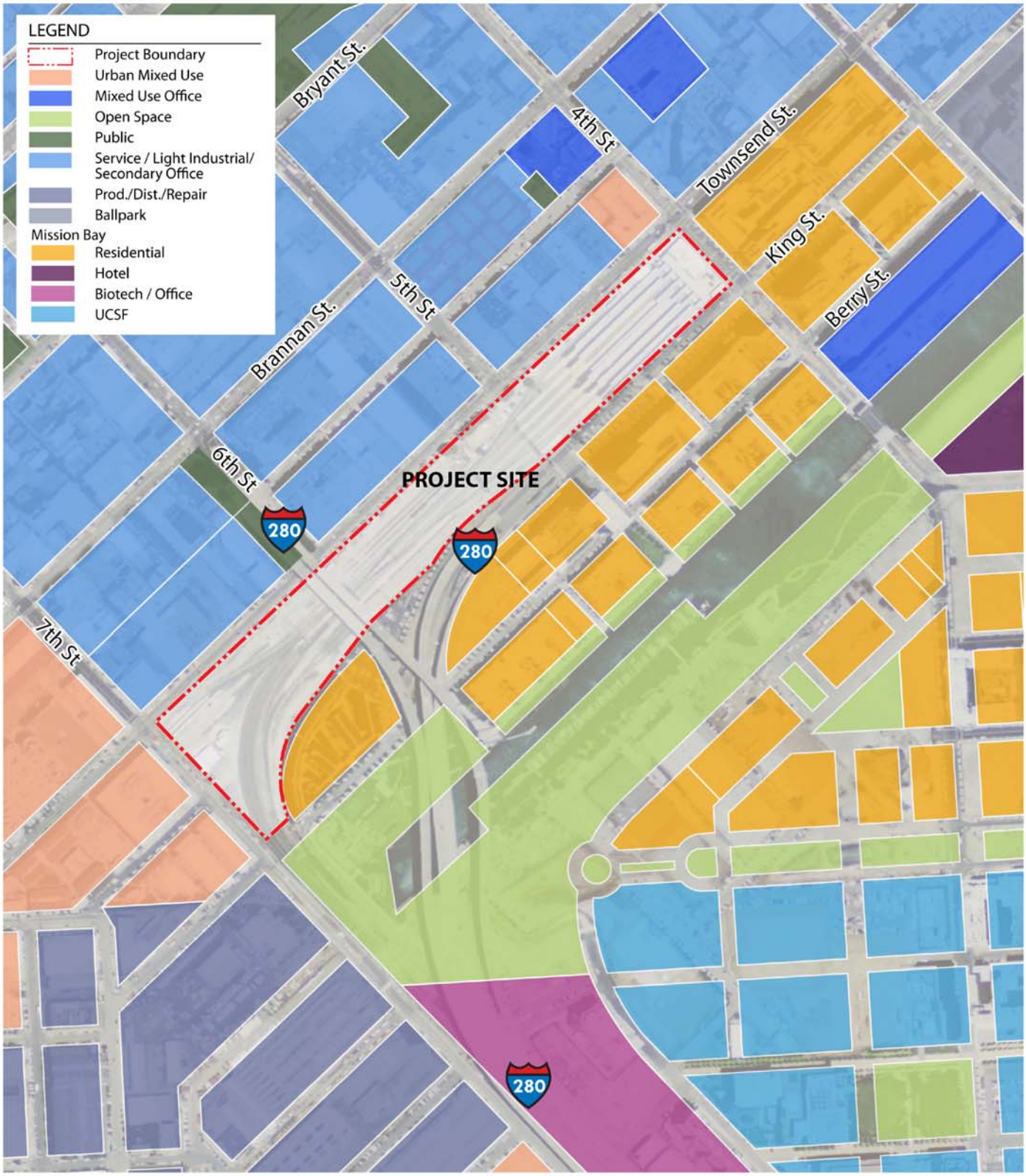


FIGURE 3: LAND USE DISTRICT MAP

Source: City and County of San Francisco Municipal Code - Zoning Code and San Francisco Redevelopment Agency

2.3 Height Regulations and Urban Form Context

The current height limit regulations for the 4th and King site allow for building heights up to 110'. Surrounding the site, the height limits in the SOMA district to the north allow for a maximum building height of 65', and in the Showplace/Potrero district maximum allowable building heights are 68'. The parcels directly north of the study area on Townsend Street are proposed to be rezoned to an 85' height district, as part of the Western SOMA Community Plan process. The Central Corridor planning effort includes proposed changes to height regulations as well, including 65' and 85' base heights along major street frontages, large-floorplate mid-rise buildings up to 130' in key growth areas, and taller building heights (180'-320') at Central Subway rail stations along 4th Street, particularly at Townsend and Brannan Streets. Mission Bay contains varying height districts of 50', 65', 90', including several mixed-use residential/office towers rising up to 160'. As previously mentioned, the Port is reviewing a development proposal for Seawall Lot 337, south of AT&T Park; proposed building heights range from midrise buildings (90') to towers in key locations (320'-450'). Height limit regulations are illustrated in **Figure 4**.

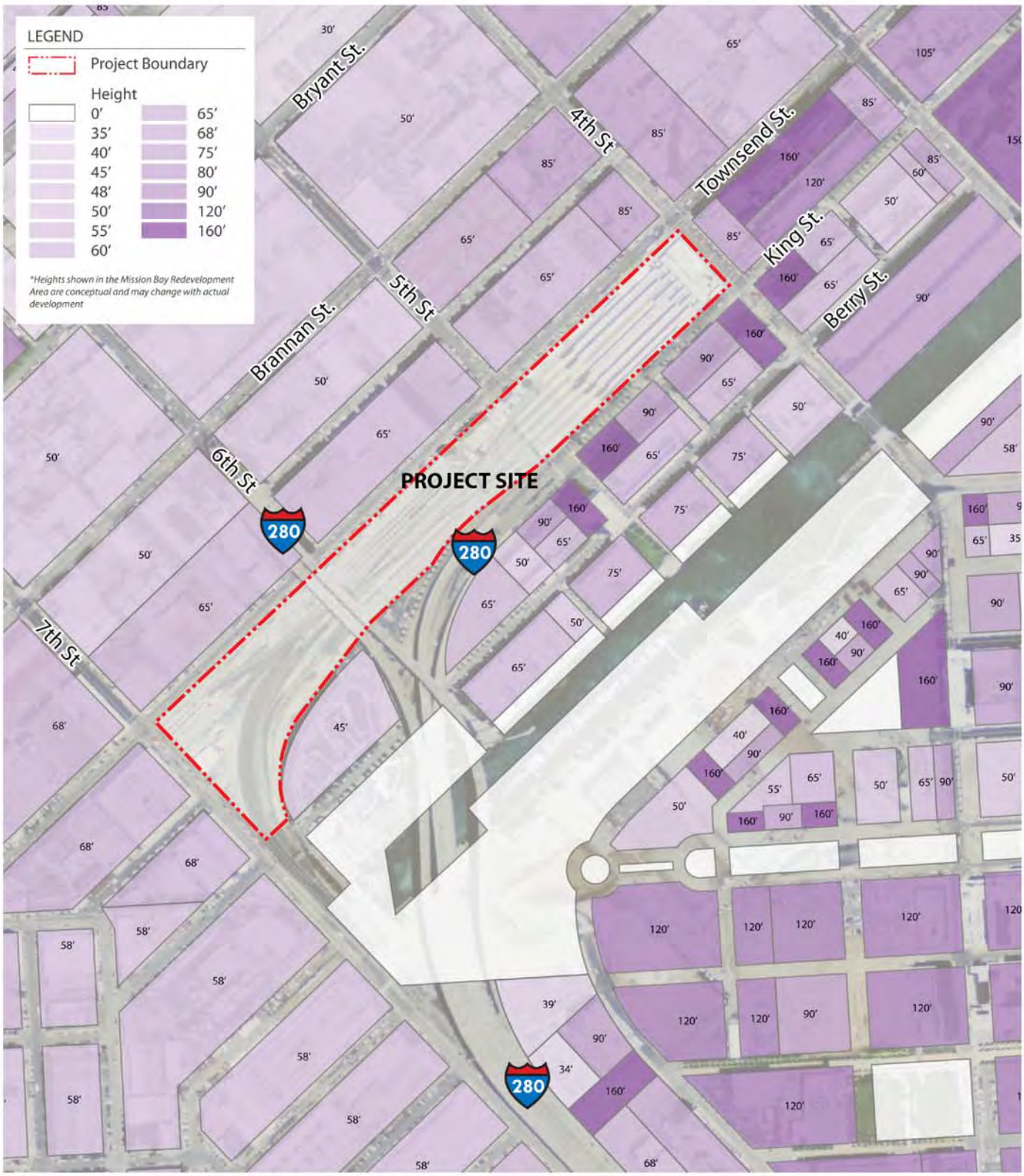


FIGURE 4: HEIGHT MAP

Source: City and County of San Francisco Municipal Code - Zoning Code and San Francisco Redevelopment Agency

3. Urban Design and Planning Principles

In order to assess future development potential at the site, there was a need to establish some fundamental principles and objectives to guide any changes to the site. Following are guiding urban design and planning principles, which should serve as the design benchmarks for any future development of the 4th and King site. These principles were developed during the initial phase of analysis, and revisited as part of the analysis of the "blank slate" scenario. As described in the following sections, there are significant challenges to realizing these principles when considering development in the air-rights over a working railyard.

- Ensure that the project site is woven into the surrounding neighborhoods, blending the office and employment uses to the north in SOMA with the residential uses to directly south of the site in Mission Bay.
- Ensure active ground floor uses along all frontages and a vibrant and welcoming neighborhood environment.
- Continue to support the transit operations on or adjacent to the site, to meet existing and future ridership demands.
- Improve access to and across the site, as well as internal connectivity. Provide new connections through the site that extend or enhance the existing street grid in order to reduce or break down the barrier presented by the existing facility, improve local circulation, and knit neighborhoods together on either side of the site.
- Enhance the street environment to improve the pedestrian experience in the area.
- Improve the public realm and public amenities surrounding and within the site, including provision of new open space and gathering areas throughout the site and enhanced connections to nearby open space.
- Provide a mix of varying building heights across the site responding to the surrounding context of existing development as well as nearby development controls planned or under consideration, ranging from 85' mid-rise buildings as the predominant podium height to a cluster of one or more high-rise buildings (ranging from 160' up to 450' in height) toward the far eastern side of the site near 4th Street, to create a landmark element.

4. Development Scenario 1

The initial portion of the 4th and King planning process, which began in 2010, included the preparation of a comprehensive existing conditions review and opportunities and constraints summary of the site and the surrounding area, as well as a general study of potential development options for the site.

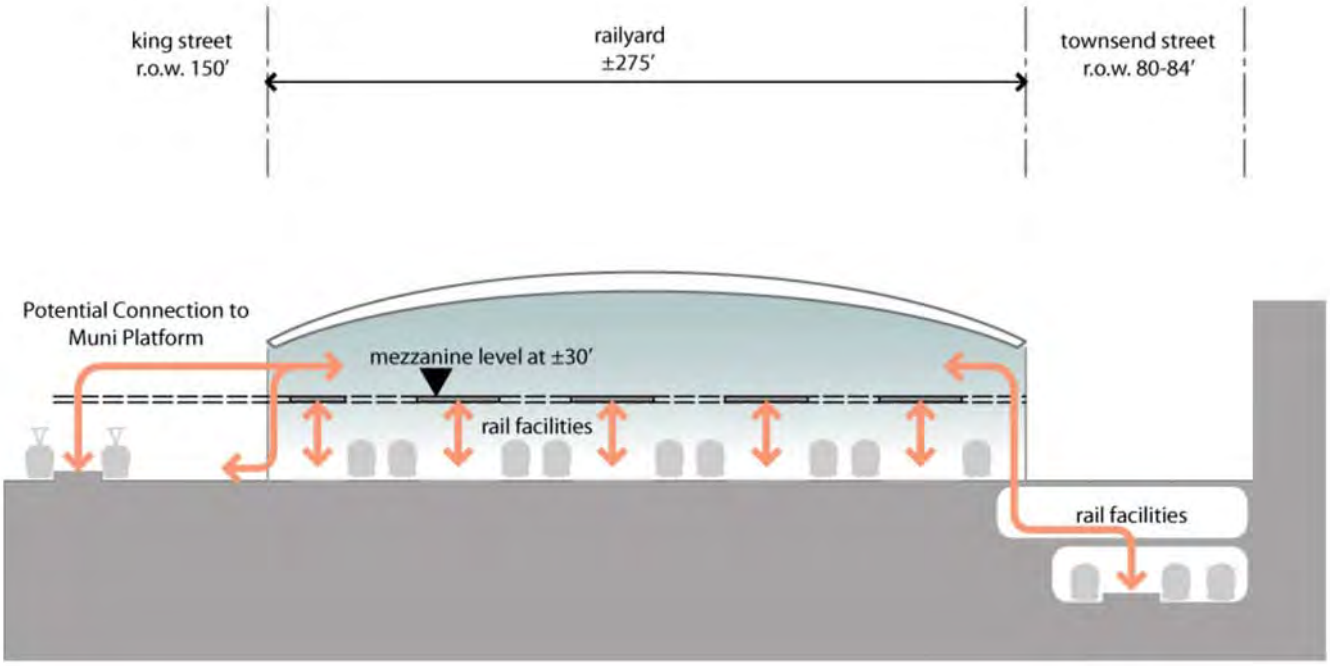
All of the tasks completed during the initial phase of work assumed that the railyards would remain operational. The layout of the railyards was consistent with published plans by the California High Speed Rail Authority and Caltrain, and it was assumed that future development would occur in the air-rights above the railyards.

4.1 Opportunities and Constraints

The Opportunities & Constraints Report (Appendix A), produced in December 2010, summarizes the results of the analysis of development potential of the 4th and King Railyards, assuming the site is to be rebuilt as a major station for both Caltrain and the CHSR system, with significant expansion of the railyards footprint, such that it would occupy the full width of the site to the property lines along Townsend and King Streets. The current CHSR/Caltrain plans for the station include the following characteristics:

- Serve both high speed rail intercity trains and Caltrain regional trains
- Contain two 30' wide platforms of 1,370' in length for high speed trains, serving four tracks
- Provide five Caltrain tracks overall, including two 30'-wide platforms 800' in length for Caltrain, serving two tracks each, and one 20'-wide platform, serving one Caltrain track.
- Contain a mezzanine, which would run the length of the station between King and Townsend and 4th and 5th Streets. The mezzanine would add a pedestrian layer above the railyard, with the purpose of facilitating pedestrian movement, and accommodating the needs of both transit riders and non-riders.
- A new mid-line Caltrain subway station under Townsend Street between 4th and 5th Street, constructed as part of DTX.

Figure 5 on the following page illustrates the expanded railyard layout, consistent with published plans. In this scenario, there would be limited opportunities for at-grade level development, and it is envisioned that the majority of development would occur in air-rights, on a podium above the station, with the exception of the portion of the site above the station mezzanine/platforms. This portion is assumed to be covered with a roof that allows significant natural lighting of the mezzanine and platforms; additionally the combined clearance needed for the platform level plus the mezzanine level would reduce the ability for any podium development above this portion of the site. On the remainder of the site, Caltrain would retain the use the area up to 30' above ground, and air-rights above this point would be available for development. **Figure 6** illustrates the potential development envelope, both for ground-floor development and development within the air-rights.



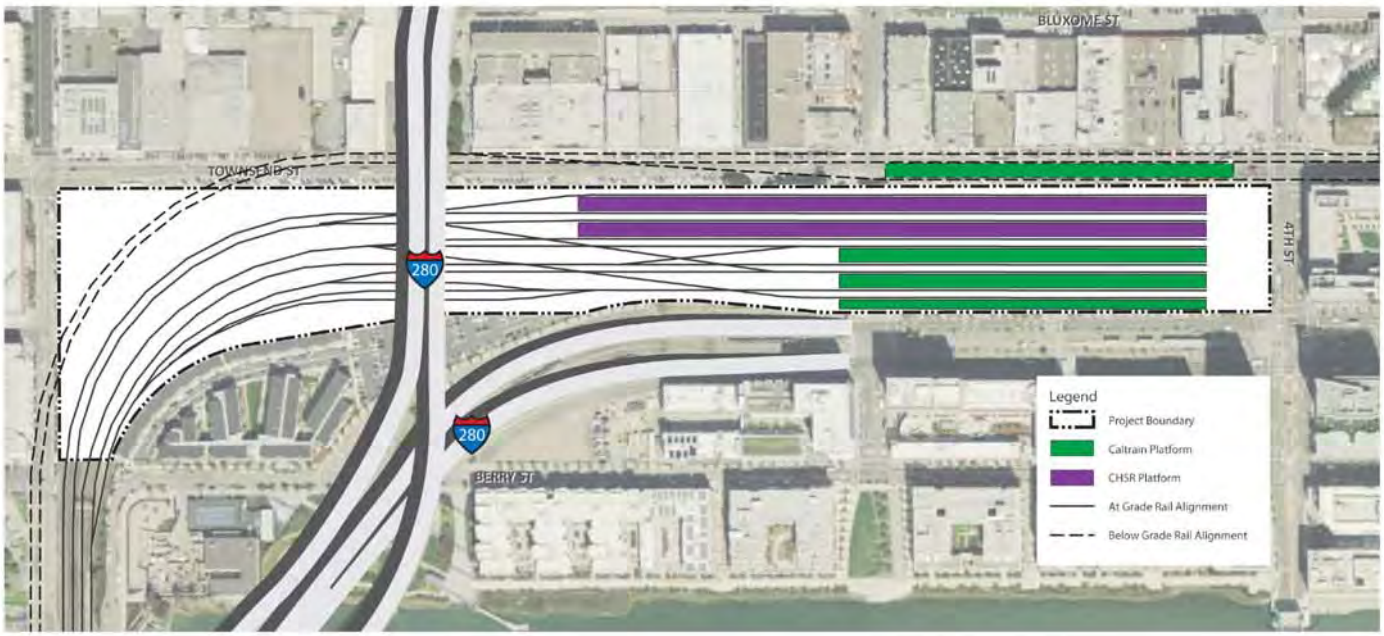


FIGURE 5: PROPOSED RAILROAD YARD

(Source : SAN FRANCISCO TO SAN JOSE SECTION, CALIFORNIA HIGH-SPEED TRAIN PROJECT APRIL 2010 ALTERNATIVES ANALYSIS)

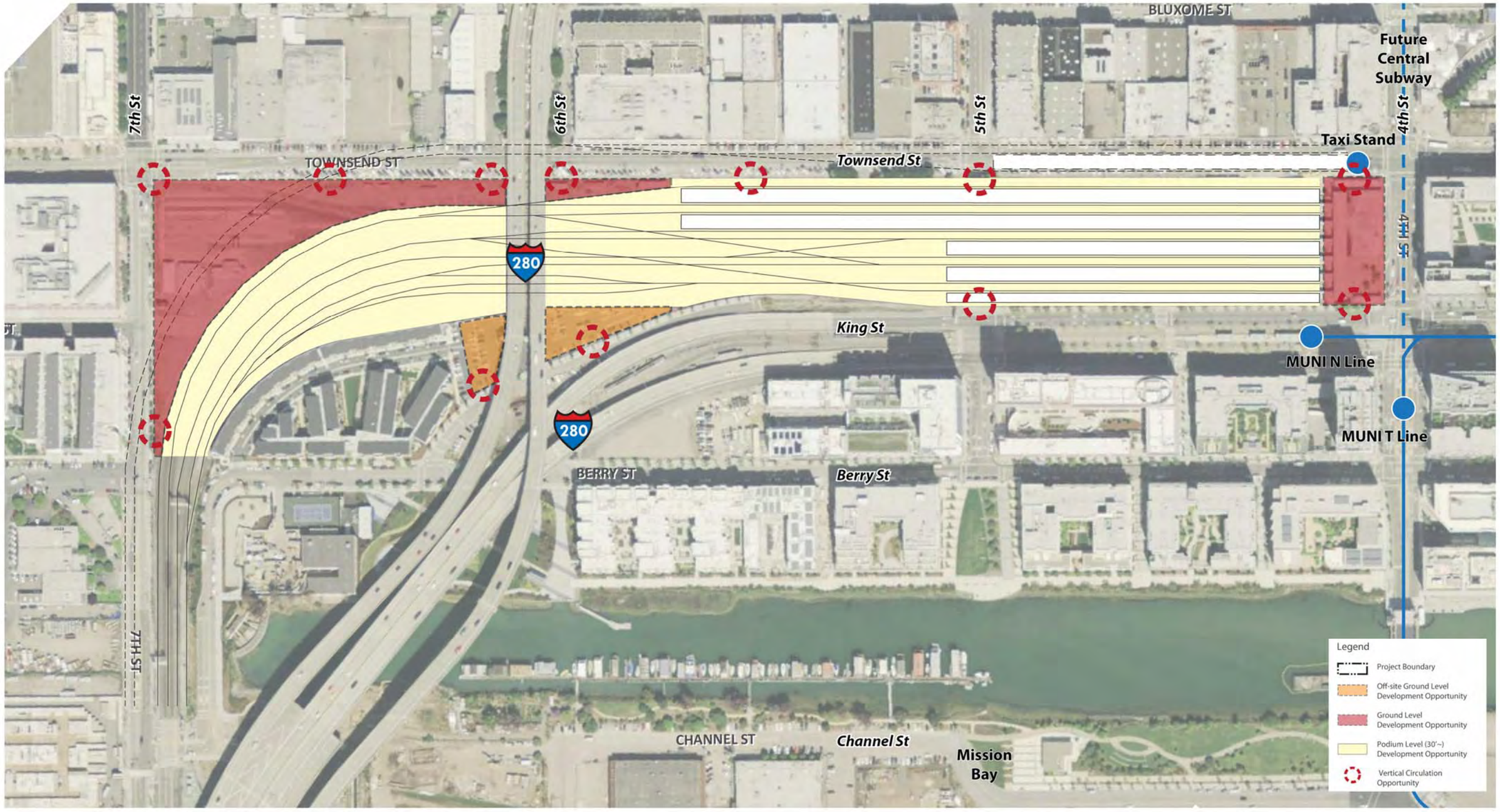


FIGURE 6: DEVELOPMENT OPPORTUNITIES

Following is a discussion of the key constraints and challenges that emerged regarding development based on the expanded railyards / air-rights assumptions, also illustrated in **Figure 7** (with additional detail provided in Appendix A):

1. **Site Access –** The primary concerns as they relate to site access include ground level interface and vertical circulation to the podium and/or below grade levels. At the ground level, the main pedestrian access to the station would have to occur on the 4th Street side. The rest of the perimeters would have limited access due to train operations and facilities right up against the property lines, with an exception at the corner of Townsend Street and 7th Street. Additionally, site access from Mission Bay is particularly constrained due to the Highway 280 on-ramp, and the residential development on Berry Street. The land that would be available for vertical circulation to access upper levels from the street level is limited with the platform layout taking up the entire width of the property (right up to the property lines on Townsend and King Streets) for railyards use. Furthermore, support services such as shipping, delivery, waste removal, and main utility distribution would have a difficult time obtaining access due to the at-grade property setbacks and track configuration/clearance constraints. Additionally, since the site functions as a multi-modal hub, ensuring access while minimizing potential conflicts between pedestrians, buses, trains, bicycles, and automobiles would be a significant challenge, particularly due to limited access to and across the site.
2. **Development Area –** Continued rail operations would significantly limit the possibility of ground floor development. Under current and planned conditions, ground floor development would be restricted to the current station area on 4th Street, and the corner of Townsend and 7th Street. Creating liner buildings along the Townsend and King Street edges would not be feasible, as the building depth needed (minimum of 25') would not be available due to space reserved for rail operations. As primary goals of any development at this site are to provide for improved pedestrian environment around the perimeter of the site and to have the expansive rail property integrate with the surrounding neighborhoods, the inability to "ground" development along the lengthy edges of the property and provide active ground floor uses or accessible and usable building lobbies presents a fundamental challenge to the physical feasibility and desirability of development above the railyard, even if it is structurally feasible to support several floors of new buildings on a podium above the railyard.

   Additionally, development should not or could not encroach on the public rights-of-way (i.e. Townsend and King Streets) in order to provide for vertical connections (i.e. lobbies, elevators, stairwells, escalators), because the transportation demands on these limited public ways are significant, increasing, and already pressed spatially to meet needed transportation functions[2]. As previously mentioned, air-rights development would require complicated vertical circulation from

[2] There are significant urban design issues associated with extending buildings in any considerable way into the public ROW, and this is explicitly discouraged and/or prohibited by San Francisco's General Plan.

the street level. Due to Caltrain and high speed rail operations, development within air-rights would be available at a minimum of 30' above grade level, further reducing total site capacity. Because of these factors and the complexity of developing over the railyards, the design of potential development within the air-rights would be a large, monolithic structure that would further separate Mission Bay and SOMA, which would be in opposition to the objective of creating additional connections in this vicinity.

As part of the opportunities and constraints analysis for Development Scenario 1, Economics and Planning Systems (EPS) prepared an overview of market conditions and a theoretical feasibility analysis of varying building/use typologies over a 35' podium. No analysis was prepared for the overall value of the site under this development scenario, because the major constraints to development on the site (discussed previously in this section) make development physically challenging or undesirable across large portions of the site. This study, prepared in September 2010, is included within of Appendix A to this memo.

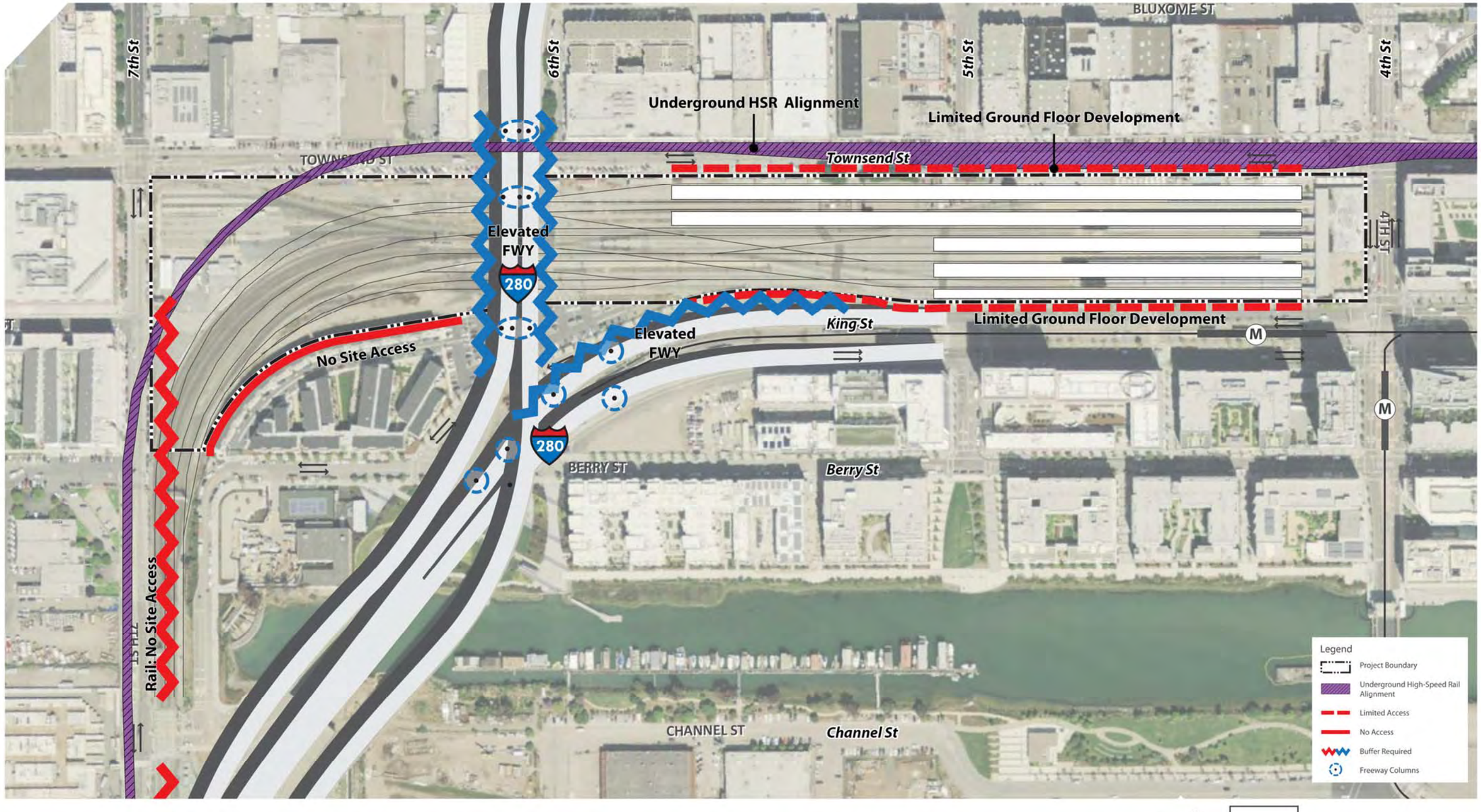


FIGURE 7: CONSTRAINTS MAP

5. Development Scenario 2

Following the opportunities and constraints analysis completed in 2010 as part of Development Scenario 1, the focus of this study shifted to consideration of a "blank slate" scenario, which assumed that the railyards would no longer be present on the site. This analysis did not explore how rail operations or facilities would be adjusted to enable this scenario, however the presumption is that the mid-line subway station under Townsend Street between 4th and 5th Street planned as part of the DTX and associated station entries along the ground floor of the Townsend Street edge of the site are the only Caltrain/HSR rail facility at or adjacent to the site, except as noted for the "boulevard" concept below. Rail storage and other functions of the current railyards are presumed to be handled off-site. Under these assumptions, the entire site is considered as a future development opportunity.

A variety of factors contributed to the shift in focus to the blank slate scenario, including the complexity and constraints of developing in the air-rights over the railyard and the fact that the plans for high speed rail implementation and extension of Caltrain are not certain at this point in time. Regardless of the ultimate configuration of the rail facilities, this scenario provides a useful benchmark to "bracket" the potential value, and development capacity of the site, in comparison with the design issues and challenges associated with Scenario 1.

The analysis completed for the blank slate scenario focused on understanding the site's development, while reflecting current market conditions, a realistic land use mix, and desired land use and urban design principles. The primary work task for blank slate scenario was to develop two land use and urban design concepts for the site based on the following roadway configurations:

1. **A "highway" concept** that assumes that the current elevated freeway configuration will remain unchanged from its current state, with one leg touching down on King Street between 5th and 6th Street, and a second running through the site in a north-south direction, elevated above what would otherwise be 6th Street.
2. **A "boulevard" concept** that assumes the existing Highway 280 configuration is significantly changed. This concept envisions Highway 280 touching down on the south side of 16th Street, continuing north along the 7th Street alignment as an urban surface boulevard similar to a wider Octavia Boulevard, and curving east along the southern edge of the railyard site to connect to King Street[3]. The 6th Street overpass and ramps would not be replaced, with northbound traffic from the Boulevard continuing north along 7th Street. Under these conditions, the site would no longer be bisected by the elevated freeway or bordered on its southern edge by an elevated freeway ramp, which would allow for a more accessible site

[3] The boulevard concept is presented for exploratory and discussion purposes. It has not been endorsed by any government agency, commission, board or entity and would require further study.

and cohesive project, in terms of design and connectivity. While the boulevard would be designed to accommodate significant levels of traffic, it could also include pedestrian amenities and encourage a walkable, welcoming street frontage along King Street with active ground floor uses.

Note that this scenario does provide an opportunity for the DTX underground alignment to curve under the site between 5th and 6th Street to connect to the new subway station between 4th and 5th Streets, substantially easing the sharp 90-degree curve of the current planned alignment at 7th and Townsend Streets. Because this development concept assumes no more than one level of below grade parking across the site, and assumes that the underground rail alignment would be approximately 30' below ground, there was not assumed to be any major impact on the development capacity or envelope for the site.

EPS prepared a revised market study reflecting the updated site assumptions and development conditions as of 2012, as well as valuation estimates for both boulevard and highway scenarios (included as Appendices B and C to this memo).

5.1 Land Use and Urban Design Overview

While the concepts analyzed in Development Scenario 2 consider two dramatically different roadway configurations, the following land use and urban design elements are consistent across both the highway and boulevard concepts:

- The land use mix includes retail, entertainment, office, residential, and hotel.
- A Caltrain station is located below-ground underneath Townsend Street between 4th and 5th Streets, with pedestrian access to the station provided at the corners of 4th and Townsend and 5th and Townsend Streets.[4]
- Development on the easternmost portion of the site is set back from 4th Street to allow for a pedestrian plaza and ample public circulation and access to the train station.
- Uses and individual buildings on the site would share parking across the site, with one level of below-ground parking located within each of the blocks.
- Pathways are included within the development pattern to create mid-block connections within the large blocks of the SOMA street grid, and to provide open space and gathering areas for residents, employees, and visitors.
- Pathways and non-developed areas are distributed evenly throughout the blocks within the study area.
- 5th and 6th Streets are extended through the site, to connect to the surrounding street grid. *(Note: the total developable area shown in the graphics and tables for each concept excludes existing and new streets within the site, but includes non-vehicular pathways and open space areas).*
- Uses transition across the site from predominantly office/visitor-serving uses at the eastern portion of the 4th and King site, to predominantly residential uses at the western end of the site. *(Note that the mix of uses was adjusted based on the particulars of each concept, as described further in the following sections.)*
- Building heights are varied across the site, with generally taller buildings at the eastern end, and decreasing building heights moving in a westward direction.

Due to the varying roadway configurations, the highway concept has a slightly larger developable area, and a corresponding higher overall development yield. However, the boulevard concept provides for a notably higher residual land value on a per square foot basis and in aggregate, since a substantial premium or value enhancement would derive from removal of the elevated freeway and replacement with the boulevard. The resulting change to the infrastructure in the boulevard concept would support more residential development, which provides the highest land value. As part of this planning process, EPS estimated the site's value for both the highway and boulevard concepts using both comparable land sales and residual land value analysis. The key finding from this study, detailed further in this report, is that the

[4] This station concept has been planned by the TJPA as part of the DTX project. It is a mid-line station that allows high speed rail trains to pass stopped Caltrain trains.

estimated land value is significantly higher for the boulevard scenario ($228 million) than for the highway scenario ($148 million).

5.2 Concept 1 – Highway

Due to the roadway configuration, the highway concept includes a slightly larger total gross area than the boulevard concept, with a total developable area of 15.6 acres. The total development GFA for this concept is just over 3.6 million square feet. The land use mix and urban design concept is illustrated in **Figure 8**, and **Figure 9** illustrates general building massing for this concept. The development program is summarized in **Table 1** below.

Table 1: Highway Concept Development Program

	Block A	Block B	Block C	Total
Gross Site Area	259,167 sf (5.9 ac)	208,582 sf (4.8 ac)	213,165 sf (4.9 ac)	680,914 sf (15.6 ac)
Office GFA	247,000 sf	1,005,000 sf	933,500 sf	2,185,500 sf
Retail GFA	38,000 sf	22,000 sf	144,000 sf	204,000 sf
Entertainment GFA	0 sf	0 sf	191,500 sf	191,500 sf
Residential GFA	745,000 sf	0 sf	0 sf	745,000 sf
Total Dwelling Units [1]	745 du	0 du	0 du	745 du
Hotel GFA	0 sf	0 sf	300,000 sf	300,000 sf
Hotel Rooms [2]	0 rm	0 rm	325 rm	325 rm
Total GFA	1,030,000 sf	1,027,000 sf	1,569,000 sf	3,626,000 sf
FAR	4.0	4.9	7.4	5.3
Max. Parking per Code [3]	616	205	275	1,096
Parking Estimate Across the Study Area [4]	1,000-1,100			
Pathways and Plaza[5]	126,000 sf (2.9 ac)	72,500 sf (1.7 ac)	69,000 sf (1.6 ac)	267,500 sf (6.1)

Notes:
[1]Residential efficiency 85%, average gross unit size = 1000 sf, net unit size = 850 sf
[2]Hotel efficiency 65%, average room size = 600 sf
[3] Max residential parking ratio: .75 spaces/du, max commercial/entertainment parking ratio: 7% of total GFA, max hotel parking ratio: 1 space/16 rooms + 1 space for manager
[4] Assume 1 level below-ground parking
[5] Does not include the existing or proposed streets through the site

While the block configuration of the highway concept provides for a slightly larger gross development area and overall development yield, the elevated highway running through the site north-south along 6th Street limits the potential land use mix for Blocks A and B. Given the single-land use configuration of these mid-rise buildings and proximity to the highway, residential land uses would not be particularly desirable adjacent to the highway overpass along 6th Street. The total dwelling unit count for this concept is approximately 750 units, compared to over 1,200 in the boulevard concept. Correspondingly, the

amount of office development contained in the highway concept is much larger, since it is more reasonable to locate office uses adjacent to Highway 280.

This concept incorporates approximately 6.1 acres of open space in the form of pathways and plazas (excluding existing and new streets). It is envisioned that this open space would be a mix of private and public open space, intended to serve residents, employees, and visitors to the area. It is important to note that the open space areas included in these development concepts do not represent a specific design, but illustrate a reasonable average amount and dispersal of unbuilt and pedestrian circulation area in proportion to the built area. When considering the land use mix for the site, it is necessary to balance the provision of neighborhood open space and amenities with the need to maximize revenue from development to support future rail improvements. Open space areas above and beyond what is included in this study would reduce the value of the site, and reduce the amount of revenue available to fund infrastructure improvements.

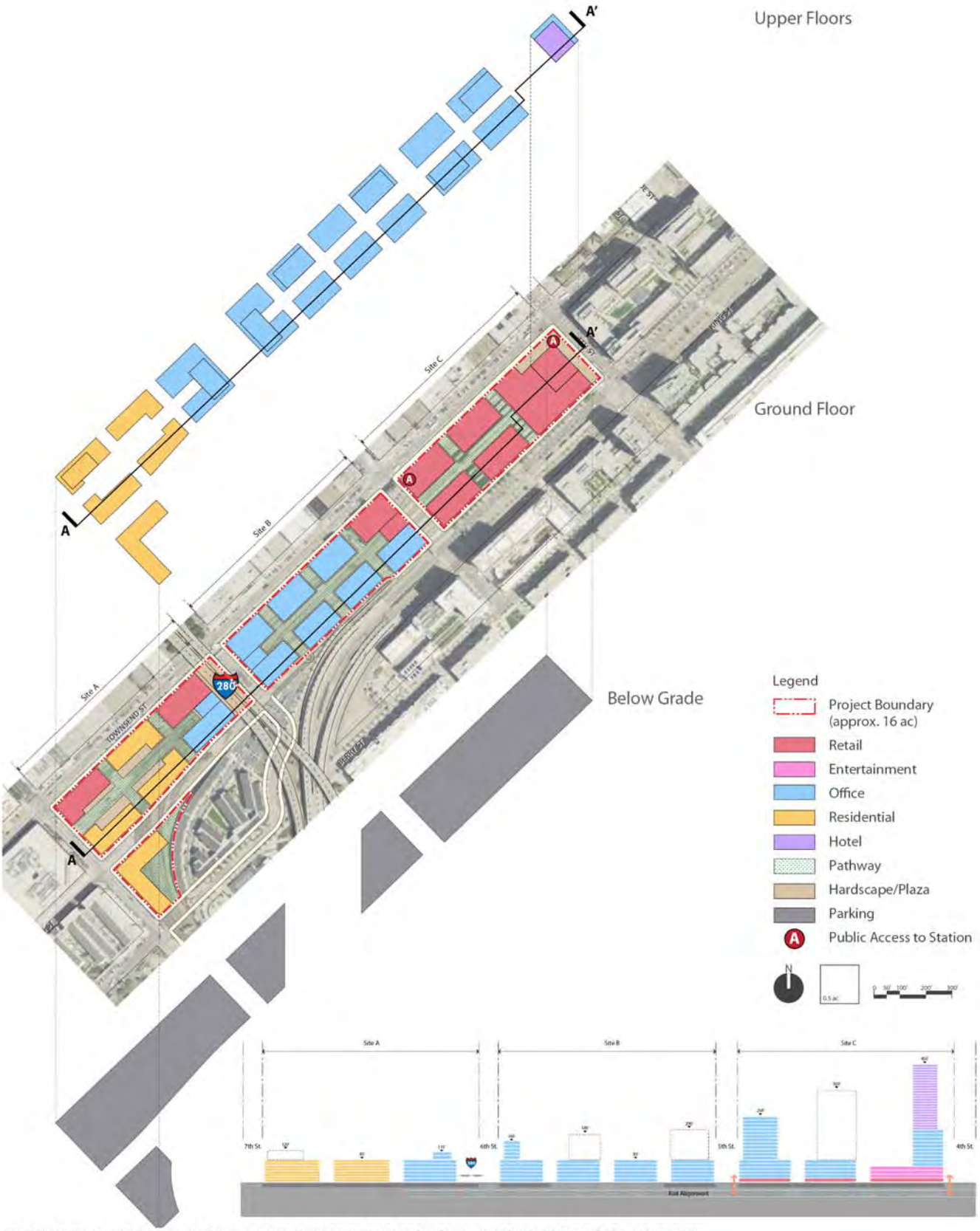


FIGURE 8: LAND USE AND URBAN DESIGN, HIGHWAY CONCEPT

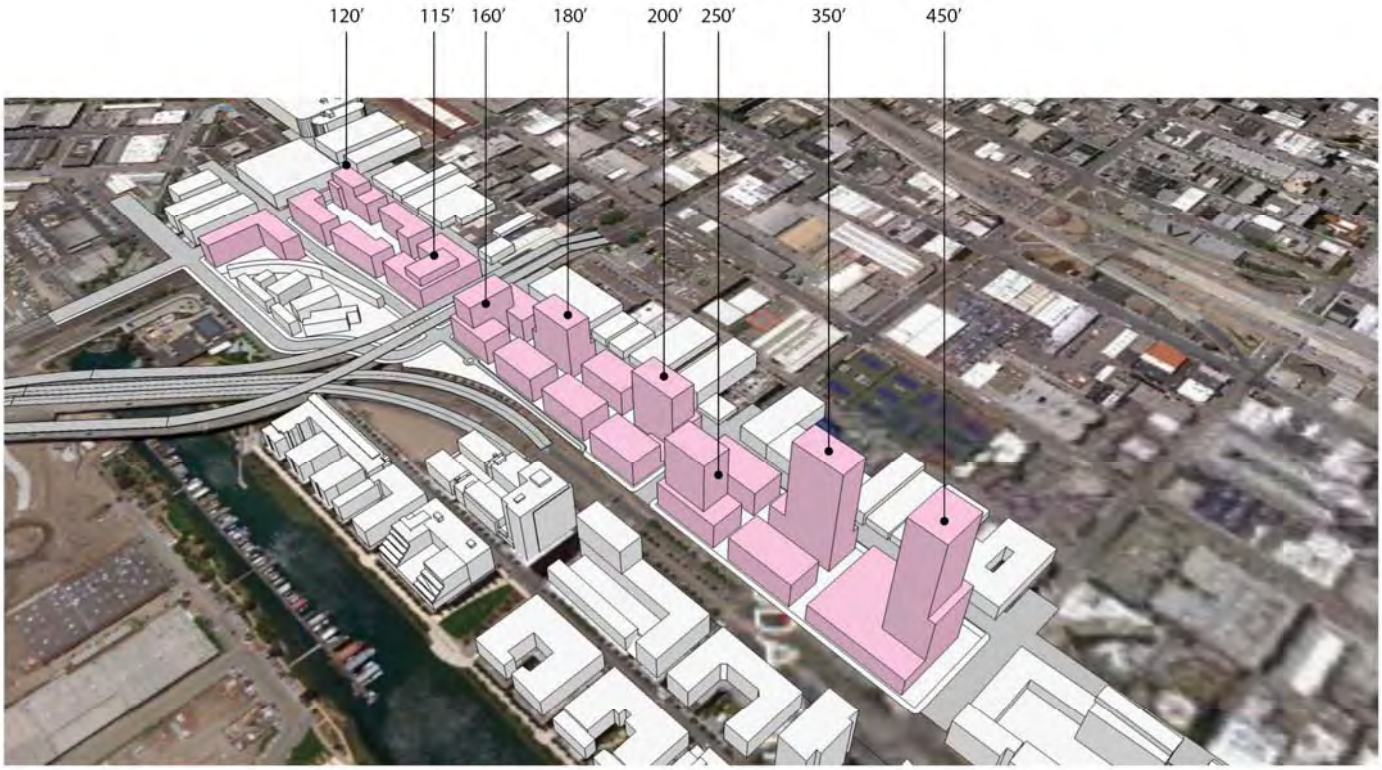


FIGURE 9: BUILDING MASSING, HIGHWAY CONCEPT

5.3 Concept 2 – Boulevard

As previously described, implementation of the boulevard concept would allow for a more accessible site and cohesive project, in terms of design and connectivity (**Figure 10** illustrates the boulevard roadway conceptual design). This concept includes a developable area of 14.9 acres, with a total development gross floor area (GFA) of over 3.5 million square feet. The land use mix and urban design concept is illustrated in **Figure 11**, and **Figure 12** illustrates general building massing for this concept. The development program is contained in **Table 2**, below.

Table 2: Boulevard Concept Development Program

	Block A	Block B	Block C	Total
Gross Site Area	216,025 sf (5.0 ac)	218,016 sf (5.0 ac)	213,165 sf (4.9 ac)	647,206 sf (14.9 ac)
Office GFA	0 sf	712,000 sf	934,500 sf	1,646,500 sf
Retail GFA	44,500 sf	55,000 sf	104,000 sf	203,500 sf
Entertainment GFA	0 sf	0 sf	191,500 sf	191,500 sf
Residential GFA	934,000 sf	283,500 sf	0 sf	1,217,500 sf
Total Dwelling Units [1]	934 du	283 du	0 du	1,217 du
Hotel GFA	0 sf	0 sf	300,000 sf	300,000 sf
Hotel Rooms [2]	0 rm	0 rm	325 rm	325 rm
Total GFA	978,500 sf	1,050,500 sf	1,523,000 sf	3,552,000 sf
Floor Area Ratio (FAR)	4.5	4.8	7.2	5.5
Max. Parking per Code [3]	709	366	267	1,342
Parking Estimate Across the Study Area [4]	1,200-1,350			
Pathways and Plazas [5]	92,500 sf (2.1 ac)	84,500 sf (1.9 ac)	69,000 sf (1.6 ac)	246,000 sf (5.7 ac)

Notes:
[1] Residential efficiency 85%, average gross unit size = 1000 sf, net unit size = 850 sf
[2] Hotel efficiency 65%, average room size = 600 sf
[3] Max residential parking ratio: .75 spaces/du, max commercial/entertainment parking ratio: 7% of total GFA, max hotel parking ratio: 1 space/16 rooms + 1 space for manager
[4] Assume 1 level below-ground parking
[5] Does not include the existing or proposed streets through the site.

As illustrated in **Figure 11**, Block C (between 4th and 5th Streets) contains the most intense development, with a mix of hotel, entertainment, office, and commercial uses. The building containing the hotel is the tallest building included in the study area (450'), serving as a landmark and gateway to the site. The hotel is envisioned as a large, full-service hotel containing approximately 325 rooms. Block B serves as a transition block, containing a mix of commercial, office, and residential land uses, and Block C is a primarily residential block, with ground-floor retail uses located on the corners. The program for this

concept includes approximately 5.7 acres of open space, including pathways and plazas incorporated within the development blocks (excluding existing or new streets).

The boulevard roadway configuration creates more street frontage on King Street on Blocks A and B, encouraging activation of the ground floor and an improved pedestrian environment. The boulevard also creates a wider range of development opportunities along 6th Street, since there will no longer be an elevated freeway crossing the site.

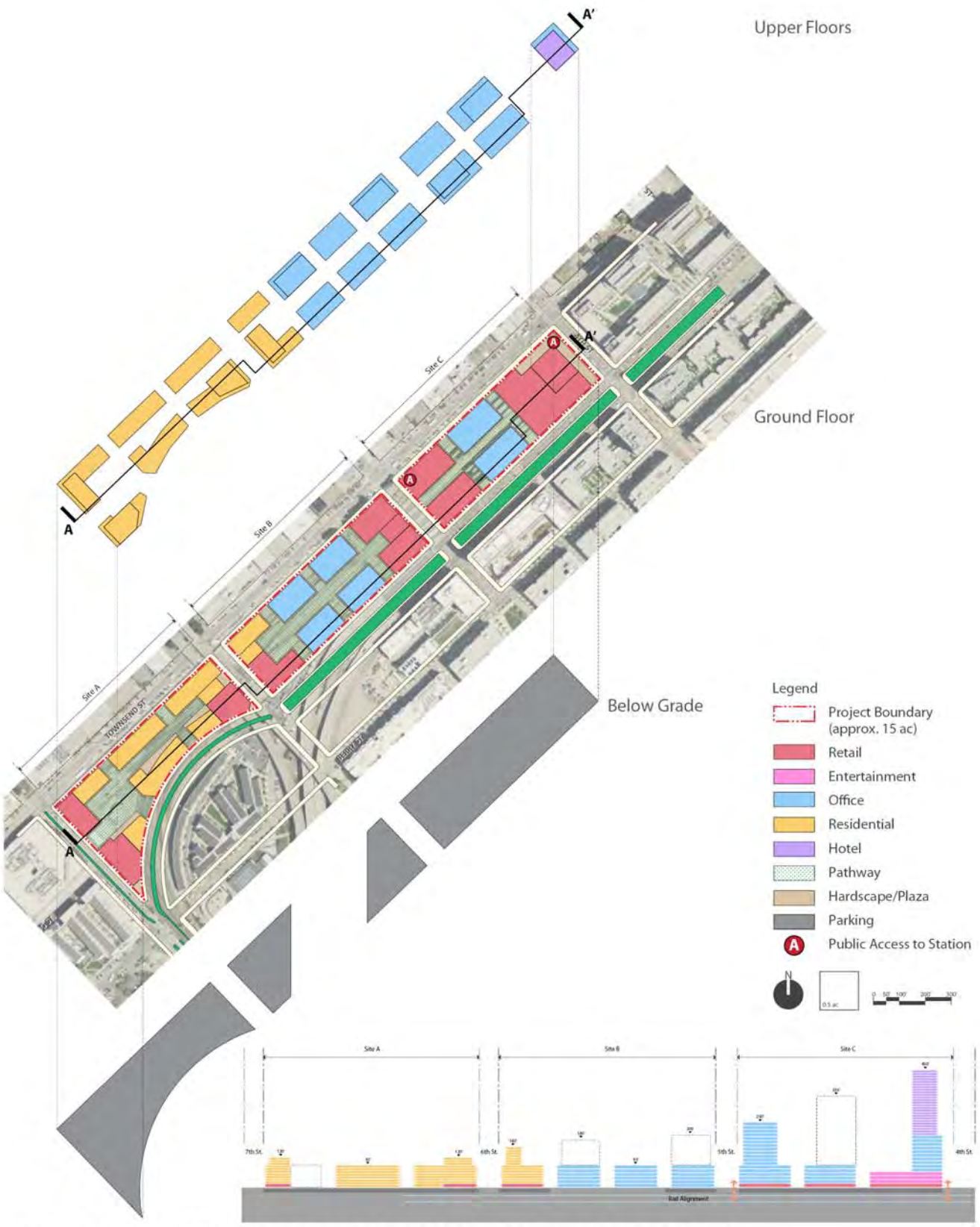


FIGURE 11: LAND USE AND URBAN DESIGN, BOULEVARD CONCEPT

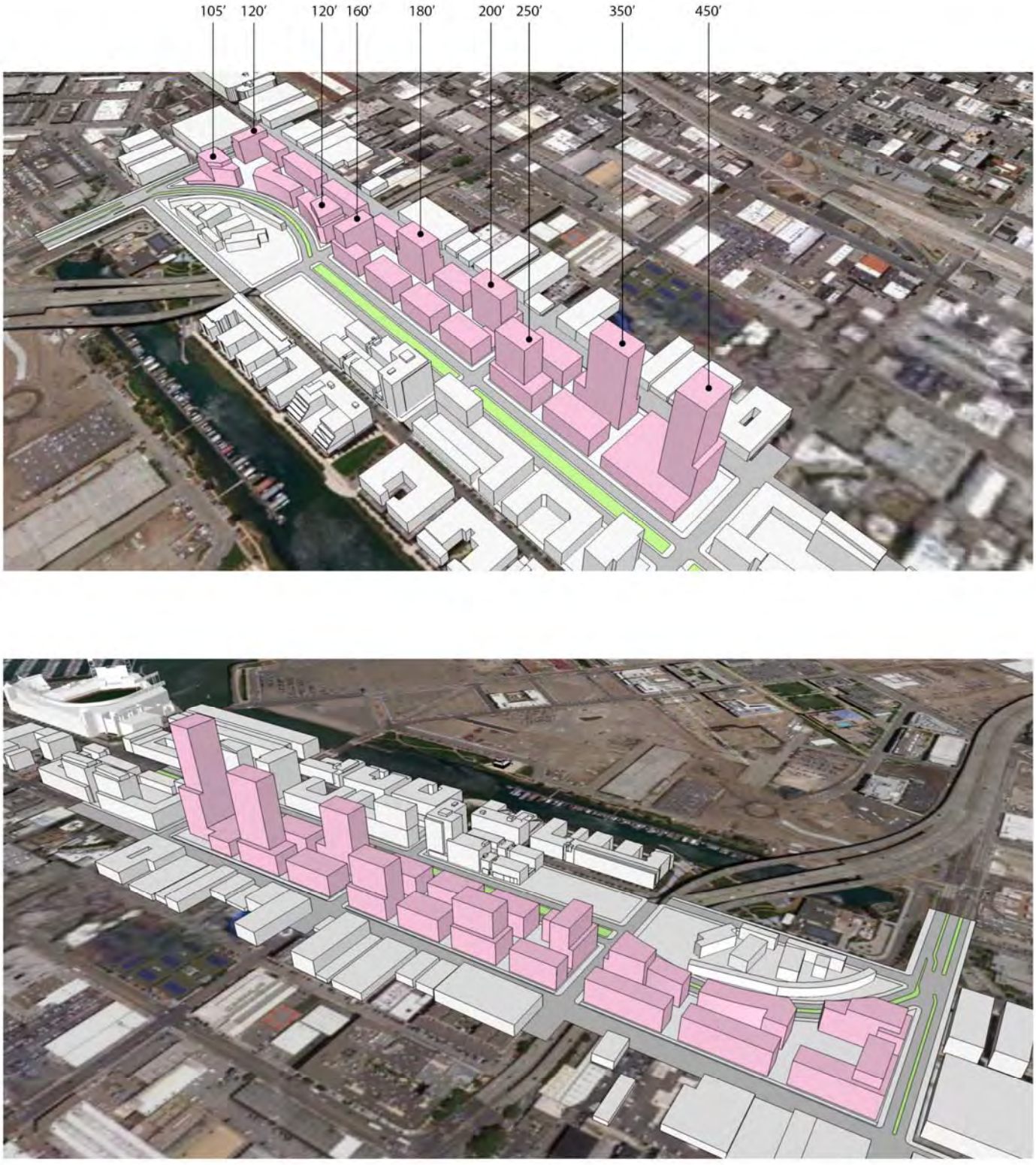


FIGURE 12: BUILDING MASSING, BOULEVARD CONCEPT

5.4 Valuation Estimates – Development Scenario 2

EPS conducted an analysis to assess the potential market support and value of both the highway and boulevard concepts for 4th and King site assuming the blank slate scenario, reviewed case study literature regarding the value impacts associated with development adjacent to urban highways (particularly elevated highways) compared with examples where highways have been removed or replaced with attractive surface roadways, and estimated the site's value using comparable land use sales and residual land value analysis. As previously mentioned, the boulevard concept generates nearly 50 percent more value than the highway concept, due to two key differences:

1. Residential and office uses configured around a boulevard are assumed to generate significantly higher values than those situated near the existing highway, consistent with case study research indicating value premiums for adjacent properties after freeways are removed[5]; and
2. The residential uses for the prototypes tested generate higher land values than the office uses tested, and the boulevard concept contains approximately 60 percent more residential units than the highway concept (1,217 vs. 745), due to the land use configuration enabled by the removal of the freeway.

The following table provides an overview of the residual land value summary for each of the scenarios, organized by land use.

Table 3: 4th and King Railyards Valuation

Land Use	Concept 1: Highway	Concept 2: Boulevard
Land Value Estimate per GSF ($s)		
Residential	$64	$115
Office	$36	$46
Hotel	$20	$20
Retail	$15	$15
TOTAL for Program ($s millions)		
Residential	$77	$140
Office	$59	$76
Hotel	$6	$6
Retail /Entertainment	$6	$6
Total	**$148**	**$228**
Value Metrics by Program ($s)		
Total Land Value per Acre	**$7,750,000**	**$11,930,000**
Total Land Value per Land Sq.Ft.	**$178**	**$274**
Total Land Value per Building GSF	**$41**	**$64**

[5] For example, "From Elevated Freeways to Surface Boulevards: Neighborhood, Traffic, and Housing Price Impacts in San Francisco"(Cervero, Kang and Shively; UC Berkeley, 2007)

Please note that these land values reflect a clean and entitled site with required infrastructure in place; no analysis has been completed to evaluate the costs required to prepare and entitle the site. The full findings are included in Appendix C, "4th and King Preliminary Draft Feasibility Analysis Findings", prepared by EPS in September 2012.

6. Key Findings and Next Steps

6.1 Key Findings

This study for the 4th and King site, which including analysis of two development scenarios, highlighted several key findings that will help inform and direct future development opportunities for the railyards site:

- Development over the existing/expanded railyards consistent with published plans would be extremely constrained and challenging, due to a variety of factors:
    - Complex and limited ground floor and vertical site access.
    - Limited development areas. Ground floor development would be exceedingly limited, and development in air-rights would be constructed starting at a height of 30', further limiting total developable capacity.
    - Limited potential for improving the overall physical environment of the site and in the surrounding area. This development scenario provides few opportunities for creating connections across and within the site, and does not allow for significant public realm improvements or provision of open space on-site.
- Development Scenario 2, the blank-slate scenario which assumes that rail facilities are limited to the planned DTX tunnel and new mid-line subway station below Townsend Street, is a more desirable and physically feasible scenario.
    - This scenario allows for substantially greater development capacity, more flexibility in terms of land use mix, and for site design features that will improve the pedestrian environment, improve circulation and connectivity within and across the site, and provide supporting open space amenities.
    - Reconfiguration of Highway 280 to create a boulevard would increase the value of the land, both from a financial standpoint and also from the perspective of improving the physical environment.
    - The residual land value of the site conservatively ranges from $148m to $228m. This is a substantial revenue opportunity for rail agencies with a stake in the site (i.e. Caltrain, CHSRA, TJPA) to support investment in planned rail infrastructure and ongoing service, as well as generate substantial additional ridership from transit-oriented development on the site.

6.2 Recommended Next Steps

This study provided a high-level overview of the opportunities and constraints associated with developing the railyards under both the existing/planned conditions (existing or expanded railyard footprint), and the blank slate scenario. It also provided an idea of the site capacity and potential land use mix and circulation/access opportunities under the blank slate scenario. There are several important next steps to be taken in order to further explore the full revenue, operational, and physical improvement opportunities for the site and to advance the dialogue, including:

- Actively engage Caltrain, CHSRA, and the land owner to discuss development opportunities, and the option of finding other alternatives/locations to serve railyard functions elsewhere along the corridor, in order to allow for a future scenario that resembles the "blank slate" development scenario. It is important to note that recent discussions between Caltrain and CHSRA regarding a "blended" system could result in a rail footprint on the site that is less extensive than both published plans and the existing facility; this evolution should be supported and further evaluated.
- Complete a more extensive and comprehensive financial assessment of the broader economic benefits of intensification and development of the site, including exploring an infrastructure financing district (IFD), property value and real estate tax benefits of such changes to the broader area, including nearby areas in SOMA, Showplace Square, and Mission Bay.
- Initiate and advance discussions with Caltrans, the San Francisco Municipal Transportation Agency (SFMTA), and the San Francisco County Transportation Authority (SFCTA) regarding the reconfiguration of Highway 280.
- Establish a public process to review and gain input on the land use and urban design concepts for the site.
- Create more specific and detailed land use plans and recommended policy direction for the site, based on stakeholder and community input.
- Assess ridership generated by future site development.
- Evaluate and pursue memoranda of understanding (MOUs) or other financial or legal agreements to ensure that all relevant parties and stakeholders (Caltrain, CHSRA, and ProLogis) receive a financial benefit from mutual agreement to pursue changes to the site that include vertical development. These conversations should address what specific rail infrastructure projects and/or operational uses toward which such proceeds would be directed.

Appendices

Appendix A: Opportunities and Constraints Report

Appendix B: Revised Market Assessment

Appendix C: Draft Feasibility Analysis Findings

APPENDIX A

APPENDIX A

FOURTH AND KING STREET RAILYARDS

OPPORTUNITIES AND CONSTRAINTS REPORT

FINAL | DECEMBER 2010

SAN FRANCISCO PLANNING DEPARTMENT LTK Nelson|Nygaard consulting associates AECOM

APPENDIX A
FOURTH AND KING STREET RAILYARDS
OPPORTUNITIES AND CONSTRAINTS REPORT

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1. INTRODUCTION

A. PURPOSE OF THIS REPORT

This Opportunities & Constraints report summarizes the results of an analysis of development potential of the 4th and King Railyards, now that this site is scheduled to be rebuilt as a major station for both Caltrain and the California High Speed Rail system. The objective of this initial work is to outline the physical considerations in developing a mix of uses on land that includes active railroad service. This report will be followed by a one that builds on the findings of this report to explore more detailed development concepts and economic feasibility of such concepts for the site.

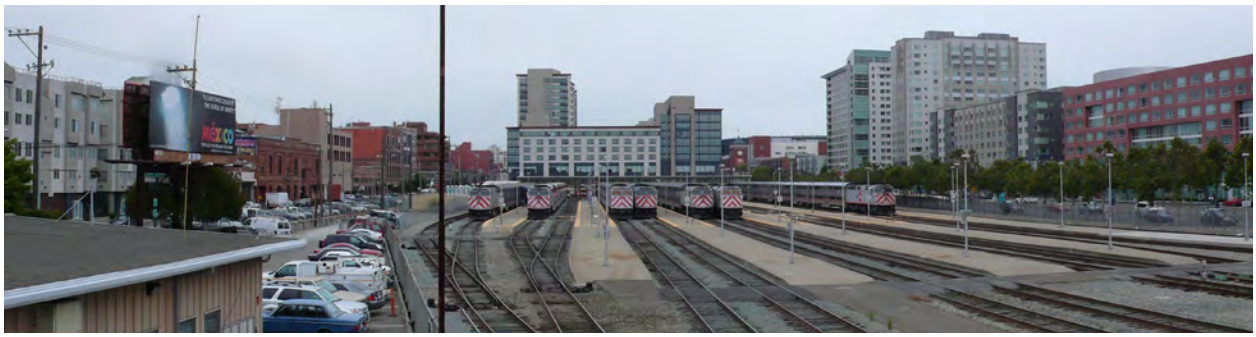
The report addresses an important question at 4th and King: What is the potential for development of air rights above the station? If air rights development were feasible, it would enable several positive city building outcomes, including a better physical connection to the surrounding neighborhood, the possibility of an enhanced mixed-use 24-hour neighborhood that celebrates transit, and, through good design, a chance to create a landmark entrance to downtown from at its southern entrance.

Development on this 19-acre site could present a major opportunity to mesh together the surrounding neighborhoods, which represent a significant share of the City's recent and future growth. The transit service provided by the railyard currently and into the future is critical for supporting this very growth. However if it were possible to build over the facility, it may mitigate some of the existing physical challenges to the life and circulation of the vicinity presented by this long facility, as well as provide additional opportunity for transit-oriented growth to add to the vitality of the area and the City.

This overall study effort will not result in a specific plan proposal for adoption or endorsement by any authoritative body, but should be regarded as an informational feasibility study intended as a first step in determining the potential for, advisability of, and likely parameters for development of this critical location in Mission Bay. Subsequent planning work will almost certainly be necessary, especially considering that this study is being conducted amidst some amount of uncertainty, in that the California High Speed Rail Authority and Caltrain Joint Powers Board are currently engaged in planning for rail improvements on Peninsula corridor. As such, information regarding the future of the railyards is preliminary and subject to change.

The analysis starts by examining existing plans, policies and regulations, the existing site and surrounding context, as well as regional and state activities that affect the site. As a consequence, this analysis stresses how the development of the site can be integrated with surrounding neighborhood uses. Opportunities and limitations are identified along with the site's long term development potential and recommendations for next steps in the process of reaching a plan the terminal and yards.

This report was developed by AECOM, a consulting firm, in association with the San Francisco Planning Department. Contributors included the Transbay Joint Powers Authority, San Francisco Redevelopment Agency and the Pennisula Joint Powers Board. The AECOM team included architects, urban designers and planners. Nelson Nygaard and LTK Engineering reviewed various technical background documents and participated in group discussions, charettes and field visits.



View to the northeast, current Caltrain station

April 2010

California High-Speed Train Route Map, Statewide Overview

(Source : California High-Speed Rail Authority http://www.cahighspeedrail.ca.gov/library.asp?topic=maps)

2. PROJECT AREA EXISTING CONDITIONS ANALYSIS

A. IMPORTANCE OF THE SITE

The Fourth and King Street Railyards comprise approximately three blocks of the city between Fourth Street to Seventh Street and King Street to Townsend Street. The railyards currently occupies approximately 19.1 acres of land forming a barrier between South of Market (SoMa) to the north and Mission Bay to the south. The site represents an enormous opportunity for San Francisco to connect the SoMa and Mission Bay neighborhoods and provide a land use and development response to an important transit rich area in the city.

A portion of the site is in the Mission Bay North (MBN) Redevelopment Area. The railyard enjoys an excellent regional location due to its proximity to the transit network, regional freeway and the Mission Bay Redevelopment Plan area which includes high density residential and employment uses. The site is also well located for future development particularly as a future site for California High-Speed Rail Service combined with a Caltrain station. In addition, the AT&T Ballpark draws heavy pedestrian and transit traffic contributing to the development potential of the area.

The existing Caltrain station at Fourth and King streets is the node that links San Francisco to Silicon Valley and the Peninsula. Today, passengers make about 15,000 trips to and from Caltrain, a number that is projected to grow dramatically over the coming years, making Fourth and King an important regional destination.

This station is also the hub of an extraordinary network of Muni rail lines - the N-Judah, the T-Third, and soon the Central Subway, which will run down Fourth Street before heading under Market Street to Chinatown and North Beach. In addition, the area is also served by numerous Muni bus lines [1].

With the continued expansion of the UCSF campus and biotech offices in Mission Bay as well as the new housing development, the Fourth and King Transit Center can serve as a major transit-oriented employment center.

View to the east and south, new residential development along King Street

1 http://www.spur.org/publications/library/report/anewtransitfirstneighborhood_070107

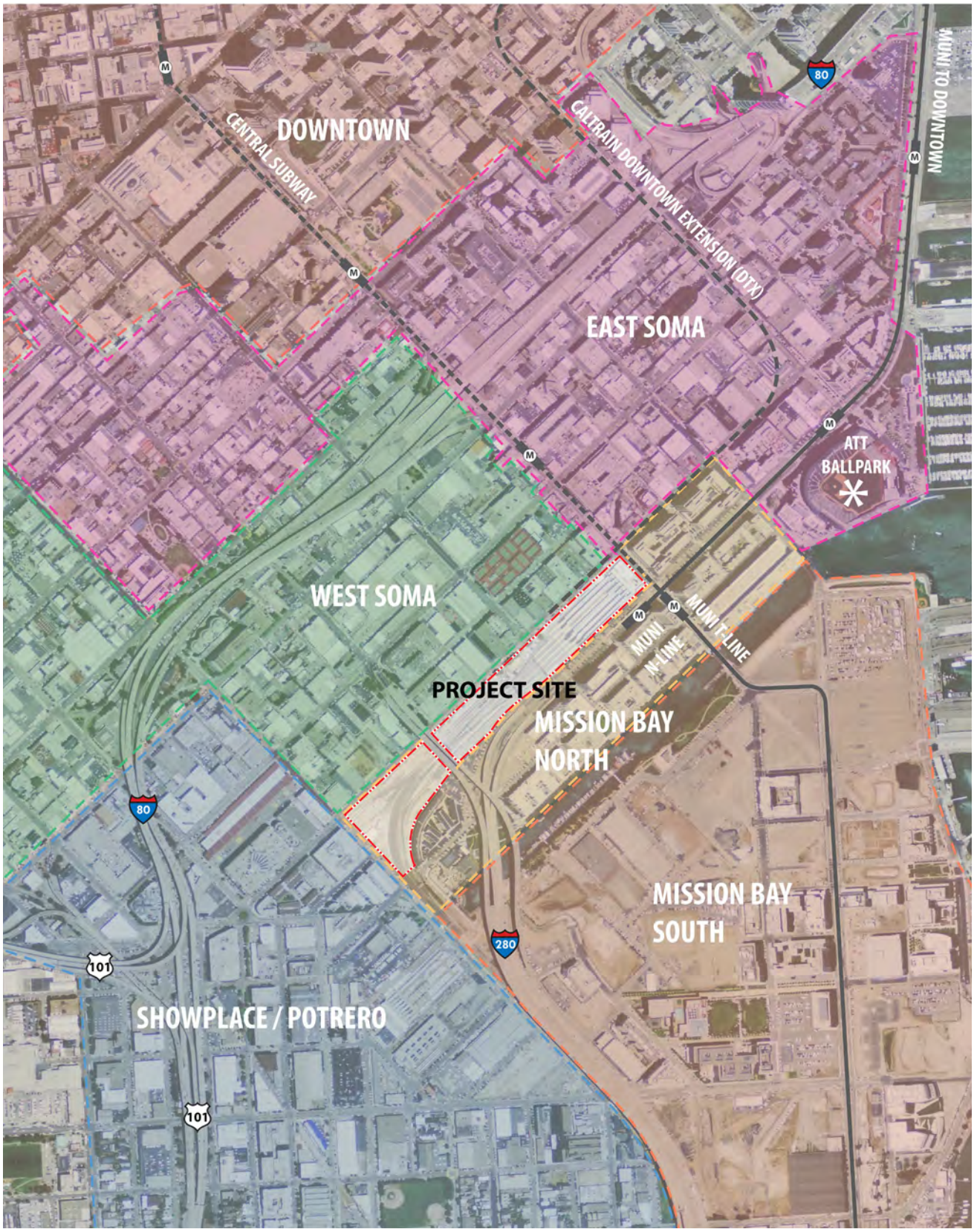


FIGURE 1: SITE CONTEXT

B. HISTORICAL BACKGROUND OF THE SITE AND RAILYARD CONFIGURATION

The Caltrain Terminal in San Francisco occupies the blocks bounded by Fourth Street on the east, Seventh Street on the west, Townsend Street on the north and King Street on the south. Mainline trackage approaching the terminal throat from the south also occupies a significant part of the block bounded by Seventh, King, Sixth and Berry Streets. These blocks are half-blocks in the 100 vara section of the O'Farrell survey, which is the explanation for their dimensions, 100 varas being 275 feet, the width of the Caltrain terminal blocks, and 300 varas, or 825 feet, corresponding to their length.

Emerging from a series of tunnels, the Caltrain mainline approaches the terminal parallel to Seventh Street on its east side from 16th Street north to what would be Channel or Berry Streets if they went through to Seventh Street. It then swings 90° to the east, on what to the railroad is a fairly tight curve, to parallel King and Townsend Streets into the stub end terminal at Fourth Street. The railroad alignment therefore is in conflict with both east-west surface traffic circulation across Seventh between Townsend and 16th, and also with north-south surface traffic circulation across Townsend between Seventh and Fourth Streets. The Sixth Street I-280 ramp passes over the terminal trackage.

The explanation for this L-shaped alignment is essentially historical. These blocks have never been used for anything other than railroad operating purposes. Constructed during the Civil War, and opened in 1863, Caltrain's ancestor, the San Francisco and San Jose Railroad, did not follow the current alignment east of Potrero Hill, but rather followed one similar to the current BART routing west of San Bruno Mountain and through the Mission District, running up Harrison Street at grade north from 22nd. At that time, although the lots for the terminal had been purchased by the railroad company, the terminal area was still under the waters of Mission Bay. There were several interim terminal sites, including a short-lived operation down Market Street, but eventually the land that had been purchased was filled, and a station fronting on Townsend between Third and Fourth was opened in 1875. The railroad approached this terminal using Division Street, curving into the northwest corner of the property through the area now occupied by the unused storage tracks. By this time the line was part of the Southern Pacific Company, which built its headquarters building across the street on the northeast corner of Fourth and Townsend. Later, early in the 20th Century, the fast, direct and gradeless Bayshore cutoff between San Bruno and San Francisco was built, connecting into the original mainline at Seventh and Townsend Streets using the present sharp curve and generally establishing the pattern seen today. A large railroad yard for freight car classification and switching, as well as servicing and maintenance of cars and locomotives, was built at that time at "Bayshore", the railroad name for Visitacion Valley. The density of passenger and freight service also required car storage and servicing

1915

1946

facilities adjacent to the Third Street Station, and also a locomotive roundhouse and engine terminal to support commuter and intercity passenger trains at "Mission Bay", near Third and 16th Streets.

After the Southern Pacific's Townsend Street headquarters building was destroyed in 1906, the company built a major new office building near the Ferry Building on Market Street between Spear and Steuart, today known as One Market Plaza. As the closest thing San Francisco ever has had to a true Union Station, the Ferry Building was the focus of San Francisco's regional connections, the key to Downtown's centrality in an era of water transportation. Southern Pacific made plans for extension of the Peninsula service to the foot of Market Street so that all rail passenger service would be in one place, but these plans were never carried out. Instead, a new 15-track terminal with a brick-and-stucco headhouse fronting on Third Street at Townsend was opened in 1915. With other railroads considering serving San Francisco from the south, there were also other proposals for electrification and for multiple tracks on the Peninsula and into the city, some coeval with the Grand Central and Penn Station electrification projects in New York, and some remarkably similar to current plans. The Burnham Plan of 1906 envisioned a large union station at the foot of a wide Eleventh Street boulevard, terminating a vista from Civic Center. The Bion Arnold transit plan of 1911-12, which laid out the original MUNI system for the city, contemplated a continuation of the SP tracks up Seventh Street to a terminal at Mission. Like the Southern Pacific's own ideas, these never came to fruition.

After the opening of the Bay Bridge and its railway terminal, Downtown San Francisco's regional transportation connections lost their focus in a proliferation of terminals and stations. Long distance rail passenger traffic declined, and with the creation of Amtrak in 1971, disappeared entirely from San Francisco, leaving only the Southern Pacific Peninsula commute service in the deteriorating Third Street station. With the extension of Interstate 280 into the South of Market area, new connections from the city street grid to the freeway were at odds with the railroad's at-grade crossing, and frequent closure of Fourth Street for train movements in and out of the Third Street station. The Southern Pacific itself was unenthusiastic about its passenger operation. The solution was to cut back the commute service from Third to Fourth, producing the present configuration in 1975. The Third/Fourth block was sold off. With the loss of intercity trains, the drastic decline in freight train operation in and out of the city, and no corporate commitment to continued commuter rail service, both the Bayshore Yards and Mission Bay complex were also abandoned and removed during this period, leaving the Fourth Street terminal without any off-site storage or servicing facilities.

1987

2010

(Source : Google Earth)

C. LAND USE

In addition to the railyards, the Project Site includes a transit station – the Caltrain Depot - and is the northern terminus of the Caltrain commuter rail line that serves San Francisco Peninsula and Santa Clara Valley, and is a major regional transit hub. It is also served by the adjacent Muni Metro light rail stations with direct connections to downtown San Francisco and Bay Area Rapid Transit. It is served by all 96 weekday trains and all 32 (Saturday) and 28 (Sunday) weekend trains. The station is located adjacent to the Mission Bay Redevelopment Area bordered on the north by Townsend Street, east by Fourth Street and south by King Street. It opened on June 21, 1975, replacing a structure built in 1914 at Third and Townsend, one block away.

Fourth and King is located one block from AT&T Park, the home of the San Francisco Giants. Caltrain usually operates special trains to transport fans to and from baseball games. Special trains usually depart about fifteen minutes after the last out. Giants fans can either walk or take the Muni to the ballpark. Muni operates special trains from Caltrain to the ballpark on game days.

The northeastern portion of the Project Site is currently classified as Mission Bay-Office (MB-O) office use (per the City and County of San Francisco Municipal Code - Planning Code) while the southwestern portion of the site is regulated by the Mission Bay North Redevelopment Plan. To the north in the SoMa district, land uses are comprised mainly of Service and Light Industrial uses. On the remaining sides, mixed-use office and residential apartments predominantly border the site. Further southwest in the Showplace/Potrero district, Production/ Distribution/Repair uses line Seventh Street where the railyard continues to the South Bay Area.

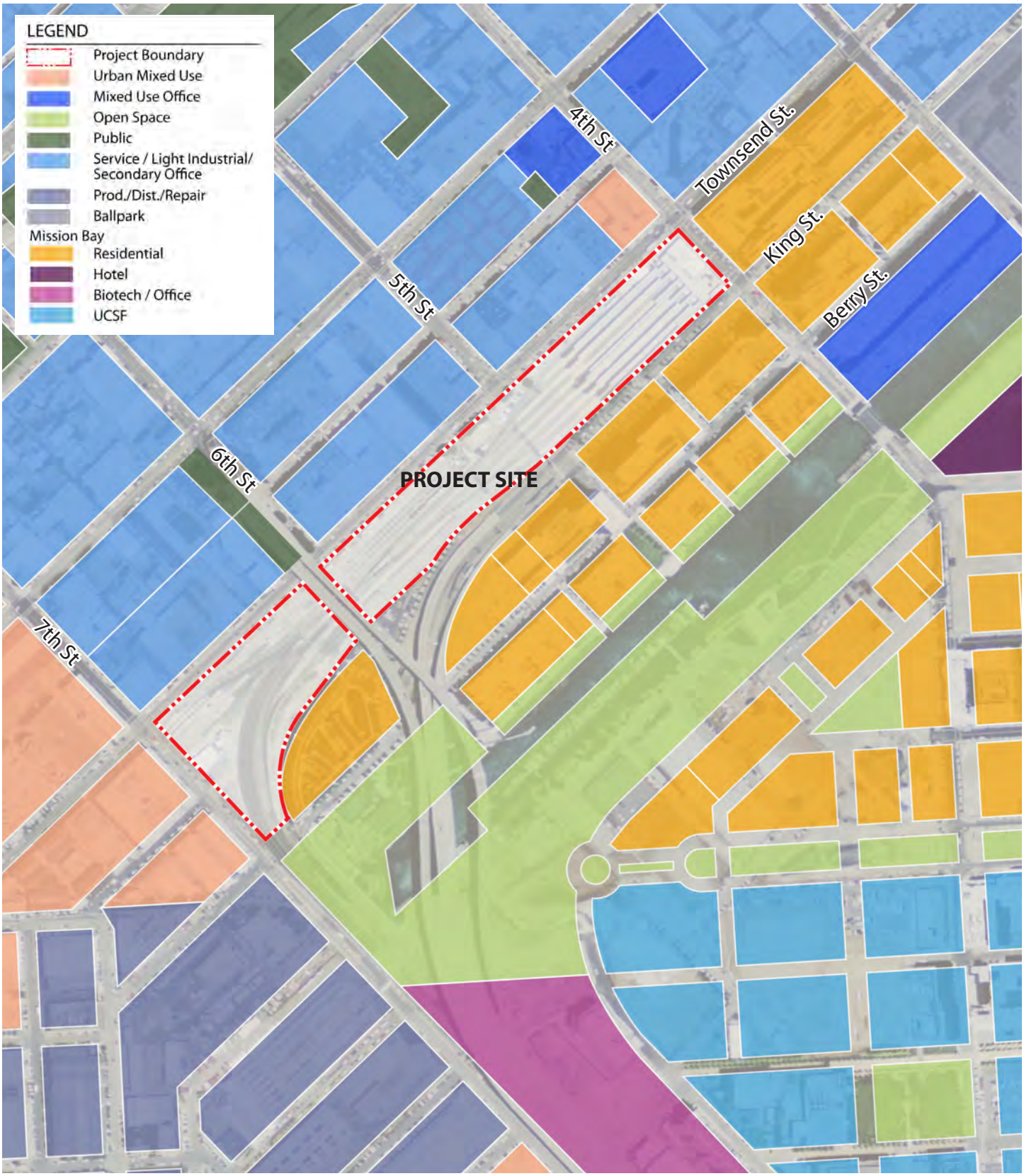


FIGURE 2: LAND USE DISTRICT MAP

Source: City and County of San Francisco Municipal Code - Planning Code and AECOM

D. ZONING / HEIGHT / BULK

The Fourth and King Railyards current height zoning allows for construction up to 110'. Surrounding the site, the height limits in the SoMa district dictate a height of 65' and in the Showplace/Potrero district zoning heights are 58'. The Mission Bay Redevelopment Area contains varying heights of 50', 65', 90', including several mixed-use residential/office towers rising up to 160'. The Mission Bay North redevelopment area allows for 65'-80' for base height, 90'-120' for mid-rise and 160' for towers. In Mission Bay South, the permitted heights are 65'-90' for base, 90' for mid-rise and 160' for towers.

FIGURE 3: HEIGHT AND BULK DISTRICT MAP

Source: City and County of San Francisco Municipal Code - Zoning Code and San Francisco Redevelopment Agency

E. CONTEXT DEVELOPMENT/ SURROUNDING LAND USE

East South of Market (East SoMa)

Considered as part of the Eastern Neighborhood Planning Areas as defined in the San Francisco General Plan, East SoMa is located north of the Transit Center and within convenient access to the downtown area.

East SoMa, as defined in the Eastern Neighborhoods analysis, is irregularly shaped, with most of the area generally bounded by Folsom Street, Essex Street and the Bay Bridge, the Bay, and Fourth Street. East SoMa also encompasses the South of Market Redevelopment Area, bounded generally by Fifth and Seventh Streets and Mission and Harrison Streets. A small corridor between Fourth and Fifth Streets south of Folsom Street links these two separate areas.

No single use predominates in East SoMa, though Production, Distribution and Repair (PDR) uses occupy more land than any other single category (approximately 23 percent), followed by residential and residential mixed uses, which together occupy 19 percent of the area, then by office and retail and entertainment uses, with 15 and 14 percent, respectively[1].

East SoMa has experienced many transitions throughout the years and offers a rich cultural history. Many new immigrants in search for employment found a niche in this area, renowned for its industries and low-rent housing. Then as the Multimedia Gulch (bounded by Market Street to the north, the Embarcadero to the east, Townsend Street to the south and Division Street to the west) and later the dot com era emerged, technology-savvy entrepreneurs and venture capitalists began investing in East SoMa, developing new office space and creating live/work units, both of which greatly influenced the built form of this community. East SoMa now boasts a diverse mix of commerce, entertainment and living space with a majority of the Plan Area zoned as Service Light Industrial, Downtown Residential and Mixed Use Residential.

South Beach is a recent residential neighborhood that occupies the entirety of several blocks along the Embarcadero between Bryant and King Streets, formerly a warehouse district. This is one of the few areas of East SoMa that has a concentration of primarily residential use. The Rincon Point-South Beach Redevelopment plan was originally adopted in 1981 by the SFRA with the intent to rehabilitate this area as it was, at the time, generally characterized by conditions of blight. Today, several important improvements have been made including the creation of The Giants ballpark, a variety of mixed-income housing and ground level neighborhood serving retail.

AT&T Park, a baseball stadium constructed in 2000, occupies 13 acres at the southeast corner of the neighborhood and represents a major entertainment use. New housing and retail uses have been developed in the blocks adjacent to the ballpark, particularly in the Mission Bay North Redevelopment Area. Other retail and entertainment uses, such as restaurants, bars and nighttime entertainment uses are scattered throughout East SoMa.

Pedestrian and traffic calming improvements efforts are underway, which will enhance safety as well as provide better access for people commuting north and south, and specifically, between the Transit Center and downtown.

East SoMa

1 Eastern Neighborhoods Rezoning and Area Plans Final EIR, 2009

West South of Market (West SoMa)

This Plan Area is currently undergoing a separate planning effort through the West SoMa Citizens Planning Task Force and is located directly northwest of the Transit Center. Similar to East SoMa, West SoMa assumes an odd shaped area, generally bounded by Mission and Harrison Streets to the north, 13th and Townsend Streets to the south, and intersected by Interstate-80.

Comprised of two sections, the eastern portion of West SoMa is predominantly zoned as Service Light Industrial while Service Light Residential dictates the western portion where historic and cultural arts and entertainment have a high presence. Overall the Plan Area is a residential and small business community, consisting of low and moderate-income rental housing units and affordable commercial and industrial spaces.

West SoMa features an eclectic mix of buildings and land uses; a majority of the building stock in West SoMa is older than 65 years old. This historic and vibrant area supports a mix of uses, warehouse, commercial and retail uses. Western SoMa is characterized by different zones that vary in scale and use due to regional/citywide element such as freeway arterials, the Hall of Justice and big box retail stores including a Costco store.

West SoMa

Showplace Square / Potrero Hill

Situated just northeast of and adjacent to the Transit Center is the Showplace Square/ Potrero Area. This neighborhood is bounded by Bryant and Seventh Streets on the north, the I-280 freeway on the east, 26th and César Chávez Streets to the south and Potrero Street to the west. A number of subareas with distinct land use character can be identified.

Immediately adjacent to the Project Site is Recology, San Francisco Recycling Service and Garbage Collection and Removal, which has a large facility located at 900 Seventh Street, just across the street from the railyards. The Concourse Exhibit Center and the San Francisco Design Center are also nearby as are other large offices and retailers.

Showplace Square can be characterized by predominately large spaces for furniture and design sales and exhibitions. Production/distribution/repair occupies about 21 percent of the land area in this neighborhood, largely concentrated in the north (Showplace Square) near the Project Site.. Retail, entertainment, and office uses represent a relatively small proportion of the land area in this neighborhood, and 5 percent of the land area is devoted to parks and open space[1]. Recently, Supervisor Sophie Maxwell and the San Francisco Planning Department have established the Showplace Square Open Space Planning Process which is intended to identify, design, and prioritize the community's open space needs.

At one time this area prevailed as a warehouse and industrial district, primarily serving nearby port facilities. However after World War II and as these facilities changed worldwide, the Port of San Francisco became less competitive and thus triggered the decline of maritime activity[2]. Building reuse became a natural transition as furniture and interior design centers and other related uses in need of open floor plans started utilizing these vacant warehouse spaces. Showrooms, re-upholstery shops and retail stores now occupy Showplace Square.

In the upper part of Showplace Square, or lower part of Potrero Hill, between approximately 16th and Mariposa Streets (but in some blocks extending as far south as 18th Street), there is an eclectic mix of land uses. Light PDR uses such as auto repair and graphic design and medium PDR warehouses are prevalent in the eastern part of this area, mixed with a few dining and entertainment establishments on 17th Street and a limited number of new residential buildings.

The western part of this area includes the Anchor Steam Brewery at Mariposa and De Haro. Along 16th are light PDR uses, dining establishments, retail stores, and the new 100,000 square foot campus of the California Culinary Institute. This area also has a great deal of new multi-story infill residential construction [3].

Showplace / Potrero

Showplace / Potrero

1 Eastern Neighborhoods Rezoning and Area Plans Final EIR, 2009

2 http://www.sf-planning.org/ftp/General_Plan/Showplace_Square_Potrero.htm

3 Eastern Neighborhoods Rezoning and Area Plans Final EIR, 2009

Mission Bay

In October and November of 1998, Mission Bay was designated by the Board of Supervisors as two Redevelopment Project Areas – Mission Bay North and South. Under the purview of San Francisco Redevelopment Agency, the area is 303 acres and is bounded by Townsend Street to the north, San Francisco Bay to the east, Mariposa Street to the south, and Interstate-280 to the west. A portion of the transit center site falls within the Redevelopment Area.

Historically, railyards serving the Port once dominated the Mission Bay landscape and land uses were focused around rail and Port activity. However, with the change to cargo containers and trucking beginning in the 1950's, the demand for railyards in Mission Bay ended, leaving acres of vacant and underutilized land. The adopted plan for Mission Bay calls for a new mixed-use, transit-oriented neighborhood that includes market rate and affordable housing, new parks, roads and infrastructure, and employment opportunities. Residential and retail uses are focused in the northern portion of Mission Bay, adjacent to the transit center, and along 4th Street in the south. Biotechnology and office-based employment opportunities are focused in the southern area, centering around a new University of California, San Francisco (UCSF) campus and medical center.

At build-out, Mission Bay will include 6,000 new residential units (30% affordable); 4.4 million sf of office/biotechnology space; 43-acre UCSF research campus and hospital; 500,000 sf of retail and 500-bed hotel; 43 acres of public open space; and new library, school, and police and fire stations. To date, more than 3,000 housing units have been built, most in Mission Bay North adjacent to the transit center. 4th Street, the retail core of Mission Bay is starting to take shape with the connection of the roadway all the way south to 16th Street and with the completion of the first mixed use building that will ultimately line both sides of 4th Street. The biotech and high tech cluster is growing, with over 1.7 million square feet of development completed and 14 acres were just purchased by salesforce.com for the construction of a new San Francisco headquarters. UCSF has started construction on its new medical center and the campus now has over 1.2 million square feet of development completed.

Mission Bay

FIGURE 4: DISTRICT MAP

3. PLANNING ANALYSIS : OPPORTUNITIES AND CONSTRAINTS

A. CURRENT USE OF RAILROAD YARD

Fourth Street Station, opened in 1975, is a stub-end terminal with six platforms, each providing access to two tracks, and therefore offering a total of 12 active tracks. There is also one pocket track without platform which ends west of the station concourse on the north side of the complex; according to a Caltrain representative, it is not regularly used. Current scheduled Caltrain service calls for 45 arrivals and 45 departures, 90 scheduled train movements per weekday. This is following recent service reductions, the previous maximum, about 100 scheduled train movements per weekday, having been reached about three years ago.

In very general terms, this level of service for a 12-track station would not be considered intensive by world standards. As a gross rule of thumb, the maximum reasonable limit of a stub terminal configured like Fourth Street might typically, given American operating practices and common peaking characteristics, reach 30-35 scheduled train movements (arrivals plus departures) per day (or 45+45 train movements with 12 tracks translating to 7.5 train movements per day per 1 platform). However, Fourth Street is significantly handicapped by the absence of nearby, readily accessible train servicing and storage facilities, so that terminal tracks have to be used for storage. This reduces the track time available for train movements, and thus also reduces terminal capacity. Offsetting this limitation somewhat has been Caltrain's use in recent years of push-pull trainsets, whose servicing needs are limited to engineers changing ends, cleaners working through the interiors of the coaches, and only the most minor servicing of the train's mechanical and electrical components.

Despite the service reduction, and fare increases, both brought about by the recession, ridership has not fallen off too badly. In comparison with Southern Pacific days, the station seems quite busy, and in fact Caltrain recently announced that June 2010 ridership actually increased slightly in comparison with June 2009.

The current station's platforms are 16 feet wide, and fill up with a crowd of people in a few seconds on the arrival of peak trains. Caltrain staff correctly notes that the platforms are not of sufficient width to handle a surge of arrivals and simultaneously provide reasonable capacity for outbound passengers. This is an important consideration because, in common with other major commuter rail systems in the U.S., the most significant growth factor in ridership has been in non-traditional markets – local travel and, importantly in San Francisco, reverse commute traffic on a fast service to Silicon Valley. These markets do not conform to traditional concepts of "commute" travel, i.e. morning peak trips into the central city and evening peak trips out of it. Instead, they often offer counter-flow business, desirable from the point of view of operational efficiency and high market penetration for transit, but requiring adequate pedestrian space to accommodate inbound and outbound crowds at the same time. With fewer platforms, frequent arrivals and departures from both sides of the platform, and quick turnaround times for electrified EMU service, pedestrian handling capability will be an important consideration for Caltrain.

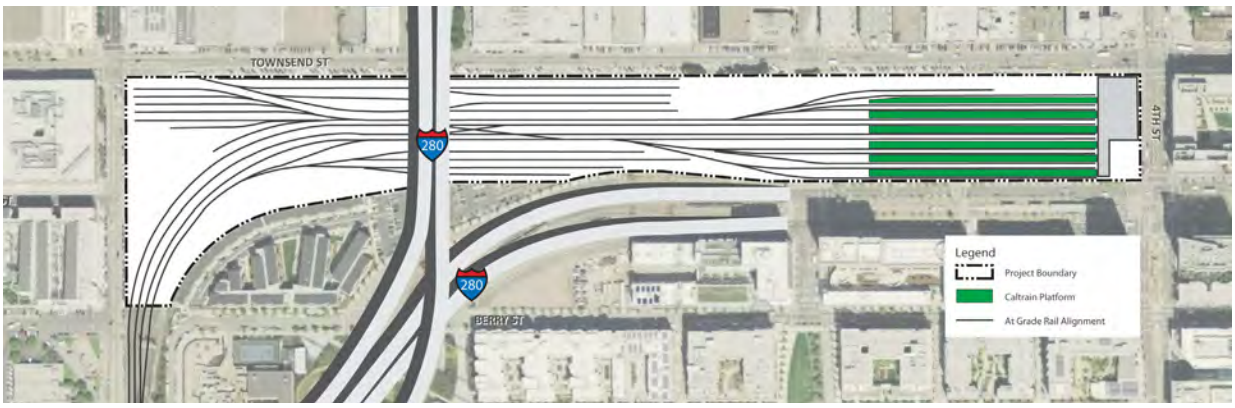


FIGURE 5: CURRENT RAILROAD YARD

B. CURRENT PLANS

The new Transbay Transit Center, according to adopted multiple local, regional, and statewide plans and ballot measures, is to be the primary terminus in the Bay Area for California High Speed Rail from southern California. The design for the Transit Center includes six tracks and three platforms – four tracks and two platforms for HSR and two tracks and one platform for Caltrain commuter service. Caltrain service to and from Transbay will also serve a Fourth and Townsend local stop in the DTX subway tunnel under Townsend Street between Fourth and Fifth Streets, adjacent to the Railyards.

While Transbay will provide a highly attractive location, with excellent local and regional transit connections, the trackage arrangement is not currently foreseen to provide sufficient capacity at the Transbay site for all current and planned Caltrain service along with long-term projected service for High Speed trains. The DTX tunnel and Transit Center are being designed primarily for electrified service, and not to accommodate potential diesel-powered intercity or corridor trains which may be maintained or added to the Caltrain line (though the current plan is to fully electrify Caltrain). Consequently, it is proposed that the Caltrain Fourth and King site be retained for some High Speed and Caltrain frequencies, as well as possible diesel-powered intercity or corridor trains should they actually be implemented.

For the purposes of further planning for rail service in the San Jose-San Francisco corridor, Caltrain and CHSRA have joined forces to create a cooperative joint planning program – the Peninsula Rail Program. In April 2010 the CHSRA released an "Alternatives Analysis," as a precursor leading up to publication of a Draft EIR/EIS for the San Jose-San Francisco segment in late 2010/early 2011, laying out the general parameters for this two-terminus solution in San Francisco. The "Concept Level Operations Analysis for San Francisco Terminals" published as part of the Alternatives Analysis evaluated several alternative configurations of terminals and trackage in San Francisco relative to the combined train handling demands of frequent intercity high speed service and Caltrain regional rail trains. The latter were assumed to be compatible high-performance EMUs operating on short headways. This analysis supported the conclusion that the optimal capacity solution consists of shared (High Speed plus Caltrain) terminals at both Transbay and the Fourth/King terminal. It does not appear that an additional layer of conventional diesel-powered service was assumed in this analysis, but it is likely that their presence would only strengthen the conclusions reached.

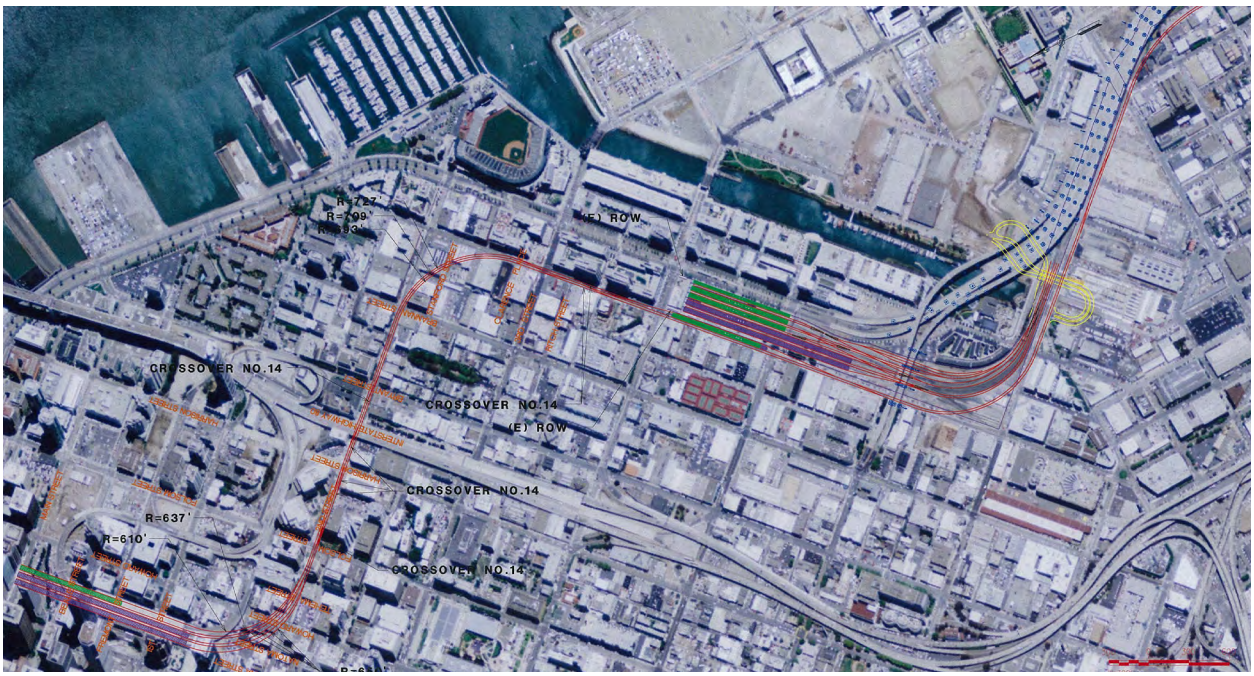


FIGURE 6: PROPOSED RAIL ALIGNMENT

(Source : SAN FRANCISCO TO SAN JOSE SECTION, CALIFORNIA HIGH-SPEED TRAIN PROJECT APRIL 2010 ALTERNATIVES ANALYSIS)

One alignment configuration for the two-terminal solution was presented in Alternatives Analysis. This configuration provides for essentially bifurcated tracks and service as follows: Somewhere in the vicinity of the San Francisco/San Mateo county line, the four-track alignment coming from the Peninsula to the south would split into two two-track alignments. Trains bound for Transbay would enter a tunnel that would pass through the entire City, connecting to the DTX at the north end, stopping only at the new underground Townsend station en-route to Transbay. (Only Caltrain train would service this station; High Speed trains would use bypass tracks to continue through to Transbay without stopping). Trains destined to Fourth and King would continue along the existing, mostly grade-separated Caltrain right-of-way (though to-be improved to serve electrified trains), arriving at street grade into a reconfigured 4th/King terminus.

As a result of this work, current plans conclude that the Fourth Street Station will likely have the following overall characteristics:

- It will serve both High Speed intercity trains and Caltrain regional trains

- It will have two 30-foot wide platforms of 1,370 feet in length for high speed trains, serving four tracks

- It will have two 30-foot wide platforms 800 feet in length for Caltrain, serving two tracks each, and one 20-foot wide platform, serving one Caltrain track, the terminal therefore providing five Caltrain tracks overall. The 30-foot wide platforms are considered to be wide enough to meet Caltrain's pedestrian capacity requirements, and provide required clearances to trains, while still providing adequate width to accommodate the piers needed to support aerial development.

- It will contain a mezzanine. A key component of the proposed train station is that of the desire for a mezzanine which would run the length of the station between King and Townsend and 4th and 5th Streets. This design feature would add a pedestrian layer/deck above the railyard with the purpose of accommodating the needs of both transit riders and non-riders alike. The mezzanine would help facilitate pedestrian movement; providing common areas for the blended populous as well as separate areas for paying customers of HSR and Caltrain. In accommodating these pedestrians, the mezzanine would provide for an organized and efficient integration of user traffic and would also provide a visual cue in the transition between controlled and uncontrolled access areas. The mezzanine could potentially even extend a vertical connection to the proposed central subway which will travel down Fourth Street with a stop at Brannan Street.

Currently a generally underutilized maintenance facility exists at Fourth and King; however, its size would not likely be adequate for a future facility intended to accommodate both HSR and Caltrain. According to the California High-Speed Train Supplemental Alternatives Analysis Report (August, 2010), various options have been considered and it was suggested in the report that the Brisbane / Bayshore site should be carried forward for study in the EIR/EIS. As a result of this facility likely moving to Brisbane, the need for storage/maintenance tracks at the Fourth and King Railyard would be eliminated.

At present (October 2010), the railyard and station configuration described above is the only one that has been articulated by the CHSRA/ Peninsula Rail Program. It is important to note, however, that the City of San Francisco has formally requested that the CHSRA include other alternatives in the draft EIR/EIS analysis in order to address concerns regarding likely significant impacts of grade separations of nearby major roadways (i.e. 16th and 7th Streets, Mission Bay Drive) that would be necessitated by providing intensified and electrified rail service on the existing Caltrain tracks at-grade between the 4th/King Railyards and Tunnel #1 (south of 16th Street). These other potential alternatives would include some form of underground alignment for the trains between 4th/King and Tunnel #1, thus allowing the City street grid and adjacent parcels to remain unaffected. In these alternative scenarios the platform and station area at 4th/King would likely remain at-grade as present with trains surfacing within the Railyard property. The one potential alternative that would have the greatest import for future development on the Railyards would be one that removes the elevated I-280 freeway north of 16th Street (in order to permit below-grade construction of the train alignment, which currently runs between the freeway columns) and replaces it with a surface boulevard, similar to

Octavia Boulevard. This boulevard would connect to King Street and possibly 6th Street, presumably using portions of the Railyard parcel for the road alignment.

Because the all above-grade alternative (currently the only official alternative) appears to provide the most constrained arrangement vis-à-vis development over the Railyards, this report and overall study focuses on analyzing this condition. In order to bracket the potential development, this study will also consider the implications of a scenario in which significant portions of the trackage are underground, per the Boulevard option described above. However to the extent that such a scenario has not been articulated as of yet, this scenario cannot be as well considered or fleshed out.

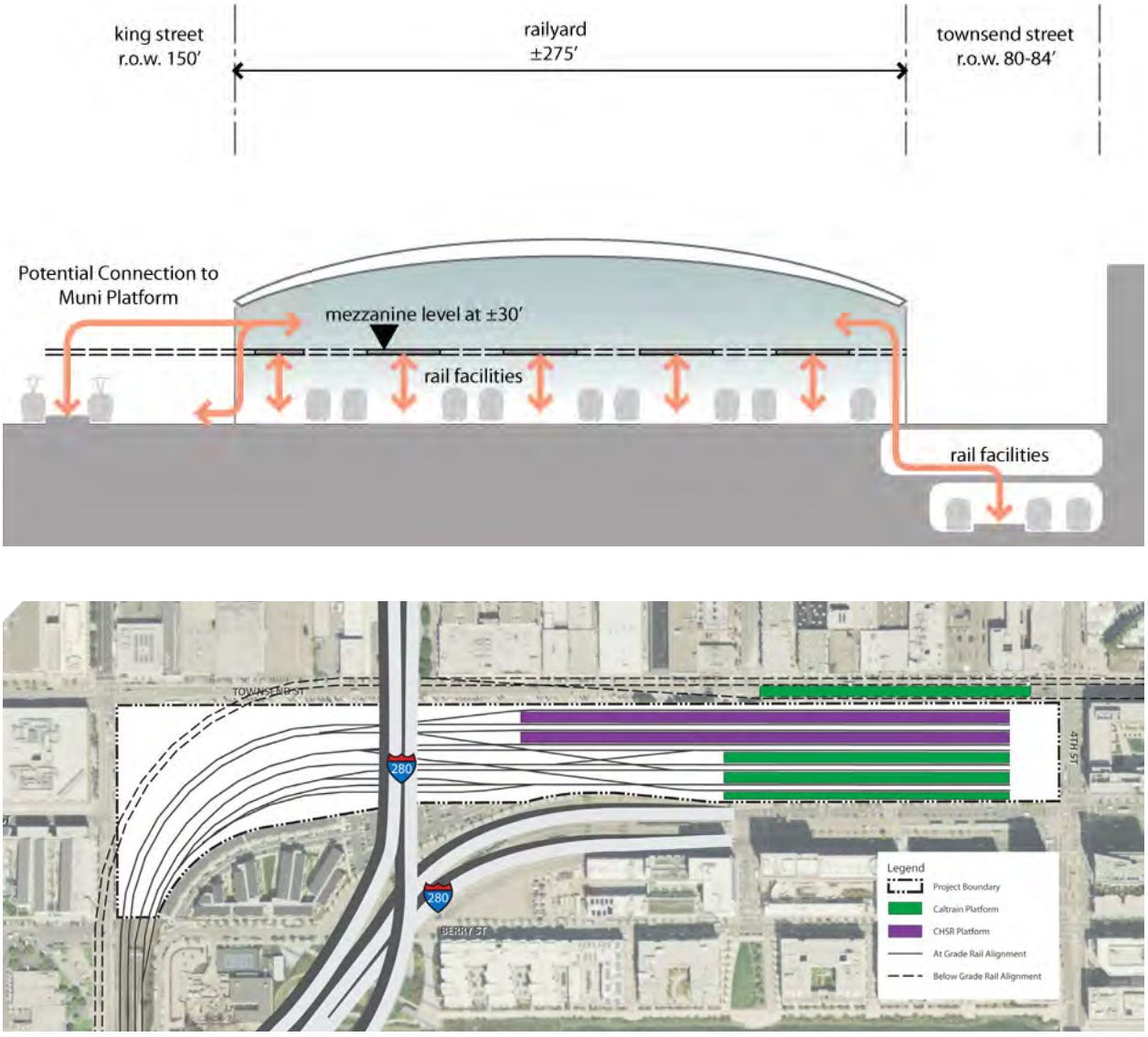


FIGURE 7: PROPOSED RAILROAD YARD

(Source : SAN FRANCISCO TO SAN JOSE SECTION, CALIFORNIA HIGH-SPEED TRAIN PROJECT APRIL 2010 ALTERNATIVES ANALYSIS)

C. PLANNING PRINCIPLES

The redevelopment of the 4th & King Station area aims to capitalize on the potential for air-rights development over the station in order to forge new connections in the fabric of the city, celebrate transit, promote a mixed-use 24-hour neighborhood center, provide much-needed open space amenities, and create a landmark gateway at the downtown's south-eastern entrance.

In exploring the long term development potential of the Fourth & King Railyards site, fundamental planning principles must be considered. These include ensuring that the project site is woven into the surrounding neighborhoods; as an important destination, this site will want to be context sensitive and contribute to the overall ongoing enhancement of the area (as stated in the introduction and as seen in the previously noted redevelopment plans).

The Fourth & King Station currently brings thousands of people to and from San Francisco each day; ridership that will only increase with the new High Speed Rail service. It is essential that this significant undertaking continue to function and meet future demands, provide a positive contribution to the neighborhood, increases connectivity, and provides for pedestrians, storefronts and street trees; all contributing to the attractiveness of this significant public project.

The Railyards Site should not serve as a barrier between neighborhoods and should not contribute to feelings of separation from the community (perceived or real). Through the strategic application of urban design practices and techniques the project site will take on a special landmark quality.

The following opportunities and constraints have been developed based on the above goals as part of this task to revisit the current proposed plan.

Examples of landmark elements and pedestrian plazas at transit stations

D. KEY OPPORTUNITIES

Based on the existing conditions analysis discussed in the previous section, the following planning analysis addresses specific aspects required for a clear understanding of the site opportunities and constrains associated with long-term future development. These aspects include connectivity with existing city fabric, development possibility both at grade and on the podium level and other urban design considerations including neighboring land use, views, and urban forms. Only physical opportunities and constraints are examined in this section and each aspect is addressed below in some detail with accompanying exhibits. A detailed circulation analysis will be discussed following this section and a market analysis is provided in a separate memo (refer to Appendix A).

Connectivity with existing city fabric (Figure 8: Opportunities Map - Connectivity)

1) Transit

- The Fourth and King station is the hub of an extraordinary network of public transportation.

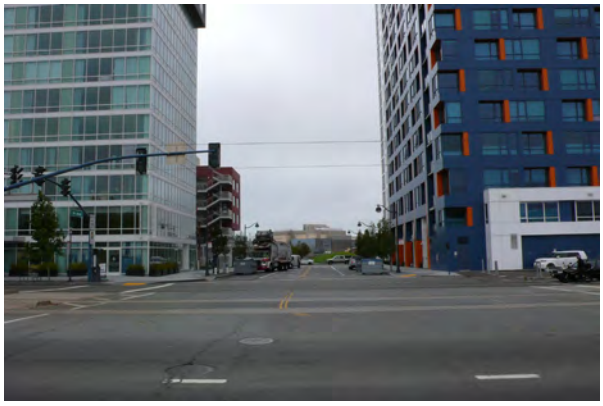
- Future HSR will serve state-wide ridership while Caltrains link San Francisco to Silicon Valley and the Peninsula used primarily by daily commuters. In addition, Muni light rail lines - the N-Judah, the T-Third and the future Central Subway, which will travel down Fourth Street connecting to Chinatown and North Beach, will provide city wide connection from the 4th and King Station. Stub-end rail yard configuration will create an excellent opportunity for a multi-modal transit node at Fourth Street.

2) Street Grid Extension

- The city grid of SoMa is 825' and relatively long by San Francisco standards. Railyard reconfiguration would open up the opportunity to provide additional connection between West SoMa and Mission Bay. Current railyard operation comprises nearly three full city blocks, which limits pedestrian movement between King and Townsend Streets. A potential Fifth Street connection through the site would mitigate this physical barrier and establish a pedestrian-friendly mixed use corridor connecting SoMa and Mission Bay with commercial development along Fifth Street (at the mezzanine level) acting as the center. This connection would assist in establishing better access to open spaces along Mission Creek from West SoMa. A planned pedestrian bridge over Mission Creek will extend this corridor further south to the Mission Bay UCSF campus and will provide an alternative pedestrian route to the Third and Fourth Street connections.

- Additional on-site mid block connection opportunities will be investigated to improve pedestrian connectivity.

Local and Regional Accessibility



Opportunity for Fifth Street Connection

Potential development envelope (Figure 9: Opportunities Map - Development Areas)

1) At grade level development

- Per current plans (refer to page 20, Figure 7), the future station would have two HSR platforms, and two and half Caltrain platforms at grade in addition to one underground platform for DTX and occupants. This configuration would occupy most of the site at grade and limit the use below grade along Townsend Street. However, there will be several development opportunities.

- One obvious development opportunity is located at the corner of Townsend Street and Seventh Street. This L-shape area is the least constrained ground floor development opportunity and there would be an opportunity to create active street frontage as well as to provide vertical circulation for potential podium development. Currently the site is surround by very low-intensity uses, such as parking lots and shorter buildings. Future development would serve as a catalyst in converting these parcels into more productive uses.

- On the other end of the site, the stub-end station configuration leaves a smaller potential at-grade development area. This area would serve as a multi-modal transit hub and would provide grand arrival / departure experience for future HSR passengers.

- Lastly, privately owned triangular parking lots bounded by highway 280 on/off ramps and railroad alignment should be taken into consideration as a part of ground floor development opportunities. Although, the site has limited floor area, it would play an important role for vertical access of the development from the King Street side. The site is currently part of the adjacent residential development and is used as parking spaces and would be replaced by integrated parking structures in future development. The property owner would need to agree to redevelopment of the site as it is privately owned.

2) On podium level development

- Caltrain will have the right to use the area up to 30 feet above the ground, while air-rights above 30 feet from ground level would be available for commercial development. In this report, the entire site with the additional triangular parcel as discussed earlier will be considered as opportunities for future air-right development. As there is an owner of the Caltrain site, that individual would need to be involved for any redevelopment of the station site for non-train uses.

Development Opportunity along Townsend Street

Arrival Experience

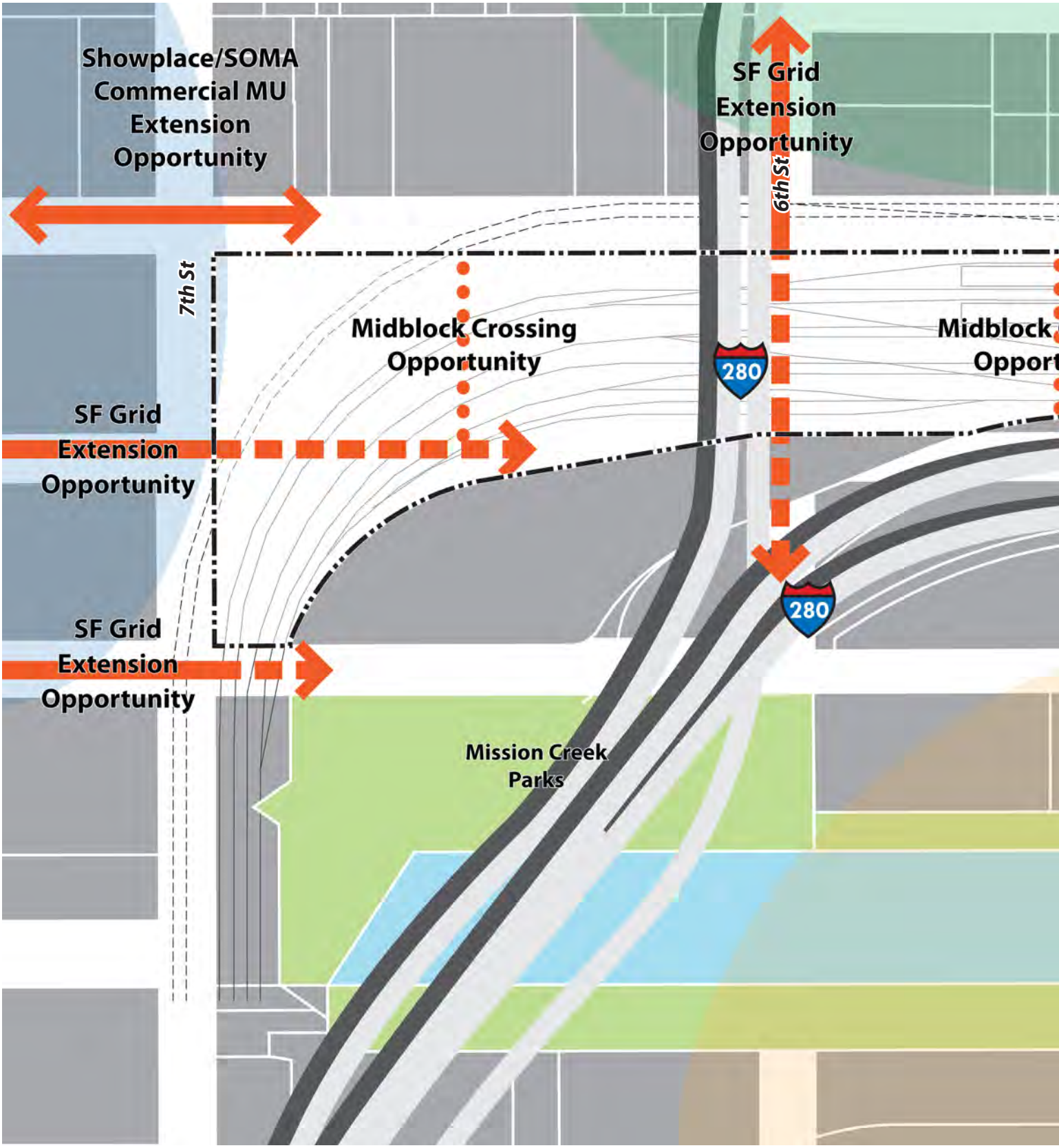


FIGURE 8: OPPORTUNITIES MAP- CONNECTIVITY

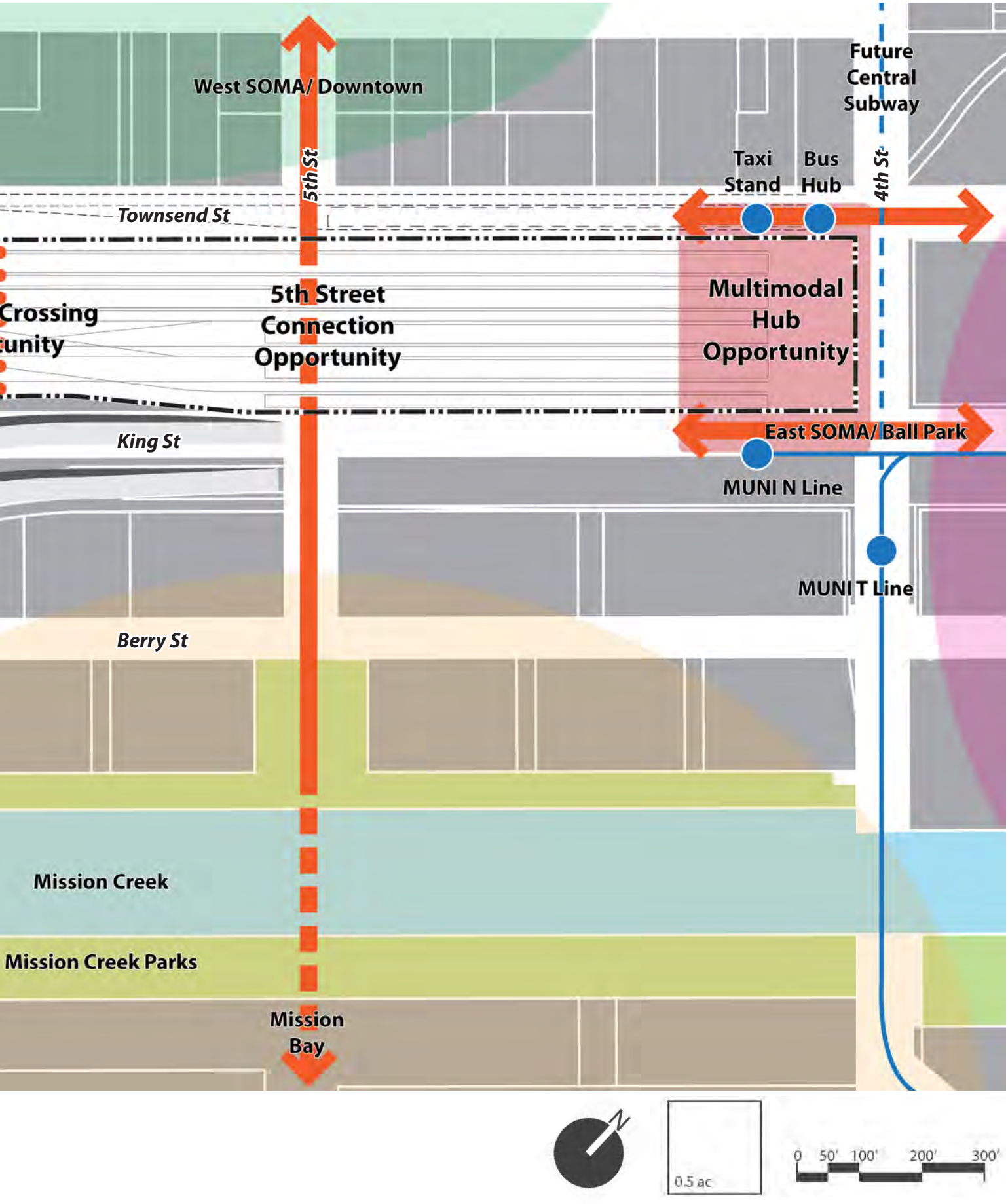
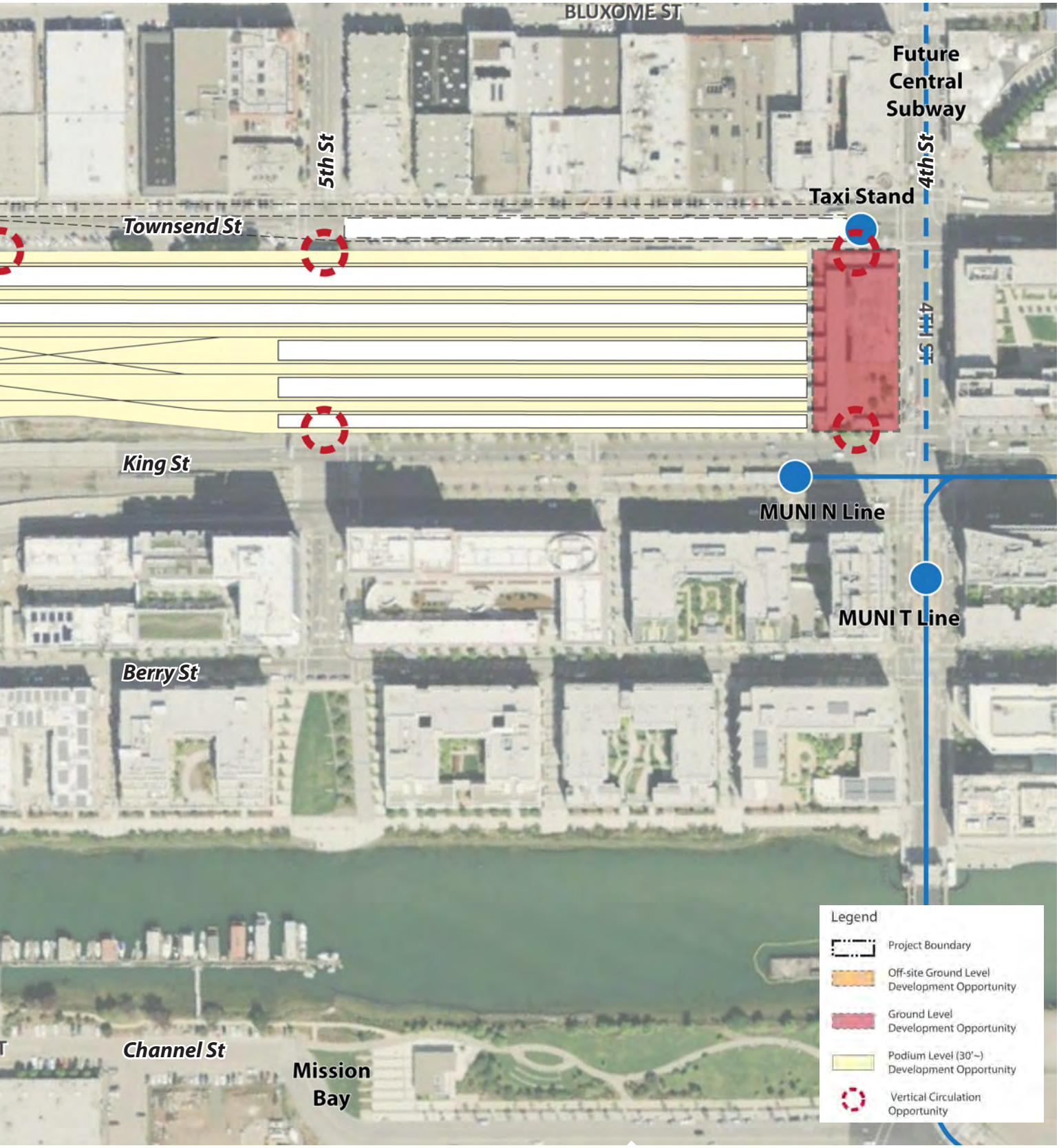

West SOMA/ Downtown
5th St
Future
Central
Subway
Taxi
Stand
Bus
Hub
4th St
Townsend St
Crossing
unity
5th Street
Connection
Opportunity
Multimodal
Hub
Opportunity
King St
East SOMA/ Ball Park
MUNI N Line
MUNI T Line
Berry St
Mission Creek
Mission Creek Parks
Mission
Bay
0.5 ac
0
50'
100'
200'
300'

FIGURE 9: OPPORTUNITIES MAP- DEVELOPMENT AREAS


BLUXOME ST
Future
Central
Subway
5th St
4th St
Taxi Stand
Townsend St
4TH ST
King St
MUNI N Line
MUNI T Line
Berry St
Channel St
Mission
Bay
Legend
Project Boundary
Off-site Ground Level
Development Opportunity
Ground Level
Development Opportunity
Podium Level (30'~)
Development Opportunity
Vertical Circulation
Opportunity
0.5 ac
0
50'
100'
200'
300'

Other urban design considerations (Figure 11: Opportunities Map - Urban Design Consideration)

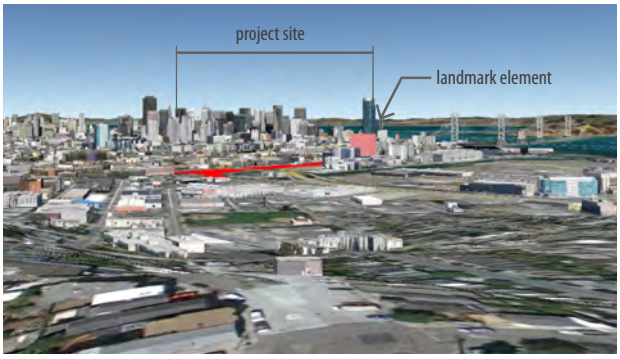
1) Views

A view to the station area from an arriving train is an important urban design consideration for this Fourth and King conceptual alternatives analysis. Existing views of the station are limited and are generally industrial consisting of chain-link fencing, rusted guard rails, little to no vegetation, few street tress and other uses associated with an active railyard (maintenance tools, etc.) King Street has undergone streetscape improvements while Townsend Street has not had this benefit and lacks a sidewalk on the south side of the street adjacent to the Railyard. Views along Townsend Street also include a variety of residential and commercial buildings (some constructed from brick others are more modern construction) which are two to five stories tall; although the majority are two stories. Fourth Street, adjacent to the train station includes a small pedestrian plaza and sidewalks.

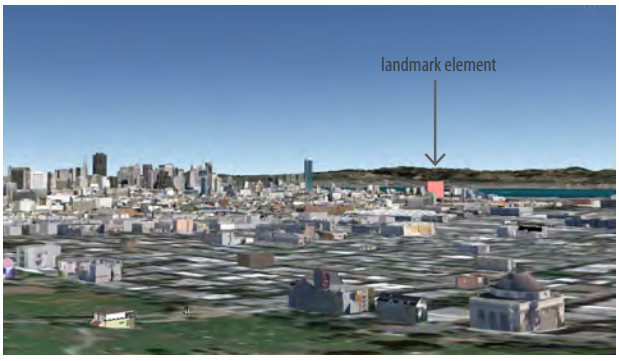
Views to the Station citywide are also an important consideration for this analysis. The following photo simulations (Figure 10) highlight that the Station is in a generally visually prominent location, visible from many locations citywide given the generally flat nature of the site and the variety of hillside destinations around the City, and should be treated with the appropriate architecture accordingly .

2) Street Improvements

Townsend Street would be reconfigured in order to accommodate various functions associated with the future railyard development, such as vertical circulations for potential air-rights development on the podium level, taxi/passenger kiss-and-ride zone and service/utility accesses, and creating a multi-use path along the south side of Townsend for bicycles and pedestrians, with sidewalks also on the north side. This reconfiguration would dramatically improve the pedestrian experience, given that there are not currently sidewalks on most of the stretch of Townsend Street between Fourth and Seventh Streets. In addition, Townsend Street is a designated bicycle route and future reconfiguration would provide safer bicycle lanes. In addition, activating ground floor uses on the south side of Townsend Street would be a major contributing factor to the vibrancy of the street as opposed to a 30' tall blank wall. The ground-level facades on both Townsend and King Streets (from 4th to 7th Streets) should be activated with street-fronting retail and upgraded station facilities.



View from Potrero Hill



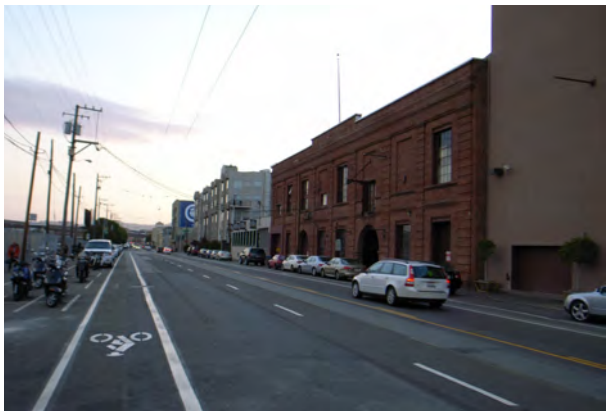
View from Dolores Park

FIGURE 10: PHOTO SIMULATIONS

Another street improvement opportunity would be the King Street extension between the Highway 280 on-ramp and the railroad tracks. Currently this street terminates between Fifth and Sixth Streets. By extending King Street to Fifth Street, as planned in the Mission Bay Plan, accessibility to the project site on the east side of highway 280 from the west will be significantly improved. SFMTA's Transit Effectiveness Project (TEP) also recommended changes in the Fourth and King area including reconfigurations of the bus transit route network; as further discussed in Section 4 Circulation Analysis. A detailed discussion on circulation is found in the following section.

3) Neighborhood Gateways/ Nodes

The site is located on the perimeter of several planning districts, including West SoMa to the west, East SoMa to the north, Mission Bay to the east and Showplace/ Potrero to the south. Directly across from the railyard on Townsend Street, the area is zoned for service/light industry and secondary office. The buildings in this area are primarily 3 to 4 stories tall. Across from the railyard on King Street, the neighborhood is zoned for residential with buildings up to eight stories tall. On 4th streets, across from the railyards where a Safeway grocery store and residential condominiums are located, the neighborhood is zoned for residential with buildings up to 8 stories tall; and at the other end of the railyards on 7th Street, the area is zoned for urban mixed use with buildings up to 4 stories tall. The long term development potential of the site would provide excellent opportunities in contributing to the urban form of the area and also establishing gateway experiences to each planning district by forming nodal developments at important corners.



Townsend Street current condition

King Street current condition near I-280 on-ramp

Potential nodal development at current station area

Potential nodal development at Seventh and Townsend Streets

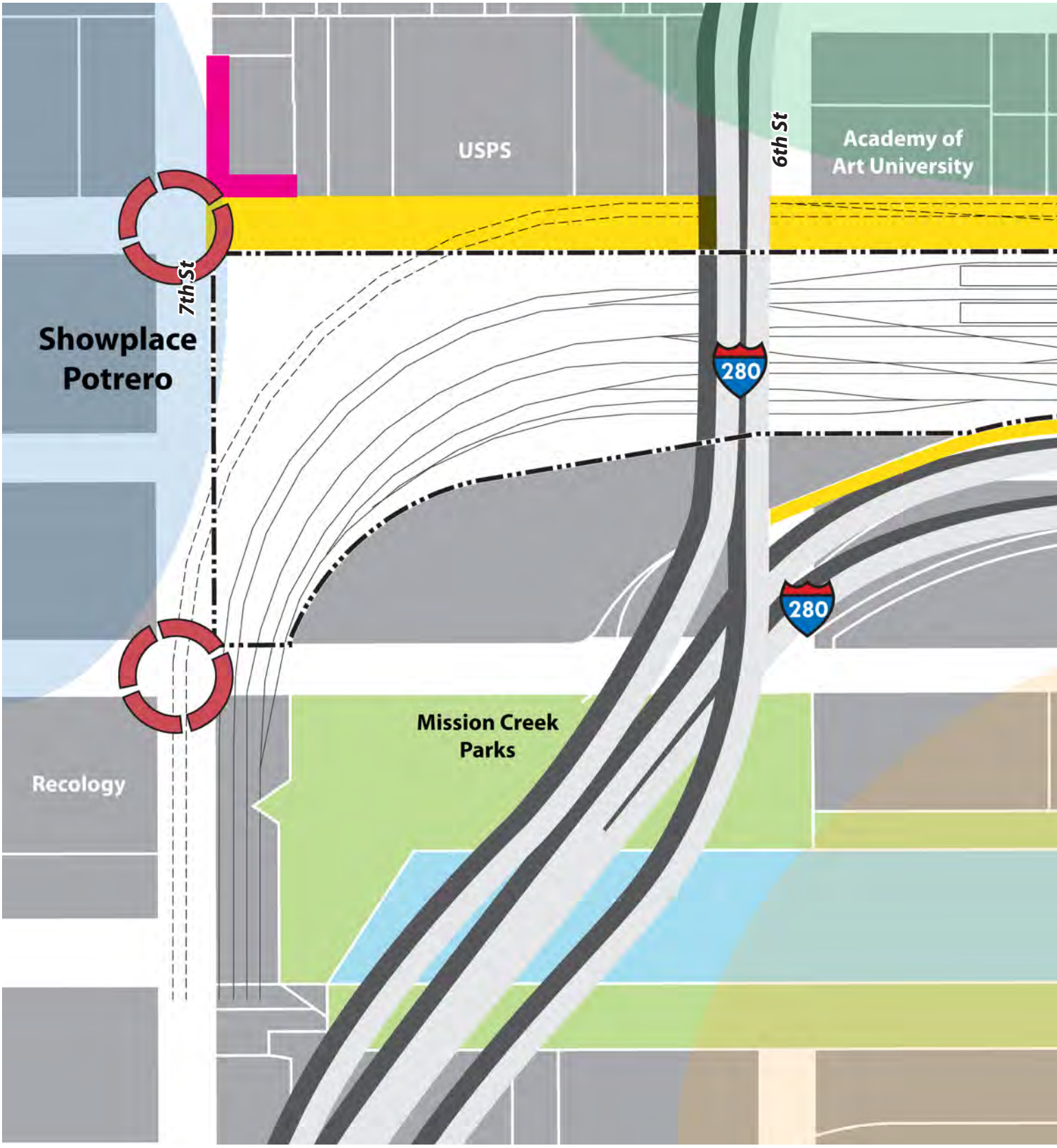
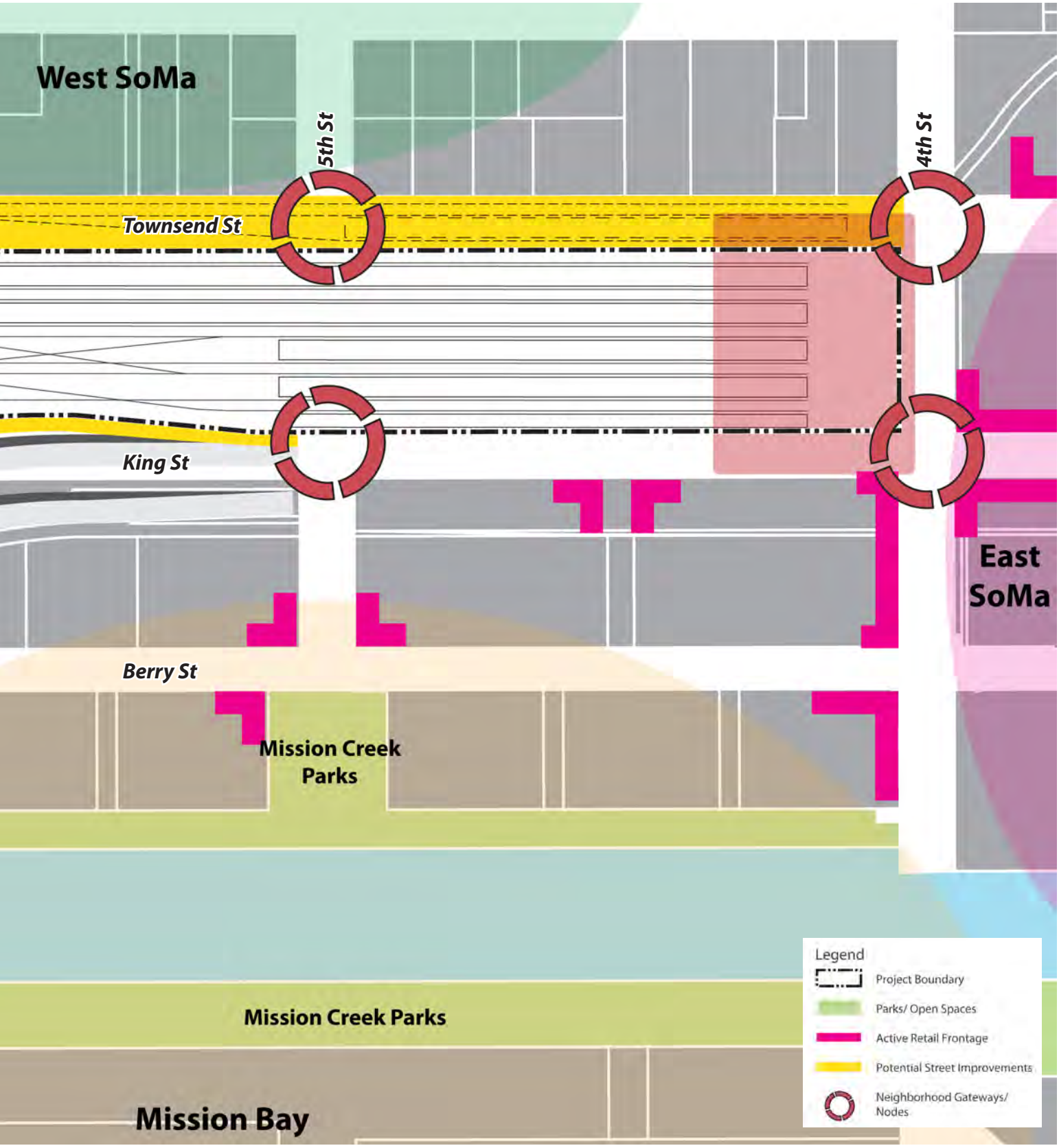


FIGURE 11: OPPORTUNITIES MAP- URBAN DESIGN CONSIDERATION


West SoMa
5th St
4th St
Townsend St
King St
East SoMa
Berry St
Mission Creek Parks
Mission Creek Parks
Mission Bay
Legend
Project Boundary
Parks/ Open Spaces
Active Retail Frontage
Potential Street Improvements
Neighborhood Gateways/ Nodes

E. KEY CONSTRAINTS AND CHALLENGES (Figure 12: Constraints Map)

The key constraints and challenges of this analysis are categorized into 1) site access, 2) limited development area at and below grade level and 3) railyard operation.

1) Site Access

Two of the primary concerns as they relate to site access include 1) ground level interface and 2) vertical circulation to the podium and/or below grade levels.

At the ground level, the main pedestrian access to the station would occur from the Fourth Street side. The rest of the perimeters would have limited access due to train operation with an exception around the corner of Townsend Street and Seventh Street. Site access from Mission Bay is particularly very constrained because of the existence of the Highway 280 on-ramp and newer residential development on Berry Street.

The land that would be available for vertical circulation is limited with the platform layout already taking up the entire length of the right-of-way for the railyards use. As one of the goals of this assignment is to provide for good pedestrian connections and to have the station integrate with the surrounding neighborhoods, the development proposal should not encroach upon the public right-of-way in order to provide for these vertical connections (i.e elevators, stairwells, and/or escalators) Furthermore, support services such as shipping, delivery, waste removal, and main utility distributions would also have a difficult time obtaining access due to the at-grade property setbacks and the track configuration/clearance constraints.

It has been preliminarily estimated that any future development scenario would need to accommodate, at a minimum, six elevators, four escalators and four stairwells per podium for access requirements.

Limited Site Access

I-280 Intersects Site

2) Development area at and below grade level

As discussed earlier in key opportunities section, the planned HSR and Caltrain expansion limits the possibility of development on ground level. Development is restricted to the current station area on Fourth Street, at the corner of Townsend Street and Seventh Street, and potential air-rights development over the railroad tracks which would require vertical circulations from the street level.

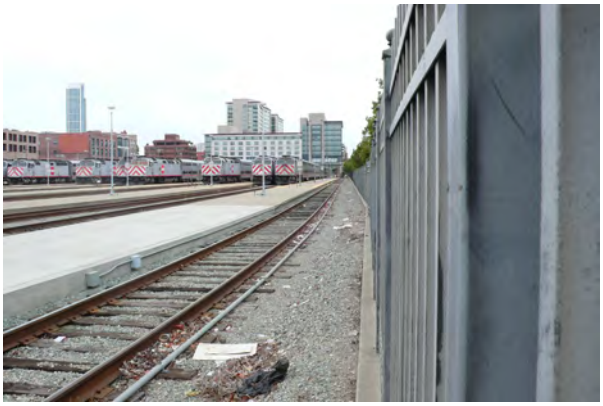
Below grade development opportunities also would be limited due to the proposed DTX alignment under Townsend Street that curves across the northern portion of the site. Due to the expected high water table and poor soil condition from the previous landfill use during the mid-nineteenth century; elevation, location and space of below grade development would require extensive studies. If below grade development is considered as a development option, the access to the below grade level would likely need to occur from the King Street side. Below grade development may be limited to "back of house" uses such as parking, loading, utilities, etc.

Furthermore, the San Francisco Public Utilities Commission (PUC) has existing sewer lines in the station area that cross 4th, 5th and 6th Streets which could conflict with the future development of the DTX and associated uses; perhaps even at grade development.

3) Railyard operation

Noise and diesel exhaust/dust is an existing condition associated with the active railyard and would remain an issue with continued train operation. Continued train Train operation could potentially continue to negatively impact noise level. Noise sources would be generated from braking by approaching/ departing trains on tight curvature and idling by diesel-powered trains in the terminal station. Exhaust from diesel-powered trains would affect users in any proposed development scenario and would require careful design integration with any elevated pedestrian level, to ensure provision of adequate ventilation of diesel locomotive exhaust. Ultimately the line will be mainly electrified and there would be a reduction in noise and diesel dust.

Elevated Freeway



Limited Ground Level Development Opportunity

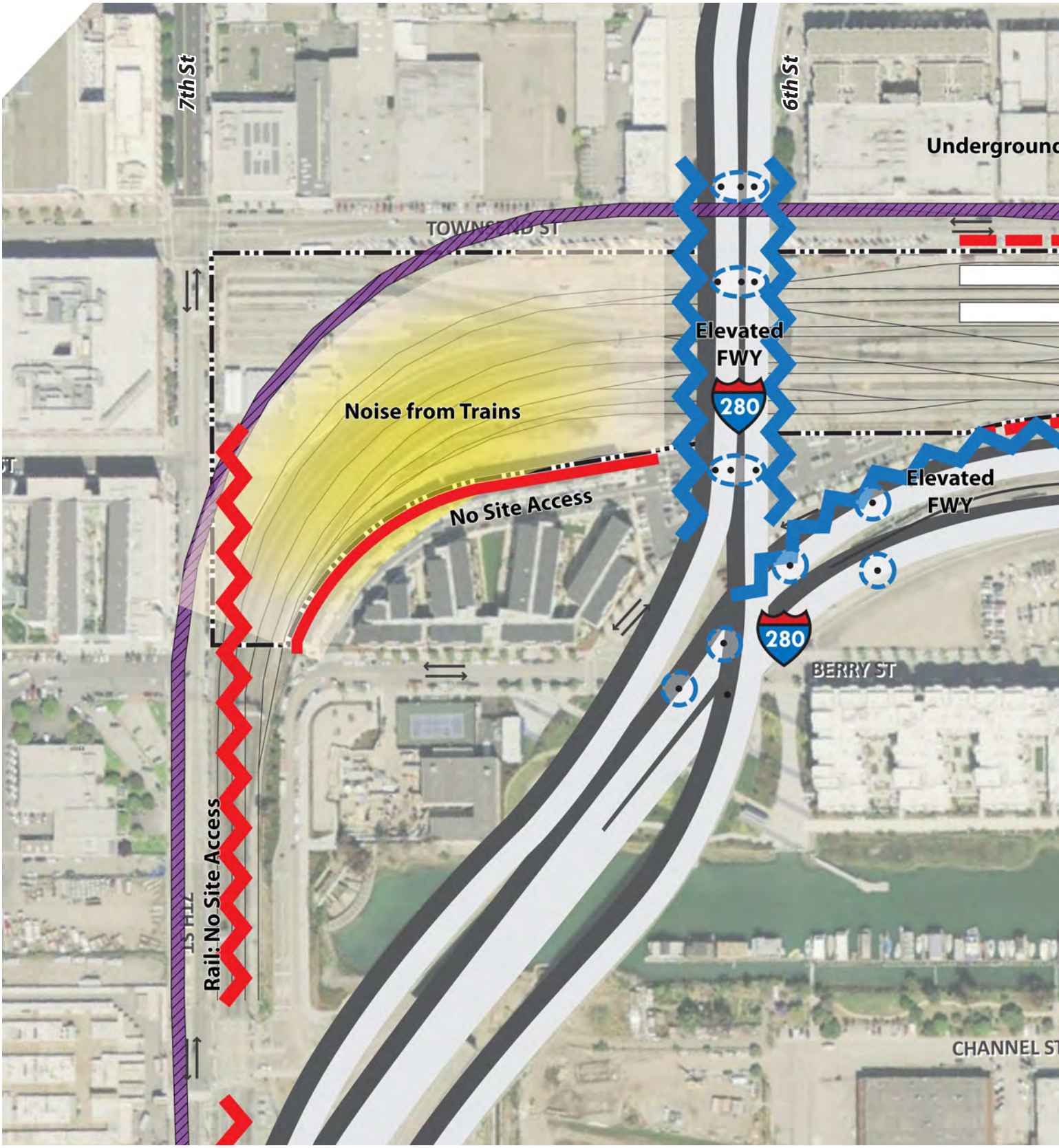
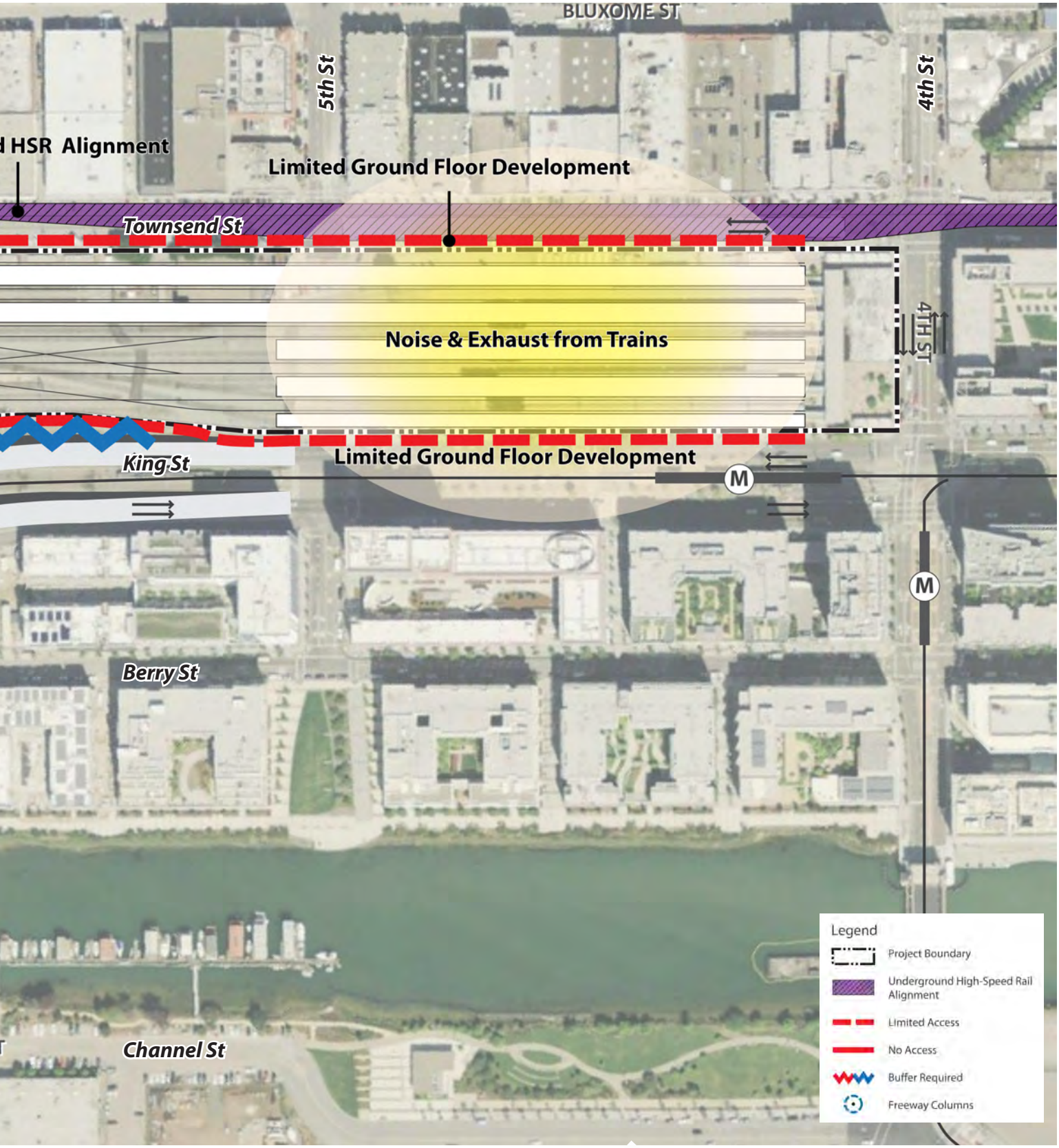


FIGURE 12: CONSTRAINTS MAP


BLUXOME ST
5th St
4th St
d HSR Alignment
Limited Ground Floor Development
Townsend St
4TH ST
Noise & Exhaust from Trains
King St
Limited Ground Floor Development
M
M
Berry St
Channel St
Legend
Project Boundary
Underground High-Speed Rail Alignment
Limited Access
No Access
Buffer Required
Freeway Columns
0.5 ac
0 50' 100' 200' 300'

F. CONCEPTUAL BLOCK ORGANIZATION (Figure 14: Conceptual Block Organization)

A conceptual block organization diagram has been prepared in order to integrate the key opportunities and constraints addressed earlier into design principals in graphic format and to guide the development scenarios that are ultimately prepared in the following section.

While the site is one contiguous block, the site area is divided into three blocks for the a better understanding of the project site's character:

Block "4-5" Area between 4th & 5th (approx 5 ac)

Block "5-6" Area between 5th & I-280 off-ramp (approx 6 ac)

Block "6-7" Between I-280 & 7th Street (approx 8 ac)

These blocks have been organized based on the following principles:

1. The Train Station is an important piece of the City's civic identity and infrastructure.

2. The railyard site is a significant transit oriented development and real estate opportunity.

3. The railyard site is one of few precious development sites located in the City of San Francisco and property developers are willing to pay a premium in order to be able to advertise their connection to a transit stop.

4. The railyard site must be successful in "filling the gap" in sewing the surrounding neighborhoods together with a focus on vertical development.

The land uses that have been considered for these blocks include opportunities for office, hotel, public open spaces and scenic pedestrian corridors. Housing was considered not to be well suited for this site due to the lifestyle issues associated with living above an active train station; issues such as exhaust, noise, and vibration happening at all hours of the day and night.

Given the general constraints to building above an active railyard, this assignment considered the following factors when deciding on how best to organize the uses on site:

1. Consider a viable method for supporting a podium over an active railyard that is suitable for developing above, is structurally sound and seismically stable.

2. As the building envelope is defined by the boundaries of the railyard, providing for vertical access/infrastructure is a challenge.

3. Accommodate construction during ongoing railroad operations

The following provides a discussion on the different character and conceptual organization of each of the three blocks that comprise the Fourth and King Railyards site.

Block "4-5" is the Grand Train Station area and would serve as a primary point of entry into San Francisco for passengers arriving at the station, offering access to the Giants ball park, the central subway, and other East SoMa office and entertainment destinations. It is important that his block capture the imagination of the City in providing for a landmark representative of civic identity. The existing land uses on this block are directly compatible to that of a train station. This area would have the opportunity to for the creation of create a multi-modal transit hub as well as a potential commercial development above. A small amount of ground floor retail is encouraged to activate pedestrian activities. Commercial development will rise up high enough to establish the iconic landmark at the transit node at the Fourth and King Station and will serve as an anchor of this development. Platforms would be potentially relocated to the west in order to accommodate the proposed intermodal CAHST/ Caltrain passenger embarkation and debarkation and appropriate building depth for the development. Location would be determined after further railyard operation study.

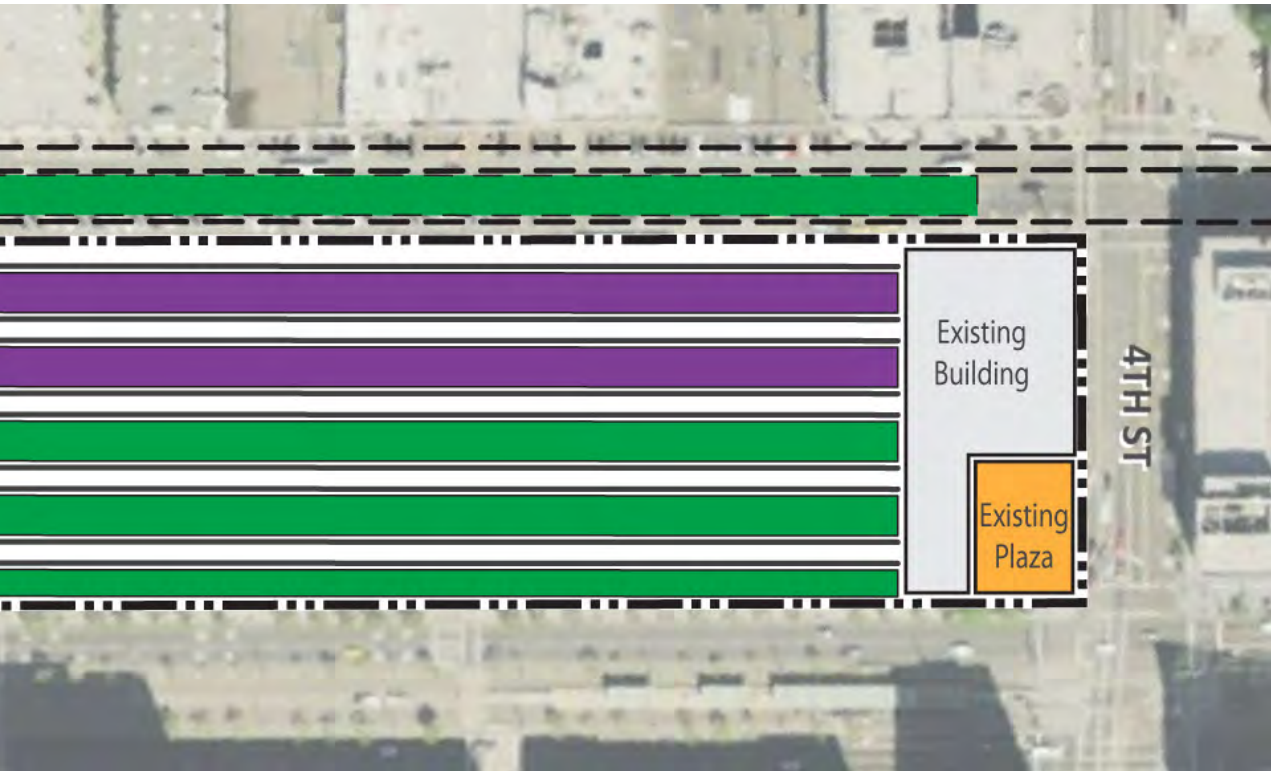
Whether a westward shift of the platforms could be achieved cannot be determined until preliminary engineering of the terminal trackage is undertaken. One hesitates to say it cannot be done, but the geometrics of the situation suggest that, at least in the case of the High Speed platforms, this would seem to be a difficult prospect. The conceptual drawing of the currently proposed terminal arrangement (Figure 13: Westward Shift of Platforms) suggests that the point of curvature from west to south (the determining bend from Townsend to Seventh) begins just west of the west edge of the platforms. If that conceptual drawing is literally correct, it would suggest that a westward shift is really not feasible.

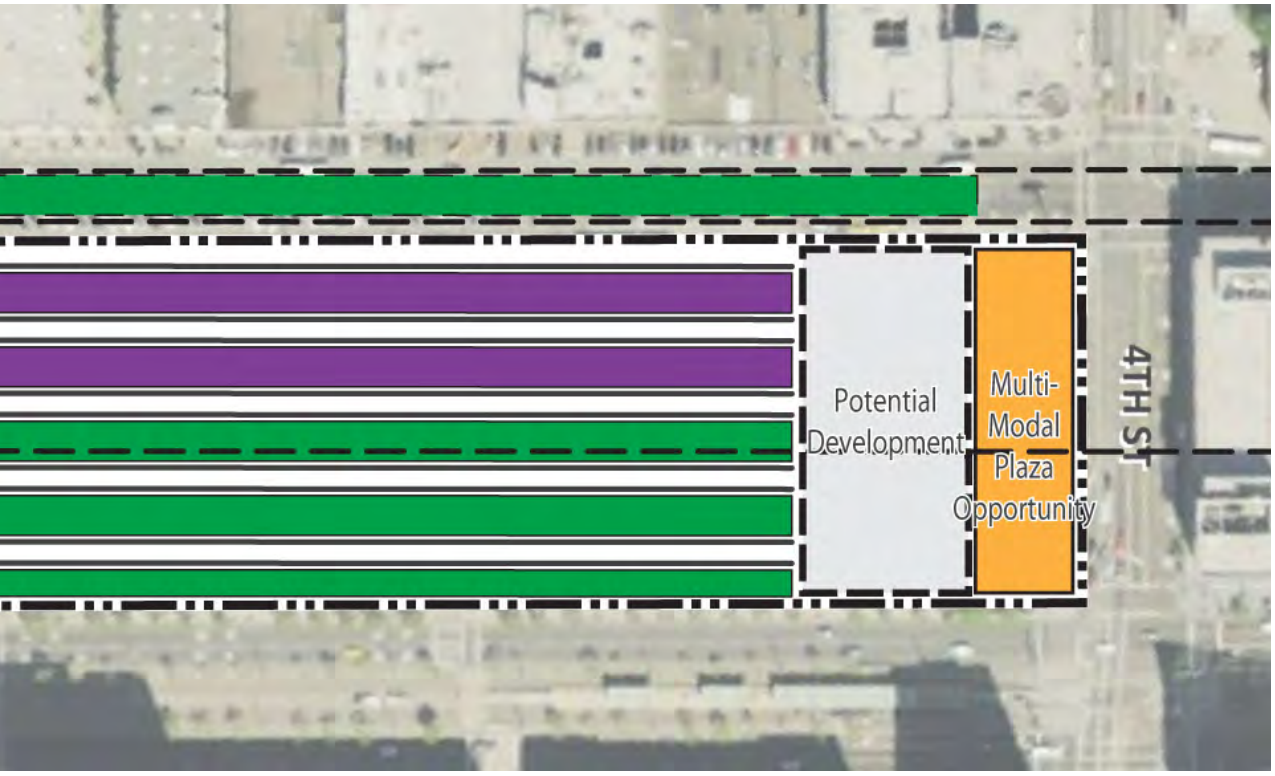
Block "5-6" is located mid-block along the site and as such, serves as a key connection link. This "infill zone" should contribute to the character of the surrounding neighborhoods and should blend accordingly. What is built on this block should not dominate the neighborhood and relate well to the architecture of the surrounding buildings. For example the buildings across from the railyard on King Street, within these same blocks, are modern and taller, up to 8 stories, while buildings on Townsend are up to 4 stories. Appropriately siting buildings on this block, somewhere within the range of 4-8 stories, would provide for a purposeful transition in height between Townsend and King Streets. New buildings should complement the surrounding architecture and contribute to the overall urban form of this area. Future development on this block would will include small ground-floor retail and commercial uses on top. The triangular parcel located between Highway 280 and the railyard may be incorporated as a part of the development in order to enhance the gateway experience of highway access from the south and to increase ground floor development opportunities. Development will stay within the 110′ height envelope except for several tower elements at key locations.

Block "6-7"is the Showplace Square gateway and should take on some of the characteristics of the adjacent existing buildings. This block would will more likely be a conventional commercial development area due to a less constrained ground floor area for vertical circulation. The corner of 7th and Townsend Streets will should be a tower element and will that anchors the western end of the development. A potential connection between the Showplace/Potrero district to the station area crossing the railroad tracks will be investigated.

Please refer to the forthcoming "Building Form Prototypes and Constraints" report to be provided in under separate package cover for a further discussion of the conceptual development scenarios alternatives and potential building structures.

FIGURE 13: WESTWARD SHIFT OF PLATFORMS


Existing
Building
Existing
Plaza
4TH ST


Potential
Development
Multi-
Modal
Plaza
Opportunity
4TH ST

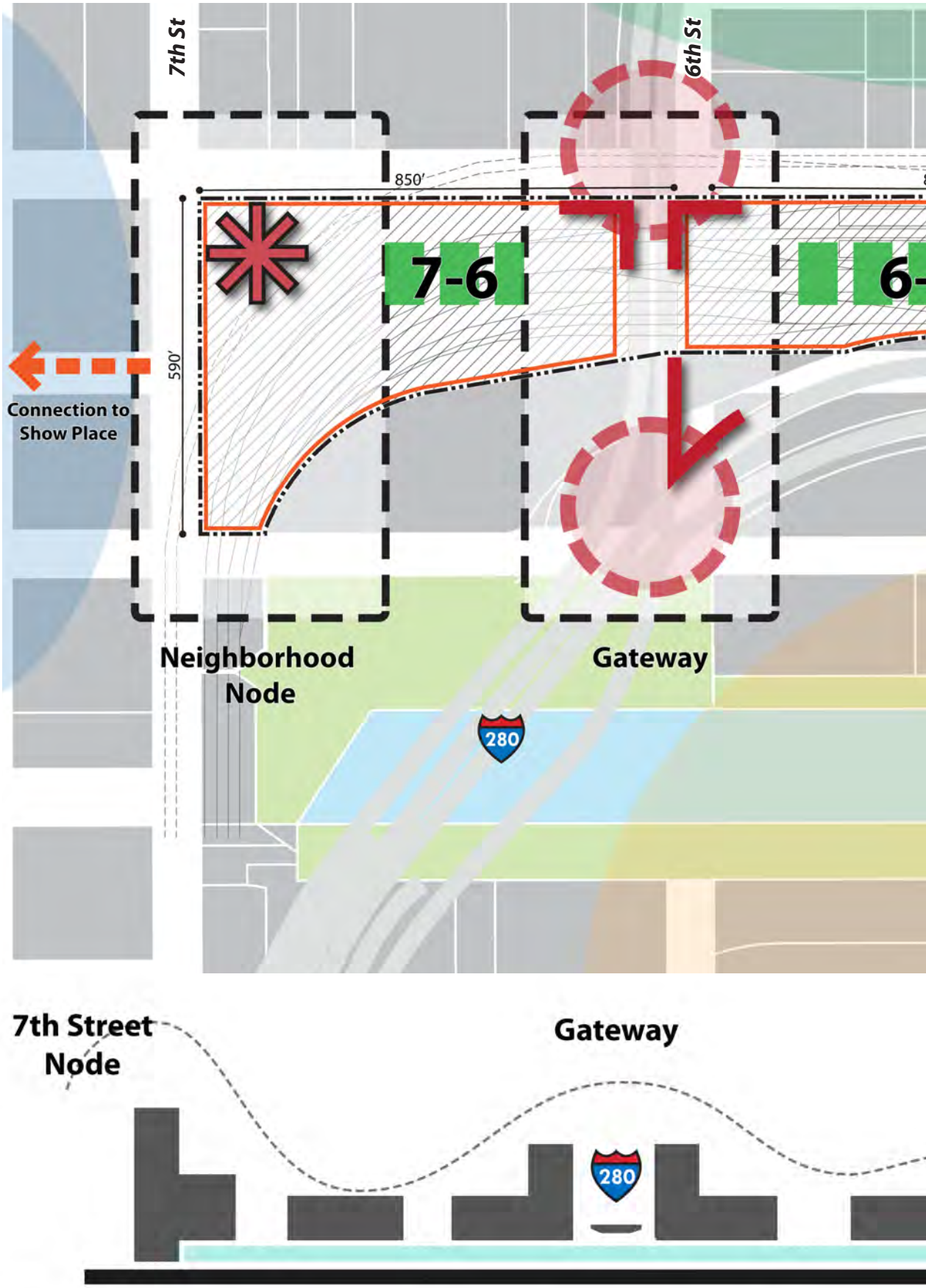
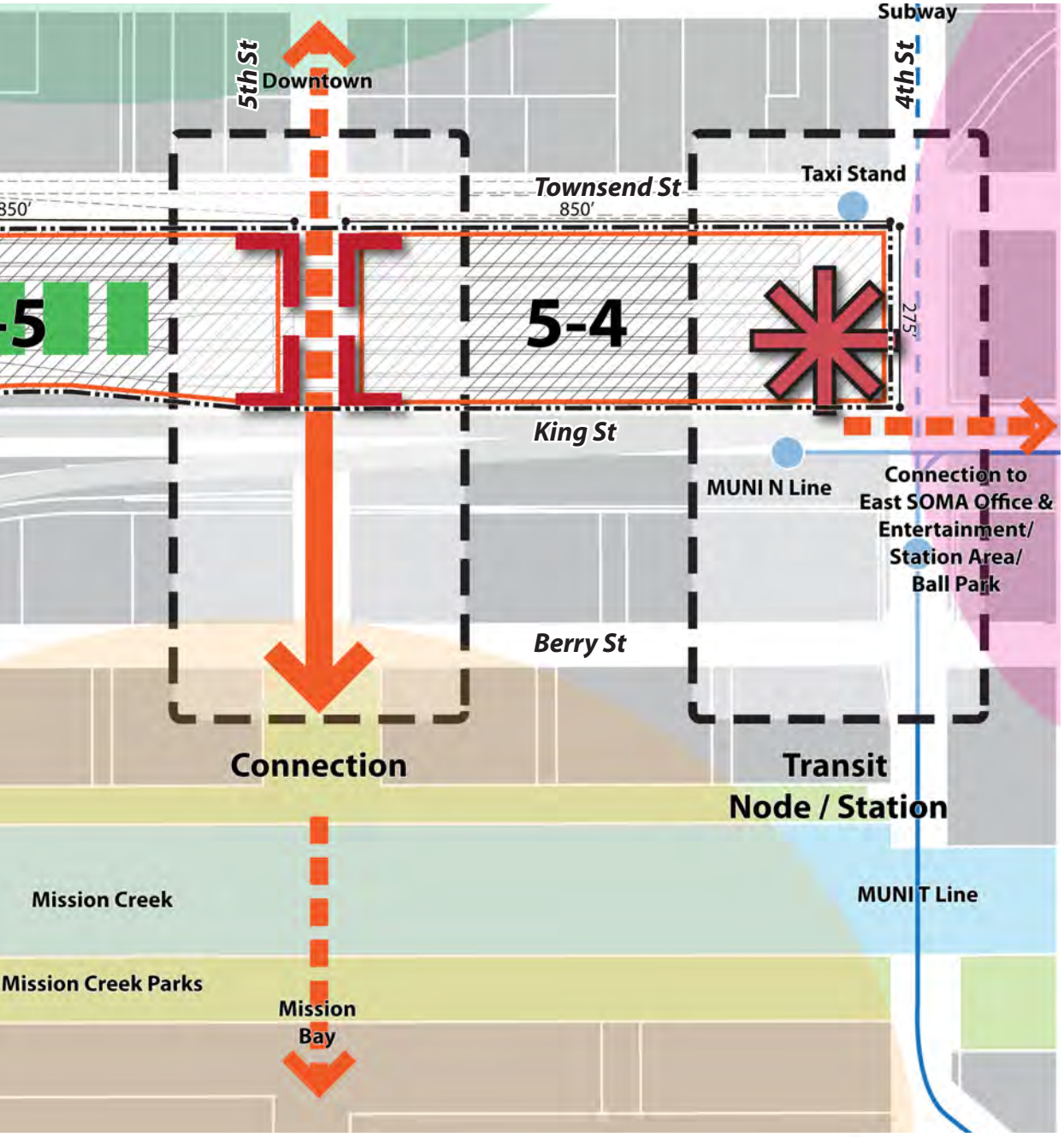
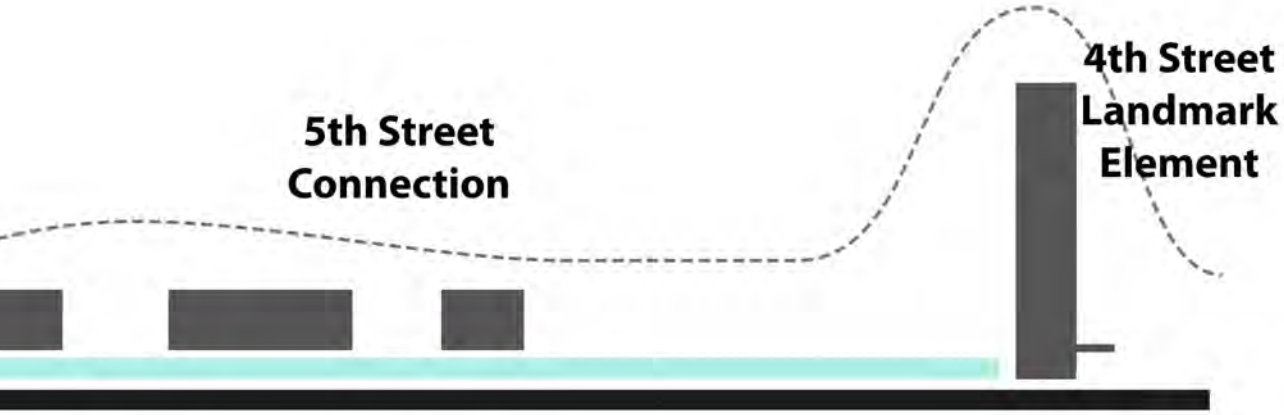


FIGURE 14: CONCEPTUAL BLOCK ORGANIZATION


Subway
5th St
Downtown
4th St
Townsend St
850'
Taxi Stand
850'
5-5
5-4
275'
King St
MUNI N Line
Connection to
East SOMA Office &
Entertainment/
Station Area/
Ball Park
Berry St
Connection
Transit
Node / Station
Mission Creek
MUNI T Line
Mission Creek Parks
Mission
Bay


5th Street
Connection
4th Street
Landmark
Element

4. CIRCULATION ANALYSIS

This section addresses issues related to multimodal circulation and access for the Fourth and King station. It is divided into three sub-sections:

- **Existing Conditions, Plans, and Policies.** This sub-section summarizes existing transportation services and infrastructure, relevant adopted policies, and pending projects.

- **Proposed Connectivity Goals and Principles.** This sub-section describes transportation goals and principles that should be used as a framework to evaluate future station siting and track alignment options.

- **Key Issues and Opportunities.** This sub-section outlines what Nelson\Nygaard believes are the three key transportation issues and opportunities that should be addressed as part of any future station design.

A. EXISTING CONDITIONS, PLANS AND POLICIES

Existing Infrastructure, Services and Travel Demand

Transit Infrastructure and Services

Muni

Most connecting transit serving the Fourth & King station is provided by the Municipal Railway (Muni), a division of the San Francisco Municipal Transportation Agency (SFMTA).

Muni Rail Service

Muni Metro light rail stops are located south of the station, at island platforms for the N Judah line in the median of King Street just west of Fourth Street and for the T Third Street line in the median of Fourth just south of King. Both lines run along the Embarcadero to the Market Street tunnel, into downtown San Francisco and toward the west side of the city. In the opposite direction, the N terminates at Fourth & King, while the T continues south through Mission Bay and the Bayview to Visitacion Valley. Both lines run relatively frequently during weekdays (the N on 7- to 10-minute headways, and the T on 10- to 12-minute headways) and somewhat less often in the evening. The N does not serve Fourth & King on weekends, but N Owl bus service is available seven nights a week (from a curbside stop at Fourth and Townsend streets).

Because the Muni Metro platforms are located in street medians, passengers transferring between Caltrain and the N or T must cross lanes of traffic. In the case of the T, passengers must cross the entirety of King Street (six lanes, including four lanes of traffic exiting the 280 freeway) in addition to two lanes of Fourth Street. Wait times for pedestrians to cross King are also relatively long, and inbound trains on the T line are not visible from the station side of the street until they are very nearly at the platform. In an effort to improve safety and reduce the incidence of transferring Caltrain passengers riders running across busy streets to catch Muni Metro trains, SFMTA recently posted a NextBus digital display providing real-time arrival information in the plaza of the Caltrain station plaza by the King crosswalk. The sign displays projected wait times for both N and T trains, and is intended to discourage passengers from crossing against the light out of fear that they might miss the next train. Figure 13 shows the N platform and King Street crossing in the midground and the T platform and Fourth street crossing in the background.

Muni Bus Service

Muni bus stops are located north of the station along Fourth and Townsend streets. Four all-day routes (the 10 Townsend, 30 Stockton, 45 Union-Stockton, and 47 Van Ness), three peak-only routes (the 80X Gateway Express, 81X Caltrain Express, and 82X Levi Plaza Express), one

Sunday-only route (the 76 Marin Headlands), and two Owl routes (the N Owl and 91 Owl) serve Fourth & King, with all but the 10 and 91 Owl terminating there. The 30, 45 and 47 are all among Muni's highest-frequency routes, with headways during each route's peak period of fewer than 10 minutes. Both the 30 and 45 serve Union Square, Chinatown, North Beach and the Marina, while the 47 serves the Van Ness corridor.

Accessing most Muni bus stops also requires street crossings: The Routes 30 and 45 stops on Townsend across Fourth, hidden from view until one reaches the corner of Townsend, are particularly problematic, as there are five lanes of traffic on Fourth Street.

Other Fixed-Route Bus Service

Shuttles

In addition to Muni, three regularly scheduled shuttle services stop near Fourth & King: the Mission Bay Shuttle, the PresidiGo Downtown Shuttle, and the UCSF Shuttle Bus Teal line.

Other Services

A private jitney operator also serves the station, making timed connections to arriving and departing trains during AM and PM peak periods.

Amtrak Thruway buses (providing connections to and from the Amtrak station in Emeryville) and California Shuttle Bus (a private operator providing intercity service to Southern California) both stop at Fourth & King a few times a day.

FIGURE 15: MUNI METRO PLATFORMS
Source: Nelson\Nygaard

Pedestrian Infrastructure

Pedestrian Network

The pedestrian network in the area is generally of fair quality. The street pattern is primarily gridded, and the network of sidewalks is nearly complete. Alleys and pedestrian pathways bisect some blocks. However, a number of problems exist:

- Limited numbers of paths are available. Surrounding blocks are large by San Francisco standards: to the north, they are 550 wide and 825 feet long, and immediately to the east and south they are also 825 feet long, if somewhat narrower (approximately 300 and 200 feet, respectively).

- Notable gaps in the network of main streets also exist: between Fourth and Seventh streets, a distance of almost exactly one-half mile, both the Caltrain yards and Mission Creek block north-south travel, while in the east-west direction, there remains an unfinished segment of King Street, just west of Fifth Street and north of the I-280 ramps. South of the Creek, the Mission Bay street network is still in development; when complete, it will feature intersecting grids of smaller blocks.

- The quality of pedestrian paths that do exist varies, in terms of both comfort and safety. Most sidewalks generally have sufficient capacity for the existing pedestrian volumes they must support at most times. However, many sidewalks are not especially wide from the perspective of both existing pedestrian comfort and the need to have adequate capacity (especially at corners) to accommodate future pedestrian volumes that are anticipated to increase with increasing rail and bus transit service to the Fourth and King station. To cite a few examples:

    - Sidewalks along Fourth north of Townsend are approximately nine feet wide (with the effective width being closer to 4-5 feet netting out the "building door zone" and the curb "furniture/street/meter zone").

    - On Townsend between Fourth and Seventh, however, there are no sidewalks, with the exception of short segments just west of Fourth by the station and on the north side of the street just east of Fifth and mid-block between Fifth and Sixth. Along this stretch, pedestrians are relegated to a narrow, grade-level space on the south side of the street between diagonally-parked cars (separated from the pedestrian space by concrete "wheel stops") and a chain-link fence. This path is shown in Figure 14. It should be noted that SFMTA is now in the process of restriping Townsend Street, in part to provide a similar pedestrian path on the north side of the street between Fourth and Seventh, where there is currently no space for pedestrians. Other elements of this project are described in the following sections.

    - Pedestrian paths are also compromised at intersections due to the large number of streets in the station area that are relatively wide by San Francisco standards. Most of the primary streets in the station area feature four or five lanes of traffic, many in a one-way configuration encouraging higher speeds, and long traffic signal cycles result in unusually long waits for pedestrians considering the context. King Street as it approaches its terminus at 280 in particular exhibits these characteristics six lanes wide in most places (albeit with pedestrian refuges in its median), and wait times to cross King at Fourth are longer than at other area intersections.

FIGURE 16: PEDESTRIAN PATH ALONG SOUTH SIDE OF TOWNSEND WEST OF FOURTH

Source: Nelson\Nygaard

Bicycle Infrastructure

Bicycle Network

Townsend is also an officially designated bicycle route, and a project to add Class II lanes from Second Street to 8th and Division streets is now underway. (Remaining elements of this project are described in the following sub-section.)

Fifth Street north of Townsend, Third Street between King and Mission Creek, Second north of King, Fourth Street south of King, Berry Street and Seventh Street are also designated bicycle routes, but lack lanes. In general, conditions for cyclists in the area surrounding the station are challenged by fast-moving traffic (on South of Market streets to the north) and by physical barriers (including Mission Creek to the south).

Other Bicycle Infrastructure

Fourth & King is one of a handful of transit stations in the Bay Area with a full-service bikestation: Warm Planet Bikes offers repairs, equipment and attended parking for 130 bikes. There are another 180 key-operated bike lockers in a secure area nearby, just west of the station's north entrance along Townsend, and there are 22 bike racks outside the station. Private development must provide bike parking and there are bike racks along the new streets

Auto Infrastructure

Auto Network

In general, the Fourth & King station is relatively accessible to motorists. On- and off-ramps for Interstates 280 and 80 are within a few blocks, and surrounding surface streets are generally designed to accommodate high volumes of fast-moving traffic, with multiple lanes, peak-hour parking towaway restrictions, and a one-way configuration in many cases. Key streets in the auto network include:

- Third and Fourth streets constitute a major one-way arterial couplet connecting Mission Bay to downtown San Francisco and to northeastern neighborhoods via direct connections to Kearny and Stockton streets.

- Seventh Street is also a major arterial and of the main connections to Potrero Hill and Mission Bay. Other than Third Street, it is the only other street in the station area that connects from 16th St. to Market St.

- King is a major arterial connecting The Embarcadero to Interstate 280. King suffers from peak-period traffic delays. According to the Central Subway Project Final SEIS/SEIR, as of 2008 average PM peak hour vehicular delays at the intersections of both Third and Fourth with King were greater than 80 seconds, representing intersection level of services (LOS) of "F." Congestion delays at other area intersections, however, appears to be less severe: At the only other intersection in the immediate area included in the Central Subway analysis, Fourth and Bryant, peak hour LOS was found to be "B", and in its 2008 Bay Area to Central Valley HST Final Program EIR/EIS, the California High-Speed Rail Authority found an average volume-to-capacity (V/C) ratio on surrounding streets at screenlines approximately 1,600 feet from the intersection of Fourth and Townsend of 0.33, representing a roadway LOS of "A." According to the Central Subway SEIS, average PM peak hour traffic volume on the key segment of Fourth immediately in front of the station, between King and Townsend, was 1,160 as of 2007.

Auto Parking

No dedicated parking is available at the station, although both on-street and private off-street parking is available nearby.

While most of the on-street spaces west of Fourth and south of Townsend are currently unmetered (meters will soon be added along Townsend, Bluxome and Brannan streets between Fourth and Fifth, and along Fifth), time limits are in effect for both metered and some unmetered spaces, discouraging long-term parking. However, the blocks north of King and east of Fifth are within a pilot area for the SFpark program, meaning that time limits may soon be extended to four hours, or even eliminated for metered spaces (rates will reflect demand, with prices increasing or decreasing over time as needed to maintain 15 percent availability).

Long-term public parking is available in off-street lots and garages both in the immediate vicinity of the station and slightly farther away in Mission Bay south of Mission Creek. Rates vary; the "early bird" (arrive by 9 a.m.) all-day rate at the California Parking Inc. lot at Fourth and Brannan Street, to take one example, is $12, while the maximum rate in the China Basin Building between Third and Fourth south of King is $19 and the maximum rate in garages on the UCSF-Mission Bay campus is $24. (On San Francisco Giants game days at nearby AT&T Park, area lots and garages charge higher "event" rates.)

Only limited data are available regarding parking supply and demand: In the Central Subway EIR, average occupancy during morning and afternoon time periods in 2006 was found to be 74 percent on Third and Fourth between King and Bryant, a rate below the SFpark "target" occupancy of 85 percent.

As part of the project to add bike lanes to Townsend, the street is being restriped to include just one through lane of traffic in each direction, rather than two, in the four-lane segment between Second and Fourth (a short segment of the second westbound lane will remain just east of Fourth). A two-way left turn lane will be added to compensate for the loss of auto capacity from removal of the through lanes. Between Fourth and Seventh, perpendicular parking on the north side of the street is being converted to a parallel configuration in order to make room for a pedestrian space, and on the south side of the street between Fourth and Fifth, diagonal parking is being converted to parallel in order to enable a transit lane that is part of the Central Subway project (see "Existing Plans," next section). Remaining angle parking on the south side of the street between Fifth and Seventh will be converted to back-in angle parking. Altogether, these changes will result in a loss of 91 parking spaces.

Finally, there is a designated motorcycle parking area on the south side of Townsend just west of Fourth, near the station's north entrance, with space for approximately 60 motorcycles and scooters.

Other Auto Infrastructure

There is no designated pick-up and drop-off (or "kiss and ride") area at Fourth & King, although the bus stops in front of the station's main (east) entrance on Fourth, which are used only for Owl service, are used informally for this purpose.

A designated taxi zone with space for approximately nine cabs to queue exists along the south side of Townsend west of Fourth, although similarly, taxis sometimes pick up and drop off passengers in the bus stops in front of the station's main entrance on Fourth.

Existing Access Mode Splits

Station Access/Egress Mode Share

The Fourth & King Caltrain Station is located in a relatively dense, mixed-use urban district, is relatively well-served by connecting transit, and provides no off-street patron parking. Perhaps unsurprisingly, then, trips connecting to the station are nearly all made using transit or by nonmotorized modes.

Figure 15 shows modal shares for access to Fourth & King Station during all time periods, derived from surveys conducted in 2006.

Notably, most trips to the station are made by transit (47.4 percent for all transit modes combined) or on foot (33.1 percent). Another 9.2 percent of trips are made by bicycle. In sum, non-auto modes account for nearly 90 percent of all trips to Fourth & King. Furthermore, most auto-based trips are drop-offs (3.9 percent) or are made by taxi (2.3 percent). Drive-alone mode share is just 1.5 percent

Modal shares for trips away from the station are similar: nearly half (49.9 percent) take transit, 31.9 percent walk, 8.6 percent bicycle, 3 percent are picked-up, 2.8 percent take a taxi, and just 0.7 percent drive-alone.

Data for the AM peak period reveal additional details: In the morning, people traveling to the station are less likely than those traveling away from it to take transit (39.9 percent vs. 52.6 percent) or to walk (25.3 vs. 35.2 percent), and are more likely to cycle (19.7 vs. 6.6 percent) or get a ride (7.1 percent for drop-offs, vs. 0.6 percent pick-up). Presumably, these trends are reversed in the evening.

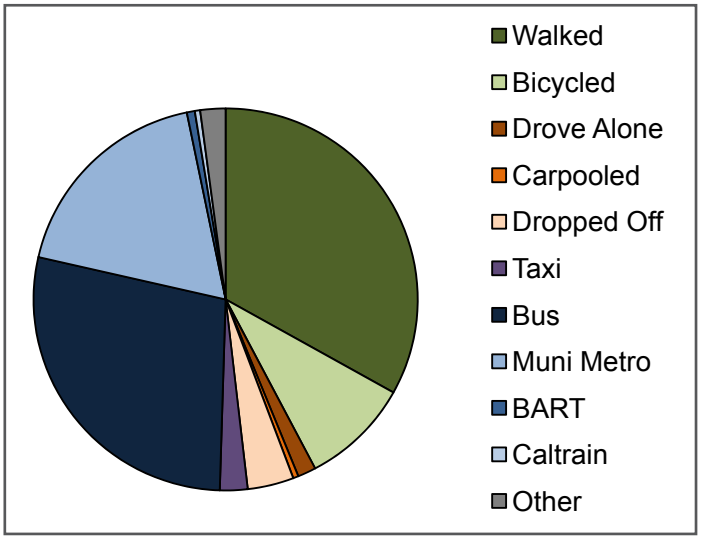


Figure 17: Fourth & King Caltrain Station Access Mode Splits (2006)

Source: Caltrain, 2010

Connecting Transit Usage

Figure 16 shows total numbers of average weekday boardings for major Muni routes at stops adjacent to Fourth & King. Data were collected by SFMTA for the Transit Effectiveness Project (TEP), which is discussed in the following section. Data were collected in 2006 and 2007 for all routes but the T Third Street and 45 Union-Stockton, for which data were collected in 2008. Data is not included for part-time routes or for the 10 Townsend (as the route has been realigned in the interim).

Route	Boardings
N Judah	2,159
T Third Street (northbound)	599
T Third Street (southbound)	898
30 Stockton	1,151
45 Union-Stockton	756
47 Van Ness	765
TOTAL	**6,319**

Figure 18: Average Numbers of Weekday Boardings at Major Muni Stops Adjacent to Fourth & King Station

Source: SFMTA Transit Effectiveness Project (TEP).

Existing Plans / Projects

Central Subway

SFMTA's Central Subway project will result in a 1.8-mile extension of the T Third Street from Fourth & King, where it currently turns east toward the Embarcadero (sharing its alignment with the N Judah), north along Fourth and Stockton streets to the Moscone Center, Union Square and Chinatown. This second, more direct local light rail connection to Market Street and downtown should have a significant impact on Fourth & King: In addition to the improved travel time it will provide – trips to Chinatown from Fourth & King are projected to take seven minutes, down from 20 minutes on Routes 30 and 45 – its tracks will run past the station on Fourth (to a subway portal a few blocks north, under Interstate 80).

Currently, between King and Townsend Fourth features a northbound transit lane (although the lane is not physically separated from travel lanes, and is regularly used by autos), a northbound travel lane, and between three and four southbound travel lanes (three at Townsend, and four at King, including a right-turn pocket). Under the project, there would be one northbound travel lane, two sets of tracks in semi-exclusive right-of-way, and three southbound travel lanes.

At present, there are no plans to relocate the existing platform on the south side of King to a site directly in front of the station despite the issues associated with its present location (see the previous section, "Existing Infrastructure, Services and Travel Demand"). This topic will be addressed in the "Issues and Opportunities" section.

Utility relocation has recently gotten underway, with completion of construction currently scheduled for 2018. As part of the project, service on Routes 30 and 45 will be reduced.

Transit Effectiveness Project

SFMTA's Transit Effectiveness Project (TEP) was a multiyear comprehensive operations analysis resulting in a Board of Directors-approved package of recommended changes and including extensive reconfigurations of the bus transit route network. As some of the service changes since implemented by Muni differ from TEP recommendations, it is not clear to what extent some TEP-recommended changes are likely to occur.

The most significant change recommended by the TEP in the area of Fourth & King was introduction of Embarcadero historic streetcar service between Fourth & King and Fisherman's Wharf. The line has been planned for years, and much of the necessary infrastructure already exists. However, implementation has been repeatedly delayed for reasons including operating cost and a lack of rolling stock.

Another significant recommendation was realignment of the 12 Folsom line to serve Fourth & King and Mission Bay south of Mission Creek. The 10 Townsend, which currently operates along a similar alignment (but runs west through Showplace Square rather than south through Mission Bay), was recommended for elimination. Extension of either route through Mission Bay would require new overhead wires to accommodate the electric trolleybuses that operate on both routes.

A third major recommendation was realignment of the 47 Van Ness line west of Fourth & King to enable faster trips between the station and the Van Ness corridor, where the line is scheduled to begin operating in bus-only lanes in 2014 as part of the Van Ness Avenue Bus Rapid Transit project. Under the TEP, the line would run west from the station on Townsend, rather than making the current loop on Fourth, Townsend, and Fifth.

San Francisco Bicycle Plan

San Francisco's adopted San Francisco Bicycle Plan includes three projects in the station area:

- The Townsend Street bike lane project now underway (described in more detail in the previous section, "Existing Infrastructure, Services and Travel Demand")
- Addition of bike lanes along Fifth north of Townsend
- Addition of bike lanes on Second north of King.

The Fifth Street project would reduce the roadway from two through lanes each way to one in most places, although there would be turn lanes at Townsend, Bluxome and Brannan. It would also require removal of 13 spaces from the block between Brannan and Bryant.

The Second Street project, meanwhile, has been delayed due to some community opposition to removal of traffic lanes north of Interstate 80. South of the Bay Bridge approach, it would reduce the roadway to one to two lanes in each direction, depending on location, and would restrict most left turns, but there would be no parking removed.

Eastern Neighborhoods Program

The Eastern Neighborhoods Program is a multiyear, collaborative and comprehensive land use and transportation planning effort including four adopted area plans (including a plan for the "East Soma" area to the east and north of the station) and the now-in-process Eastern Neighborhoods Transportation Implementation Planning Study, or ENTRIPS. While ENTRIPS recommendations are still in development, Eastern Neighborhoods planning conducted to date has supported the concept of pedestrian improvements to Third and Fourth from King north including corner bulb-outs and streetscape improvements, as well as addition of sidewalks where they are now missing along Townsend Street.

Eastern SoMa Community Plan

The Eastern SoMa Community Plan also features a number of objectives and policies generally supportive of multimodal "complete streets" and parking demand management.

Mission Bay Infrastructure

Two pieces of infrastructure are planned for the Mission Bay redevelopment area to the south of the station that will have a significant impact on circulation patterns in the station area.

One, a pedestrian bridge over Mission Creek at Fifth Street, will go some distance toward removing the barrier to north-south travel between Fourth Street and the west end of the Mission Bay Creek near Seventh Street (as identified in the previous section, "Existing Infrastructure, Services and Travel Demand"). However, a gap will remain in the Fifth Street axis at the railyards, between Townsend and King.

The other project will extend an existing right-of-way (King Street) that runs a few hundred feet east from the Crescent Cove apartments, north of Berry near Seventh, to connect to King at Fifth. This King Street stub currently dead-ends just short of the intersection, and is wedged between the Interstate 280 viaduct and the railyards. At Fifth, the street will be one-way westbound for autos.

From the San Francisco Redevelopment Agency's standpoint, the intended purpose of the King Street extension from Fifth Street to Berry Street is to provide additional connectivity and capacity for access to the western side of Mission Bay North for auto access and emergency response access. The most current development estimates call for the extension to be open by July 2012 at the latest. Furthermore, the westbound left turn from King onto Fifth would have to be operational by January 2015, although it may be earlier since the design and approval for both improvements is being carried out as a single project.

Based on our preliminary analysis for this study it could potentially be better to use the land that is currently slated to become a road serving a single development versus turning it back over to Caltrain (or granting an easement) in order to use that land to resolve the track chicanes/ bottleneck on the east side of the railyard. Whatever happens to this land, pedestrian / bike facilities should be upgraded and formalized beyond the current level of "social path" (e.g. people have created an informal "desire lines" path because it is the quickest way to get from A to B).

The project as currently proposed will close a gap for pedestrians: currently, to walk between the street and Fourth & King, one must navigate an informal "social path" across a gravel- and weed-covered slope. This land was originally owned by Caltrain and was traded to the City as part of a land swap several years ago. Completion of the project as currently proposed would "lock in" the existing bottleneck in Caltrain track alignments at the point where the railyards narrow and this could potentially restrict rail capacity and/or service quality of future operations.

Seawall 337 ("Giants Lot A") Redevelopment

The 2,000-space parking lot on Port-owned Seawall 337 (Giants Lot A), just to the northeast of Mission Bay east of Third and south of Mission Creek, is a planned redevelopment site. The latest public proposal calls for construction of 2,650 spaces, although it is not clear how many of these would be public.

Relevant Existing Policies

Caltrain Access Policy

In May 2010, the Joint Powers Board (JPB) Board of Directors adopted Caltrain Comprehensive Access Program Policy Statement described as the "first step in developing a full access program" that will ultimately include a strategic plan, capital improvement program, and monitoring program.

The Policy Statement is premised on the notion that "(i)n planning for tomorrow, Caltrain needs to shift (its predominate) access mode of transportation away from auto to sustainable options." Toward that end, it identifies "System-wide Access Priorities" similar to the "access hierarchy" used by BART:

1. Walk
2. Transit
3. Bike
4. Auto

BART's access hierarchy, contained in its "Station Access Guidelines," differs in that "auto" is divided into two modes, with "pick-up/drop-off" prioritized over "vehicle parking."

As shown in Figure 17, the Caltrain policy also includes a station typology identifying four types of stations with distinct land use, service and access contexts. While it does not classify existing stations, Fourth & King might be assumed to be a "Transit Center," a category described as "stations ... located in high-employment density areas with high Caltrain service levels and strong transit feeder service." However, Transit Centers are further described as stations where "the primary access modes are auto and transit. ... The parking lot is full or near full." As indicated in the previous section ("Existing Infrastructure, Services and Travel Demand") there is no station parking lot at Fourth & King, and only a fraction of trips to and from the station are made by private vehicle. For this reason, the access hierarchy identified for "Intermodal Connectivity" stations with "strong intermodal connections to light rail, rapid rail or bus" might be more appropriate for Fourth and King; Caltrain's adopted access priorities for the Intermodal Connectivity stations are as follows, (in order of priority): transit, walking, and bicycling.

The policy statement also lists a number of access strategies including both capital improvements (e.g., traffic calming to benefit pedestrians) as well as programmatic solutions (e.g., shared parking).

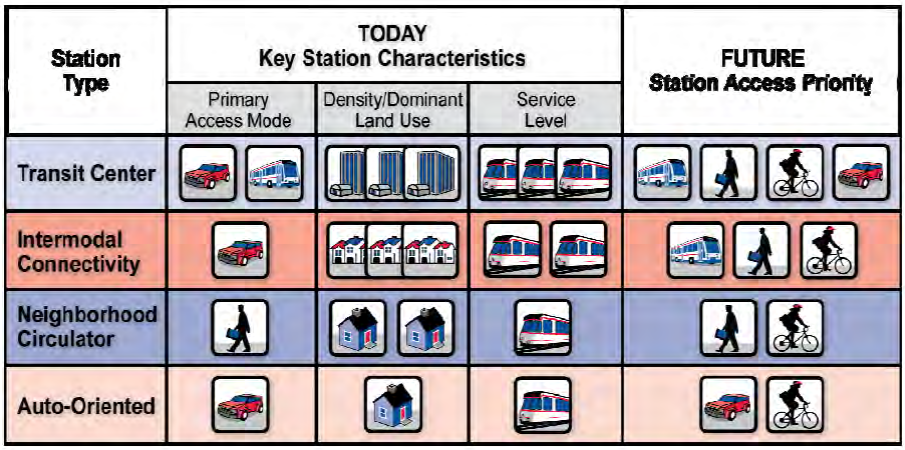


Figure 19: Average Numbers of Weekday Boardings at Major Muni Stops Adjacent to Fourth & King Station

Source: Caltrain Comprehensive Access Program Policy Statement, 2010

Off-Street Parking Policies

Off-street parking policies in the station area are generally more restrictive than those in place in other San Francisco neighborhoods, where residential developments are generally required to provide at least one parking space per unit. Station-area policies may be summarily described as follows:

- In Eastern SOMA and in Showplace Square, parking regulations recently implemented through the Eastern Neighborhoods process include parking maximums for residential (.25 spaces per unit by right, with conditional allowances of up to 1 space per 2-bedroom or larger unit) and office (up to 7 percent of gross floor area) developments. Residential developers are also required to "unbundle" parking, or sell or lease spaces separately from residential units.

- In Mission Bay, parking maximums exist for residential (one space per unit), retail (one space per 500 square feet for developments up to 20,000 square feet, with different standards for larger developments and bars and restaurants), hotel (one space per 16 rooms) and theater developments.

Additionally, the San Francisco General Plan includes the following objective: "efficiently manage the supply of parking at employment centers throughout the city." Both the aforementioned Sfpark program and the recently completed SFCTA On-Street Parking Policy Study serve to reinforce the recent direction in city policy toward a strategy of robust management of parking supply and demand.

California High-Speed Rail Authority Parking Policy

According to the Bay Area to Central Valley HST Final Program EIR/EIS, "(i)t is the Authority's policy that parking for (high speed train) services at HST stations should, as appropriate, be provided at market rates (no free parking). The Authority would maximize application of TOD principles during the site-specific review of proposed station locations." The document further notes that:

> *With the addition of an HST station (at Fourth & King), increase in parking demand would [be estimated to] range from 2,000 to 3,000 spaces in the case of the Pacheco Pass alternatives and from 1,500 to 2,100 spaces in the case of the Altamont Pass alternatives. Because it is assumed that the private sector would respond to the demand at market rates and provide sufficient parking at or close to this location to accommodate the demand at this location, the V/C would be less than one. Basically, the assumption is that the HST riders have adequate parking if they pay $25 per day, the current market rate for the area.*

For this reason, the EIR/EIS states that no dedicated station parking is proposed at Fourth & King.

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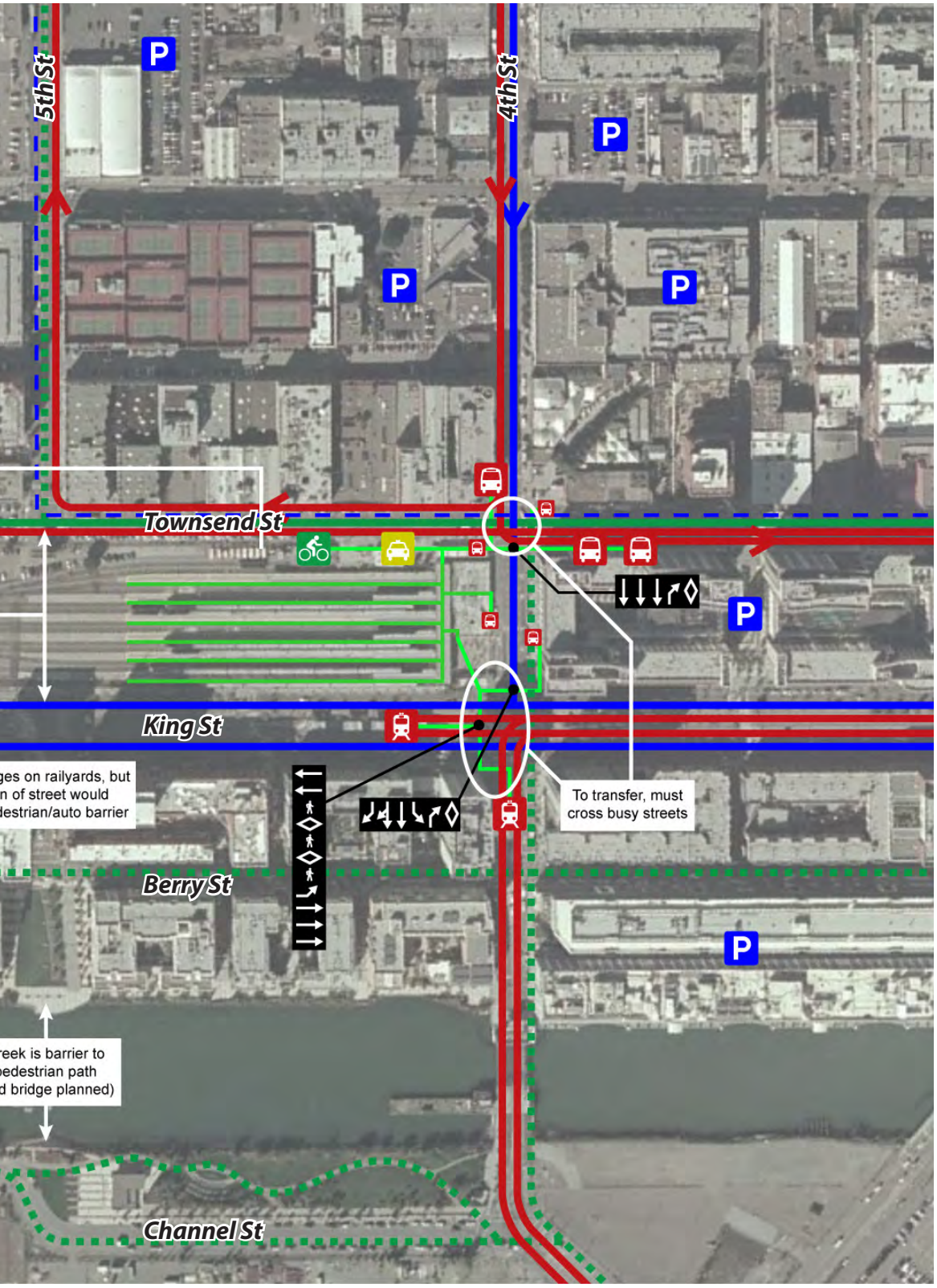
FIGURE 20: EXISTING ACCESS & CIRCULATION



Legend

Pedestrian Paths
- Internal Circulation
- Access to Transit Stops, Taxi Stand, Bikestation

Connecting Transit
- Light Rail Platform
- Major Bus Stop
- Minor Bus Stop
- Major Route

Bicycle Facilities
- Bikestation & Lockers
- Bike Route w/ Lanes/Path
- Bike Route w/o Lanes

Autos
- Off-Street Public Parking
- General Area of Meters/ SFpark Pilot Area
- Major Arterial
- Taxi Stand
- Thru Lane
- Transit Lane
- Turn Lane
- Ped Refuge
- Thru/Turn Lane

0.5 ac

0 50' 100' 200' 300'

B. PROPOSED CONNECTIVITY GOALS AND PRINCIPLES

In order to identify mobility-related issues requiring attention, and to help in developing potential solutions, a number of draft goals and principles potentially relevant to Fourth & King have been articulated by members of the project team. The draft goals and principles below do not constitute a comprehensive list; rather, they are designed to serve as a framework for further discussion, and to build upon the formal policies already in place, including the Caltrain Access Policy and CHSRA policies related to parking, as well as adopted policies by other agencies that might bear consideration, such as BART's Station Access Guidelines.

Broad Goals

- Meet the operational needs of all of the transit providers serving the Fourth & King station, including Caltrain, CHSRA, the Peninsula Rail Program (PRP), and Muni.
- Balance access by all modes, with priority emphasis on the most space-efficient, high-volume, and sustainable modes.
- Optimize air rights development of the site.
- Achieve functional and aesthetic excellence in the design of both the station and surrounding public realm.
- Reduce barriers to direct travel to and through the site.
- Rather than creating "separate" transit stations, seek to develop a single integrated, multimodal complex.

Detailed Principles

Connections

- Connecting paths should be as short, direct, clear and free of conflict as possible.
- The best connections are between points of access within direct sight of each other.
- Vertical distances are "longer" than equivalent horizontal distances. Level changes serve as both physical and psychological barriers.
- Paths that are rendered clear by design are preferable to paths made less unclear by signage.

Access and Circulation

- Pedestrian, bicycle and transit paths to and from the station should be as direct and free of conflict as possible.
- Pedestrian and bicycle paths (including pedestrian paths from parking spaces) should feel inviting and secure.
- To the extent possible, internal circulation should allow for travel through the station.
- Consider paths to the station from both near (neighborhood) and far (e.g., how will connections be made from BART?).
- Accommodate traffic as necessary on adjacent streets, but calmly: traffic should flow, but slowly.

Allocation, Prioritization, and Design of Space

- In prioritizing use of adjacent space, apply Caltrain access hierarchy – walk, transit, bike, auto – and consider slightly more refined BART hierarchy of walk, transit, bike, pick-up/drop-off, and parking.
- In locating transit stops, try to prioritize on the basis of demand: the higher-volume the stop, the closer it should be to station platforms.
- Transit stops should be sited in such a way so as to allow direct routing.
- Pick-up/drop-off and taxi zones should be sited and designed so as to avoid conflicts with transit vehicles and pedestrian paths to and from transit stops.

Amenity and Wayfinding

- All transit waiting areas should offer shelter, seating, and information.
- A full-service bikestation with attendant parking should be prominently located, and provision should be made for its eventual expansion.
- All bicycle parking should be secure, in well-lit areas in view of station agents and others.
- Real-time information regarding transit connections should be prominently displayed at all decision points.
- Information should be "agency-neutral" (e.g., "Next train for Downtown San Francisco in 5 minutes").

Parking

- Make the most efficient use of existing parking supply, including seeking out shared, leased, valet or other creative parking solutions that do not require additional supply.
- If and when additional parking supply is added, it should not displace higher-value uses adjacent to the station.
- Prioritize parking spaces for different categories of users (carpool, motorcycle, carshare, accessible/disabled).
- All public parking should be priced at market rates and/or regulated to discourage all-day or multi-day long-term parking.

C. KEY ISSUES AND OPPORTUNITIES

Two preliminary concept designs for the future Fourth & King/Fourth & Townsend station complex have been developed thus far: one in which all platforms/tracks are located underground and one in which some platforms/tracks are underground but some remain at grade. We believe that the key issues opportunities identified in this section are largely independent of any particular design concepts are ultimately determined to be most feasible by the project team.

The list of issues and conceptual solutions that follows is not a comprehensive listing. Rather, it focuses on three general areas that the project team has identified as being of particular importance if station access and circulation is to be optimized. These are:

- Intermodal connections between high-speed rail/Caltrain and Muni Metro must be made as seamless as possible.
- Pedestrian access to the subway station and paths across the site must be made as direct and inviting as possible.
- Parking supply must be managed to maximize access by all modes, limit capital costs and preserve valuable station-area space for higher uses.

Muni Metro Intermodal Connections

N Judah Platform

While access to and from the existing N-Judah platform is not as problematic as access to and from the T-Third Street platform, it still requires a crossing of a busy street with many right-turning vehicles across the King Street crosswalk. There are several preliminary options for consideration.

Traffic calming.

Additional "traffic-calming" of King Street and implementation of pedestrian-priority treatments like raised crosswalks.

Pedestrian bridge.

A pedestrian bridge could be a means for connecting pedestrians from a mezzanine level of the Caltrain station over King Street and down onto the N Judah platform. While such a bridge might be attractive to Caltrain and high-speed rail passengers arriving at grade, who would have to ascend only one level to use it, a bridge seems impractical given the physical constraints of the existing platform and unlikely to succeed in achieving its stated goal, as given the effort required for those arriving by Muni Metro to ascend to the bridge, then descend to the platform level, many if not most would still likely cross at grade.

Pedestrian tunnel

Conversely, if the station complex were located entirely underground, a pedestrian tunnel under King Street from the concourse level might be an alternative.

Depressing King Street through the Fourth Street intersection.

Depressing all auto lanes on King Street below grade would be costly but would likely be the best option for improving intermodal connectivity and pedestrian comfort. It should be noted that this idea is entirely conceptual and has not been analyzed further than this preliminary feasibility study. It is however recognized that there almost certainly is going to be unavoidable negative impacts associated with road trenching (e.g. the trenches need to stretch back for hundreds of feet in each direction from the intersection and would affect adjacent land uses and circulation).

This option would provide long-term benefits to all modes, including improved transit operations (due to reduced waiting time through multiple signal phases) and improved vehicle throughput, on Fourth Street. Vehicle turning movements onto King from Fourth (both directions) would not be possible, but the at-grade intersections of King with Third and Fifth (each approximately 800 feet away) would remain. King Street could remain below grade for the maximum distance possible (while still allowing for the transition to the above-grade 280 ramps) and this would possible free up additional publicly-owned space on the south of the station site for an at-grade pedestrian-oriented plaza or park surrounding the N Judah boarding platforms.

Additional analysis would need to be conducted to determine the feasibility of this option as there are some very complex issues involved that would need to be examined further. The basic idea of grade-separating the freeway-bound traffic from transit/pedestrians should be examined further.

Additional analysis would be necessary to determine the ultimate feasibility and relative merits of each of these preliminary concepts.

T Third Platform

While connections for to the N Judah platform are challenging, they are even more difficult to the T Third platform. There are several preliminary options for consideration.

Traffic calming.

If this platform were to remain in its present location, pedestrian access could be significantly improved. This could be achieved by additional "traffic-calming" of both Fourth and King Streets and implementation of pedestrian-priority treatments like raised crosswalks.

Relocate platform north of Fourth Street between King and Townsend.

The existing Muni Metro T-Third Street platform on Fourth south of King Street is not currently proposed to be relocated as part of the Central Subway project. While design modifications would be necessary to incorporate a platform north of King, and while there would be impacts associated with any design that did so, we believe that failure to relocate the platform as part of the Fourth and King station design could represent a significant missed opportunity. The current arrangement is not just inconvenient but potentially unsafe, and is inconsistent with several of the draft principles elaborated in this document, including the broad goal of developing "a single integrated, multimodal complex." (The pedestrian path between the existing Muni Metro platforms and proposed Caltrain platforms two levels below Townsend Street would be even more problematic, as the Caltrain platforms would be several hundred feet farther away than the existing platforms, and pedestrians would be required to ascend or descend two levels.) A number of conceptual options could be considered to remedy this situation:

- *Center alignment.* Relocating the platform to center of Fourth Street and retaining a reduced number of auto lanes might be feasible.

- *Curb alignment.* If it were not possible to reduce auto capacity on Fourth between King and Townsend, then a suggestion could be to locate the T Third platform on the west side of Fourth, immediately in front of the station and partially or completely on the existing station site. This option could provide some additional right-of-way capacity for both bus transit and autos. The T Third/Central Subway tracks, however, would then have to transition from their current center-running alignment to and from the west side of Fourth street, which could introduce new points of conflicts with traffic or require complicated signal phasing. In addition, this option could result in the need to push the station footprint southwards.

Convert Fourth street between King and Townsend into a transit-only street.

Even more ideal from a transit operations and pedestrian safety perspective would be to close this block of Fourth Street entirely to private vehicles so that it can serve as a "transit-only street" configuration for both rail and bus transit vehicles (similar to the concept for Mission Street in front of the new Transit Center). If this scheme were combined with taking King Street below grade at this intersection (as described above), the entire intersection of Fourth and King – which is the major intermodal transit node for this area and the heart of the North Mission Bay neighborhood - could be a pedestrianized transit mall: pedestrians and rail/bus transit would operate on the surface with through auto traffic either prohibited (Fourth Street) or below grade (King Street).

Converting Fourth Street for this one block to a transit-only street would have obvious implications for auto circulation and access. The proposed configuration of Fourth Street under the plan for the Central Subway calls for Fourth between King and Townsend to provide one northbound and three southbound travel lanes. However, it is not clear that this much capacity is necessary. Relatively convenient and high-capacity alternatives to the access that would be provided by the southbound lanes are available, including:

- Sixth Street for vehicles attempting to access Interstate 280.

- Third Street for vehicles attempting to access Mission Bay South (Third is currently a two-way street, with two lanes in each direction, as far north as King, where it becomes one-way northbound).

Additional analysis will be necessary to determine if vehicle volumes currently using Fourth Street could be feasibly accommodated on alternate routes. If Fourth between King and Townsend were converted to a transit-only street, placement of the T Third platform in the center of the existing Fourth Street right-of-way might be the preferable alignment, as this location might be most easily accommodated within existing plans for the Central Subway (or, at least, the general alignment of the tracks would not have to be significantly altered.)

Muni rail loop on the Caltrain station site.

Alternately, the T-Third Street alignment (and potentially N Judah alignment) could be significantly reconfigured. For example a rail loop could be considered through the existing station site, to bring the T Third and potentially N Judah onto the station site itself. Such a configuration would obviously have major implications for design of the entire station complex. It should be possible to design a loop to not interfere with air rights development. However, if the railyards were to remain at grade, a loop extending some distance onto the existing station site could conflict with Caltrain and High-Speed Rail alignments and operational requirements.

Additional analysis would be necessary to determine the ultimate feasibility and relative merits of each of these preliminary concepts.

Pedestrian Access to the Subway Station and Paths Across the Site

In addition to the pedestrian paths between Caltrain, High Speed Rail and Muni Metro platforms, there are a few other pedestrian pathways of special significance. These include paths between the Townsend Street subway station and the surrounding area (including both the neighborhood to the north and bus stops to the east) and the pedestrian axis along Fifth Street.

In general, we concur with the recommendations contained in the November 13, 2009 "Draft Townsend Street and Station Design Guidelines and Recommendations" memorandum from the Planning Department to TJPA (included as Appendix C), including the ideas for improving the pedestrian, bicycle and transit environments along Townsend Street. Most of all, however, we would endorse the notion of subway station entrances/exits along Townsend both at Fifth Street and east of Fourth Street, in addition to entrances just west of Fourth. The former would greatly improve not just access to and from the neighborhood to the north, but internal circulation and capacity, as all subway station users would not be "funneled" through one of its ends. The latter, meanwhile, would provide an important connection between the subway station and the Muni Lines 30 and 45 stops, which even after completion of the Central Subway are likely to remain relatively busy and important (as these buses will continue to provide local service to stops every few blocks).

The other notable potential pedestrian pathway is an extension of the Fifth Street terminus at Townsend across the railyards to King St. This has already been identified as a major opportunity associated with redesign and potential development of the station site. We would add that for any such closure of this gap to be effective, the negative impacts of grade changes must be minimized. If the railyards are to remain at-grade, this will present a significant design challenge, as the "deck" over the yards could potentially be 50 feet or more above grade. One possible solution is to require an atrium be provided for any development at Townsend at Fifth with escalators leading from grade to the "mezzanine" level providing access to the pathway and potentially observation/seating areas. We also believe that for a path 50 feet above grade to be attractive and effective, it must be a) perceived as a convenient and secure access/connectivity improvement for neighborhood residents and employees, b) an alluring and memorable placemaking/wayfinding element, and c) and part of the "essential experience" for station users (something to check out for passengers with time on their hands before their train departs and something to distract and amuse passengers waiting on platforms for their trains). In other words, this pedestrian bridge must simultaneously function as a shortcut, a landmark, and a diversion.

Parking

It should be emphasized that both previous CHSRA and Caltrain planning documents and policy statements would seem to suggest that no new parking should be built at the Fourth and King station.

CHSRA's approach to provision of patron parking at this station is that the private sector will "respond to the [parking] demand at market rates and provide sufficient parking at or close to this location," ensuring that an appropriate amount of auto access is available without requiring public subsidy. The SFpark program will soon extend these demand-responsive parking management principles to public parking in the station vicinity.

Our preliminary analysis suggests that there is a significant amount of on- and off-street parking in the station vicinity. If additional station parking capacity is deemed necessary at some future point, all feasible alternatives to the construction of new supply should be explored. In other words, the benefits of greater access to the station for automobiles must be compared to traffic impacts, financial costs on a per-trip-served basis, and economic development opportunity costs associated with using high-value land near a major transit node for a relatively low-value use.

Parking policies for development at the site, meanwhile, would of course be tailored to the development program. However, a few general principles can be said to apply:

- Any parking for new development at the site should be provided in accordance with parking standards for C-3 zoning, the Transbay Transit Center, and other transit-oriented districts in San Francisco. These include: no minimum parking requirements, low parking maximums, unbundled parking requirements, and parking efficiency strategies allowed by right (e.g. mechanical parking stackers, valet/tandem, and off-site parking).

- The development program for the site will respond to market demands; however, to the extent practical, land use decisions should also take into account the transportation needs of the station and the uses themselves. In practice, this would mean development likely to generate higher transit ridership, including ridership on high-speed rail. It would also mean a mixture of uses with "complementary" parking demand, such as office (for which demand exists during the day), and restaurants (for which demand is highest in the evening). A shared parking strategy would reduce the footprint required for parking at the site, leaving more space for higher uses.

- Finally, on-site parking must be developed in the context of and in tandem with a robust program of transportation demand management. Such a program could consist of a flexible "menu" of options, but would need to include performance standards.

Once a development program has been finalized, a parking demand study should be conducted tailored to that program.

Feasible, cost-effective alternatives to providing more parking capacity without building additional parking typically fall under two categories:

Parking efficiency strategies could include:

- Coordination of parking pricing and real-time availability signage for existing parking facilities.
- Conversion of existing independently-accessible parking facilities to stacked/tandem/valet operations.
- Lease/share opportunities at private garages, including garages in Mission Bay and other locations in the station area
- A single coordinated valet parking operator for the station area and/or a wider area (e.g. SoMa or the "waterfront visitor corridor" from Fisherman's Wharf, the ballpark area, and the Fourth and King station).
- A branded and free/low-cost shuttle to supplement fixed-route transit and circulate between satellite parking facilities and the station site.

Parking demand reduction strategies could include:

- Formation of a station area Transportation Management Area (TMA) to publicize and incentivize use of non-auto modes to help reduce peak parking loads (similar to that of Mission Bay).
- Requiring/incentivizing subsidized transit passes for residents and employees of new station area development.
- Requiring/incentivizing subsidized carsharing memberships for residents and employees of new station area development.
- Incentivizing use of taxis to and from the station area, including participation in the CCSF Department of the Environment's Emergency Ride Home Program.
- Pursuing implementation of a bikesharing pilot program in coordination with pilot in Transit Center district.
- Coordinate with pedi-cab vendors to improve service to station and provide dedicated pick-up and drop-off space for pedi-cabs as part of new station design.
- Providing adequate bike parking at the new station and requiring/incentivizing changing/shower rooms to be provided in new commercial development in the station area.
- One of the main reasons that some travelers rent cars and find transit inconvenient is that they are carrying luggage. To reduce parking and traffic impacts in the station area and improve the attractiveness of feeder transit services, evaluate the feasibility of remote bag check services for high-speed rail travelers. A private vendor could operate in response to city encouragement and or in-kind support (marketing, etc.). Locations could include Fisherman's Wharf, Union Square, and Hallidie Plaza (at the Convention and Visitor's Bureau Tourist Information Center), and Powell and Embarcadero BART stations (for business travelers).

Wayfinding

As part of its Regional Transit Hub Performance Review Project, the Metropolitan Transportation Commission (MTC) in 2006 issued dozens of recommendations to improve signage at Fourth & King. While the wayfinding needs for the existing station are relatively straightforward, the wayfinding needs for the future Fourth & King/Fourth & Townsend station and surrounding station area (including adjacent transit stops, parking for both autos and bikes, and pick/up drop-off and taxi zones) will be more complicated due to the increase in the station footprint size, potential introduction of one or more grade changes for transferring passengers, and the overall increase in passengers but especially the likely increase in occasional (i.e. non-commuters) travelers who are unfamiliar with the station/site and connecting transit services.

For this reason, a brief discussion of key transportation wayfinding principles is appropriate. General wayfinding principles include:

- A fully developed wayfinding strategy should be an integral component of the architectural and urban design process. "Ad-hoc" signage tends to be both ineffective and unattractive.

- "Wayfinding by design" using architectural/placemaking elements is superior to even the best-conceived signage strategy. For example, paths should be as clear and direct as possible, reflecting "desire lines." However, some signage will inevitably be necessary.

- In order to serve the needs of all users, wayfinding systems should address both travelers by different modes as well as different demographics (including first-time visitors as well as regular users who may not be familiar with all elements of a site, and including non-English speakers and users with physical disabilities, including the visually and audibly impaired).

- In order for signage to be simple and memorable, it should convey only as much information as is necessary – but taken as a whole, signs along a path should convey all information that is essential to completing one's journey using that path (including directions, identities of transit operators, departure times and fares, among other elements).

- Signs directing travelers to transit platforms or stops should indicate ultimate destinations, and not just operators, and to the extent practical, real-time arrival time information should be provided.

- A wayfinding strategy should encompass not just a station (or other building) and its immediate area, but the "travel shed" around the site. There should be area maps for pedestrians on sidewalk kiosks, and signs along roadways extending some distance from the site (including signs directing motorists to available parking).

- Navigational signage should be sited so as to be clearly visible in advance of all "decision points." Signs should be scaled to speed of travel (larger signs along roadways; smaller signs for pedestrians) and should not be too high or too low.

- Signs should be legible, featuring high-contrast color schemes, large, simple typefaces (generally sans-serif), and universal icons (standard icons developed by the U.S. Department of Transportation and the American Institute of Graphic Arts can be found here: http://www.aiga.org/content.cfm/symbol-signs).

- Colors, fonts, iconography and branding (including operator logos) should all be consistent.

- Signs should both complement and be distinct from architectural elements and other nearby signage.

Wayfinding principles relevant to Fourth & King should be more fully explored as part of the design process for the future station. At this point in the development process, it is most important simply to bear in mind the importance of developing a comprehensive wayfinding strategy. As preferred rail alignments and station siting/design concepts emerge from the design process, a station wayfinding strategy can be articulated in greater detail.

5. NEXT STEPS

This report was developed by the AECOM team with guidance from The City of San Francisco Planning Department, and input from Transbay Joint Powers Authority, San Francisco Redevelopment Agency, and Peninsula Joint Powers Board.

For this effort the AECOM team of architects, urban designers and planners, in addition to Nelson Nygaard and LTK Engineering, reviewed various technical background documents and also had the opportunity to participate in various group discussions, charettes and a site visit.

Building from this existing conditions and opportunities and constraints analysis; the team will proceed with several tasks with the goal of analyzing the feasibility of air rights development, by exploring potential development scenarios for the site.

The team will seek to develop and refine three different scenarios in 3-dimensional format and will assess each scenario from the following perspectives:

- Urban Design (massing);
- Architecture (vertical circulation/ structure);
- Railroad/ circulation; and
- Economic feasibility.

The results of each of these assessments will contribute to the overall feasibility of each development scenario.

Furthermore, the final "Development Scenarios " report will define general design characteristics and parameters and will discuss possible implications of these scenarios including development opportunities and challenges including cost. The long range intent is to bracket general project descriptions for the development scenarios, with the understanding that this is a program, rather than a project level discussion.

The feasibility study and Development Scenarios Report will produce policies, conceptual site plans, and possible implementation mechanisms for air-rights development of the Fourth/King Street station and railyards, particularly given the need to reconfigure the facilities to accommodate the Caltrain Downtown Extension and California High-Speed Rail.

Many issues will be considered including economics, circulation, and multi-modal issues (i.e. pedestrian access, trains, Muni rail, buses, train station), land use and urban design .The City may choose to use the concepts explored to prepare , and refine with public participation, alternatives for a program level CEQA analysis.

The remaining tasks to be undertaken in achieving this goal include:

1. Develop site concepts and development capacity;
2. Examine potential modifications to railyards configuration; and
3. Prepare Draft and Final Development Scenarios Report.

These tasks will be completed by the greater AECOM team including also Robin Chiang and Associates, Economic & Planning Systems (EPS), KCA Engineers, Nelson Nygaard and LTK Engineering. The goal is to have the Development Scenarios Report finalized by January, 2011.

APPENDICES

APPENDIX A

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www.epsys.com

Introduction and Purpose

The San Francisco Planning Department retained Economic & Planning Systems (EPS) as part of the AECOM consulting team, to conduct an overview of market conditions and a feasibility analysis for potential development on the railyards at 4th and King Streets in San Francisco. The 19.1-acre site is an active railyard where trains terminate in San Francisco and carry passengers from the City south to destinations on the Peninsula, San Jose, and Gilroy. A portion of the site contains a limited about of vehicle storage.

California voters passed a $9.95 billion bond in 2008 supporting the development of a high-speed rail line linking the northern and southern parts of the state. The northern terminus of the planned coastal route is in downtown San Francisco. San Francisco is undertaking a plan for intensified development around the last stop, called the Transbay Transit Center (Transit Center), in downtown San Francisco. Caltrain plans to extend trains from the 4th and King station to the Transit Center. The 4th and King site will become a secondary high-speed rail station in San Francisco, allowing more trains to stop in the City.

This memorandum explores the extent to which office or hotel uses with ground floor retail may be viable development types, built above the 4th and King site. Specifically, the Planning Department envisions development on the site and requested a high-level, preliminary analysis of the market value of potential office or hotel development to better understand the marketability and feasibility of an air-rights lease.

Historic and recent market values of office and hotel in San Francisco's Mission Bay, South Beach, and South of Market sub-areas are evaluated in the memorandum. Based on the site's specific locational attributes and the results of the market analysis, the likely market value of the site is estimated under hotel and office development scenarios. Comparing each building's market value to its respective development costs results in the "residual land value" of the site to a developer. This residual land value then dictates the potential revenue to the current property owner from an air-rights lease.

The results of this preliminary feasibility assessment will be used as inputs to the AECOM Team's development programming alternatives for the site, with iterative refinements to be conducted in the next few months. Please note that the market values for the buildings and the air rights discussed herein reflect EPS's assumption that development could occur in a reasonably standard process once an air rights "pad" has been established through other investment linked to the transportation improvements and infrastructure. The costs of creating that air rights "pad" have not been estimated in this analysis, and fall outside of EPS's scope or work and expertise.

Summary of Findings

The 4th and King railyards site offers a significant opportunity for development, with some major constraints.

- The Site is a rare development opportunity, with three contiguous blocks comprising over 19 acres near a major attraction (AT&T Park) in San Francisco—an historically strong business and tourism location. The site also offers direct access via current and future transit service, as well as competitive proximity to the regional freeway system.
- The real estate market, when it was stronger, was responding to opportunities in the ballpark/South Beach area for both commercial and residential development. New urban-density housing, office, and retail space has been developed in the vicinity, which has undergone a major transformation in the past two decades.
- The Site will have to compete with other major development opportunities in Mission Bay, Seawall Lot 337, Pier 70, and the Transit Center District. These other areas are slated for major redevelopment of a variety of uses, and also offer certain advantages such as transit access, waterfront or skyline views.
- The major constraints on the site, as compared with other potential development areas, are the physical complexity of development in air rights above a major transportation hub and the expectation that such development will occur on a ground lease basis.
- Despite these constraints, the development opportunity at 4th and King should attract significant interest from developers nationally and internationally.

The office market is currently weak, but employment in the Bay Area and San Francisco is expected to increase over the next 20 years, generating demand for new office space.

- The 4th and King site is near the SoMa and Mission Bay/China Basin office submarkets, where competitive lease rates have been slightly below average for the San Francisco overall. Still, studies from around the country have indicated that proximity to major transit service

translates to premium commercial property values, and the 4th and King site can capitalize on those advantages.

- When the office market recovers and high speed rail is closer to reality, office space developed on the site should command premium rents within its market area (SoMa and Mission Bay/China Basin).
- EPS projects that office development can be feasible (i.e., generate positive residual land values) at anywhere from 50- to 215-foot development heights. This result assumes that the development will not provide any parking on-site, and that impact fees associated with the project are at or below the lower end of what is currently applicable in and around the area.

Future high speed rail at the Site, which will bring thousands of passengers each day into San Francisco from around the State, makes the Site an attractive location for a hotel use.

- San Francisco is an international tourism destination, as well as a large employment center attracting significant business travel. While the current economic recession has dampened daily room rates, comparable hotels in San Francisco that EPS reviewed were achieving healthy occupancy rates.
- A hotel use at the site would need to compete with other existing hotels nearer the central travel attractions—the Financial District, the Convention Center, Union Square, and similar areas. The 4th and King hotel eventually may also have to compete with the planned 500-room hotel development at Mission Bay, on a parcel just a few blocks from the 4th and King site.
- Even with modest room rates reflecting its competitive position, a select-services hotel at the 4th and King site may generate substantial residual value. At the most modest density tested, the residual value generated from a select-services hotel use appears to exceed the values achieved with office development of any height (on a per building square foot basis), though the overall value generated will be contingent on the densities achieved. Taller hotels are expected to generate less value per square foot, because of a major increase in construction costs associated with taller hotel buildings.

Retail space included as a ground floor element of the development program appears to be financially feasible.

- While the national retail market has been severely impacted by the economic downturn and the nature and depth of its turnaround is still unclear, lease rates and occupancy rates in San Francisco have not experienced the sharp downturn that has occurred in other, more suburban markets.
- Lease rates for retail space along King Street commands relatively high rents, sufficient to justify construction costs. As such, some amount of retail should be assumed as part of the development program for 4th and King.
- Retail space which may only be accessed by scaling stairs or entering an enclosed rail station is unlikely to be competitive along King Street, where other retail locations are on the ground floor.

Site and Context

The Caltrain station and railyards at 4th and King site (Site) is a 19.1-acre, rectangular site located just north of San Francisco's Mission Bay neighborhood and a few blocks from the San Francisco Giants baseball park.

Site Location

The 4th and King site is located in San Francisco's Mission Bay/South Beach neighborhood, an area which has undergone tremendous change over the last 20 years. Beginning in 1989 with the development of hundreds of new residential units constructed along The Embarcadero (spurred in part by the San Francisco Redevelopment Agency-SFRA), the South Beach neighborhood began a transformation from an area of dilapidated warehouses, storage, and other abandoned or underutilized buildings into a high-density, mixed-use area. The opening of the San Francisco Giants baseball park in 2000 and the development of new high-rise office continued the transformation and helped support the market for restaurants, bars, and other retail like grocery, pharmacy, and book stores.

The Mission Bay neighborhood, which is also an SFRA Project Area, is adjacent to the South Beach area. Mission Bay is in the midst of significant land use intensification and conversion. An old railyards site, the 303-acre area began development in 1999 and is now the location of more than 3,100 housing units, about 1.2 million square feet of biotechnology and office space, and the rapidly developing Mission Bay campus for the University of California, San Francisco (UCSF). UCSF's new campus site contains about 43 acres of instruction, research, and other student and support space and an additional 12-acre location where a new 550-bed hospital is being planned. At maximum buildout, the Mission Bay neighborhood will have 6,000 residential units, 4.4 million square feet of biotech/office space, 2.65 million square feet at the UCSF campus, a new UCSF-hospital, and a 500-room hotel, along with a variety of open and community spaces.

Site Transit Access

The current transit access to the site is very good and will be further improved with the development of high-speed rail. The site is directly served or within walking distance of a variety of public transit options including:

- Caltrain, providing access to the Peninsula and San Jose
- Third Street T and N Judah light rail lines which provide access to the Financial District, the Central Waterfront and points further south, and the Ferry Building where riders can transfer to ferries to the East and North Bay
- A variety of bus lines including the 10 Townsend, 19 Polk, 30 Stockton, 45 Union-Stockton, 47 Van Ness

In addition, the site is less than a quarter-mile from the Interstate 80 entrance, providing direct vehicle access to the Bay Bridge and Highway 101, and blocks from Interstate 280.

Adjacent Uses

The 4th and King Caltrain Station provides a meeting place for the broad range of uses that surround the Site. **Figure 1** illustrates the areas around the Site. The Site is bordered by a variety of uses that contrast sharply with one another—from brand new vertical mixed-use mid-rise buildings to occupied low-rise warehouse space and vacant lots. This disparate set of uses reflects the character of the site—a location which is at the crossroads with new sections of the South Beach/Ballpark neighborhood meeting portions of Mission Bay that are yet to be redeveloped.

Figure 1. Uses Adjacent to 4th and King Site, Areas A, B, C Indicated

- **Area (A).** Outside of the Caltrain station are a variety of commuter conveniences such as drugstores, grocery stores, transfers to other transit systems, and coffee shops. These uses are housed inside newly developed low-rise, mixed-use buildings that occupy most of the space between 4th Street and AT&T Park. Along King Street in the space between 4th Street and the Interstate 280 entrance ramp are much taller—up to 15-stories—recently developed residential buildings.

- **Area (B).** Between the freeway, the train tracks, and Golden Gate Disposal & Recycling Company are two affordable housing complexes to the south side of the tracks. This area poses a difficult environment with missing sidewalks for pedestrians. The low-density nature

of this subarea and sparsely populated streets have much to do with poor access to the area—there is only one crosswalk that allows people to cross the train tracks and the highway cuts off pedestrian access to King Street.

- **Area (C).** The three-block stretch of Townsend Street that borders the train tracks is largely low-density warehouse space. Some of these buildings have historic significance and are unlikely to be redeveloped into higher density while others may only remain as low-density uses until the area as a whole is redeveloped.

Major Nearby Planning Efforts

While the area around the Site has changed significantly over the last two decades, several major planning efforts suggest that new development will continue to alter the area. In considering how the development community will view an opportunity at the Site, consideration must be given to surrounding areas that are likely to compete with the Site for private investment. (**Figure 2** illustrates the location of these sites in relation to the 4th/King site.

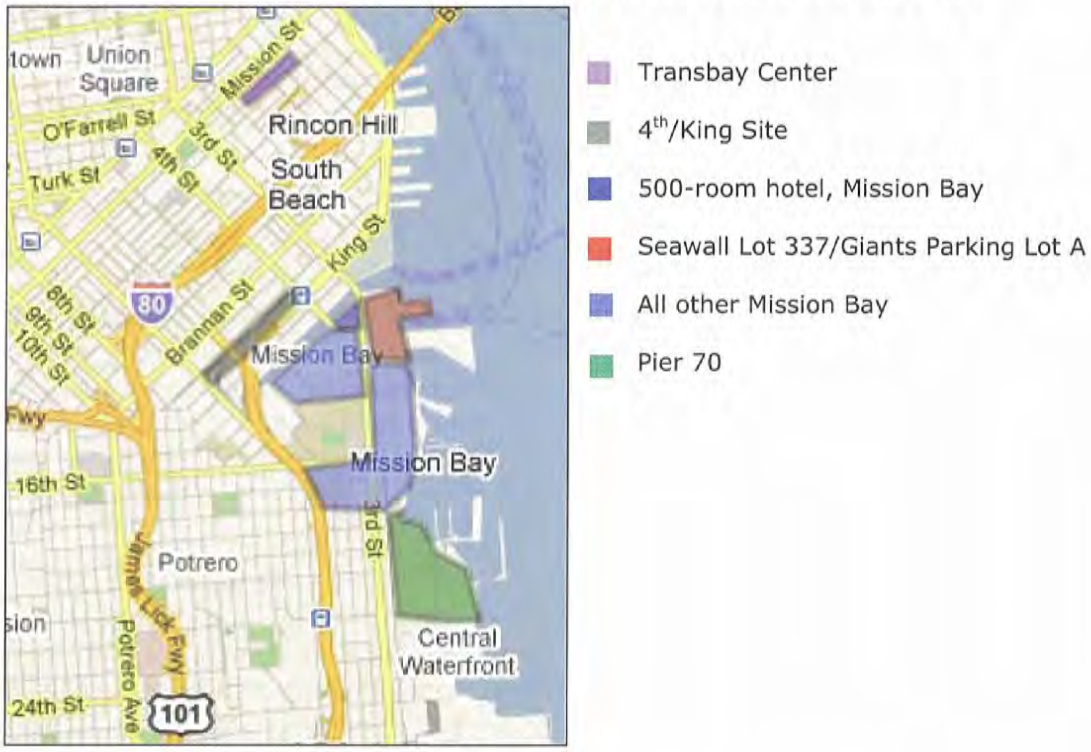
- **Mission Bay.** Development at Mission Bay began in 1999 and will likely continue for at least another ten to fifteen years. According to the maximum development program, just under 3,000 more residential units, 3.2 million square feet of office/biotech space, the new UCSF hospital and a 500-room hotel may be constructed. The future hotel site is designated on a triangular piece of land along 3rd and 4th Streets, adjacent to the channel.

- **Seawall Lot 337/Giants Parking Lot A.** The Port of San Francisco is currently engaged in negotiations with a development team to redevelop an underutilized parking lot and Pier 48 (also called Mission Rock). The 17-acre site may include up to 875 housing units, 1 million square feet of office, and almost 400,000 square feet of a mix of shops, restaurants, and exhibit/event space.

- **Pier 70.** The Port of San Francisco has recently published a Preferred Master Plan for the 65-acre site. It includes potential new development in the range of 3.0 million square feet of commercial space and about 720,000 square feet of adaptively reused historic building space. The next step in the redevelopment of this site is to publish a request for proposals or qualifications from developers.

- **Transbay Transit Center.** San Francisco Redevelopment Agency adopted the Transbay Redevelopment Plan in 2005. The plan includes capacity for 2,600 residential units, 3 million square feet of office, and 100,000 square feet of retail. Included in this development capacity program is a proposed Transit Tower atop the Transbay Transit Center where 11 transit systems will meet including AC Transit, Amtrak, BART, Caltrain, Golden Gate Transit, Greyhound, Muni, Samtrans, West CAT Lynx, Paratransit and future High Speed Rail.

Figure 2. Illustration of Major Planning Areas Relevant to the Site



Opportunities and Constraints

Based on a review of the site's location, adjacent uses, and plans for the areas around the site, the 4th and King location provides a significant development opportunity. The key opportunities are:

- **Favorable location.** The neighborhood around 4th and King has experienced a significant amount of public and private investment over the last two decades.
- **Site accessibility.** In addition to being near two freeways, the site is closely connected to downtown San Francisco and the Eastern Neighborhoods via light rail and to the Peninsula and South Bay via Caltrain. Most importantly this site will feature a high speed rail connection linking to locations throughout California.
- **Large and contiguous site is unique opportunity for San Francisco.** The Site is a regular shape and is of sufficient size to accommodate significant new development. Indeed, the site sums to the equivalent of three City blocks—a rare opportunity in a densely developed city like San Francisco.

The key constraints are:

- **Air rights development.** Development at the site is envisioned to take place within the air rights of the property. The physical construction of structures atop a major train station may limit developer and investor interest. However, the complexity associated with development at 4th and King may not be far more difficult than the challenges posed by development at nearby sites like Mission Rock, Pier 70, and the Transit Center.

- **Air rights lease terms.** The Planning Department has indicated that development at 4th and King would involve a leasing of air rights rather than a more standard fee simple land acquisition and development. This type of lease arrangement may limit the pool of potential developers and investors to those familiar and comfortable with similarly complex transactional arrangements.

Market Context

San Francisco Real Estate Market

San Francisco has a dynamic and diversified economic base, with substantial numbers of jobs in professional services, financial, hospitality, health and education, information, construction and public sectors. While many jobs in San Francisco are susceptible to the peaks and valleys of business cycles—financial services, information, professional services, and construction—others like health, education, and public services tend to remain more stable during turbulent economic conditions. San Francisco has also made efforts to diversify its economy further by encouraging firms in the biotechnology sector to locate in the City.

The City's real estate market parallels the trends in its economic base. As firms locate their functions and employees in San Francisco, high demand for space increases occupancy, lease rates and sale prices, and the need for new development. During poor economic times, these actions and reactions reverse, with firms consolidating their space to minimize costs and tenants seeking decreases in rent rates.

The global recession which began in December 2007 and officially ended in 2009 is expected to have lasting impacts on real estate development across the nation for many years. How each local market responds to the significant economic downturn will vary significantly, depending on the unique strengths and weaknesses of the local economy. An examination of San Francisco's recent economic trends provides some context for the current economic conditions.

Population and Housing Units

San Francisco's population grew by 104,200 residents between 1995 and 2010, an increase of 13.9 percent. The rest of the nine-county Bay Area over the same period grew by 17.3 percent. (see **Table 1**). While San Francisco's population grew at a *slower* rate than the rest of the Bay Area for the whole period, this disparity can be attributed in large part to the generally built-out nature of the City compared to suburban areas where developable land has been in greater supply.

Table 1. San Francisco and Bay Area Population, 1995-2010

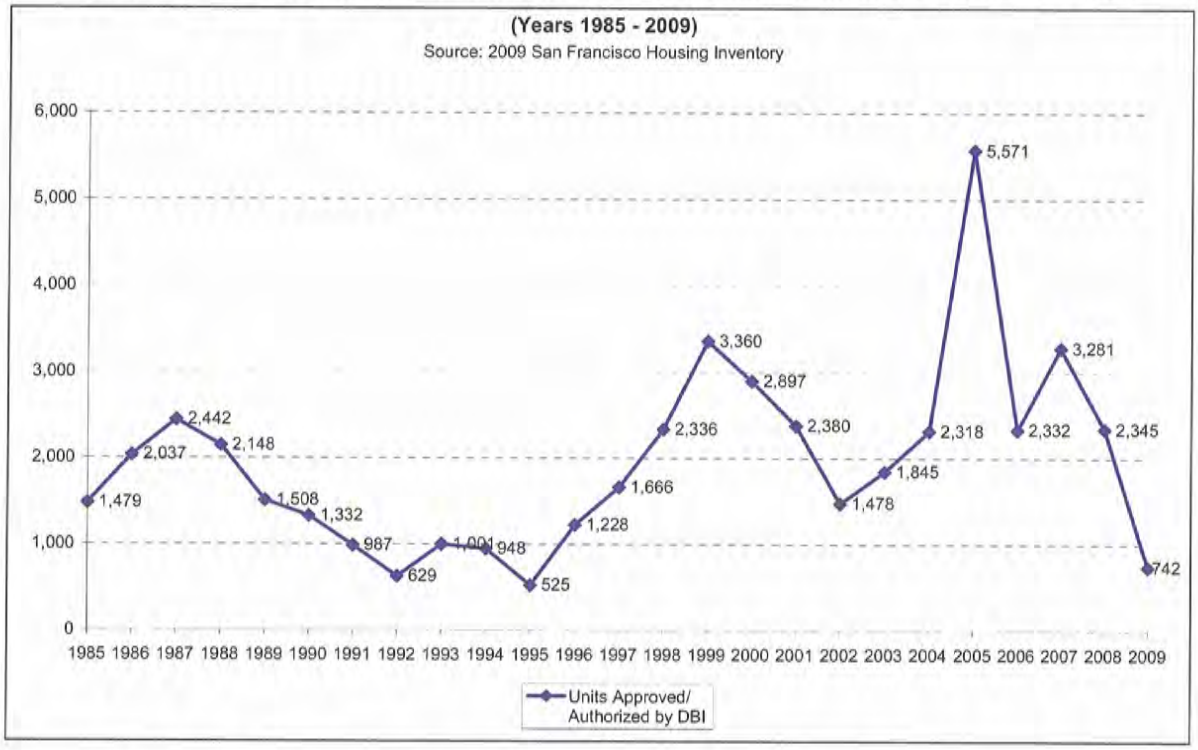
Year	San Francisco			Rest of Bay Area[1]			San Francisco,
	Population	# Change	% Change	Population	# Change	% Change	as a % of Bay Area
1995	751,899			5,630,062			11.8%
1996	760,000	8,101	1.1%	5,694,601	64,539	1.1%	11.8%
1997	778,000	18,000	2.4%	5,794,105	99,504	1.7%	11.8%
1998	790,000	12,000	1.5%	5,907,620	113,515	2.0%	11.8%
1999	791,000	1,000	0.1%	5,999,925	92,305	1.6%	11.6%
2000	776,733	(14,267)	-1.8%	6,007,615	7,690	0.1%	11.4%
2001	785,654	8,921	1.1%	6,085,791	78,176	1.3%	11.4%
2002	793,462	7,808	1.0%	6,148,720	62,929	1.0%	11.4%
2003	798,574	5,112	0.6%	6,190,038	41,318	0.7%	11.4%
2004	802,512	3,938	0.5%	6,228,561	38,523	0.6%	11.4%
2005	807,382	4,870	0.6%	6,266,530	37,969	0.6%	11.4%
2006	813,929	6,547	0.8%	6,309,671	43,141	0.7%	11.4%
2007	823,940	10,011	1.2%	6,370,528	60,857	1.0%	11.5%
2008	836,360	12,420	1.5%	6,451,932	81,404	1.3%	11.5%
2009	846,610	10,250	1.2%	6,531,568	79,636	1.2%	11.5%
2010	856,095	9,485	1.1%	6,603,763	72,195	1.1%	11.5%
Total Change 1995-2010		104,196	13.9%		973,701	17.3%	

[1] Includes San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin Counties.

Source: California Department of Finance, City/County Population and Housing Estimates, 2001-2010, Economic & Planning Systems

Population growth and housing unit development are closely linked—as new residents compete for a limited supply of units, the price of housing is driven upward, and housing developers typically respond by proposing and developing more housing units. **Figure 3** illustrates new housing permits issued in San Francisco between 1985 and 2009. As shown, the residential building permit activity in the past decade averaged around 2,400 units per year, roughly 50 percent higher than the average for the previous 15 years.

Figure 3. New Residential Units in San Francisco (building permits issued)



Jobs and Nonresidential Development

Reflecting the boom and bust economic cycle of internet and software companies in the late 1990s, San Francisco rapidly gained about 83,000 jobs between 1995 and 2000, before losing 89,000 jobs over the next five years (see **Table 2**). Comparing this loss to the experience of the rest of the Bay Area, San Francisco was hit much harder by the dot.com bust than the rest of the region generally. Overall during the past 20-year period, San Francisco lost over 10,000 jobs while the other eight counties in the Bay Area gained 280,000 jobs.

Looking forward, the Associated of Bay Area Governments (ABAG) projects job growth in San Francisco to add jobs steadily over the next 20 years, resulting in a net gain of over 140,000 jobs or nearly 25 percent over the 2010 employment figures. This is a slightly lower rate than that projected in the rest of the Bay Area through 2030. Still, San Francisco's substantial job growth will create demand for the development of new office space and other forms of workplaces.

Table 2. Jobs: San Francisco and Bay Area 1990-2030

Year	San Francisco			Rest of Bay Area[1]			San Francisco,
	Number of Jobs	# Change	% Change	Number of Jobs	# Change	% Change	as a % of Bay Area
1990	579,180			2,047,720			22.0%
1995	559,300	-19,880	-3.4%	2,108,790	41,190	1.6%	21.0%
2000	642,500	83,200	14.9%	2,468,460	442,870	16.6%	20.7%
2005	553,090	-89,410	-13.9%	2,343,560	-214,310	-6.9%	19.1%
2010	568,730	15,640	2.8%	2,338,380	10,460	0.4%	19.6%
New Jobs/(Job Loss) 1990-2010		**-10,450**	**-1.8%**		**280,210**	**10.7%**	
2015	606,540	37,810	6.6%	2,521,510	220,940	7.6%	19.4%
2020	647,190	40,650	6.7%	2,746,310	265,450	8.5%	19.1%
2025	694,830	47,640	7.4%	2,990,240	291,570	8.6%	18.9%
2030	748,100	53,270	7.7%	3,242,530	305,560	8.3%	18.7%
New Jobs/(Job Loss) 2015-2030		**141,560**	**23.3%**		**862,580**	**27.6%**	

[1] Includes San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin Counties.
Source: Association of Bay Area Governments, Projections 2009 Economic & Planning Systems

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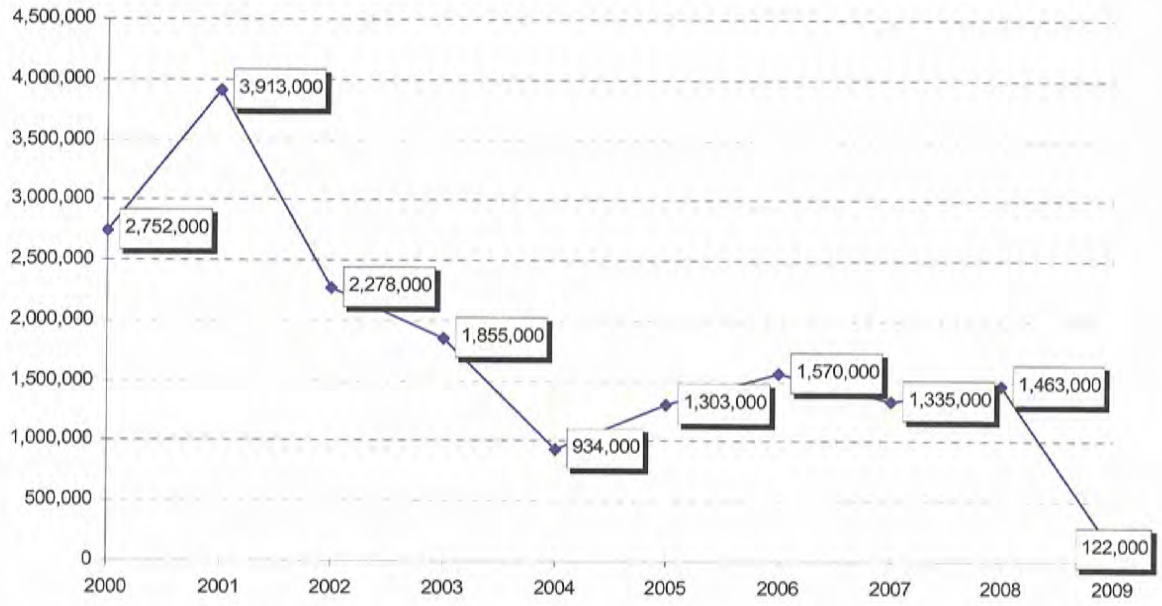
The development activity for new nonresidential square feet expands and contracts with economic conditions, usually lagging behind by a year or two as the development process responds to economic cycles. **Figure 4** illustrates the amount of nonresidential square feet approved for development in San Francisco in 2000 through 2009. Unlike the housing market which spiked in 2005-2006 with a tremendous number of new units under development, development of job-related space peaked in 2001 (just after the dot-com bust) and has shown much more modest activity in subsequent years, including a negligible amount of activity in 2009. Even with these major cyclical shifts, an average of roughly 1.7 million square feet of nonresidential development was approved each year in the past decade—a substantial amount given San Francisco's limited supply of developable land.

Figure 4. Building Permits Issued for San Francisco Non-Residential Square Feet

(Years 2000 - 2009)

Source: 2010 San Francisco Pipeline Report



Development Pipeline

San Francisco has almost 44,000 residential units and 15.3 million square feet of nonresidential space in the pipeline. These figures include projects in various stages of the development process, ranging from those which have been filed with the Planning Department to those that are under construction. **Table 3** summarizes San Francisco's development pipeline, by neighborhood area.

Table 3. San Francisco Development Pipeline, 2010

Neighborhood	Projects	Percent	Residential			Commercial	
			Net Units	Percent	Avg Units / Project	Net Comm'l Sq. Ft.	Percent
Balboa Park	5	0.6%	270	0.6%	54	4,800	0.0%
Bernal Heights	36	4.6%	60	0.1%	2	320	0.0%
Buena Vista	14	1.8%	80	0.2%	6	26,520	0.2%
BVHP Area A,B	31	3.9%	400	0.9%	16	163,160	1.1%
Candlestick	2	0.3%	10,440	23.8%	5,218	6,120,000	39.9%
Central	71	9.0%	120	0.3%	2	18,430	0.1%
Central Waterfront	10	1.3%	470	1.1%	47	2,870	0.0%
Downtown	42	5.3%	3,930	9.0%	101	1,537,880	10.0%
East SoMa	29	3.7%	1,430	3.3%	49	-47,620	-0.3%
Executive Park	1	0.1%	340	0.8%	340	14,000	0.1%
India Basin	3	0.4%	10	0.0%	3	-3,120	0.0%
Ingleside, Other	30	3.8%	70	0.2%	2	42,640	0.3%
Inner Sunset	36	4.6%	60	0.1%	2	12,130	0.1%
Japantown	4	0.5%	230	0.5%	59	3,550	0.0%
Marina	21	2.7%	110	0.3%	5	25,660	0.2%
Market Octavia	38	4.8%	2,020	4.6%	55	552,110	3.6%
Mission	56	7.1%	750	1.7%	13	-34,940	-0.2%
Mission Bay	4	0.5%	0	0.0%	0	1,272,880	8.3%
Northeast	51	6.5%	1,120	2.6%	22	-292,750	-1.9%
Other S Bayshore	15	1.9%	520	1.2%	35	40,660	0.3%
Outer Sunset	26	3.3%	40	0.1%	1	36,680	0.2%
Park Merced	2	0.3%	5,800	13.2%	2,902	478,380	3.1%
Richmond	81	10.3%	460	1.1%	6	37,810	0.2%
Rincon Hill	7	0.9%	1,970	4.5%	281	-170,350	-1.1%
Showpl/Potrero	28	3.6%	1,740	4.0%	62	426,750	2.8%
South Central, Other	70	8.9%	1,250	2.9%	18	102,670	0.7%
Transbay	18	2.3%	2,490	5.7%	138	4,606,980	30.0%
Treasure Island	1	0.1%	6,000	13.7%	6,000	250,000	1.6%
VisVal	4	0.5%	10	0.0%	3	-6,080	0.0%
Western Addition	28	3.6%	1,070	2.4%	38	18,020	0.1%
WSoMa	23	2.9%	530	1.2%	23	94,650	0.6%
Grand Total	**787**	**100.0%**	**43,790**	**100.0%**	**15,502**	**15,334,690**	**100.0%**

Formatting indicates neighborhoods which are geographically proximate to the 4th and King site.

Source: San Francisco Pipeline Q2 2010; Economic & Planning Systems, Inc.

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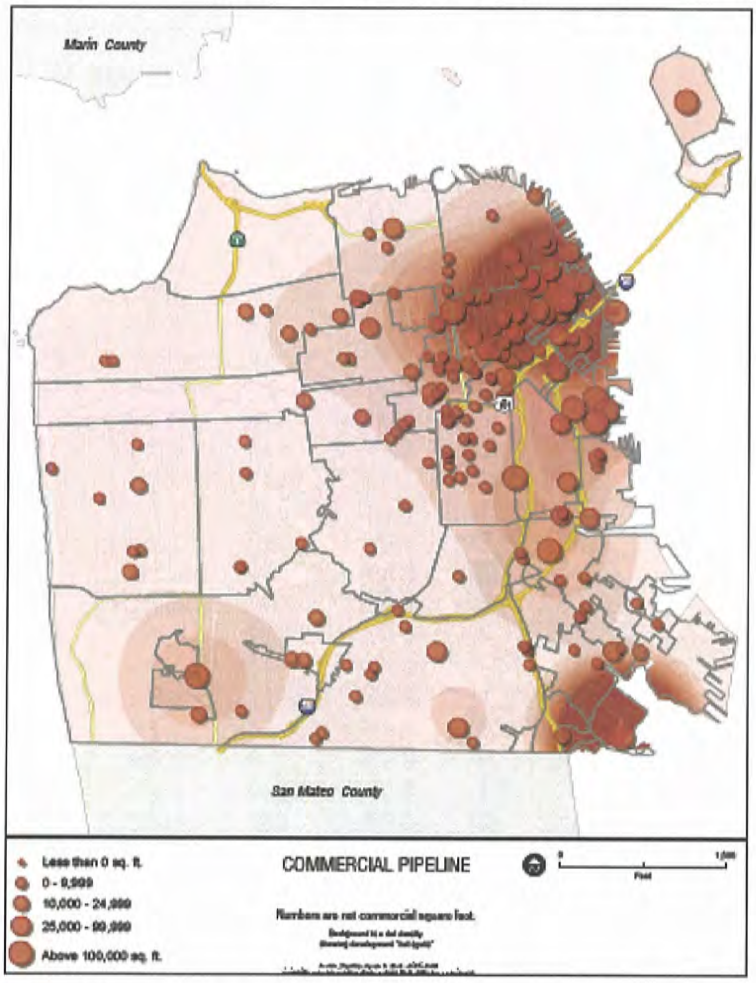
Note that a substantial amount of the development pipeline is attributable to just a few projects or development areas. Three residential areas—Candlestick, Park Merced, and Treasure Island—sum to half of the City's residential pipeline, while just two areas—Candlestick and Transbay—comprise two-thirds of the commercial pipeline (see **Figure 5** which illustrates the commercial development pipeline by geography; the Candlestick and Transbay areas dominate the commercial pipeline).

Figure 5. San Francisco Commercial Pipeline by Geography



Source: San Francisco Pipeline Report, San Francisco Planning Department, August 2010

Examining geographic areas adjacent to the 4th and King site which may compete with any future development there, Mission Bay has by far the greatest amount of development in the pipeline, with 1.2 million square feet of non-residential space. Western SoMa has several smaller projects in the pipeline that result in a net increase of mostly retail and entertainment space summing to almost 100,000 square feet (see **Table 4**.)

Table 4. Pipeline Projects in Areas Near the Site

Neighborhood/Address	Commercial Sq Ft (net)	Land Use[1]	Date of Most Recent Action on Application
Mission Bay			
1455 3rd St.	380,999	MIPS	4/23/2010
1600 Owens St.	245,000	MIPS	6/3/2008
455 Mission Bay S Blvd.	333,945	MIPS	6/26/2008
300 16th St.	312,932	MIPS	10/2/2008
	1,272,876		
WSoMa			
340 11th St.	5,682	Retail/Ent	4/11/2005
870 Harrison St.	-6,120	Retail/Ent	7/14/2006
690 5th St.	32,500	Visitor	6/17/2009
121 9th St.	-4,975	Retail/Ent	7/31/2009
350 8th St.	56,700	Retail/Ent	9/7/2007
397 5th St.	5,000	Retail/Ent	9/24/2007
150 7th St.	10,808	Retail/Ent	4/2/2007
	99,595		

[1] MIPS space is where activities result in information being produced as the chief commodity. It includes Managerial, Information, Professional, Business Services, and Multi-media space.
Source: San Francisco Pipeline Q2 2010; Economic & Planning Systems, Inc.

Most of the projects in the City's development pipeline are in the earliest stage of development tracked by the City's annual report (see **Table 5** for details).

- Almost 80 percent of the commercial square footage in the pipeline (12.19 million square feet) has been filed with the Planning Department, but not yet approved;
- 6 percent have been approved, but have not filed applications for building permits;
- 9 percent have filed building permit applications;
- 6 percent have building permits issued; and
- 1 percent of commercial square footage in the pipeline is under construction.

Table 5. San Francisco Development Pipeline, by Stage of Development

Pipeline Stage	Projects	Percent	Residential		Commercial	
			Net Units	Percent	Net Comm'l Sq. Ft.	Percent
Filed with Planning	113	14%	30,780	70%	12,190,000	79%
Approved by Planning	91	12%	5,870	13%	848,000	6%
Bulding permit filed	287	36%	3,300	8%	1,347,000	9%
Building permit issued	182	23%	2,330	5%	850,000	6%
Under construction	114	14%	1,480	3%	100,000	1%
Total Pipeline	**787**	**100%**	**43,760**	**100%**	**15,335,000**	**100%**

Source: San Francisco Pipeline Q2 2010; Economic & Planning Systems, Inc.

Conclusion

Looking back at San Francisco's development patterns, construction of nonresidential space peaked in response to the dot.com boom, with a much flatter trend in the amount of nonresidential space being developed after 2003. In 2009, the recession drove nonresidential development permits down well below rates found in any other year in the past decade.

While San Francisco's economy and real estate market have been hurt by the global recession, the City is expected to be among several cities in the United States that will lead their respective regions out of the downturn. According to the Urban Land Institute's 2010's Emerging Trends in Real Estate Report, San Francisco currently is one of the best cities in the United States to invest in property. While Washington, DC, holds the top spot on the list, San Francisco along with Boston and New York are other cities for which investors have long-term confidence in the market. The Emerging Trends surveys rank the San Francisco market as one of the top buys for apartments, warehouse, office, and hotels. The City's multifaceted environment, proximity to Silicon Valley, and history of bouncing back from corrections bolster investor outlooks.

Office Market and Feasibility

Office Market Overview

The market value of office space in San Francisco is reflected in office lease rates and occupancy rates. **Figure 7** illustrates lease rates in Class A office space[1] in three San Francisco geographies (see **Figure 6** for the boundaries of the areas):

(1) San Francisco overall

(2) South of Market (SoMa)

(3) Mission Bay/China Basin (MB/CB)

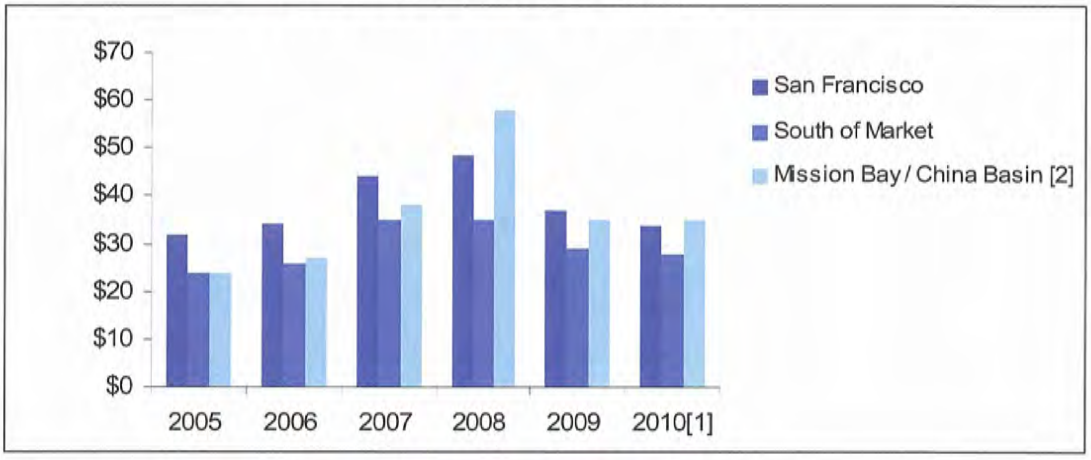
[1] Class A office space is defined as high-quality office space in an excellent location with great access, attracting high quality tenants, and is managed professionally.

Figure 6. Illustration of Office Market Subareas

Between 2005 and 2010, average asking lease rates for Class A office space in the City as a whole grew at an annual rate of 1 percent, from $31.67 to $33.67 per square foot per year (see **Figure 7** for illustration, and **Table 6** for detailed data). However, the current lease rates are roughly 30 percent below the rates achieved just two years ago. Lease rates over the five-year period in the SoMa area grew at a faster pace, from $24 to $28, but represent lower rates than the City overall. Rates in MB/CB spiked in 2008, but have since returned to a level nearly equivalent to the City average.

Figure 7. Class A Office Lease Rates

Annual, Full Service lease, per building sq.ft.



[1] Data only available through Q2.
[2] Before 2008, counted in SOMA South along with Multimedia Gulch, Potrero Hill, and Potrero Hill West submarkets.

Table 6. Office Performance, San Francisco and Selected Sub-areas, 2005-2010

	2005	2006	2007	2008	2009	2010[1]	2005-2010 Amount	2005-2010 % Change	2005-2010 Avg. Annual Growth
San Francisco									
Class A Lease Rate	$31.67	$34.23	$44.12	$48.41	$37.12	$33.67	$2.00	6.3%	1.0%
Vacancy Rate	12.6%	10.7%	8.5%	9.1%	14.7%	16.2%	3.6%	28.6%	4.3%
South of Market									
Class A Lease Rate	$24.00	$26.00	$35.00	$35.00	$29.00	$28.00	$4.00	16.7%	2.6%
Vacancy Rate	12.2%	14.5%	7.9%	4.8%	14.7%	40.1%	27.9%	228.7%	21.9%
Mission Bay / China Basin [2]									
Class A Lease Rate	$24.00	$27.00	$38.00	$58.00	$35.00	$35.00	$11.00	45.8%	6.5%
Vacancy Rate	19.5%	14.5%	13.0%	30.3%	24.7%	23.2%	3.7%	19.0%	2.9%

[1] Data only available through Q2
[2] Before 2008, counted in SOMA South along with Multimedia Gulch, Potrero Hill, and Potrero Hill West submarkets.

Source: CB Richard Ellis MarketView San Francisco Office Q2 of respective year; Economic & Planning Systems, Inc.

Office occupancy rates provide another indication of office market conditions. As occupancy tightens in particular areas, lease rates rise reflecting the increased demand for space. Occupancy rates in the local submarkets and the City overall were in the range of 80 to 90 percent before the recession, but have since declined significantly. The SOMA market now has 40 percent vacancy, while the MB/CB area vacancies have exceed 20 percent for several years. (Note that the MB/CB vacancy data for 2008 appear to be an outlier, reflecting a change in how that data was being tracked.) Current low occupancy conditions reflect the weak economy. Until job growth resumes—bringing new tenants or allowing existing tenants to expand—lease rates are likely to remain stagnant because of the high level of vacant space on the market.

Office Feasibility

Development Scenarios

In order to test the feasibility of an office use at the 4th/King site, the value of a prototypical office development is compared with its costs. For the purposes of analysis, EPS has tested a one-acre development with the following development characteristics:

- 50-foot mid-rise office over a 35-foot podium (podium will house rail tracks and station)
- 125-foot high-rise over 35-foot podium
- 215-foot tower over 35-foot podium

While an actual development program is likely to include varying heights, for comparison purposes, these three programs are tested on an identical, one-acre site.

Development Values

To estimate the value of the office development, EPS has referred to the current and past market data regarding achievable office lease rates. The current market price for Class A office in MB/CB, the area nearest to the site and one which contains a number of new buildings, is $35 per square foot per year, with full-service lease terms. During the 2005-2007 period, reports of asking lease rates in the area ranged from $38 to $60 (for a mix of office and biotech space).

The lease rate that may be commanded by a new office development at 4th and King Streets will depend on economic conditions at the time of market entry, the availability and strength of competitive office space, and other factors. For the purposes of estimating the residual land value of an office development at 4th and King, "normalized" lease rates will be tested. Taking into account today's achievable lease rates, those observed during better market conditions in 2006-2008 (not peak office market conditions, which occurred in 1999 and 2000), and the premium which is typically achieved by new office space, a lease rate of $48.00 per building square foot per month is assigned to the 50-foot mid-rise office space. To account for the better views which will be available under the two higher construction prototypes, the lease rate is increased 5 percent for the 125-foot building compared with the 50-foot, and another 5 percent for the 215-foot tower compared with the 125-foot structure.

The lease rate assumptions are then converted to building values by subtracting operating costs and vacancy losses, and applying a market-standard capitalization rate to the remaining net operating income. Details of these calculations and assumptions are provided on the tables in the **Appendix**.

Development Costs

To estimate the costs of construction, EPS has referred first to recent (2008/2009) work conducted for the Planning Department's Transit Center District Plan by the Concord Group. Those studies provided planning-level development costs for a variety of building types (office, hotels, retail, and residential) at a variety of heights, and have been vetted by EPS, the Planning Department, the Redevelopment Agency, other real estate consultants engaged in the Transit Center District Plan and/or Transbay Joint Powers Authority planning processes, and developers and property owners affected by the Transit Center District Plan. EPS has utilized the Transit Center District cost assumptions for the buildings most comparable to those being tested for the 4th and King site. Where adjustments were necessary to reflect different conditions (such as the applicability of various impact fees, changes in market conditions, etc.), EPS has refined the Transit Center District figures to be more appropriate for 4th and King.

Four different impact fee scenarios are included in this analysis. These are considered as a feasibility variable as the Planning Department has indicated that it is unclear which area impact fees may be applied to the site (potentially Citywide fees, the Eastern Neighborhoods benefits program, and/or the Mission Bay Community Facilities District obligations) or whether a fee agreement may be put into place which eliminates a contribution from the development, given the extraordinary investment in public transit infrastructure being made at the site. The four scenarios included by EPS in the feasibility test are:

1. No impact fees
2. Citywide impact fees
3. Citywide fees + Eastern Neighborhoods impact fees

4. Citywide fees + Eastern Neighborhoods impact fees + Mission Bay annual Community Facilities District (CFD) contributions

Table 7 summarizes the potential development impact fees. As shown, Citywide fees for office total about $33.00 per building square foot. The Eastern Neighborhood benefits program imposes fees starting at $6.00, and increasing depending on whether a zoning change was required for the development (EPS has assumed the $6.00 fees). Mission Bay's ongoing CFD charge is no more than $17,936 per acre in 2010, meaning that the amount per building square foot varies depending on the intensity of development.

Table 7. Development Impact Fees Tested

Item	Hotel	Office	Retail
	--- *per building sq. ft.* ---		
Various City-wide Fees			
Housing	$14.95	$19.96	$18.62
Child Care	$1.00	$1.00	-
Transit Fee	$9.37	$11.34	$11.34
Wastewater	$1.13	$0.36	$2.21
School	$0.09	$0.27	$0.18
Subtotal	$26.54	$32.93	$32.35
Eastern Neighborhoods Public Benefits Program[1]			
Tier 1	$6.00	$6.00	$6.00
Tier 2	$10.00	$10.00	$10.00
Tier 3	$14.00	$14.00	$14.00
Citywide+Eastern Neighborhoods by Tier			
Tier 1	$32.54	$38.93	$38.35
Tier 2	$36.54	$42.93	$42.35
Tier 3	$40.54	$46.93	$46.35
Mission Bay CFD: Maximum $17,936 per acre			
Based on 3.0 FAR	$0.14	$0.14	$0.14
Based on 7.0 FAR	$0.06	$0.06	$0.06
Based on 12.0 FAR	$0.03	$0.03	$0.03

[1] Tiers refer to the intensity of development relative to the intensity achieved with a zoning change. For example, Tier 1 fees refer to sites which do not receive zoning changes that increase heights, as compared to allowable height prior to the rezoning (May 2008), all 100% affordable housing projects, and all housing projects within the Urban Mixed Use (UMU) district.

Tier 2 are applied to all other sites which receive zoning changes that increase heights by one to two stories.

Tier 3 fees are applied to all other sites which receive zoning changes that increase heights by three or more stories and in the Mixed Use Residential District.

Sources: San Francisco Municipal Code (Planning); San Francisco Public Utilities Commission; Mission Bay North Redevelopment Plan; EPS

Formatting indicates the fee scenarios which are used in the feasibility tests.

The development impact fee scenarios are combined with the assumptions regarding building construction and soft costs to estimate office space development costs at the site (not including any extraordinary costs which may be associated with developing over the rail line). It is

important to note that *no* parking costs are included in the estimate. This assumption is based on California High Speed Rail Authority and Caltrain planning documents and policy statements which suggest that no new parking should be built at the 4th and King station.

Residual Land Values

The development costs are compared with the development's value, driven by achievable lease rates and a capitalization rate, to yield a residual land value reflecting the amount a developer would be able to pay for the developable air rights and still generate an attractive financial return on investment. In this analysis, a positive residual land value indicates that development is likely to be feasible, while a negative value indicates that development is infeasible without some form of subsidy or else marked improvements in the projected financial performance of the project. To compare "apples to apples," EPS has calculated the residual land values per building square foot for each different height of building. The results can then be applied to various development programs conceived for the 4th and King site to calculate the gross value of the development opportunity.

The results of the office feasibility analysis are summarized in **Figure 8** and **Table 8** and detailed in **Appendix Tables 1A through 1C.** As shown, office development under all three heights tested appears to be feasible with no impact fees and with the Citywide impact fees. However, the imposition of the Eastern Neighborhood fees, with or without the additional Mission Bay CFD requirements, significantly reduce the viability of office development, especially under the lowest-density scenario.

Figure 8. Residual Value per Office Building Square Foot, by Fee Scenario

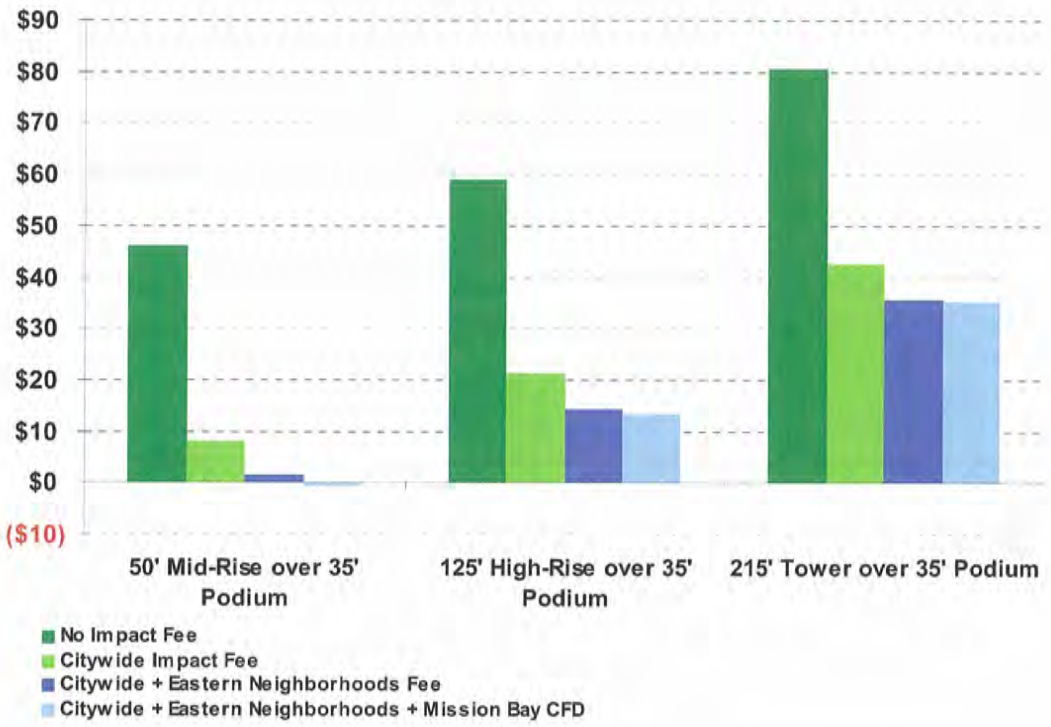


Table 8. Results of Office Use Feasibility Analysis

Dev. Scenario Tested	Residual Land Value per Gross Bldg. Sq. Ft.
50' Mid-Rise over 35' Podium	
No Impact Fee	$46.15
Citywide Impact Fee	$8.28
Citywide + Eastern Neighborhoods Fee	$1.38
Citywide + Eastern Neighborhoods + Mission Bay CFD	($0.57)
125' High-Rise over 35' Podium	
No Impact Fee	$59.13
Citywide Impact Fee	$21.26
Citywide + Eastern Neighborhoods Fee	$14.36
Citywide + Eastern Neighborhoods + Mission Bay CFD	$13.52
215' Tower over 35' Podium	
No Impact Fee	$80.58
Citywide Impact Fee	$42.71
Citywide + Eastern Neighborhoods Fee	$35.81
Citywide + Eastern Neighborhoods + Mission Bay CFD	$35.32

While the residual land values shown in this table illustrate the potential values for office development at the 4th and King site, these values depend on a significant recovery in the demand for new office construction. In addition, 4th and King will need to compete for limited real estate investment resources with other San Francisco projects and planning areas.

Hotel Market and Feasibility

Hotel Market Overview

Hotel markets are driven by tourists, business travelers, and conventions in San Francisco. Unlike office lease rate data which is tracked systematically and readily available for various geographies, hotel performance data is typically obtained for particular hotels, but aggregated to protect the confidentiality of an individual hotel's operations. To understand the hotel room and occupancy rates achieved by hotels nearby the site over the last few years, EPS selected ten hotels for review. **Table 9** lists the hotels and **Figure 9** illustrates their locations in San Francisco.

The ten selected hotels represent more than 5,500 rooms and range in size from 200 rooms to almost 1,500 rooms. The hotels selected represent a range of service provision, with both full-service hotels—hotels offering a full suite of services including restaurants, bars, gift shops, valet parking, conference and event facilities, and other services—and select-service hotels which typically include limited food service, lounges, and business centers but no substantial meeting facilities or event space.

Table 9. Comparable Hotels Reviewed

Map #	Hotel	Zip Code	Yr. Opened	Rooms
1	Hotel Whitcomb	94103	1919	459
2	Marriott Moscone Center	94103	1989	1499
3	W Hotel San Francisco	94103	1999	404
4	Holiday Inn San Francisco Civic Center	94103	1970	388
5	Omni San Francisco Hotel	94104	2002	362
6	Courtyard San Francisco Downtown	94105	2001	405
7	Joie De Vivre Hotel Vitale	94105	2005	200
8	Hilton San Francisco Financial Dist	94108	1970	544
9	Hyatt Regency San Francisco	94111	1973	802
10	Club Quarters San Francisco	94111	2003	446
	Total Rooms Included in Review			**5,509**
	Average Size			**551**

Source: Smith Travel Research; Economic & Planning Systems, Inc.

Figure 9. Locations of Hotels Examined

Table 10 reports the occupancy, revenue per available room and the average daily room rate for the 10 hotels examined from 2004 through 2010 (year-to-date). As shown, occupancy has remained relatively steady over the period. Meanwhile, room rates have declined in 2009 and 2010 from the higher rates charged in 2005-2008. This suggests that hotels are dropping room rates to maintain occupancy around 75 percent, a healthy occupancy rate. Such rate-cutting practice is not uncommon throughout the hotel industry during this and any recessionary period. Still, it is important to note that all the basic hotel performance indicators—occupancy rates, revenues per available room, and average daily rates—are still stronger in 2010 than they were in 2004 or 2005, before the current recession began.

Table 10. Hotel Performance Indicators

Item	2004	2005	2006	2007	2008	2009	2010[1]	2004-2010 Amount	2004-2010 % Change	2004-2010 Avg. Annual Growth
Occupancy										
Total Year	74.5%	76.3%	75.3%	79.3%	78.9%	74.6%	76.6%	2.0%	2.7%	0.4%
June YTD	74.1%	74.0%	72.4%	77.0%	77.2%	69.3%	76.6%	2.5%	3.3%	0.6%
Revenue Per Available Room										
Total Year	$113	$126	$138	$153	$158	$129	$127	$15	13.2%	2.1%
June YTD	$115	$120	$132	$146	$155	$121	$128	$13	11.2%	1.8%
Average Daily Rate										
Total Year	$151	$165	$183	$193	$200	$173	$166	$15	10.1%	1.6%
June YTD	$155	$162	$182	$189	$201	$175	$167	$12	7.6%	1.2%

[1] Data only available through June 2010

Source: Smith Travel Research; Economic & Planning Systems, Inc.

Hotel Feasibility

The feasibility of a hotel at the 4th and King site will depend on a variety of factors, the most prominent being the competitive landscape. Specifically, the Mission Bay redevelopment plan includes a several-acre site designated for a 500-room hotel located just a few blocks east of the 4th and King site. Like any planning document, until something is actually built the Mission Bay plan's hotel designation is just that—a placeholder for future development. However, if that site does attract investment sufficient to finance hotel construction, prospects for a hotel use at 4th and King may diminish or be pushed further into the future.

As was the case in the office analysis, for the purposes of testing hotel feasibility a development program on a one-acre site is modeled, with the following development characteristics:

- 50-foot mid-rise over a 35-foot podium (podium will house railroad tracks and station)
- 125-foot high-rise over 35-foot podium
- 215-foot tower over 35-foot podium

Again, like the office feasibility analysis, four fee scenarios are included:

1. No impact fees
2. Citywide impact fees

3. Citywide fees + Eastern Neighborhoods impact fees
4. Citywide fees + Eastern Neighborhoods impact fees + Mission Bay annual Community Facilities District (CFD) contributions

After a review of the site's location and nearby hotels, we have assumed that the most appropriate hotel type for 4th and King is a select-services hotel. A full-service hotel use was eliminated as an option as those hotels cater to conferences or meeting attendees and are typically located near major convention centers (like Moscone Center) or are in the financial district, within comfortable walking distance to all areas of the employment heart of the City. The site at 4th and King is too far from either the financial district or Moscone Center to compete successfully for conference attendees and business visitors to that area, even with the advantages of having some rail passengers delivered to the site.

Still, if a hotel is built on top of a transit center serving visitors from around the State and the Bay Area, the site is very well-located to capture overnight travelers arriving in San Francisco via rail. In addition, a hotel at 4th and King may be attractive to those traveling to attend events or games at the Giants ballpark, or the employers and institutions of the Mission Bay project. Given these types of visitors, a hotel at 4th and King is assumed to provide a selection of services like business services, a bar/lounge, and food available for much of the day.[2]

The hotel development value is driven by the average daily rate that rooms may achieve and the vacancy rate of the hotel. A select-service hotel will also generate revenues from food and bar purchases, but these goods are expected to have relatively low margins (with cost nearly equaling revenues) thus the costs and revenues from services are excluded from the analysis. Under stabilized economic conditions and conservative assumptions, a select-service hotel at the 4th and King site could be expected to achieve average daily rates of $175 per room per night – above the current average rates for comparable hotels, but well below the rates achieved just two years ago.

Costs for hotel development are expected to vary considerably for the three different heights analyzed. For the 50-foot mid-rise structure, we assume that the hotel may wood frame construction. The two taller prototypes—the 125 foot and the 215-foot structures—require steel and glass construction materials. This different creates a large difference in costs per building square foot. As with the office development, EPS has referred to the Concord Group's feasibility studies for the Transit Center District for certain cost information, but made more adjustments based on the type of hotel operation assumed (select-service) and the building technologies that may be available (such as a woodframe low-rise hotel), in addition to factors such as the applicable impact fee schedule.

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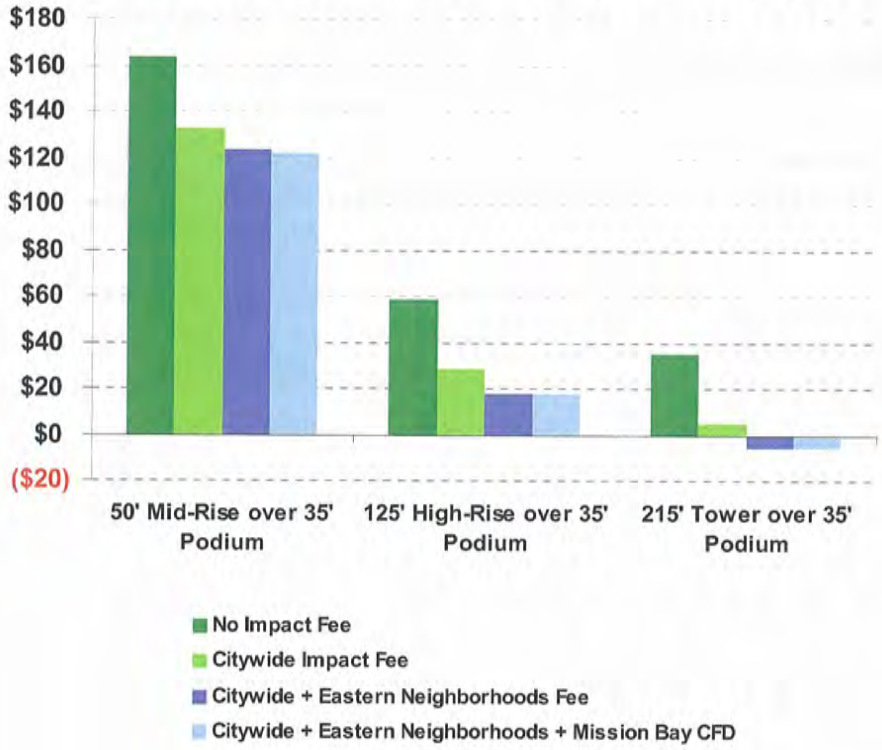
[2] A limited service type hotel like Motel 6, EconoLodge, etc., which provides only very basic services like continental breakfasts was considered and eliminated as an appropriate development type for the site.

The results of the feasibility analysis are summarized in **Figure 10** and **Table 11** and detailed in **Appendix Tables 2A through 2C.** As shown, hotel development under the lowest height generates the highest residual value per building square foot. This is because the costs are significantly less for woodframe construction compared with steel and because hotel room rates for taller structures are not expected to increase sufficiently to compensate for the greater costs.[3]

Figure 10. Residual Value per Hotel Building Square Foot, by Fee Scenario



[3] A taller hotel at the site may be viewed by guests more favorably because noise from trains would be lessened in rooms on higher floors. However, height is not expected to command a very large room-rate premium in this location.

Table 11. Results of Hotel Use Feasibility Analysis

Dev. Scenario Tested	Residual Land Value per: Gross Bldg. Sq. Ft.
50' Mid-Rise over 35' Podium	
No Impact Fee	$163.19
Citywide Impact Fee	$132.67
Citywide + Eastern Neighborhoods Fee	$123.58
Citywide + Eastern Neighborhoods + Mission Bay CFD	$122.21
125' High-Rise over 35' Podium	
No Impact Fee	$58.61
Citywide Impact Fee	$28.09
Citywide + Eastern Neighborhoods Fee	$18.02
Citywide + Eastern Neighborhoods + Mission Bay CFD	$17.44
215' Tower over 35' Podium	
No Impact Fee	$35.21
Citywide Impact Fee	$4.69
Citywide + Eastern Neighborhoods Fee	($5.52)
Citywide + Eastern Neighborhoods + Mission Bay CFD	($5.87)

These values and results naturally depend on attracting an experienced operator and management team. Given the early stage of planning reflected in this analysis, the feasibility test does not analyze the likelihood that a hotel operator may be engaged in the project.

Retail Market and Feasibility

Retail Market Overview

Nationally, the retail sector has been significantly impacted by the recession as disposable incomes have stagnated and debt has loomed large on personal finances, resulting in a significant reduction in discretionary spending. A review of the top 50 retail markets in the country reveal that retail vacancy rates have increased from 5 percent between 2002 and 2007 to more than 12 percent in 2009 and 2010. Similarly, retail square feet constructed in the U.S. has dropped from 20 million to 30 million annually between 2002 and 2007 to 10 million to 15 million in 2009 and 2010.

While the retail market picture is very weak nationally, asking lease rates for retail in San Francisco tops all retail rates for the Bay Area at $44.60 per square foot per year (for shopping centers 50,000 square feet or larger). In this category of stores, the vacancy rate has been relatively low, at between 5 and 7 percent in 2009 and 2010.

In the area surrounding the 4th and King site, ground floor retail has been integrated into several residential projects. Safeway grocery store opened across the street from the Caltrain stop in 2002 and a bit farther east on King Street is a Borders book store. In that same area and continuing on King to the AT&T ballpark, there are a number of restaurants and bars. Food and drinking establishments benefit from tens of thousands of fans descending on King Street for the 80 or so Giants home-games each year, plus other events from time to time.

Consistent with the pattern of mixed-use retail development throughout Downtown San Francisco, the type of retail that may be included in a development program for 4th and King is more likely to be smaller shops such as are found on King Street than major anchors like Safeway and Borders. For this reason, EPS reviewed asking lease rates for stand-alone and corner stores currently available. **Table 12** reports asking lease rates and **Figure 11** illustrates the locations of the stores. As shown, the average asking lease rate is $37.60 per square foot per year. A site just a block from the 4th and King site—the 250-206 King St. listing—is asking for a $48.00 rent.

Table 12. Asking Lease Rates – Retail Sites Proximate to 4th and King

Address	Sq Ft Offered	Lease Rates (/sq.ft./year)
185 Berry Street	2,163	$35.00
634 Second Street	875	$36.00
250-260 King St	12,405	$48.00
73 & 83 10th Street	563	$24.00
631 Folsom Street	2,928	$42.00
575 4th Street	1,583	$48.00
725 Folsom St	6,800	$36.00
370 3rd Street	2,000	$32.00
1 St Francis Place	1,184	$33.00
650 Townsend St	12,806	$42.00
Average Asking Rate		**$37.60**

Source: LoopNet; Economic & Planning Systems

Figure 11. Locations of Retail Listings Included in Table 12

According to San Francisco's pipeline report, about 67,000 square feet of retail and entertainment uses are in the development pipeline in Western SoMa (no uses of this type are in the pipeline in Mission Bay or East SoMa). Given that the 4th and King location will eventually have thousands of travelers entering and exiting the station each day, we assume that demand for retail goods from these passengers presents a potential opportunity to capture retail expenditures. In addition, employees in the hotel or office use above the station and hotel guests will generate further demand for retail. A third source of demand for retail goods which may be partially captured at 4th and King is spending by visitors to AT&T Park games and other events.

Ground Floor Retail Feasibility

The AECOM Team's preliminary site elevation plans for 4th and King indicate that retail may be located at street grade under two scenarios: one where rail tracks are constructed completely below grade and the other where a portion of the tracks are constructed below grade. A third option shows all of the rail tracks at street grade with retail one-story above the street. For the purposes of the residual value analysis, we assume that retail space is constructed at street grade. Unlike for the office and hotel analyses, the height of the overall buildings is essentially immaterial to the retail feasibility analysis.

Also, lease rates at a new space as assumed to command an average value of $44.00 per square foot per year—slightly above the current average for the area to reflect a market recovery as well as the advantages of having high speed rail service and new commercial or hotel development at the site. This lease rate assumption is based on the retail space being developed at the street level and accessible to passers-by, not elevated and/or tucked inside the rail facility and not hospitable to serendipitous shoppers. Retail with such accessibility constraints would be assumed to command substantially lower lease rates.

Like the office and hotel feasibility analyses, four fee scenarios are included in the residual analysis:

1. No impact fee
2. Citywide impact fee
3. Citywide + Eastern neighborhoods impact fee
4. Citywide + Mission Bay impact fees + Annual Community Facilities District contributions

The results of the feasibility analysis are summarized in **Figure 12** and **Table 13** and detailed in **Appendix Table 3.** As shown, retail development under improved economic conditions generates values of up to $80 or more per building square foot, though these values diminish considerably as impact fees are applied.

Figure 12. Residual Value per Retail Building Square Foot, by Fee Scenario

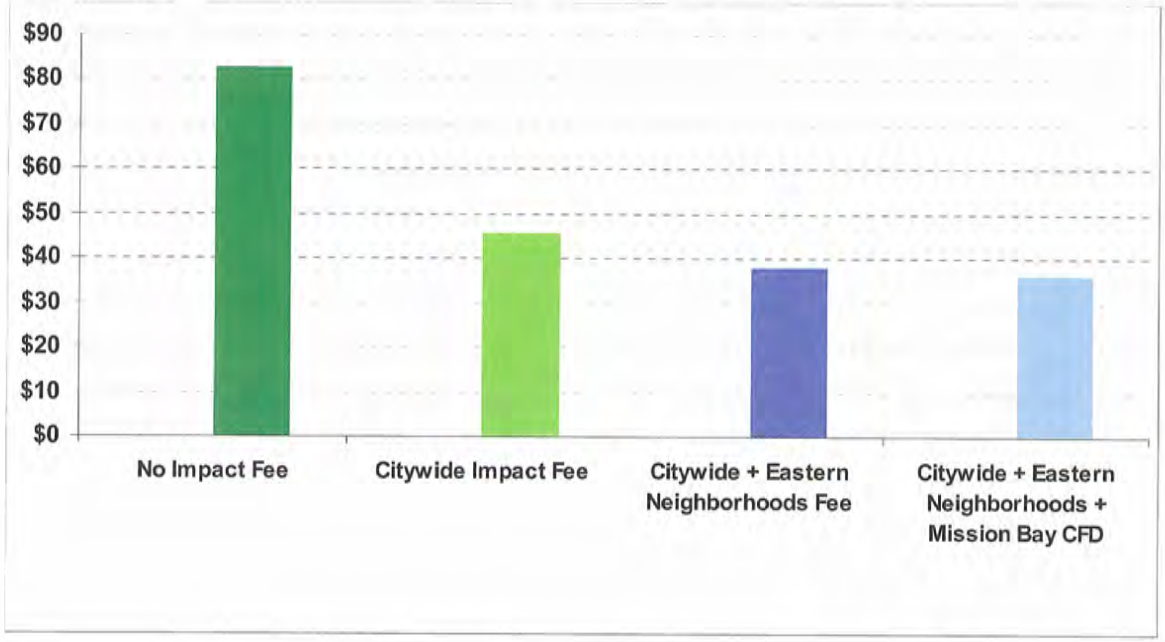


Table 13. Results of Retail Use Feasibility Analysis

Dev. Scenario Tested	Residual Land Value per Gross Bldg. Sq. Ft.
Ground floor retail at grade	
No Impact Fee	$82.81
Citywide Impact Fee	$45.60
Citywide + Eastern Neighborhoods Fee	$38.04
Citywide + Eastern Neighborhoods + Mission Bay CFD	$36.42

There are many good planning reasons to include ground floor retail in mixed-use developments, such as to activate the street and provide a space for employees and residents to purchase goods and services in walking distance to their place of work/ residence. However, despite the suggestions of the residual land value analysis, most developers have indicated that retail uses do not typically enhance the residual land value for a site in a significant way. The success of ground floor retail elements varies widely depending on the location, the experience of the development and brokerage team, the site configuration and need for/provision of patron parking, etc.

APPENDIX

Appendix Table 1A
Office Residual Land Value
4th & King Railyards Study; EPS #17004

50' Mid-Rise over 35' Podium

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS			
Site sq. ft.			43,560
Construction Sq. Ft. (GSF)	3.00 FAR		**130,680**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**111,078**
Parking Spaces (construction)	- /1,000 NSF		0
Parking Area (construction)	325 sq. ft./space		**0**
Net Sq. Ft. (NSF)			**111,078**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) [1]	$48.00 /NSF/yr.	$40.80	$5,331,744
(less) Operating Expenses [2]	38%	($15.67)	($2,048,278)
(less) Vacancy Rate	5%	($2.04)	($266,587)
Subtotal, Annual Net Operating Income		**$23.09**	**$3,016,878**
Capitalized Value (capitalized at 7.0%) [3]	**7.0%**	**$330**	**$43,098,000**
DEVELOPMENT COSTS			
Direct Costs			
Building Construction Cost [4]	$150.00 /GSF	$150	$19,602,000
Parking Cost	$50,000 space	$0	$0
Tenant Improvements	$50.00 /NSF	$43	$5,553,900
Subtotal Direct Costs		$193	$25,155,900
Indirect Costs			
Soft Costs (% of Direct Costs)	18.0%	$35	$4,528,062
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$8	$1,013,031
Subtotal Indirect Costs		$42	$5,541,093
Subtotal Total Development Costs (Direct and Indirect)		$235	**$30,696,993**
Contingency (% of Total Development Costs)	5.0%	$12	**$1,534,850**
Development Fee (% of Total Development Costs)	15.0% of total costs	$37	**$4,834,776**
Impact Fees (Excluded scenario)	$0.00 /GSF	$0	**$0**
Total Costs		**$284**	**$37,066,619**

Residual Land Value Scenarios	
No Impact Fee	
RLV per Gross Building Sq. Ft.	$46
Citywide Impact Fee [5]	
RLV per Gross Building Sq. Ft.	$8
Eastern Neighborhood Impact Fee Program (Tier 1) [5]	
RLV per Gross Building Sq. Ft.	$1
Eastern Neighborhood Fees and Mission Bay CFD [6]	
RLV per Gross Building Sq. Ft.	($1)

[1] Based on review of the current market conditions around the site.

[2] Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco.

[3] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.

[4] EPS estimate based on review of Concord Group's work on Transbay Terminal.

[5] Per August 9, 2010 Citywide Development Fee Register.

[6] Per Redevelopment Plan for Mission Bay North.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems, Inc.

Appendix Table 1B
Office Residual Land Value
4th & King Railyards Study; EPS #17004

125' High-Rise over 35' Podium

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS			
Site sq. ft.			43,560
Construction Sq. Ft. (GSF)	7.00 FAR		**304,920**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**259,182**
Parking Spaces (construction)	- /1,000 NSF		0
Parking Area (construction)	325 sq. ft./space		**0**
Net Sq. Ft. (NSF)			**259,182**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) [1]	$50.40 /NSF/yr.	$42.84	$13,062,773
(less) Operating Expenses [2]	38%	($15.67)	($4,779,316)
(less) Vacancy Rate	5%	($2.14)	($653,139)
Subtotal, Annual Net Operating Income		**$25.02**	**$7,630,318**
Capitalized Value (capitalized at 7.0%) [3]	**7.0%**	**$357**	**$109,005,000**
DEVELOPMENT COSTS			
Direct Costs			
Building Construction Cost [4]	$160.00 /GSF	$160	$48,787,200
Parking Cost	$50,000 space	$0	$0
Tenant Improvements	$50.00 /NSF	$43	$12,959,100
Subtotal Direct Costs		$203	$61,746,300
Indirect Costs			
Soft Costs (% of Direct Costs)	18.0%	$36	$11,114,334
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$8	$2,481,927
Subtotal Indirect Costs		$45	$13,596,261
Subtotal Total Development Costs (Direct and Indirect)		$247	**$75,342,561**
Contingency (% of Total Development Costs)	5.0%	$12	**$3,767,128**
Development Fee (% of Total Development Costs)	15.0% of total costs	$39	**$11,866,453**
Impact Fees (Excluded scenario)	$0.00 /GSF	$0	**$0**
Total Costs		**$298**	**$90,976,142**
Residual Land Value Scenarios			
No Impact Fee			
RLV per Gross Building Sq. Ft.		$59	
Citywide Impact Fee [5]			
RLV per Gross Building Sq. Ft.		$21	
Eastern Neighborhood Impact Fee Program (Tier 1) [5]			
RLV per Gross Building Sq. Ft.		$14	
Eastern Neighborhood Fees and Mission Bay CFD [6]			
RLV per Gross Building Sq. Ft.		$14	

[1] Based on review of the current market conditions around the site.
[2] Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco.
[3] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
[4] EPS estimate based on review of Concord Group's work on Transbay Terminal.
[5] Per August 9, 2010 Citywide Development Fee Register.
[6] Per Redevelopment Plan for Mission Bay North.
Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems, Inc.

Appendix Table 1C
Office Residual Land Value
4th & King Railyards Study; EPS #17004

215' Tower over 35' Podium

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS			
Site sq. ft.			43,560
Construction Sq. Ft. (GSF)	12.00 FAR		**522,720**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**444,312**
Parking Spaces (construction)	- /1,000 NSF		0
Parking Area (construction)	325 sq. ft./space		**0**
Net Sq. Ft. (NSF)			**444,312**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) [1]	$52.92 /NSF/yr.	$44.98	$23,512,991
(less) Operating Expenses [2]	38%	($15.67)	($8,193,113)
(less) Vacancy Rate	5%	($2.25)	($1,175,650)
Subtotal, Annual Net Operating Income		**$27.06**	**$14,144,228**
Capitalized Value (capitalized at 7.0%) [3]	**7.0%**	**$387**	**$202,060,000**
DEVELOPMENT COSTS			
Direct Costs			
Building Construction Cost [4]	$165.00 /GSF	$165	$86,248,800
Parking Cost	$50,000 space	$0	$0
Tenant Improvements	$50.00 /NSF	$43	$22,215,600
Subtotal Direct Costs		$208	$108,464,400
Indirect Costs			
Soft Costs (% of Direct Costs)	18.0%	$37	$19,523,592
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$9	$4,467,468
Subtotal Indirect Costs		$46	$23,991,060
Subtotal Total Development Costs (Direct and Indirect)		$253	**$132,455,460**
Contingency (% of Total Development Costs)	5.0%	$13	**$6,622,773**
Development Fee (% of Total Development Costs)	15.0% of total costs	$40	**$20,861,735**
Impact Fees (Excluded scenario)	$0.00 /GSF	$0	**$0**
Total Costs		**$306**	**$159,939,968**
Residual Land Value Scenarios			
No Impact Fee			
RLV per Gross Building Sq. Ft.		$81	
Citywide Impact Fee [5]			
RLV per Gross Building Sq. Ft.		$43	
Eastern Neighborhood Impact Fee Program (Tier 1) [5]			
RLV per Gross Building Sq. Ft.		$36	
Eastern Neighborhood Fees and Mission Bay CFD [6]			
RLV per Gross Building Sq. Ft.		$35	

[1] Based on review of the current market conditions around the site.
[2] Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco.
[3] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
[4] EPS estimate based on review of Concord Group's work on Transbay Terminal.
[5] Per August 9, 2010 Citywide Development Fee Register.
[6] Per Redevelopment Plan for Mission Bay North.
Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems, Inc.

Appendix Table 2A
Hotel Residual Land Value
4th & King Railyards Study; EPS #17004

50' Mid-Rise over 35' Podium

Item	Assumption	Per Room	Per Sq. Ft.	Total
DEVELOPMENT PROGRAM ASSUMPTIONS				
Site sq. ft.				43,560
Rooms				218
Sq. Ft. per room				600
Construction (Sq. Ft.)				**130,680**
Parking Spaces (construction)	- /room			0
Parking Area (construction)	325 sq. ft./space			**0**
Total Sq. Ft.				**130,680**
REVENUE ASSUMPTIONS				
Room Revenue				
Average Daily Rate [1]	$175 /room/night	$175	$106.46	$13,911,975
(less) Vacancy Rate	30%	($53)	($31.94)	($4,173,593)
Room Revenues, after vacancy		$123	$74.52	$9,738,383
(less) Admin & Gen. [2]	10%	($12)	($7.45)	($973,838)
(less) Marketing [2]	8%	($10)	($5.96)	($779,071)
(less) Property O&M [2]	5%	($6)	($3.73)	($486,919)
(less) Energy Costs [2]	5%	($6)	($3.73)	($486,919)
(less) Management Fee [2]	3%	($4)	($2.24)	($292,151)
Subtotal, Annual Net Operating Income	31%	**$85**	**$51.42**	**$6,719,484**
Capitalized Value (capitalized at 10.0%) [3]	10.0%	**$308,517**	$514	**$67,195,000**
DEVELOPMENT COSTS				
Direct Costs				
Building Construction Cost [2]	$200 /sq. ft.	$120,000	$200	$26,136,000
FF&E		$15,000	$25	$3,267,000
Parking Cost	$50,000 space	$0	$0	$0
Subtotal Building and Parking Costs		$135,000	$225	$29,403,000
Indirect Costs				
Soft Costs (% of Direct Costs)	30.0%	$40,500	$68	$8,820,900
Subtotal Total Development Costs (Direct and Indirect)		**$175,500**	**$293**	**$38,223,900**
Contingency (% of Total Development Costs)	5.0%	$8,775	$15	$1,911,195
Development Fee (% of Total Development Costs)	15.0% of total costs	$26,325	$44	$6,020,264
Total Costs		**$210,600**	**$351**	**$46,155,359**
Residual Land Value Scenarios				
No Impact Fee				
RLV per Room and Gross Building Sq. Ft.		$97,917	$163	
Citywide Impact Fees [4]				
RLV per Room and Gross Building Sq. Ft.		$79,604	$133	
Eastern Neighborhood Impact Fee Program [4]				
RLV per Room and Gross Building Sq. Ft.		$74,148	$124	
Eastern Neighborhood Fees and Mission Bay CFD [5]				
RLV per Room and Gross Building Sq. Ft.		$73,324	$122	

[1] Based on review of the current market conditions around the site.
[2] EPS estimate based on review of Concord Group's work on Transbay Terminal.
[3] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
[4] Per August 9, 2010 Citywide Development Fee Register.
[5] Per Redevelopment Plan for Mission Bay North.
Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems,

Appendix Table 2B
Hotel Residual Land Value
4th & King Railyards Study; EPS #17004

125' High-Rise over 35' Podium

Item	Assumption	Per Room	Per Sq. Ft.	Total
DEVELOPMENT PROGRAM ASSUMPTIONS				
Site sq. ft.				43,560
Rooms				508
Sq. Ft. per room				600
Construction (Sq. Ft.)				**304,920**
Parking Spaces (construction)	- /room			0
Parking Area (construction)	325 sq. ft./space			**0**
Total Sq. Ft.				**304,920**
REVENUE ASSUMPTIONS				
Room Revenue				
Average Daily Rate [1]	$193 /room/night	$193	$117.10	$35,707,403
(less) Vacancy Rate	30%	($58)	($35.13)	($10,712,221)
Room Revenues, after vacancy		$135	$81.97	$24,995,182
(less) Admin & Gen. [2]	10%	($13)	($8.20)	($2,499,518)
(less) Marketing [2]	8%	($11)	($6.56)	($1,999,615)
(less) Property O&M [2]	5%	($7)	($4.10)	($1,249,759)
(less) Energy Costs [2]	5%	($7)	($4.10)	($1,249,759)
(less) Management Fee [2]	3%	($4)	($2.46)	($749,855)
Subtotal, Annual Net Operating Income		**$93**	**$56.56**	**$17,246,675**
Capitalized Value (capitalized at 10.0%) [3]	10.0%	$339,368	$566	**$172,467,000**
DEVELOPMENT COSTS				
Direct Costs				
Building Construction Cost [2]	$300 /sq. ft.	$180,000	$300	$91,476,000
FF&E	$25	$15,000	$25	$7,623,000
Parking Cost	$0 space	$0	$0	$0
Subtotal Building and Parking Costs		$195,000	$325	$99,099,000
Indirect Costs				
Soft Costs (% of Direct Costs)	30.0%	$58,500	$98	$29,729,700
Subtotal Total Development Costs (Direct and Indirect)		**$253,500**	**$423**	**$128,828,700**
Contingency (% of Total Development Costs)	5.0%	$12,675	$21	$6,441,435
Development Fee (% of Total Development Costs)	15.0% of total costs	$38,025	$63	$20,290,520
Total Costs		**$304,200**	**$507**	**$155,560,655**
Residual Land Value Scenarios				
No Impact Fee				
RLV per Room and Gross Building Sq. Ft.		$35,168	$59	
Citywide Impact Fees [4]				
RLV per Room and Gross Building Sq. Ft.		$16,856	$28	
Eastern Neighborhood Impact Fee Program [4]				
RLV per Room and Gross Building Sq. Ft.		$10,815	$18	
Eastern Neighborhood Fees and Mission Bay CFD [5]				
RLV per Room and Gross Building Sq. Ft.		$10,461	$17	

[1] Based on review of the current market conditions around the site.
[2] EPS estimate based on review of Concord Group's work on Transbay Terminal.
[3] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
[4] Per August 9, 2010 Citywide Development Fee Register.
[5] Per Redevelopment Plan for Mission Bay North.
Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems, Inc.

Appendix Table 2C *215' Tower over 35' Podium*
Hotel Residual Land Value
4th & King Railyards Study; EPS #17004

Item	Assumption	Per Room	Per Sq. Ft.	Total
DEVELOPMENT PROGRAM ASSUMPTIONS				
Site sq. ft.				43,560
Rooms				871
Sq. Ft. per room				600
Construction (Sq. Ft.)				**522,720**
Parking Spaces (construction)	- /room			0
Parking Area (construction)	325 sq. ft./space			**0**
Total Sq. Ft.				**522,720**
REVENUE ASSUMPTIONS				
Room Revenue				
Average Daily Rate [1]	$193 /room/night	$193	$117.10	$61,212,690
(less) Vacancy Rate	30%	($58)	($35.13)	($18,363,807)
Room Revenues, after vacancy		$135	$81.97	$42,848,883
(less) Admin & Gen. [2]	10%	($13)	($8.20)	($4,284,888)
(less) Marketing [2]	8%	($11)	($6.56)	($3,427,911)
(less) Property O&M [2]	5%	($7)	($4.10)	($2,142,444)
(less) Energy Costs [2]	5%	($7)	($4.10)	($2,142,444)
(less) Management Fee [2]	3%	($4)	($2.46)	($1,285,466)
Subtotal, Annual Net Operating Income		**$93**	**$56.56**	**$29,565,729**
Capitalized Value (capitalized at 10.0%) [3]	10.0%	$339,368	$566	**$295,657,000**
DEVELOPMENT COSTS				
Direct Costs				
Building Construction Cost [2]	$315 /sq. ft.	$189,000	$315	$164,656,800
FF&E	$25	$15,000	$25	$13,068,000
Parking Cost	$0 space	$0	$0	$0
Subtotal Building and Parking Costs		$204,000	$340	$177,724,800
Indirect Costs				
Soft Costs (% of Direct Costs)	30.0%	$61,200	$102	$53,317,440
Subtotal Total Development Costs (Direct and Indirect)		$265,200	$442	$231,042,240
Contingency (% of Total Development Costs)	5.0%	$13,260	$22	$11,552,112
Development Fee (% of Total Development Costs)	15.0% of total costs	$39,780	$66	$36,389,153
Total Costs		**$318,240**	**$530**	**$278,983,505**
Residual Land Value Scenarios				
No Impact Fee				
RLV per Room and Gross Building Sq. Ft.		$21,128	$35	
Citywide Impact Fees [4]				
RLV per Room and Gross Building Sq. Ft.		$2,815	$5	
Eastern Neighborhood Impact Fee Program [4]				
RLV per Room and Gross Building Sq. Ft.		($3,314)	($6)	
Eastern Neighborhood Fees and Mission Bay CFD [5]				
RLV per Room and Gross Building Sq. Ft.		($3,520)	($6)	

[1] Based on review of the current market conditions around the site.
[2] EPS estimate based on review of Concord Group's work on Transbay Terminal.
[3] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
[4] Per August 9, 2010 Citywide Development Fee Register.
[5] Per Redevelopment Plan for Mission Bay North.
Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems, Inc.

Appendix Table 3
Retail Residual Land Value
4th & King Railyards Study; EPS #17004

Ground floor retail at grade

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS			
Site sq. ft.			43,560
Construction Sq. Ft. (GSF)	1.00 FAR		**43,560**
Efficiency Ratio	100%		
Leasable Area, Sq. Ft. (NSF)			**43,560**
Parking Spaces (construction)	- /1,000 NSF		0
Parking Area (construction)	325 sq. ft./space		**0**
Net Sq. Ft. (NSF)			**43,560**
REVENUE ASSUMPTIONS			
Rental Revenue (NNN Terms)[1]	$40.00 /NSF/yr.	$40.00	$1,742,400
(less) Operating Expenses	10%	($4.00)	($174,240)
(less) Vacancy Rate	10%	($4.00)	($174,240)
Subtotal, Annual Net Operating Income		**$32.00**	**$1,393,920**
Capitalized Value (capitalized at 8.5%) [2]	**8.5%**	**$376**	**$16,399,000**
DEVELOPMENT COSTS			
Direct Costs			
Building Construction Cost [3]	$150.00 /GSF	$150	$6,534,000
Parking Cost	$50,000 space	$0	$0
Tenant Improvements	$50.00 /NSF	$50	$2,178,000
Subtotal Direct Costs		$200	$8,712,000
Indirect Costs			
Soft Costs (% of Direct Costs)	18.0%	$36	$1,568,160
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$7	$313,632
Subtotal Indirect Costs		$43	$1,881,792
Subtotal Total Development Costs (Direct and Indirect)		$243	**$10,593,792**
Contingency (% of Total Development Costs)	5.0%	$12	**$529,690**
Development Fee (% of Total Development Costs)	15.0% of total costs	$38	**$1,668,522**
Impact Fees (Excluded scenario)	$0.00 /GSF	$0	**$0**
Total Costs		**$294**	**$12,792,004**
Residual Land Value Scenarios			
No Impact Fee			
RLV per Gross Building Sq. Ft.		$83	
Citywide Impact Fee [4]			
RLV per Gross Building Sq. Ft.		$46	
Eastern Neighborhood Impact Fee Program (Tier 1) [4]			
RLV per Gross Building Sq. Ft.		$38	
Eastern Neighborhood Fees and Mission Bay CFD [5]			
RLV per Gross Building Sq. Ft.		$36	

[1] Based on review of the current market conditions around the site.
[2] Based on Emerging Trends in Real Estate 2010 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
[3] EPS estimate based on review of Concord Group's work on Transbay Terminal.
[4] Per August 9, 2010 Citywide Development Fee Register.
[5] Per Redevelopment Plan for Mission Bay North.
Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; San Francisco Redevelopment Agency; Economic & Planning Systems, Inc

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MEMORANDUM

TO: Joshua Switzky, San Francisco Department of City Planning

THROUGH: Mary Laux, Nick Haskell, AECOM San Francisco

FROM: Tom Matoff, Director, Transportation Planning, LTK Engineering Services

DATE: 1 September 2010

SUBJECT: Fourth Street Terminal: Background, General Assessment of Trackage, Plans, Operating Requirements and Developable Space

1. Background: Approach Trackage and General Configuration

The Caltrain Terminal in San Francisco occupies the blocks bounded by Fourth Street on the east, Seventh Street on the west, Townsend Street on the north and King Street on the south. Mainline trackage approaching the terminal throat from the south also occupies a significant part of the block bounded by Seventh, King, Sixth and Berry Streets. These blocks are half-blocks in the 100 vara section of the O'Farrell survey, which is the explanation for their dimensions, 100 varas being 275 feet, the width of the Caltrain terminal blocks, and 300 varas, or 825 feet, corresponding to their length.

Emerging from a series of tunnels, the Caltrain mainline approaches the terminal parallel to Seventh Street on its east side from 16th Street north to what would be Channel or Berry Streets if they went through to Seventh. It then swings 90° to the east, on what to the railroad is a fairly tight curve, to parallel King and Townsend Streets into the stub end terminal at Fourth Street. The railroad alignment therefore is in conflict with both east-west surface traffic circulation across Seventh between Townsend and 16th, and also with north-south surface traffic circulation across Townsend between Seventh and Fourth. The Sixth Street I-280 ramp passes over the terminal trackage.

The explanation for this L-shaped alignment is essentially historical. These blocks have never been used for anything other than railroad operating purposes. Constructed during the Civil War, and opened in 1863, Caltrain's ancestor, the San Francisco and San Jose Railroad, did not follow the current alignment east of Potrero Hill, but rather followed one similar to the current BART routing west of San Bruno Mountain and through the Mission District, running up Harrison Street at grade north from 22nd. At that time, although the lots for the terminal had been

purchased by the railroad company, the terminal area was still under the waters of Mission Bay. There were several interim terminal sites, including a short-lived operation down Market Street, but eventually the land that had been purchased was filled, and a station fronting on Townsend between Third and Fourth was opened in 1875. The railroad approached this terminal using Division Street, curving into the northwest corner of the property through the area now occupied by the unused storage tracks. By this time the line was part of the Southern Pacific Company, which built its headquarters building across the street on the northeast corner of Fourth and Townsend. Later, early in the 20th Century, the fast, direct and gradeless Bayshore cutoff between San Bruno and San Francisco was built, connecting into the original mainline at Seventh and Townsend Streets using the present sharp curve and generally establishing the pattern seen today. A large railroad yard for freight car classification and switching, as well as servicing and maintenance of cars and locomotives, was built at that time at "Bayshore", the railroad name for Visitacion Valley. The density of passenger and freight service also required car storage and servicing facilities adjacent to the Third Street Station, and also a locomotive roundhouse and engine terminal to support commuter and intercity passenger trains at "Mission Bay", near Third and 16th Streets.

After the Southern Pacific's Townsend Street headquarters building was destroyed in 1906, the company built a major new office building near the Ferry Building on Market Street between Spear and Steuart, today known as One Market Plaza. As the closest thing San Francisco ever has had to a true Union Station, the Ferry Building was the focus of San Francisco's regional connections, the key to Downtown's centrality in an era of water transportation. Southern Pacific made plans for extension of the Peninsula service to the foot of Market Street so that all rail passenger service would be in one place, but these plans were never carried out. Instead, a new 15-track terminal with a brick-and-stucco headhouse fronting on Third Street at Townsend was opened in 1915. With other railroads considering serving San Francisco from the south, there were also other proposals for electrification and for multiple tracks on the Peninsula and into the city, some coeval with the Grand Central and Penn Station electrification projects in New York, and some remarkably similar to current plans. The Burnham Plan of 1906 envisioned a large union station at the foot of a wide Eleventh Street boulevard, terminating a vista from Civic Center. The Bion Arnold transit plan of 1911-12, which laid out the original MUNI system for the city, contemplated a continuation of the SP tracks up Seventh Street to a terminal at Mission. Like the Southern Pacific's own ideas, these never came to fruition.

After the opening of the Bay Bridge and its railway terminal, Downtown San Francisco's regional transportation connections lost their focus in a proliferation of terminals and stations. Long distance rail passenger traffic declined, and with the creation of Amtrak in 1971, disappeared entirely from San Francisco, leaving only the Southern Pacific Peninsula commute service in the deteriorating Third Street station. With the extension of Interstate 280 into the South of Market area, new connections from the city street grid to the freeway were at odds with the railroad's at-grade crossing, and frequent closure of Fourth Street for train movements in and out of the Third Street station.. The Southern Pacific itself was unenthusiastic about its passenger operation. The solution was to cut back the commute service from Third to Fourth, producing the present configuration in 1975. The Third/Fourth block was sold off. With the loss of intercity trains, the drastic decline in freight train operation in and out of the city, and no corporate commitment to continued commuter rail service, both the Bayshore Yards and Mission

Bay complex were also abandoned and removed during this period, leaving the Fourth Street terminal without any off-site storage or servicing facilities.

2. Current Use

Fourth Street Station, opened in 1975, is a stub-end terminal with 6 platforms, each providing access to two tracks, and therefore offering a total of 12 active tracks. There is also one pocket track without platform which ends west of the station concourse on the north side of the complex; according to our tour guide, it is not regularly used. Current scheduled Caltrain service calls for 45 arrivals and 45 departures, 90 scheduled train movements per weekday. This is following recent service reductions, the previous maximum, about 100 scheduled train movements per weekday, having been reached about 3 years ago.

In very general terms, this level of service for a 12-track station would not be considered intensive by world standards. As a gross rule of thumb, the maximum reasonable limit of a stub terminal configured like Fourth Street might typically, given American operating practices and common peaking characteristics, reach 30-35 scheduled train movements (arrivals plus departures) per day. However, Fourth Street is significantly handicapped by the absence of nearby, readily accessible train servicing and storage facilities, so that terminal tracks have to be used for storage. This reduces the track time available for train movements, and thus also reduces terminal capacity. Offsetting this limitation somewhat has been Caltrain's use in recent years of push-pull trainsets, whose servicing needs are limited to engineers changing ends, cleaners working through the interiors of the coaches, and only the most minor servicing of the train's mechanical and electrical components.

Despite the service reduction, and fare increases, both brought about by the recession, ridership has not fallen off too badly. In comparison with Southern Pacific days, the station seems quite busy, and in fact Caltrain recently announced that June 2010 ridership actually increased slightly in comparison with June 2009.

The current station's platforms are 16 feet wide, and fill up with a crowd of people in a few seconds on the arrival of peak trains. Caltrain staff correctly notes that the platforms are not of sufficient width to handle a surge of arrivals and simultaneously provide reasonable capacity for outbound passengers. This is an important consideration because, in common with other major commuter rail systems in the U.S., the most significant growth factor in ridership has been in non-traditional markets – local travel and, importantly in San Francisco, reverse commute traffic on a fast service to Silicon Valley. These markets do not conform to traditional concepts of "commute" travel, i.e. morning peak trips into the central city and evening peak trips out of it. Instead, they often offer counter-flow business, desirable from the point of view of operational efficiency and high market penetration for transit, but requiring adequate pedestrian space to accommodate inbound and outbound crowds at the same time. With fewer platforms, frequent arrivals and departures from both sides of the platform, and quick turnaround times for electrified EMU service, pedestrian handling capability will be an important consideration for Caltrain.

3. Current Plans

Today the city's regional and intercity rail policy goals stress the new Transbay Transit Center location. The California High Speed project is the catalyst for an underground extension of track from to the new terminal site at First and Mission, as well as a complete electrification of Caltrain service. The track arrangement and capacity at the Transbay Terminal have been under study for some years, but the conceptual design conclusion reached there is for a five-track underground stub-end terminal, with three tracks and two platforms for long-distance high speed trains, and two tracks and one platform used for Caltrain commuter service. Caltrain service to and from Transbay will also serve a Fourth and Townsend local stop in the Terminal subway tunnel under Townsend Street.

While Transbay will provide a highly attractive location, with excellent local and regional transit connections, the trackage arrangement will not provide sufficient capacity at the Transbay site for all planned Caltrain and High Speed trains. Nor could the Terminal's underground trackage accommodate potential diesel-powered intercity or corridor trains which may be added to the Caltrain line. Consequently, it is proposed that the Caltrain Fourth and King site be retained for some High Speed and Caltrain frequencies, as well as possible diesel-powered intercity or corridor trains should they actually be implemented.

The "Concept Level Operations Analysis for San Francisco Terminals" conducted for the California High Speed Rail project evaluated several alternative configurations of terminals and trackage in San Francisco relative to the combined train handling demands of frequent intercity high speed service and Caltrain regional rail trains. The latter were assumed to be compatible high-performance EMUs operating on short headways. This analysis was apparently the key factor in coming to the conclusion that the optimal capacity solution consists of shared (High Speed plus Caltrain) terminals at both Transbay and Fourth Street. It does not appear that an additional layer of conventional diesel-powered service was assumed in this analysis, but it is likely that their presence would only strengthen the conclusions reached.

As a result of this work, it appears that the working conclusion is that Fourth Street Station will have the following overall characteristics:

- It will serve both High Speed intercity trains and Caltrain regional trains

- It will have two 30-foot wide platforms for high speed trains, serving four tracks

- It will have two 30-foot wide platforms for Caltrain, serving two tracks each, and one 20-foot wide platform, serving one Caltrain track, the terminal therefore providing five Caltrain tracks overall

- Caltrain platforms will be 800 feet long, and High Speed platforms will be 1300 feet long; these are, respectively, about one block, and one block and a half long in this district

In response to a question at the July 20 meeting, the 30-foot wide platforms were stated to be wide enough to meet Caltrain's pedestrian capacity requirements, and provide required

clearances to trains, while still providing adequate width to accommodate the piers needed to support aerial development.

Still unclear at present is the related matter of a coach yard for servicing of High Speed and regional trains. It is assumed that major High Speed trainset maintenance will occur at a central facility to be built in the San Joaquin Valley. The Caltrain maintenance center is located in San Jose. However, absent previously available maintenance facilities closer to San Francisco, and with the new Transbay Transit Center limited by underground constraints, there remains a significant question as to where routine servicing of trains originating and terminating in San Francisco is going to occur.

4. Some Observations and Responses

● With regard to the five Caltrain tracks provided conceptually at Fourth Street, it may be noted that in combination with the two Caltrain tracks at Transbay, the total overall number of terminal tracks available for Caltrain operations in San Francisco would be reduced from the present 12 to seven – a 40% reduction. One might speculate that, should the total number of Caltrain trains double in 20 years, as they have in the last 20 approximately, this would imply a terminal track operating density of nearly (200)/(7), or about 30 trains per track per day, an intensive operation by U.S. standards – well above today's level - that could conceivably begin to approach the limit of reasonable capacity. Significant additional capacity delivery into the city from the south might not then be achievable subsequently unless a tube were built to the East Bay after 2030, as envisioned in the MTC Regional Rail Plan. Through terminals have a large capacity advantage over stub-end terminals, and therefore through south to east operation would presumably be able to provide significantly enhanced throughput capacity.

● The contemplated pedestrian crossings from Townsend to King Streets on the alignment of Fifth Street, or mid-block between Fifth/Sixth or Sixth/Seventh are obviously desirable considered in isolation, but an at-grade pedestrian crossing of the terminal trackage is simply not feasible, and would not be permitted by the regulatory authorities (California Public Utilities Commission and Federal Railroad Administration). To accomplish pedestrian connections like this, either the trackage would have to be raised above grade or lowered below grade, which seems unlikely from the point of view of constructability and cost, or else the pedestrian facilities would have to be raised above the tracks. The latter would tend to support the notion of a pedestrian podium above the tracks as part of air rights development, and might also lead to provision of better connections between Caltrain and MUNI Metro and bus stops, which presently involve crossing one or more busy streets.

● The presence of diesel-powered trains, should they be introduced, would require careful design integration with any elevated pedestrian level, to ensure provision of adequate ventilation of diesel locomotive exhaust.

● Whether a westward shift of the platforms could be achieved cannot be determined until preliminary engineering of the terminal trackage is undertaken. One hesitates to say it cannot be done, but the geometrics of the situation suggest that, at least in the case of the High Speed platforms, this would seem to be a difficult prospect. The conceptual drawing of the proposed terminal arrangement suggests that the point of curvature from west to south (the determining

bend from Townsend to Seventh) begins just west of the west edge of the platforms. If that conceptual drawing is literally correct, it would suggest that a westward shift is really not feasible.

● Absent preliminary engineering, and a long-range plan showing, among other things, support facilities for Caltrain, it also would be unwise to reach a conclusion about whether the presently unused storage tracks in the northwest corner of the property could be removed. It is certainly conceivable. However, the conceptual drawing illustrates the Terminal track curvature in subway turning from Townsend into Seventh underneath this property, suggesting that it might be desirable to design and build these tracks first before permitting development at surface level. The other consideration here would be that, as noted, Caltrain's density of service per terminal track might turn out to be very high. There are no current provisions for a coach yard or servicing area for either Caltrain or High Speed, nor are there many places where faulty equipment might be shoved out of the way. The unused storage track area might wisely be retained for such purposes until permanent servicing facilities for Caltrain and High Speed are available.

cc:

APPENDIX C

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DRAFT TOWNSEND STREET AND STATION
DESIGN GUIDELINES AND RECOMMENDATIONS

NOVEMBER 13, 2009

Contact: Joshua Switzky (Joshua.Switzky@sfgov.org, 575-6815)

Background

The Transbay Joint Powers Authority (TJPA) and their consultants are designing the Downtown Extension (DTX) and the Townsend Street Station ("the station"). The station will be a below-grade subway station for Caltrain within the Townsend Street right-of-way between 4th and 5th Streets, adjacent to the existing surface station/railyard, which will remain but will be somewhat modified. TJPA has presented an initial design scheme for the station (attached).

The Planning Department has reviewed the initial station and Townsend Street layout produced by the TJPA has significant concerns about the positioning and distribution of station elements as they relate to the surface of Townsend street and affect the right-of-way.

TJPA has asked the Planning Department to convey to the TJPA a set of requirements and design guidelines for Townsend Street and for the interface between the station and the right-of-way to guide and direct the design of the station, particularly the location and orientation of surface-penetrating station elements (e.g. stairs, elevators, vents) such that they complement and do not confound the City's future vision for Townsend Street.

These initial recommendations are intended to guide the TJPA regarding the Townsend street curb lines and location/configuration of station elements, and are a partial response to preliminary layouts for the Townsend Station presented to the Planning Department by TJPA. While the crux of this exercise is to provide guidelines for the section of Townsend between 4th and 5th Streets only (as the DTX/Townsend Station does not affect the ROW west of 5th or east of 4th), some long-range thinking must be made for the corridor as a whole to be able to give guidance on the section between 5th and 4th. Additionally, while detailed striping plans and traffic engineering are not necessary for Townsend, some general assumptions must be made to determine desired curbline locations.

Related Planning Efforts and Context

There are several current or pending planning efforts that are directly pertinent to Townsend Street and suggest specific needs, constraints or visions that must be considered.

- *Railyards Study* – The Planning Department has been funded by the SFCTA to study the potential for air-rights development over the railyards to achieve several objectives, including (1) raising additional revenue for the DTX project and improvements, (2) creating transit-supportive land use, and (3) creating improved linkages from areas on the north side of the railyards to Mission Bay on the southern side. One of the primary challenges and goals of development at the railyards will be the creation of an active, pedestrian-friendly edge to the railyards. Additionally given the need of any development to span the active railyard and to provide access to development above, there will need to be "liner" buildings of at least 25 feet in depth along Townsend Street.
- *Bike Plan* – Townsend Street is a designated bike route and improvements to the street are identified in the Bike Plan with two alternative street configurations analyzed. These recommendations should be incorporated and modified as necessary and appropriate to fit within the evolving context.
- *Transit Effectiveness Project* – The MTA's 5-7 year vision for the transit network proposes changes to transit service in the area, including Townsend Street.
- *SPUR* – In July 2007 SPUR convened a committee to envision land use and public realm changes to the railyards and the area directly to the north, including Townsend Street and 4th Street. SPUR's vision paper laid out a vision for Townsend Street that includes a greenway and multi-use path along the south side.

TOWNSEND STREET AND STATION
URBAN DESIGN AND TRANSPORTATION
RECOMMENDATIONS AND GUIDELINES

Following are a set of guidelines and recommendations for design of the station and the Townsend Street right-of-way itself. Accompanying this are illustrative cross sections and plan views that Planning believes would best meet these guidelines and the vision for Townsend Street.

Note: The ROW cross-section provided by the TJPA (and shown in their drawings) for Townsend street between 4th and 5th Streets is 132', based on the TJPA's proposed reconfiguration of the railyards. West of 5th and east of 4th, the cross section is assumed to remain at 82.5'.

Note: For our purposes, TJPA has conveyed that the track and platform alignment is "fixed," but all other elements of the station are not, including all surface-penetrating elements (i.e. stairs, elevators, vent shafts).

Station Elements/Access

1. ***Surface elements should not be sited in the middle of sidewalks or be sited to block pedestrian sight-lines and paths of travel. All surface-penetrating station elements (i.e. stairs, elevators, vent shafts) additionally should be oriented parallel to the Townsend Street right-of-way, related to the geometry of the roadway, and not to the off-angle alignment of the tracks and platforms below grade.*** These elements shall be coordinated and aligned according to a linear vision of the corridor's streetscape at the surface. Surface elements shall be sited and arranged to provide continuous, unobstructed pedestrian sight-lines and paths of travel along the length of the Townsend Street sidewalks, and shall not form lateral or off-angle visual or physical obstructions. The current concept design features large vents and stairways in the middle of the southern sidewalk that would severely block sightlines and obstruct sidewalk circulation.

2. ***Access points to the subway station should be organized by and at the intersections. Mid-block stairs should be eliminated or relocated to a more useful location.***

The number, location, and distribution of stairways from street level to the station need to be reconsidered:

- *Do there really need to be stairs/entries, or the same distribution of stairs/exits, on both sides of Townsend Street?* Considering that there is a concourse level that allows people to distribute and descend from there to the appropriate platform.

- *Do there needs to be so many access points (i.e. stairwells) from the street level into the station, particularly on only one block*? This is a high number of stairwells for only one block – the south side of the street has at least four (4) stairwells from the street on only one block. The typical BART/Muni subway station has at most two entry points on one block – at the corners, and none mid-block.

- *Why are there stairways from the street located mid-block?* These seem to be useless from an access standpoint. Who would use these mid-block stairs? No matter which direction you come from (i.e. from 4th or 5th Street), you would use the stairways access points at the corners – you would not walk past the corner stairs to use the mid-block stairs. Same thing for exiting – people exiting the station will traverse the concourse to use the furthest exit in the direction they are headed on the surface (i.e. toward 4th or toward 5th Street); people are not likely to choose to use mid-block exits.

3. ***Move/add stairway to provide at least one entrance on the east side of 4th Street***. Considering that 4th Street is an incredibly busy roadway, with a streetcar (Central Subway), buses, and lots of traffic, it would be wise to extend at least an arm of the concourse level eastward under 4th Street and add one or two a stairway access to the station at either the northeast or southeast corner of the street. This will allow passengers/pedestrians to enter and exit the station without having to cross this very busy intersection. This will be very beneficial for both pedestrians/passengers, transit, and traffic. In the long run, this may relieve substantial conflict and congestion at this corner. This access could be a relocated stairway from elsewhere (i.e. the less useful mid-block stairs) on Townsend to keep the total number of access points the same.

4. ***All surface-penetrating station elements (i.e. stairs, elevators, vent shafts) on the south side of the street should be located along the southern property line against the surface railyard, in a 25' deep zone that will feature "liner buildings" in the future.*** Considering that any future development over the railyards will need to be rooted on either side of the yards, as well as create an accessible and active edge to the development, there will need to be "liner buildings" that line the edge of the yards. It is expected that the depth of such buildings will need to be approximately 25 feet. This space would contain structural columns for the development above, access (e.g. stairs, elevators), and street-activating uses such as retail, lobbies, etc. Incorporating the Townsend access and vent elements into this zone would be an ideal complementary fit. Even if the air-rights development is ultimately deemed infeasible, Locating the station elements in this zone is still preferable, along with other "liner buildings" for the station, including retail and ancillary station uses.

5. ***Use the existing station building: There should be primary access into the subway station from the main 4th/Townsend Station building along 4th street.*** The surface station and

subway station should not be considered as completely separate facilities, as they are now. Access, information, and ticketing should centralized for both the surface and subway stations. This building is the central focal point for the station. It will be natural and expected by passengers, particularly non-regular passengers that the station building is the primary access point for both the above and below ground stations. Outbound passengers particularly will want to take the next available train, which may be at either the surface or subway station, so there needs to be a centralized location (i.e. the station building) where they can see real-time information boards for departing trains, buy tickets, and then directly access the surface platforms or subway concourse. The existing station building – at least the northern end of it, will need to be redesigned and enlarged to incorporate the subway access. Stairwells, elevators and vent shafts for the subway station currently shown on the south side of Townsened Street near the station building should be designed as integral components of a redesigned station building.

6. ***Stations elements on the north side of Townsend Street should be clustered to the maximum extent feasible and aligned in a consistent 15' wide curb zone.*** Vent shaft structures should not be free-standing and should be joined or clustered with other elements, such as elevators or stair structures. The station elements, located on sidewalk extensions, should alternate with long pockets of curbside parking/loading/bus stops.

7. ***No station elements should be located in the 5th Street right-of-way alignment.*** This corridor should be kept completely clear of any surface-penetrating station elements, including stairs, vent shafts, and elevators. A primary urban design and circulation objective of any building over the railyards will likely be to create a pedestrian and visual connection along the 5th Street corridor. Eventually there will also be pedestrian bridge over Mission Creek aligned with 5th Street, so this may become an important connection to Mission Bay.

Greenway/Multi-use path

The south side of the street, due to the presence of the railyards, provides the unique and important opportunity to create an off-street multi-use path and greenway for a full half-mile (over 2,500 feet long), between 7th and 4th Streets, due to the total lack of driveways and cross streets. This opportunity is rare in the city and should not be missed. Additionally, this greenway and path could connect to a future greenway path on the east side of 7th Street (between 16th and Townsend Streets) along the railway track edge, creating an off-street multi-use path over a mile long on two major bicycle routes.

Bicycle facilities

There must be dedicated bicycle facilities in both directions. The Bike Plan illustrates Class 2 bicycle lanes in each direction. However, the DTX and Townsend Station project necessitates reconsidering the street configurations of Townsend Street shown in the Bike Plan. There are unique opportunities along Townsend Street due to the railyards:

Station Connection vs. Through-Cyclists. To accommodate both station-bound cyclists as well as through-cyclists (those continuing east and west on Townsend through this area), cyclists *could* use the bi-directional multi-use path (discussed above) on the south side that would terminate as it reaches the station between 5th and 4th Streets. At the 5th Street intersection, cyclists in either direction would be able to access the multi-use path, connecting to the Class 2 lanes in either direction east of 5th Street. This suggests that an eastbound Class 2 lane on Townsend, as shown in the Bike Plan, may not be necessary between 5th and 7th Streets if a multi-use path were available.

Transit

Townsend Street is the TEP-proposed 47 Rapid line route, so transit movement is a high priority. The Bicycle Plan proposals for Townsend show generally maintaining the current travel lane configuration of one lane in each direction. If it would be beneficial to transit operations, there is sufficient ROW width between 4th and 5th Street for a third travel lane, which could be used as either a second shared traffic lane or a dedicated transit lane in the primary direction (eastbound?). West of 5th Street, one lane in each direction is probably acceptable for transit operations. Considering that the Townsend Street area near the station and railyards is a Muni terminal area more so than a through-corridor, providing dedicated sufficient space and passenger activities and bus layover facilities is a high priority. This would include sufficiently wide sidewalks, pedestrian amenities, and generous curb space for Muni.

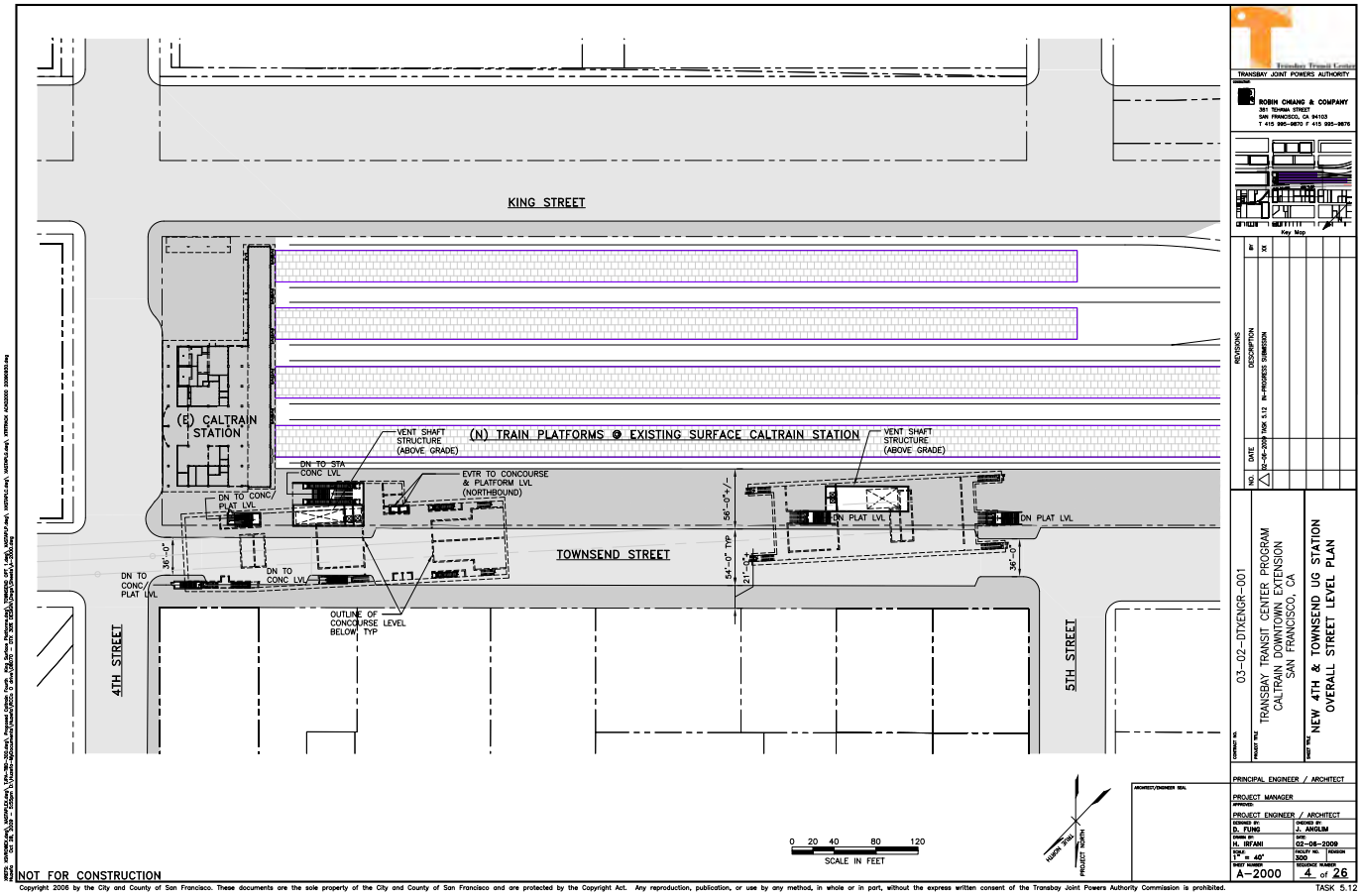
An eastbound bus stop must be located on the south side just west of 4th Street.

Taxi/Drop-Off

It is critical to maintain a curb parking lane on both sides of the street between 4th and 5th Street for taxi and other passenger loading/unloading activity. There is high demand and need for curbside taxi and passenger drop-off on Townsend to serve the stations. This is the second highest priority for curb space after bus stops. As there is currently, there needs to be a taxi zone on the south side of the street, and the curb parking on the north side can also be used for taxi activity.

On-Street Parking

On-street parallel parking can be accommodated, primarily west of 5th Street. While there is perpendicular parking today for almost the entire length of Townsend, this will not be able to be accommodated in the future as this is only possible today given the lack of other necessary and planned infrastructure (e.g. sidewalks, bike lanes, landscaping, etc.). Parallel parking can be accommodated on both sides west of 5th, or alternatively diagonal parking on one side with no parking on the other. The ultimate need for curb space for Muni and taxis between 4th and 5th Streets will determine whether general parallel public parking could be maintained on this stretch.



TASK 5.12

TRANSBAY JOINT POWERS AUTHORITY

ROBIN CHIANG & COMPANY
381 TEHAMA STREET
SAN FRANCISCO, CA 94103
T 415 285-8870 F 415 285-8876

Key Map

NO.	DATE	DESCRIPTION	BY
1	12-26-2009	TASK 5.12 IN-PROGRESS SUBMISSION	XX

REVISIONS

03-02-DTXEXGR-001

TRANSBAY TRANSIT CENTER PROGRAM
CALTRAIN DOWNTOWN EXTENSION
SAN FRANCISCO, CA

NEW 4TH & TOWNSEND UG STATION
OVERALL STREET LEVEL PLAN

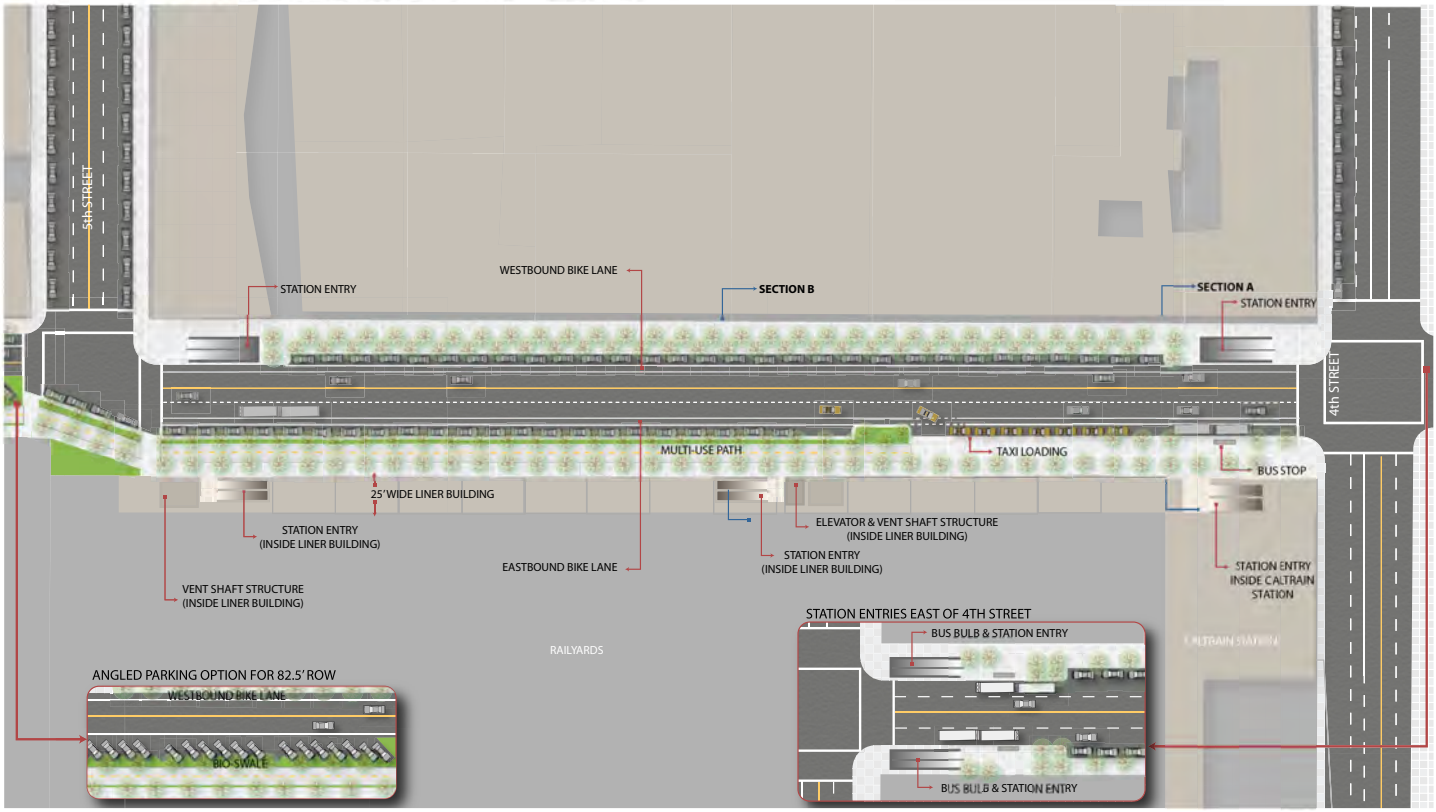
PRINCIPAL ENGINEER / ARCHITECT

PROJECT MANAGER

PROJECT ENGINEER / ARCHITECT

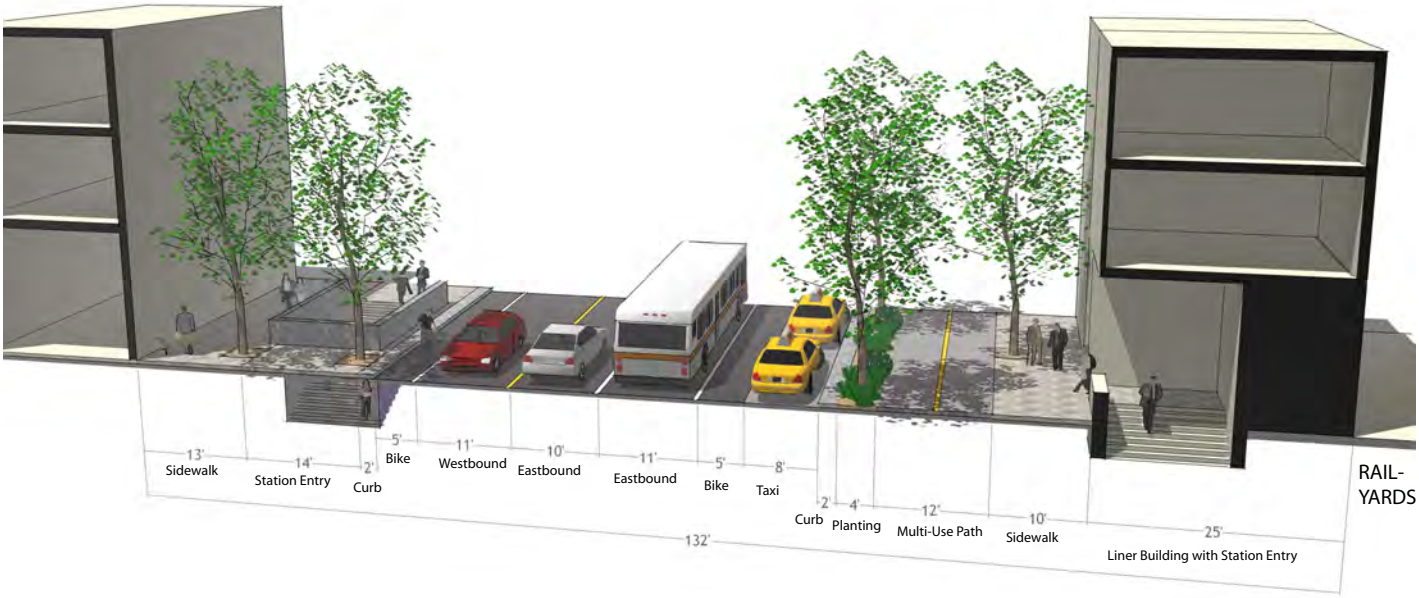
DESIGNED BY:	DRAWN BY:
D. FUNG	J. ANGLIM
CHECKED BY:	DATE:
H. IRFANI	02-26-2009
SCALE: 1" = 40'	SHEET NO. 300 REVISION
SHEET NUMBER: A-2000	SEQUENCE NUMBER: 4 of 26

DRAFT: TOWNSEND STREET CONCEPTUAL PLAN VIEW



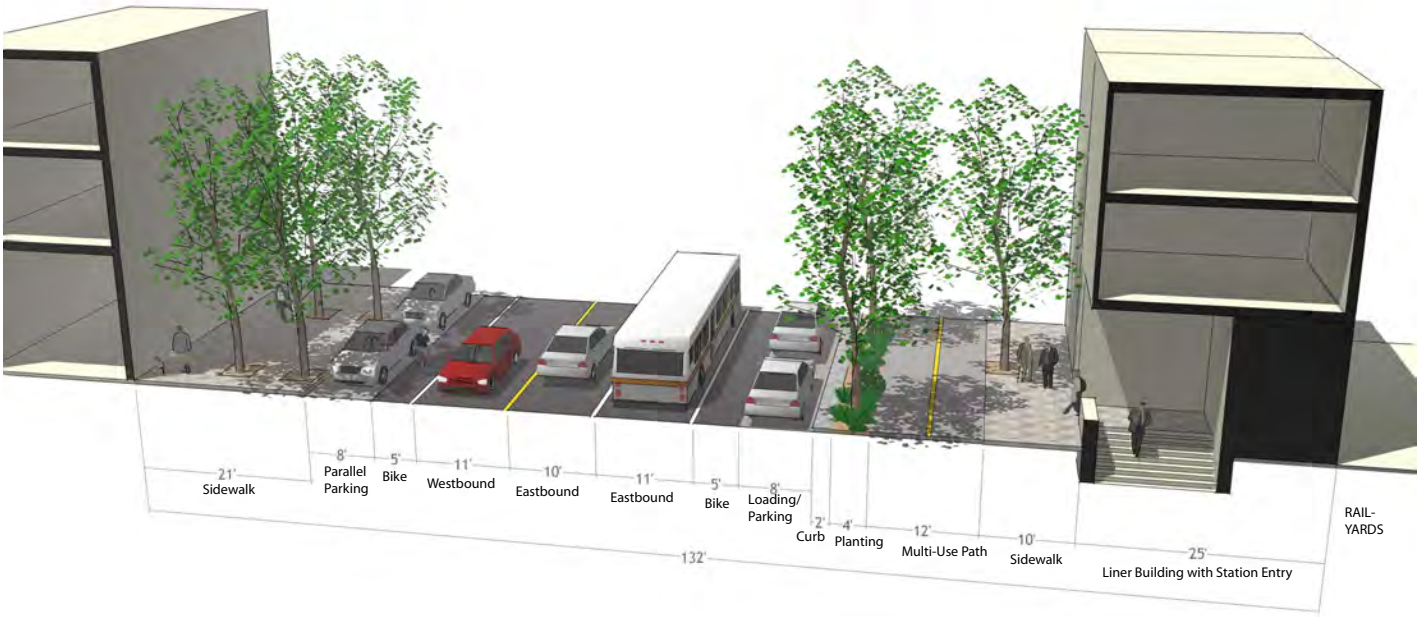
DRAFT: TOWNSEND STREET - 132' ROW

SECTION A: Looking East between 4th & 5th Street



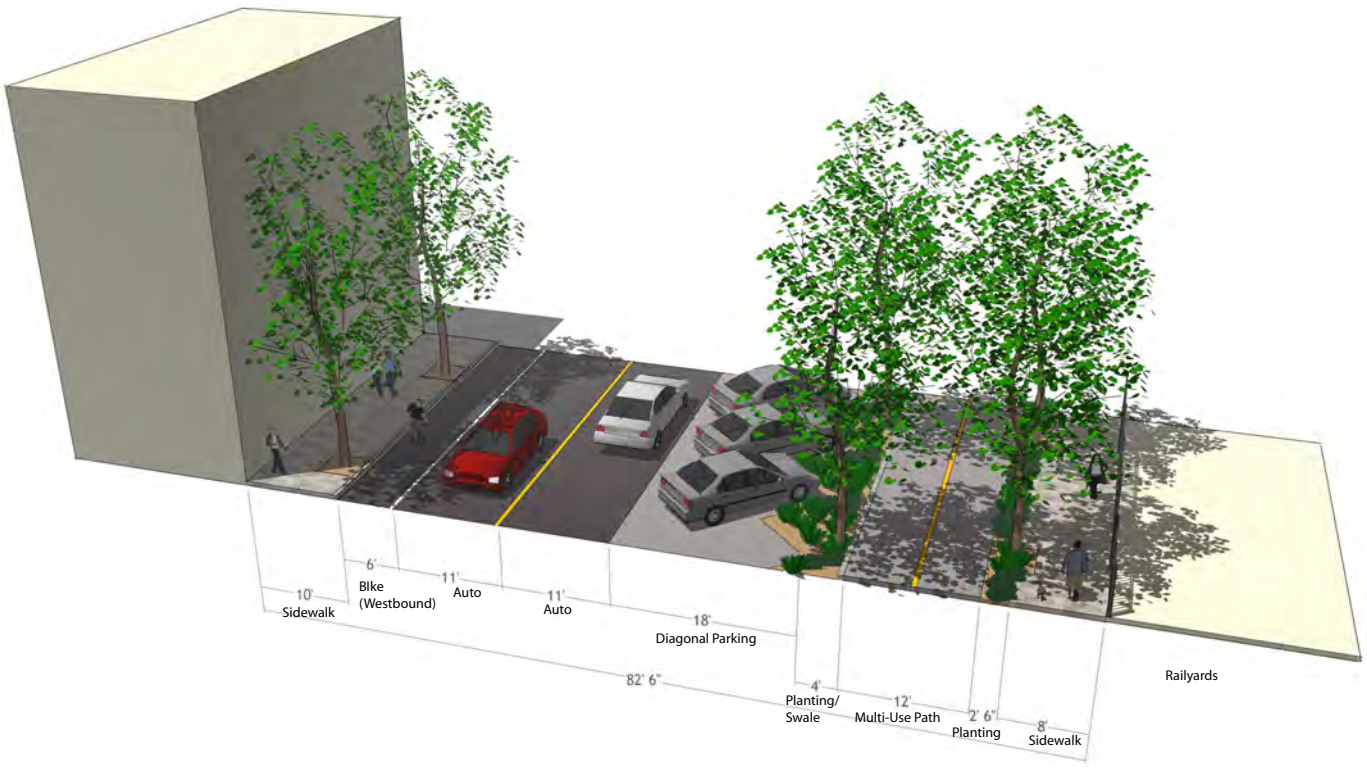
DRAFT: TOWNSEND STREET - 132' ROW

SECTION B: Looking East between 4th & 5th Street



DRAFT: TOWNSEND STREET - 82.5' ROW - DIAGONAL PARKING

Looking East between 5th & 7th Street



APPENDIX B

DRAFT MEMORANDUM

To: Joshua Switzky, San Francisco Planning Department
Mary Laux and Nick Haskell, AECOM

From: Darin Smith, Rebecca Benassini, and Catherine Meresak

Subject: Market Assessment of Potential Development at the 4th and King Site; EPS #121058

Date: May 23, 2012

Introduction and Purpose

The San Francisco Planning Department retained Economic & Planning Systems (EPS) as part of the AECOM consulting team to conduct an overview of market conditions and a feasibility analysis for potential development on the railyards at 4th and King Streets in San Francisco. This draft memorandum reports on EPS's preliminary findings regarding market conditions and likely market value of development at the site. Subsequent deliverables will analyze the financial feasibility of the various development types proposed for the site and evaluate the development's generation of revenue to the City and County of San Francisco (City). The memorandum includes a summary of the key findings of the analysis followed by sections which detail recent land transactions and the market for for-sale and rental residential, office, hotels, and retail development types near the site.

The 19.1-acre site is currently an active railyard where trains terminate in San Francisco and carry passengers from the City south to destinations on the Peninsula, San Jose, and Gilroy. In the future, the site may be available for development because the transit-related activity will be moved underground or off site.

The Economics of Land Use

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AECOM provided two development concepts for the site. Development Concept 1, "Boulevard Scenario" presumes that the Interstate Highway 280 will be altered to touchdown south of the site and continue on along a new boulevard. Development Concept 2, "Highway Scenario," does not assume any alteration to the highway and major roads around the site.

The Development Concepts are summarized in **Table 1** below. As shown, the Boulevard Scenario has more retail square feet and fewer residential units than the Highway Scenario, but the total development envelope is roughly equivalent.

Table 1. Development Concepts Summary

Land Use	Concept 1 "Boulevard"	Concept 2 "Highway"
Residential units	1,461	1,525
Office gross sq.ft.	935,407	969,924
Hotel rooms	144	148
Retail gross sq.ft.	388,971	303,395
Total Gross Developable Square Feet	2,986,862	3,005,753

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Sources: AECOM; Economic & Planning Systems, Inc.

This memorandum reports the market conditions and prices for the development categories identified in the Development Concepts. These findings may lead to revisions to the Development Concepts. Once a development program is settled upon, EPS will conduct a financial feasibility analysis aimed at estimating the land value of the site based on the uses. This later analysis will also estimate revenues generated to the City from the new development, based on a City-developed revenue model.

Key Findings

1. Based on comparable land sales, 4th and King is estimated to command a price of roughly $255 million total, assuming a clean, developable site.

Land sales in the area indicate that sales prices of between $10 million and $15 million per land acre ($240 to $350 per land square foot) for clean developable sites.[1] The developments

[1] The range is based on whether the Salesforce transaction at Mission Bay is included in the weighted average. Including the transaction leads to the $15 million per acre and $350 per land square foot estimate. While the transaction should certainly be considered in this analysis, the company may also be considered a unique user, seeking a particular location and willing to spend above market prices for a new campus. Also, it is important to note that Salesforce is now developing elsewhere in the City, leaving the future of the 14-acre location unknown at this time.

proposed on the comparable sites suggests that developers paid $124 per developable commercial building square foot (or $65 per developable commercial building sq. ft. excluding the Salesforce transaction) and $75,000 per residential unit for the land. Assuming the site has capacity for about 3 million square feet of development, the potential land value based on the comparable sales ranges from $210 million to $298 million, depending on whether the Salesforce transaction is considered in the weighted average land price, or excluded from it. $255 million is the average amount derived from this range of land values and development programs.

2. New condominiums at the site are expected to sell for roughly $750 per unit per square foot.

The for-sale residential market in San Francisco is beginning to recover after a steep decline in price points in late 2008. At the height of the market in mid-2007, the median price for a single-family home in San Francisco was $930,000. Early in 2009, less than two years later, that median price had declined by 55 percent to $588,000. Three years later, these prices have increased by about 10 percent to $647,000. This price is roughly back to about 2003 levels for new construction and resales of single-family homes.

Focusing on sales of new condominiums, newly constructed multifamily units in the 4th and King area have sold $665,000 to $1.1 million in the last year; the weighted average price of these sales was $999,000 in 2011. On a per square foot basis, sales ranged from $485 to $770 per unit square foot with the weighted average price per square foot totaling $750.

3. New apartments are expected to rent for $3.50 to $4.30 per square foot per month, with higher rents per square foot for 1-bedroom/1-bath units and lower rents for larger, 2-bedroom/2-bath units.

Unlike for-sale residential pricing, apartment lease rates in San Francisco declined by only about 5 percent overall during the recession. In 2011, lease rates increased by 10 percent over the prior year and are above the previous lease-rate peak during the dot.com boom in 2000.

Focusing only on newer apartment buildings near the 4th and King site, lease rates for these selected apartment buildings have increased by about 30 percent since 2008 (using data tracked for buildings with 50 units or more). While the apartment market is considered very strong in central cities like San Francisco, investors expect growth in market pricing to flatten in the next few years.To be conservative, newly developed apartment units at the 4th and King site are assumed to rent at lease rates that are equal to the average rate achieved at relatively new apartment buildings nearby.

4. New office development at the site is expected to command lease rates between $40 and $45 per square foot per year (/sq.ft./yr.), under full-service lease terms (FS).

Office lease rates in sub-markets proximate to the site have been volatile in the last few years. In 2008, the annual rates per building square foot reached almost $60 before falling to $35 in 2010. Since 2010, rates have been steadily climbing and are now just over $50. Rates in the submarket have only topped $50 during one other quarter since 2007. With a significant amount of square footage still undeveloped in Mission Bay (south of the channel) and major new sites now under planning (UCSF hospital, Pier 70, and Potrero Power Plant), the sub-market near 4th and King is a dynamic area of the City. Given the capacity nearby the site and the currently high

lease rates, new office development at this site is estimated to command average rates somewhat below those observed today, from $40 to $45/sq.ft./yr. (FS).

5. **Assuming growth in demand for hotel rooms in San Francisco is sufficient to justify new hotel development, average daily rates (ADR) for a new boutique hotel at 4th and King would likely be priced at the lower end of those surveyed, around $175.**

A survey of 13 hotels near the site – including full-service, limited-service and boutique hotels ranging from 3.0 to 4.0 stars – indicated ADRs of $200 in 2011 and RevPARs of $167 per room per night. Boutique hotels tend to command higher room revenues than full- and limited-services types, as they offer equivalent amenities to full-service hotels, but offer guests uniquely designed rooms and common spaces that do not conform to the standardized formats used by national chains. While a boutique hotel at 4th and King may command higher rates than a national chain, the location is situated in a pioneering area for new hotel development. Located some distance from downtown, the site would need to compete with the better located downtown hotels with competitively priced rooms.

6. **Small scale retail locations– not more than a couple thousand square feet – in the 4th and King area typically command lease rates of about $35/sq.ft./yr. (Triple net lease terms [NNN]).**

While the national retail market has been severely impacted by the economic downturn, lease rates and occupancy rates in San Francisco have not experienced the sharp downturn that has occurred in other, more suburban markets. Of the 3.8 million square feet of retail square footage in large retail centers in San Francisco, the vacancy rate decreased from 7 to 4 percent from 2010 to 2011. Current asking lease rates average $48/sq.ft./yr (NNN). These statistics for larger centers indicate a relatively healthy retail sector in the City. However, many of the ground level retail shops located along King Street today – very much like what is proposed for the site – are vacant. These shops are listed between $28 and $48/sq.ft./yr. (NNN).

7. **To be viable, the amount of retail included in the development concepts would need to draw a significant amount of sales from outside the spending expected to be generated by new residents and office workers.**

The AECOM development concepts include between about 300,000 and 380,000 square feet of new retail space. In very rough terms, spending from hotel guests, new residents, and office workers occupying the space included in the Development Concepts could support about 100,000 square feet of retail. Rather than assuming that retail at the site will capture a significant level of spending from growth elsewhere, EPS recommends that retail included in the Concepts be scaled down.

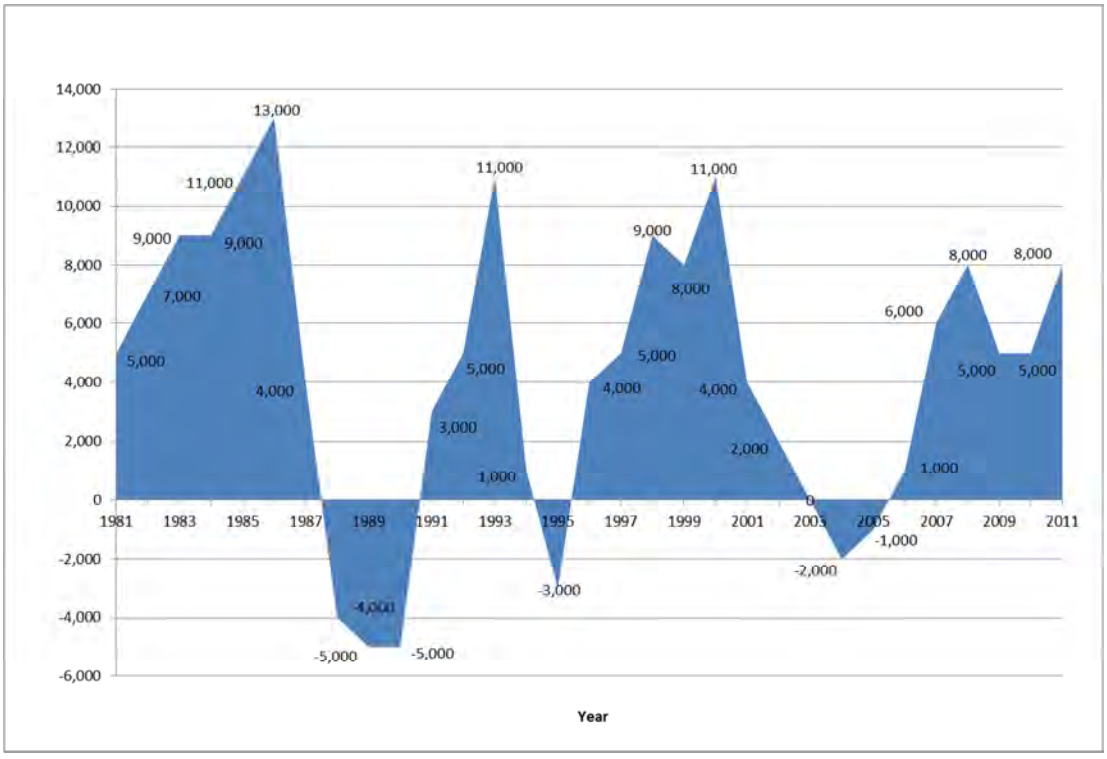
Market Context

San Francisco Population – Current and Forecast

Figure 1 shows population changes in the City of San Francisco from 1981 to 2011. **Figure 2** shows projections for the City from 2010-2040 from Caltrans and the California Department of Finance (DOF). Both projections anticipate population growth in the City though the rates of growth differ. Over the current decade, both agencies expect similar growth rates of roughly 0.5 percent annually, though DOF takes a more conservative view of population growth in the long

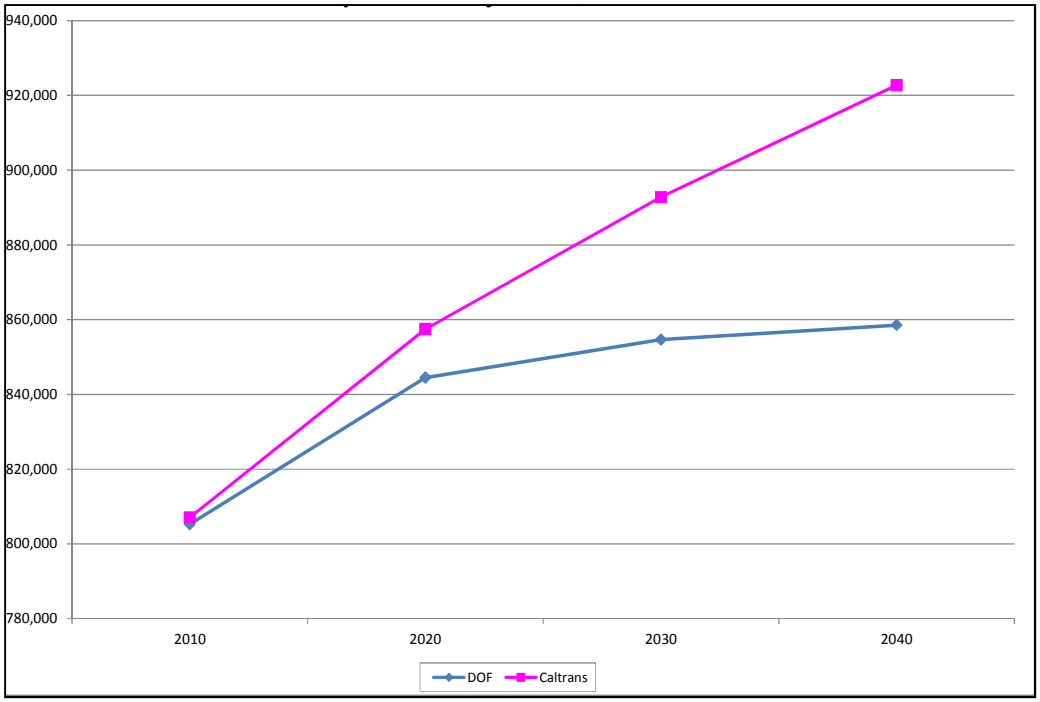
term. Caltrans projects an increase of nearly 115,000 people by 2040, which is more than double the DOF's more modest prediction of 53,000 people over the same time period. While the longer-term projects are significantly different, the 2020 projections are relatively similar, at about 850,000 people. Housing units on the order of 15,000-20,000 units will be needed accommodate population growth through 2020.

Figure 1. Change in San Francisco Population, 1981-2011



Source: California Department of Finance, Population Estimates

Figure 2. San Francisco Population Projections

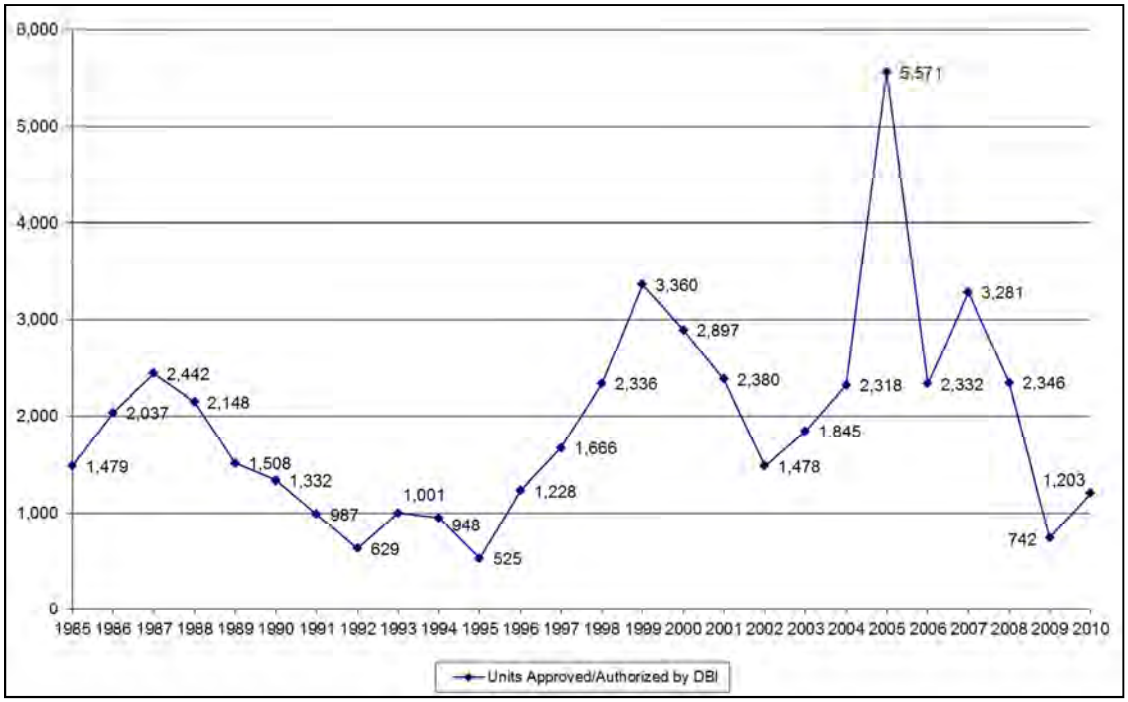


San Francisco Housing Units and Jobs

San Francisco's economy generally follows national business cycles. As shown in **Figures 1 and 3**, major housing growth was experienced during the 1980s speculation-based growth, the dot.com boom of 1995 to 2000, and the most recent buildup to the recession. These charts of population and building permit changes roughly match the economic cycles which occurred during these periods. During the 1980s, the deregulation of the savings and loan industry led to a surge in lending, spurring construction and jobs. The savings and loan scandals during that decade resulted from underwriting risky loans which ultimately went into default, bankrupting financial institutions and leading to an economic slowdown. The dot.com boom was fueled by speculative venture capital and the fall of the many internet companies whose revenues did not reach expected levels. Most recently, flexible lending standards in the subprime mortgage market created an artificial increase in demand due to easily accessible financing.

Figures 1 and 3 illustrate the numeric change of both residents and building permits issued between 1985 and 2011. The charts show population and building activity peaking around 1987 and 1999, and decreases bottoming out around 1990 and 2002. In an average year, about 2,000 units are approved by the City's Building Department. However, the current business cycle seems to counter the previous trend in that population has continued to grow during the bust even as new building permits declined significantly. This phenomenon suggests the ongoing absorption of the excess supply that was created during the housing boom of the mid-2000s.

Figure 3. San Francisco New Housing Permits, 1985-2010



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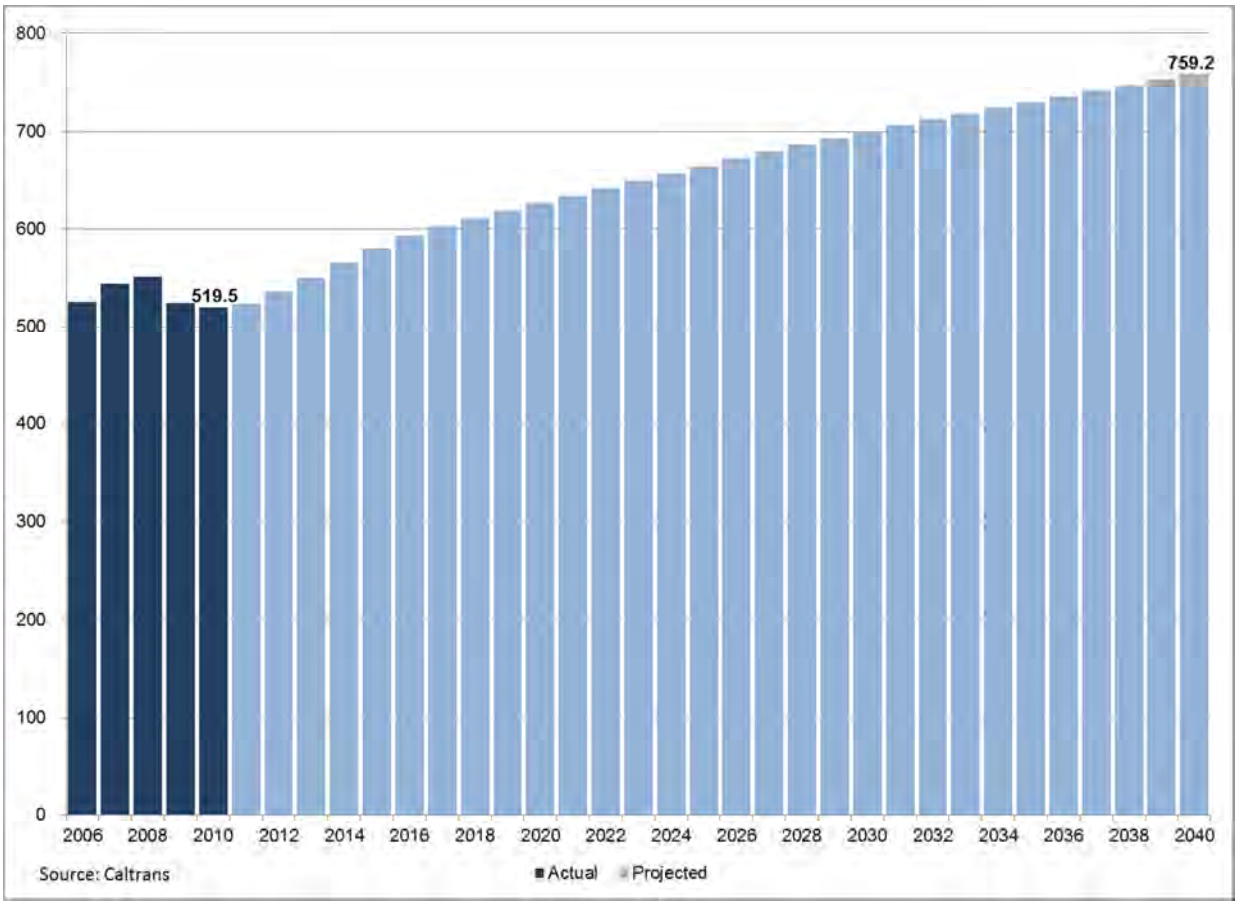
Source: San Francisco Planning Department: San Francisco Housing Inventory April 2011

Figure 4 reports the number of jobs forecasted in the City. As shown, economic growth is expected to add several thousand jobs per year in the near-term. Growth will need to continue through 2014 in order to gain back the number of jobs that were lost since 2008.

Figure 4. San Francisco Jobs: Past and Projected



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Locational Quality

The 4th and King site is located in San Francisco's Mission Bay/South Beach neighborhood, an area which has undergone tremendous change over the last 20 years. Beginning in 1989 with the development of hundreds of new residential units constructed along The Embarcadero (spurred in part by the San Francisco Redevelopment Agency-SFRA), the South Beach neighborhood began a transformation from an area of dilapidated warehouses, storage, and other abandoned or underutilized buildings into a high-density, mixed-use area. The opening of the San Francisco Giants baseball park in 2000 and the development of new high-rise office and condominiums continued the transformation and helped support the market for restaurants, bars, and other retail like grocery, pharmacy, and book stores.

The Mission Bay neighborhood is adjacent to the South Beach area. Mission Bay is in the midst of significant land use intensification and conversion. An old railyards site, the 303-acre area began development in 1999 and is now the location of more than 3,100 housing units, about 1.2 million square feet of biotechnology and office space, and the rapidly developing Mission Bay campus for the University of California, San Francisco (UCSF). UCSF's new campus site contains about 43 acres of instruction, research, and other student and support space and an additional 12-acre location where a new 550-bed hospital is being planned. At maximum buildout, the Mission Bay neighborhood will have 6,000 residential units, 4.4 million square feet of

biotech/office space, 2.65 million square feet at the UCSF campus, a new UCSF hospital, and a 500-room hotel, along with a variety of open and community spaces.

The 4th and King site is a large site with good access to car and public transportation options. Compared to the developable land on Seawall Lot 337, other undeveloped land in Mission Bay south of the channel, Pier 70, and the Potrero Power Plan site, it is located in the more built-out section of Mission Bay, with great walkability to shops, dining, and entertainment like the Giants baseball park. However, the other nearby development opportunities are waterfront locations, with premium view-potential. Also, Highway 280's proximity to the site may be considered a nuisance, blocking views and creating noise and pollution issues for new residents, workers, and hotel guests.

Land Transactions

Land transactions provide an important indicator of a site's value as a development site. Land sale prices reflect the full spectrum of a site's unique attributes —size, locational quality, state of entitlements, potential development density, allowable uses, and costs for construct on the site, among others. Reviewing actual land sales provides important information on how the marketplace is valuing developable land. As a land valuation tool, the comparables approach is limited to the number of transactions that have actually taken place and the extent to which the transactions are similar to the conditions of the subject property.

In selecting recent land sales for review, EPS has limited the range of transactions examined to those as similar to the 4th and King site as possible. Specifically, sales conforming to the following criteria are included in **Table 2** and **Figure 5**:

- Near 4th and King. The land sales included in the table include sales all within close proximity of the site.
- Since 2005. Relatively recent sales are considered.
- Residential or office/commercial uses. The land sales examined include residential, office, and mixed-use programs.
- Medium-to high-density. What can be developed - from a regulatory, a physical, and a market perspective – is ultimately what drives the value of land. All of the land sales in the table reflect planned developments similar to the program for the 4th and King site.

The review of nearby, developable land sales indicates the following:

- Land traded at weighted average price of $350 per square foot or $15.4 million per acre
- Excluding the Salesforce transaction brings the weighted average down to $241 per land square foot or $10.7 million per acre.[2]

[2] Because of the acreage of the Salesforce purchase, the sale bears some scrutiny to determine whether the transaction is comparable to the 4th and King site. Salesforce purchased the property to build a 2 million square foot campus. Since the purchase, the company decided instead to retrofit a building South of Market in San Francisco.

- On a buildable square footage basis, buyers paid $124 per buildable square foot of commercial space for the land.
- Excluding the Salesforce transaction brings the weighted average down to $65 per commercial buildable square foot for the land.
- For residential projects, buyers paid a weighted average price of $75,000 per buildable unit.

Note that these values reflect a clean and entitled site with all infrastructure constructed.

Figure 5. Recent Land Sales Near 4th and King (See Table 2 for location details)

4th and King site

Land transactions reviewed

Table 2. Recent Land Sales Near 4th and King Site (see Figure 1 for locations of sales)

	Buyer	Address	Sale Date	Price (millions $)	Land Size		Buildable Area		Sale Price per *Land* Area		Sale Price per *Buildable* Area	
					Acres	Sq.Ft.	Commercial Sq.Ft.	Residential Units	per Acre (millions $)	per Sq.Ft. ($)	per Commercial Bldg. Sq. Ft. ($)	per Unit ($)
1	Salesforce (1)	Mission Bay	2011	$278.0	14.0	609,840	2,000,000	0	$19.9	$456	$140	--
2	United Dominion Realty Trust	Mission Bay	2010	$23.6	2.0	87,120	0	315	$11.8	$271	--	$75,000
3	Lowe Enterprise	500 Terry Francois	2006	$26.2	1.9	80,609	291,000	0	$14.2	$325	$90	--
4	Crescent Heights	45 Lansing St, Rincon Hill	2010	$13.0	0.3	14,997	0	227	$37.8	$867	--	$57,000
5	Walden Development (2)	Southwest of Mission Bay	2006	$12.4	3.4	150,000	200,000	200	$3.6	$83	$33	$29,000
6	BRE Properties	Fourth Street, Mission Bay	2011	$41.4	3.8	167,270	0	360	$10.8	$248	--	$115,000
7	Park Macarthur Assoc. LLC	345 Brannan St	2005	$3.0	0.6	23,960	57,000	0	$5.5	$125	$53	--
8	SF Oakland Bay LLC	403 Main St	2011	$6.0	0.5	21,780			$12.0	$138		
9	TMG Partners	900 Folsom St	2011	$19.5	1.0	43,996	6,000	282	$19.3	$443	--	$69,000
	Total/ Average						**2,554,000**	**1,384**	**$15.0**	**$328**	**$79**	**$69,000**
	Weighted Average								**$15.4**	**$350**	**$124**	**$75,000**
	Weighted Average, without Salesforce								**$10.7**	**$241**	**$65**	**$75,000**

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(1) Note that Salesforce recently opted to halt plans for construction of this campus.

(2) The Walden development is a mixed-use product so it is not possible to derive the land value amount specific to the commercial versus the residential portion of the planned development. To estimate the per buildable square foot number, the price paid for the land is divided among the entire development square footage (commercial + residential), resulting in the $33 per building square feet.

Sources: San Francisco Business Times; San Francisco Office of the Assessor-Recorder; Loopnet.com; Economic & Planning Systems, Inc.

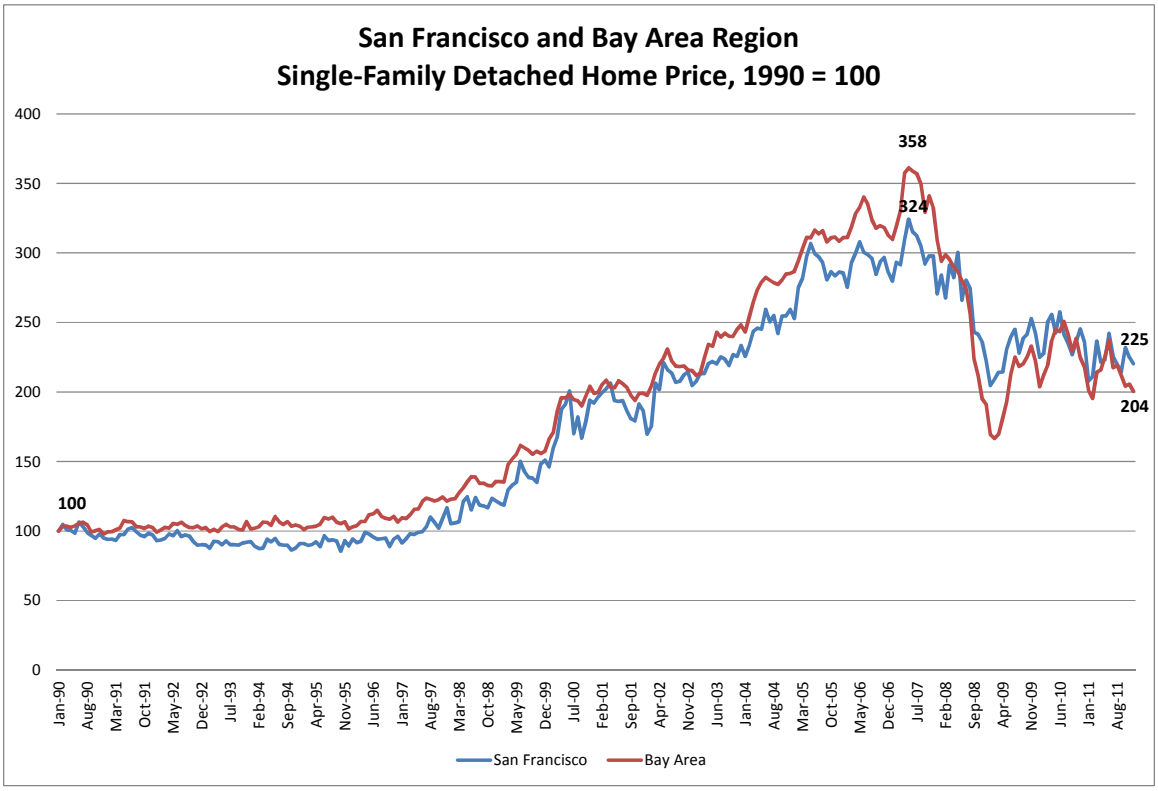
Residential Market Overview

San Francisco has historically had a very strong market for residential development, commanding some of the highest price points in the world.

For-Sale Market

Figure 6 below shows the median single-family home price in San Francisco compared to the Bay Area, relative to 1990 levels (1990 = 100 on the chart). As shown in the figure, median home prices were flat during the 1990s in San Francisco and the Bay Area, increasing significantly through 2007, and the declined generally back to 2002 levels through 2011.

Figure 6. 1990-2011 Median Home Prices: San Francisco and the Bay Area, Unadjusted Nominal $s



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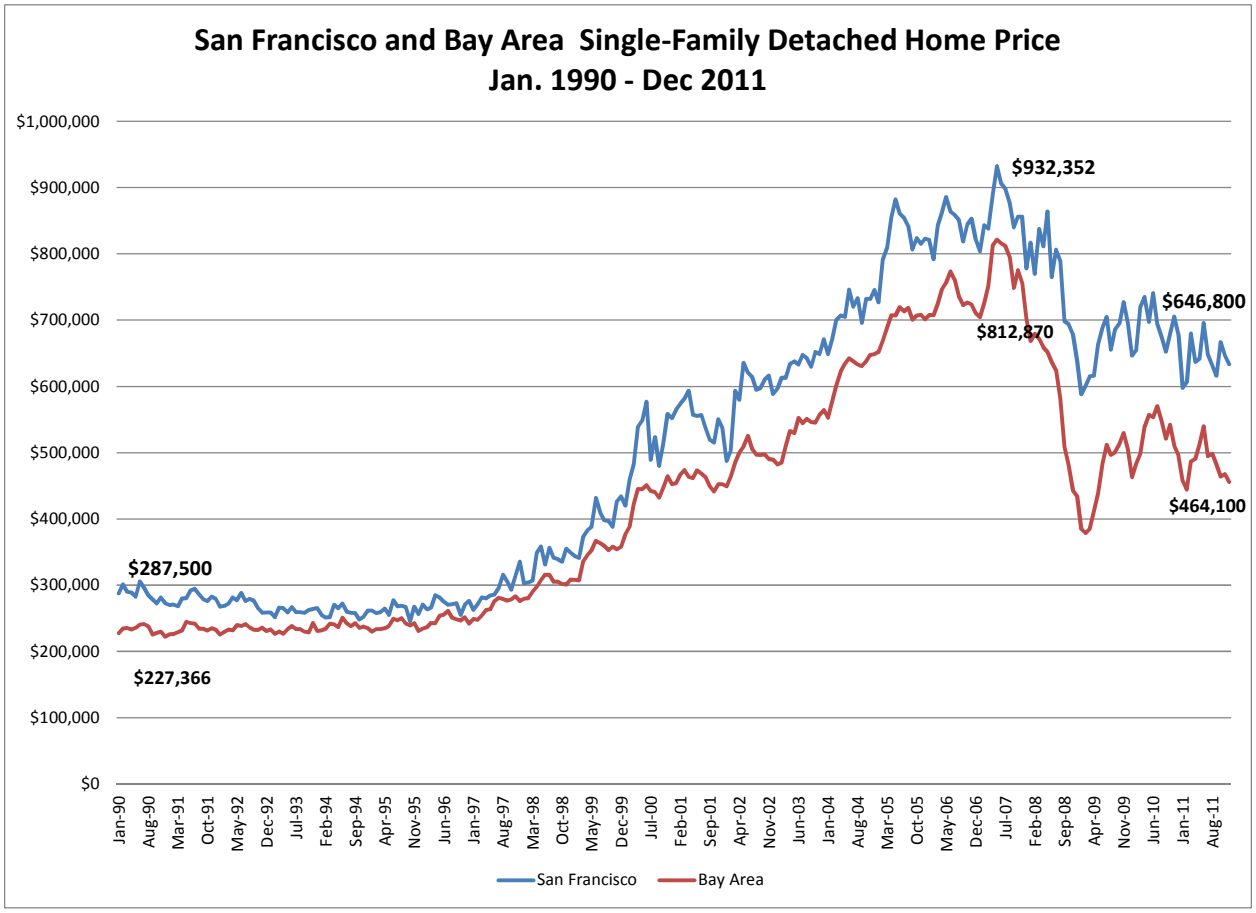
While the *pattern* of price changes is similar for San Francisco and the broader Bay Area, pricing in the City is much higher than the region. **Figure 7** shows the actual price for a single-family detached home in San Francisco and the Bay Area between 1990 and 2011. As shown, the 1990 median price was $287,500, the peak of the market was $932,000 in 2007, and median price by December 2011 was $647,000. The overall median price in the Bay Area was $464,000 in December 2011.

Figure 7. 1990-2011 Home Prices: San Francisco and Bay Area, Unadjusted Nominal $s



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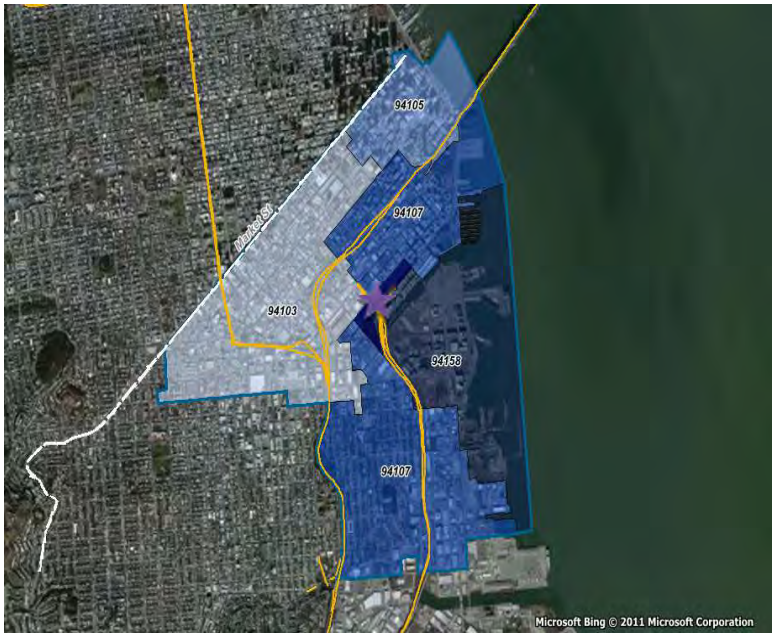
The vision for residential development at the 4th and King site is for relatively dense condominium or apartment housing units among office, retail, and hotel uses. To estimate the likely market pricing for condominiums in a new development at the site, EPS reviewed recent sales of multifamily units in new developments in zip codes in close proximity to the site. **Figure 8** shows all of the zip codes in the City with the 4th and King site indicated with a "star" icon and the zip codes surrounding the site highlighted (**Figure 9** is the same map, focused more closely on the site). EPS reviewed sales in zip codes 94103, 94105, 94107, and 94158.

Figure 8. San Francisco Zip Codes and 4th and King Site

Figure 9. Zoom in on San Francisco Zip Codes and 4th and King Site



Figures 10 and 11 report sales data from 2002 through 2011. Data for these years is reported for zip codes 94103, 94105, and 94107. Sales in zip code 94158 included a significant number of below market rate (BMR) units which skewed the average sale prices. While the BMR sales

could not be disaggregated from the market rate sales going back to 2002, sales since 2009 of market rate units only in 94158 have averaged $630 per unit square foot.

The following conclusions may be drawn from **Figures 10-11**(including data for zip codes 94103, 94105, and 94107):

- The sales price has increased from $603,000 in 2002 to $999,000 in 2011 for new condominiums in the zip codes reviewed.
- While prices increased significantly between 2002 and 2011, the number of sales dropped from an average of 360 per year from 2002 to 2009 to between 150 and 200 in 2010 and 2011.
- On a price per square foot basis, the weighted average price has generally been between about $700 and $800 since 2007.

These price statistics indicate that new condominium units at the 4th and King site may command sales prices of about $750 per unit square foot.

Figure 10. New Condominium Sales Data, 2002-2011

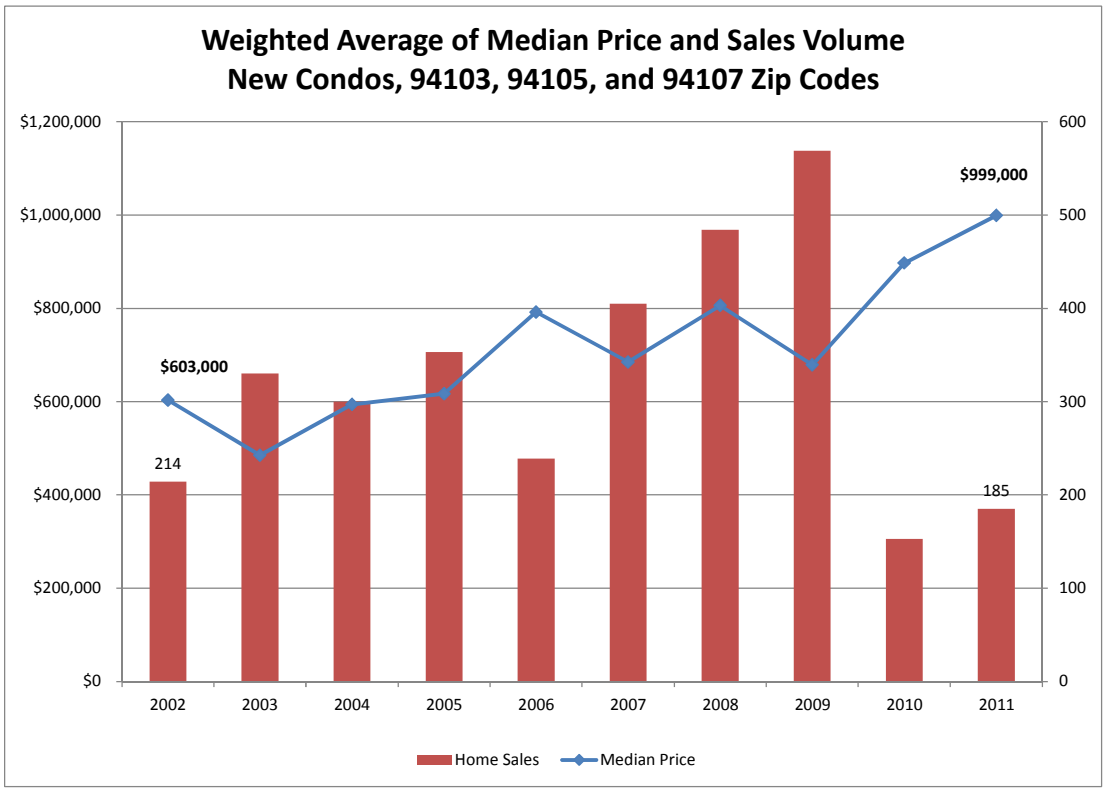


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Figure 11. New Condominium Sales Data per Square Foot, 2002-2011

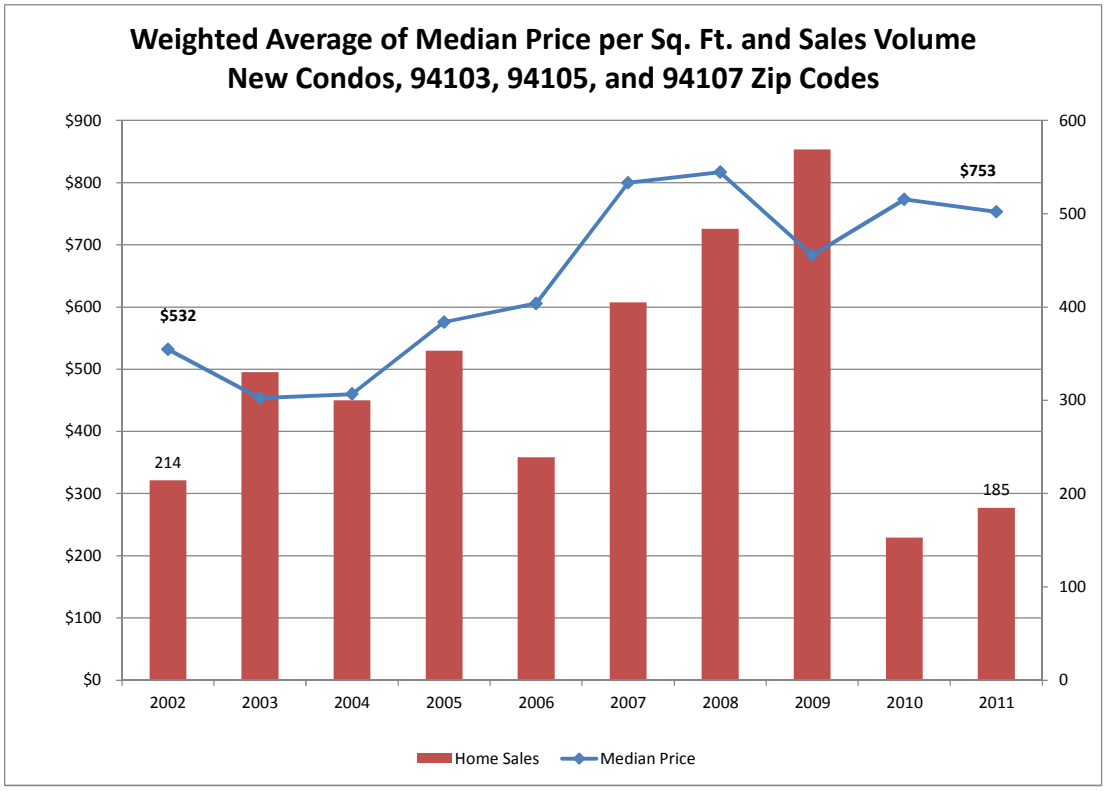

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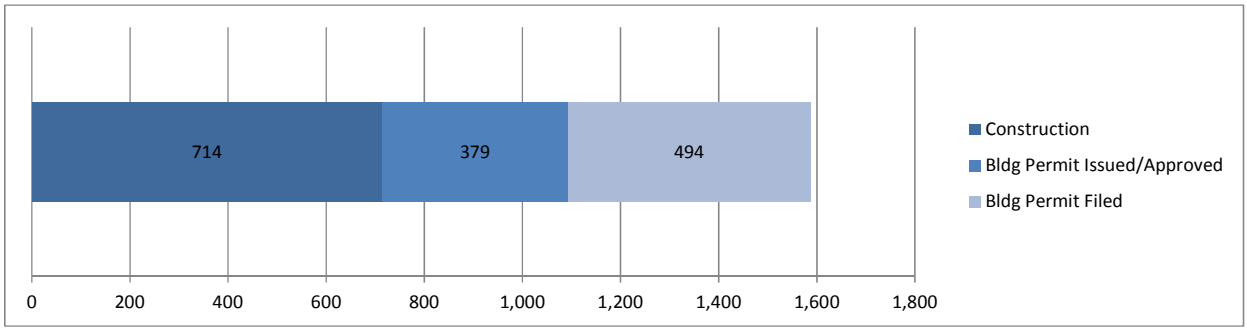
Figure 12 illustrates the number of residential units in the development pipeline including those under construction, with building permits issued or approved or with building permit filed. The pipeline totals almost 1,600 units. While this is a significant number of units relatively nearby, the strength of the residential market in San Francisco continues to indicate that additional units may be absorbed by demand for housing.

Figure 12. Residential Units in the Development Pipeline in Areas Near 4th and King



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Source: San Francisco Planning Departments
Includes projects in East SoMa, Mission Bay, Showplace Sq./Potrero, and West SoMa areas.

Apartment Market

The apartment market has been very strong in San Francisco. **Figure 13** reports the occupancy rate and average monthly lease rate for all sizes and types of apartments (for buildings with 50 units or more). As shown over the period, lease rates declined appreciably after the dot.com bust in 2001, then declined and rose again until the latest recession. During the recession, lease and occupancy rates declined only slightly and since then have risen to the highest levels in the period, almost $2,500 per unit per month.

Figure 13. Monthly Lease and Occupancy Rates, San Francisco Apartments 1997-2011

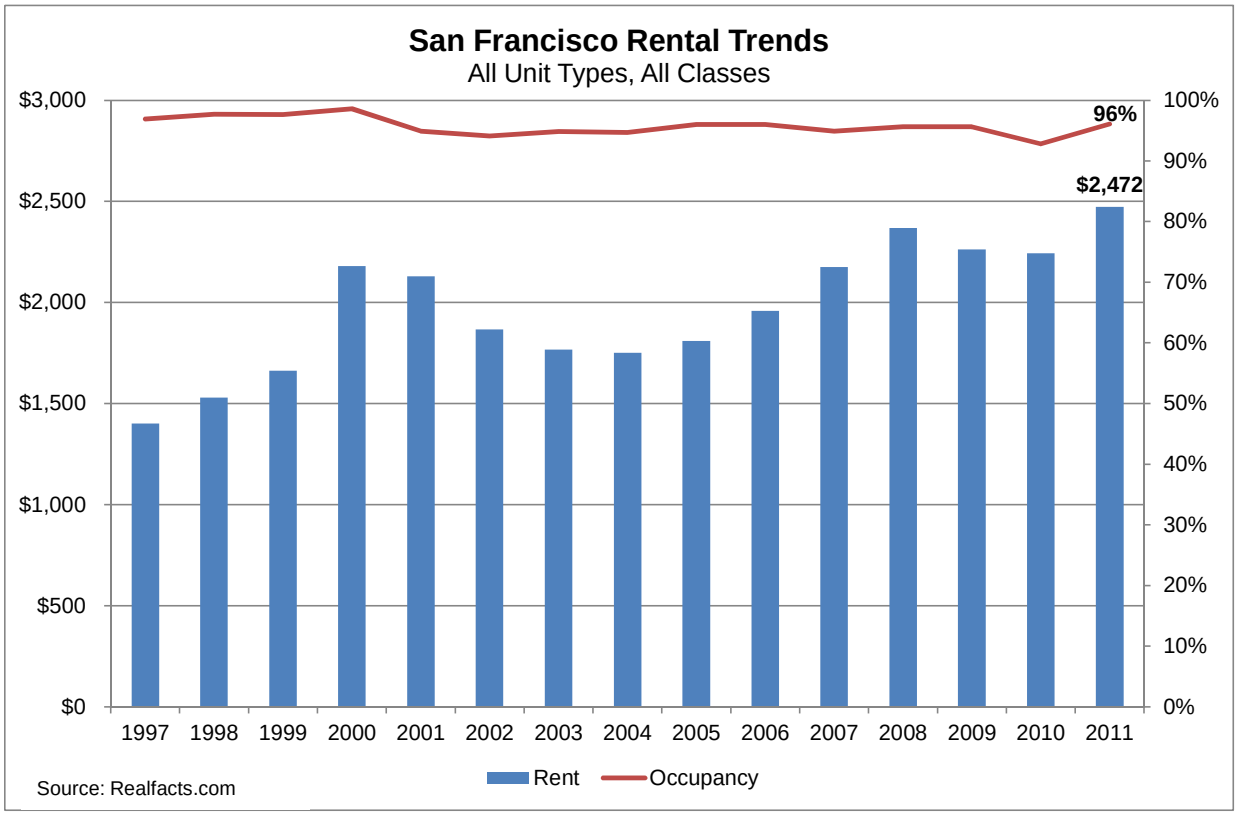

Table 3 reports selected apartment buildings near the 4th and King site with an array of amenities (controlled entry, fitness room, community deck or entertaining space, parking, etc.). As shown, seven properties have been selected for evaluation. Five were constructed in 1999 or later. The buildings range in size from 150 to 850 units and represent more than 3,000 units in all.

Table 3. Apartment Buildings Evaluated

Name	Address	Year Built	Rise	# Units	Square Feet
388 Beale Apartments	388 Beale Street	1999	Hi-Rise	226	288,000
Archstone South Market	1 St Francis Place	1985	Mid-Rise	410	323,000
Avalon At Mission Bay North	255 King Street	2002	Hi-Rise	823	767,000
Avalon At Yerba Buena	788 Harrison Street	2000	Mid-Rise	160	130,000
Bayside Village	3 Bayside Village Place	1988	Mid-Rise	863	598,000
Metro At Showplace Square	670 King Street	2006	Mid-Rise	148	135,000
Trinity Place	1188 Mission Street	2010	Hi-Rise	440	216,000
Total Units				3,070	

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Sources: RealFacts; Economic & Planning Systems, Inc.

Figure 14 reports the latest lease rate data available for the seven properties. As shown, studio and one-bedroom/one-bath (1/1) units rent for more than $4.35 per square foot per month; larger 2/2 and 3/2 units rent for $3.65 and $3.30 per square foot per month, respectively. **Table 4** reports the detailed apartment lease information summarized in **Figure 14**.

Based on the review of apartment lease rates over time in San Francisco and current rates in new apartment buildings near 4th and King, EPS believes it is reasonable and conservative to assume that new apartment development at the site will command lease rates equivalent to those documented today. While apartment lease rates have been increasing quickly in the last two years, increases in rental pricing are expected to slow and level off.[3] For financial feasibility modeling purposes, lease rates of approximately $4.25 (1/1) and $3.65 (2/2) will be used to estimate the value of new apartment buildings at the 4th and King site.

[3] See Urban Land Institute *Emerging Trends*, 2012. The document notes that – while multifamily housing has strong investment prospects in central cities like San Francisco, investors expect capitalization rates to stabilize as the market adjusts to the construction activity in the sector.

Figure 14. Selected Apartment Lease Rates, March 2012

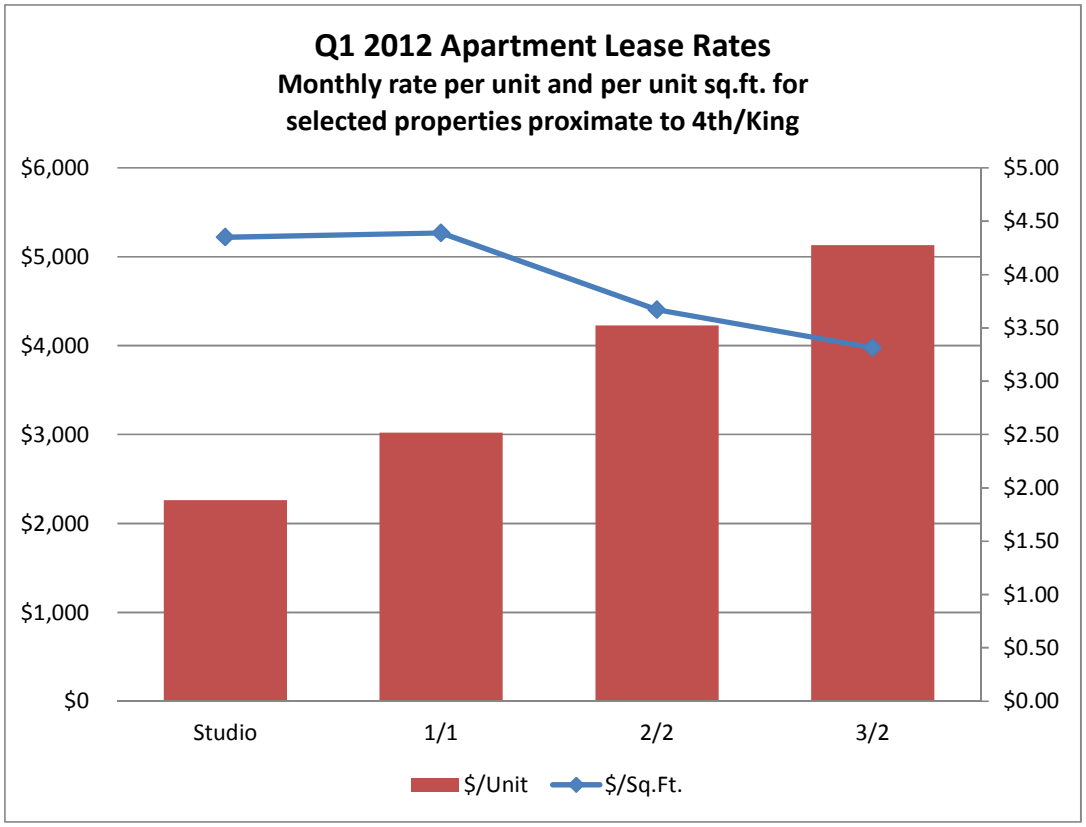


Table 4. Selected Apartment Communities March 2012 Lease Rates

Apartment/Type	# of Units (1)	Year Built	Occ-upancy	Studio				1 Bed/1 Bath				2 Bed/2 Bath			
				Units	Avg SqFt	$Avg	$Avg/SqFt	Units	Avg SqFt	$Avg	$Avg/SqFt	Units	Avg SqFt	$Avg	$Avg/SqFt
388 Beale Apartments	226	1999	96%	0				70	851	$3,121	$3.67	92	1,331	$4,979	$3.74
Archstone South Market	410	1985	94%	40	533	$2,481	$4.65	244	650	$2,836	$4.37	124	1,101	$3,838	$3.49
Avalon at Mission Bay North	823	2002	95%	190	572	$2,618	$4.58	310	891	$4,071	$4.57	283	1,398	$4,832	$3.46
Avalon at Yerba Buena	160	2000	95%	20	453	$1,975	$4.36	120	840	$3,222	$3.84	20	944	$3,893	$4.13
Bayside Village	863	1988	99%	300	460	$2,043	$4.44	300	636	$2,613	$4.11	263	1,025	$3,558	$3.47
Metro at Showplace Square	148	2006	100%	21	483	$2,050	$4.24	113	929	$2,600	$2.80	12	1,420	$3,600	$2.54
Trinity Place	440	2010	100%	0				440	492	$2,285	$4.64	0			
Total	**3,070**			**571**				**1,597**				**794**			
Average					**500**	**$2,233**			**776**	**$3,033**			**1,224**	**$4,082**	
Price/SqFt						**$4.46**				**$3.91**				**$3.33**	
Wtd Average per unit/Sq.ft.						**$2,262**	**$4.35**			**$3,020**	**$4.39**			**$4,229**	**$3.67**

P:\121000\121058_4thandKing\Model\[121058model051812.xlsx]Apartments

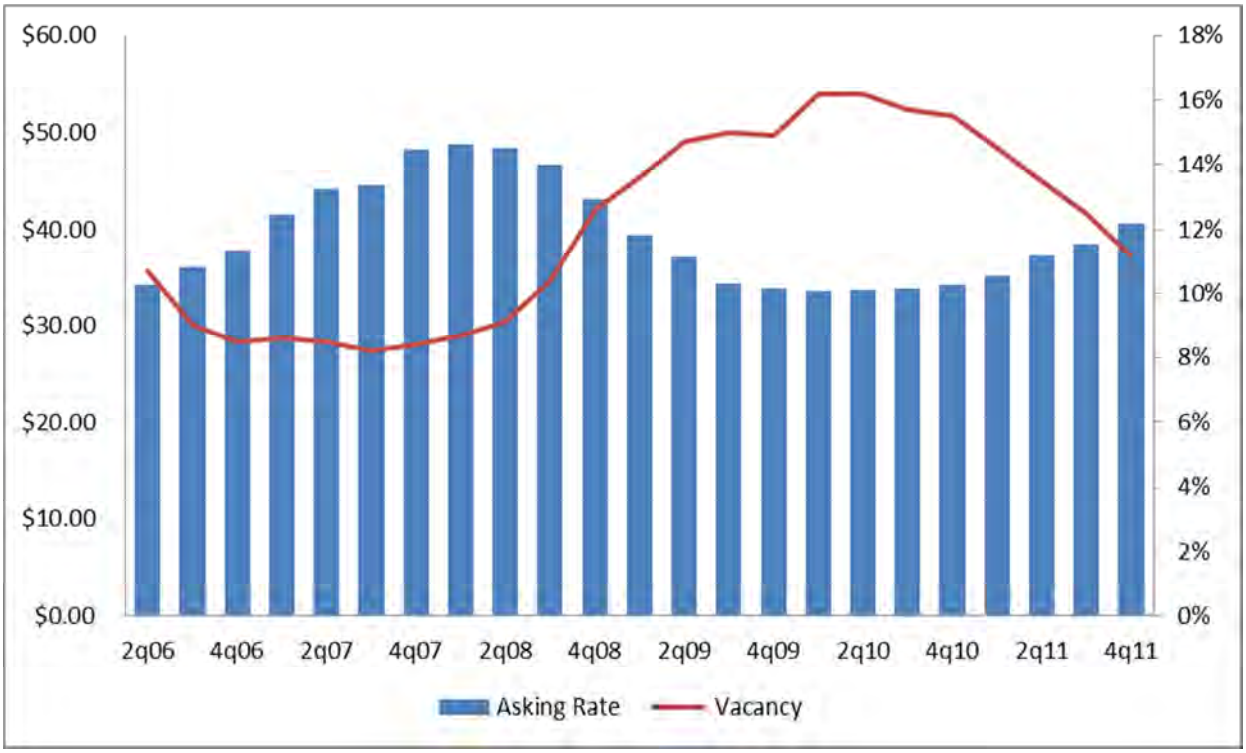
(1) The total number of units in the selected apartment buildings sum to 3,070. Three apartment size-types are shown: Studio, 1 bedroom/1bath and 2 bedroom/2 bath. Other sizes including 2 bedroom/1 bath and 3 bedroom/ 2 bath units represent about 4 percent of the total units and are not shown here.

Sources: RealFacts; Economic & Planning Systems, Inc

Office

The San Francisco office market has been recovering from the recession at a relatively steady pace. **Figure 15** reports office lease and vacancy rates for all Class A office space in the City between 2006 and 2011. Office lease rates currently average about $40/sq.ft./yr. (FS), well below the rate levels reached in late 2007 and early 2008.

Figure 15. Class A Office in San Francisco, Q2 2006 – Q4 2011



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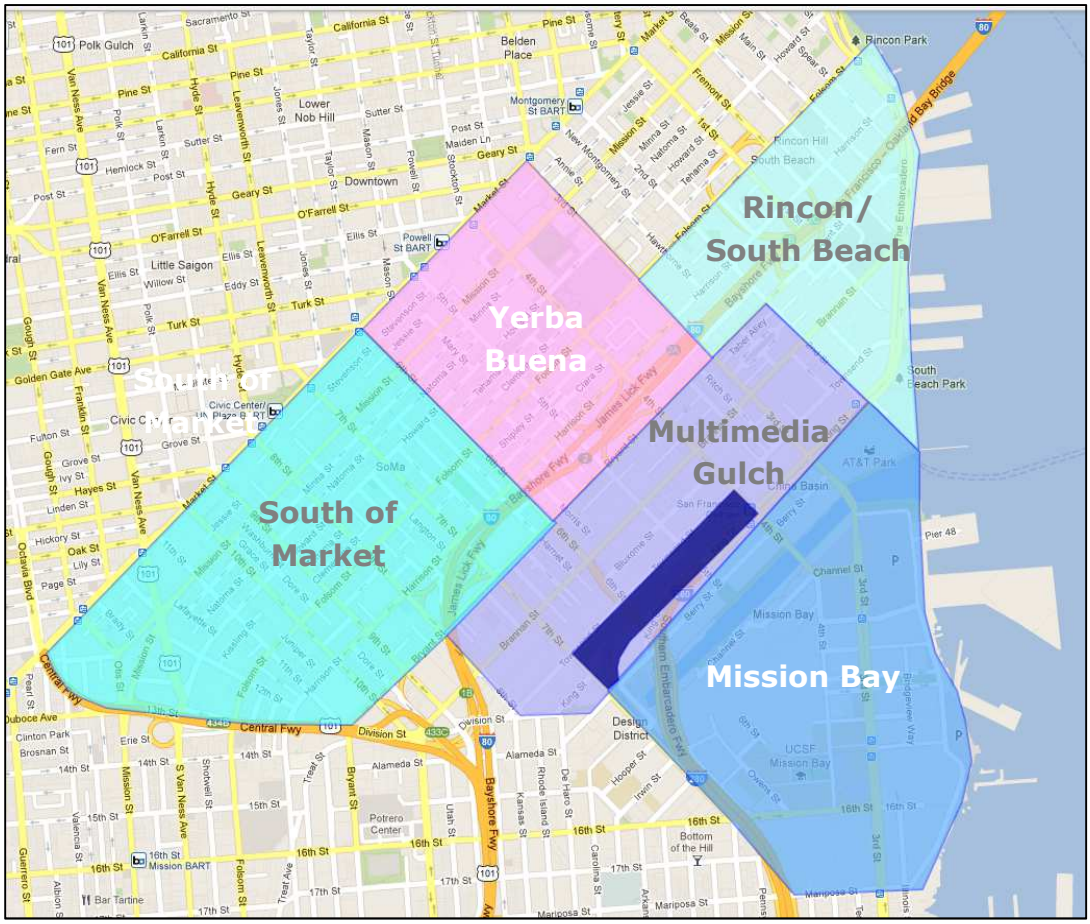
Focusing on trends around 4th and King, the site is located in a submarket called Multimedia Gulch. Submarkets are small geographies within the City for which office data is tracked. **Figure 16** shows the boundaries of Multimedia Gulch and the other submarkets important to understanding office lease rates that may be achieved in a new office development.

Figure 16. Office Submarkets and 4th and King Site



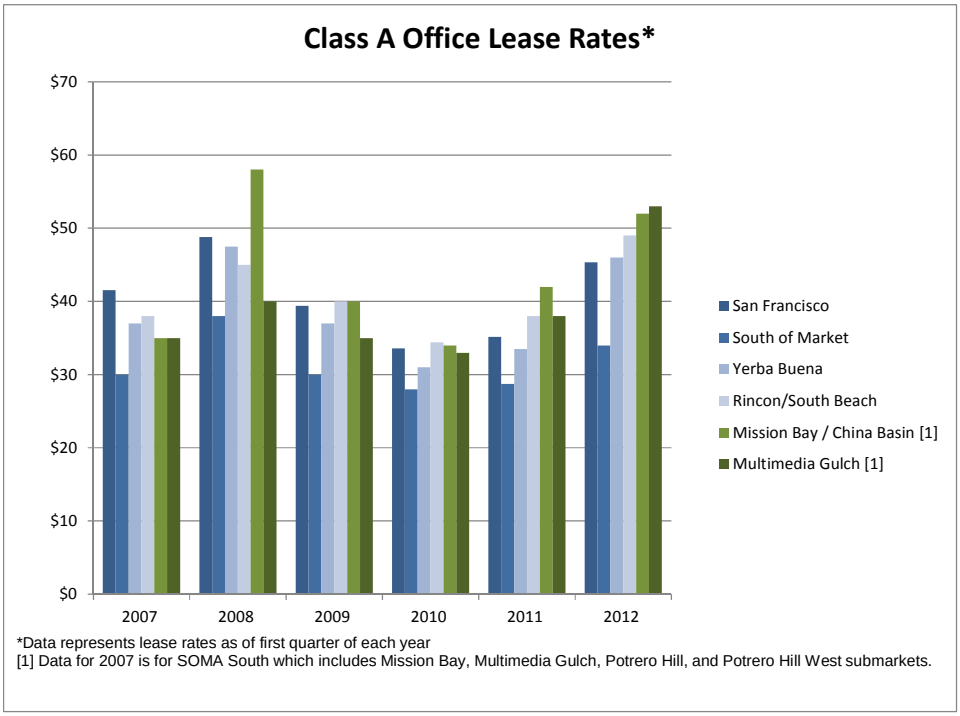
Figures 17 and 18 report the lease rates and occupancy rates for the submarkets. Presently, Multimedia Gulch and Mission Bay/China Basin subareas command high lease rates compared to the other arease, averaging $53 and $52/sq.ft./yr. (FS), respectively. However, these rates are significantly above the average rates achieved for all of 2011, which totaled $38 for Multimedia Gulch and $42/sq.ft./yr. (FS) in Mission Bay/China Basin.

These sub-markets are dynamic areas, characterized by new development filling in undeveloped land and changing the landscape. With high-interest in the Mission Bay area for commercial users attracted to the UCSF campus and the biotech cluster, the planned new UCSF hospital, or to the unique opportunity to create a new campus on a waterfront location near to central San Francisco, the area tends to attract blockbuster deals. The downside of this interest is that one large user pulling out of a development or a lease tends to affect surrounding areas. Rather than a vibrant and functioning development, an undeveloped site or an empty building can leave long blocks of inactivity.

Office lease rates in proximate submarkets have ranged from almost $60 in 2008 down to $35 in 2010 and up to over $50 in 2012. Lease rates in the sub-market may continue to be somewhat volatile as land south of the channel continues to develop. The lease rates achieved in Multimedia Gulch and Mission Bay/China Basin are the second highest achieved in the last five years. Assuming that over the longer-term office rates will range somewhere around the average of the last several years, development at 4th and King is estimated to command rates

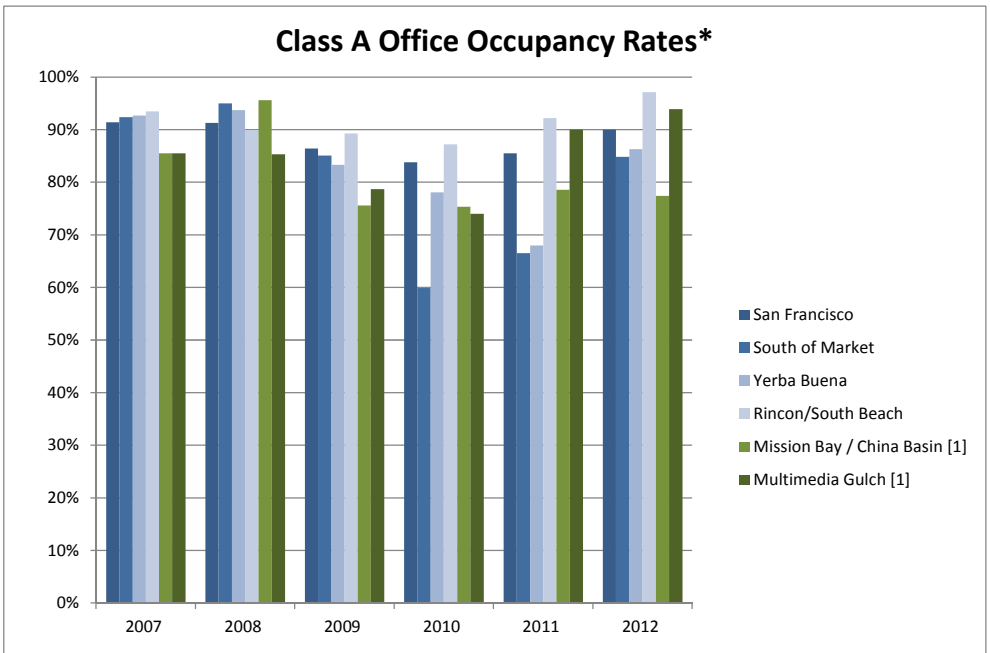
below the average observed in the early part of 2012 in the Multimedia Gulch and Mission Bay/China Basin submarkets, between $40 and $45/sq.ft./yr. (FS).

Figure 17. Class A Office Lease Rates, Selected Areas San Francisco, 2007-2012



*Data represents lease rates as of first quarter of each year
[1] Data for 2007 is for SOMA South which includes Mission Bay, Multimedia Gulch, Potrero Hill, and Potrero Hill West submarkets.

Figure 18. Class A Office Occupancy Rates, Selected Areas San Francisco, 2007-2012



*Data represents lease rates as of first quarter of each year
[1] Data for 2007 is for SOMA South which includes Mission Bay, Multimedia Gulch, Potrero Hill, and Potrero Hill West submarkets.
Blue bars are relevant submarkets. **Green** bars represent the submarket where 4th and King is located (Multimedia Gulch) or a submareket where new office space has been developed (Mission Bay/Chian Basin).

Table 5. Office Lease and Vacancy Rates, 2007-2012

	2007	2008	2009	2010	2011	2012	2007-2012 Amount	2007-2012 % Change	2007-2012 Avg. Annual Growth
San Francisco									
Class A Lease Rate	$41.55	$48.79	$39.41	$33.56	$35.13	$45.35	$3.80	9.1%	1.8%
Vacancy Rate	8.6%	8.7%	13.6%	16.2%	14.5%	10.0%	1.4%	16.3%	3.1%
South of Market									
Class A Lease Rate	$30.00	$38.00	$30.00	$28.00	$28.75	$34.00	$4.00	13.3%	2.5%
Vacancy Rate	7.6%	5.0%	14.9%	40.1%	33.5%	15.2%	7.6%	100.0%	14.9%
Multimedia Gulch [1]									
Class A Lease Rate	$35.00	$40.00	$35.00	$33.00	$38.00	$53.00	$18.00	51.4%	8.7%
Vacancy Rate	14.5%	14.7%	21.3%	26.0%	10.0%	6.1%	-8.4%	-57.9%	-15.9%
Mission Bay / China Basin [1]									
Class A Lease Rate	$35.00	$58.00	$40.00	$34.00	$42.00	$52.00	$17.00	48.6%	8.2%
Vacancy Rate	14.5%	4.4%	24.4%	24.7%	21.4%	22.6%	8.1%	55.9%	9.3%
Yerba Buena									
Class A Lease Rate	$37.00	$47.50	$37.00	$31.00	$33.50	$46.00	$9.00	24.3%	4.5%
Vacancy Rate	7.3%	6.3%	16.7%	21.9%	32.0%	13.7%	6.4%	87.7%	13.4%
Rincon/South Beach									
Class A Lease Rate	$38.00	$45.00	$40.00	$34.40	$38.00	$49.00	$11.00	28.9%	5.2%
Vacancy Rate	6.5%	10.1%	10.7%	12.8%	7.8%	2.9%	-3.6%	-55.4%	-14.9%

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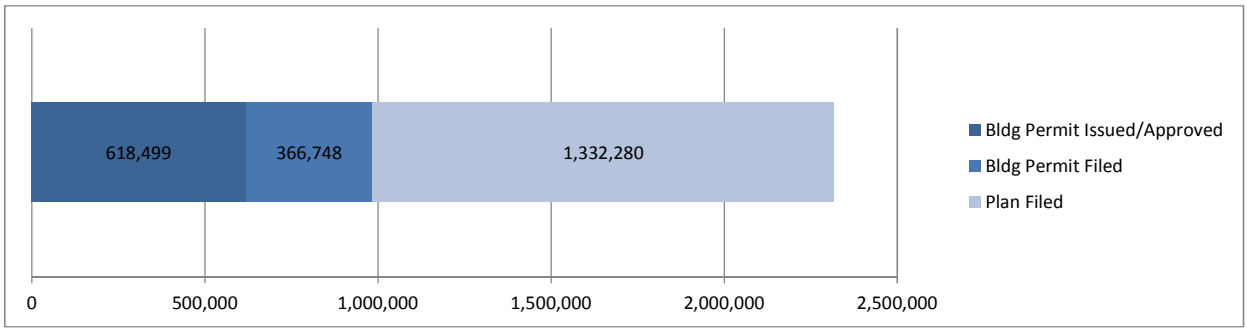
[1] Data for 2007 is for SOMA South which includes Mission Bay, Multimedia Gulch, Potrero Hill, and Potrero Hill West submarkets.

Sources: CB Richard Ellis MarketView San Francisco Office Q1 of respective year; Economic & Planning Systems, Inc.

Figure 19 illustrates the office square footage in the development pipeline including development with building permits issued or approved or with building permits or plans filed. While the pipeline totals more than 2.3 million square feet, more than 1.2 million was for the Salesforce campus; the space for that user has been accommodated elsewhere. The remaining square footage in the pipeline mostly consists of new office and lab space at Mission Bay.

Figure 19. Office Square Feet in the Development Pipeline in Areas Near 4th and King



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Source: San Francisco Planning Departments
Includes projects in East SoMa, Mission Bay, Showplace Sq./Potrero, and West SoMa areas.

Hotel

Hotel markets are driven by tourists, business travelers, and conventions in San Francisco. Potential overnight guests may desire a hotel room at the 4th and King site for access to the Giants ballpark, the UCSF Mission Bay hospital (construction of which is well underway), and potentially a new Warriors basketball arena.

Unlike office lease rate data which is tracked systematically and readily available for various geographies, hotel performance data is typically obtained for particular hotels, but aggregated to protect the confidentiality of an individual hotel's operations. To understand the hotel room and occupancy rates achieved by hotels nearby the site over the last few years, EPS selected 13 hotels for review. **Table 6** lists the hotels and **Figure 20** illustrates their locations in San Francisco.

Table 6. Hotels Surveyed

ID	Name of Establishment	Star Rating	Service Category	Rooms	Open Date
A	W Hotel San Francisco	4.0	Full Service	404	May-99
B	Marriott San Francisco Marquis	4.0	Full Service	1,499	October-89
C	InterContinental San Francisco	4.0	Full Service	550	February-08
D	Kimpton Hotel Palomar San Francisco	4.0	Boutique	195	June-08
E	Hotel Whitcomb	3.5	Full Service	459	June-19
F	Holiday Inn San Francisco Civic Center	3.0	Limited Service	388	March-70
G	Westin San Francisco Market Street	4.0	Full Service	676	April-83
H	Omni San Francisco Hotel	4.0	Full Service	362	February-02
I	Joie De Vivre Hotel Vitale	4.0	Boutique	200	March-05
J	Courtyard San Francisco Downtown	3.0	Full Service	405	October-01
K	Hilton San Francisco Financial Dist	4.0	Full Service	542	November-70
L	Hyatt Regency San Francisco	4.0	Full Service	802	May-73
M	Club Quarters San Francisco	3.5	Full Service	446	June-03
	Total Rooms			**6,928**	

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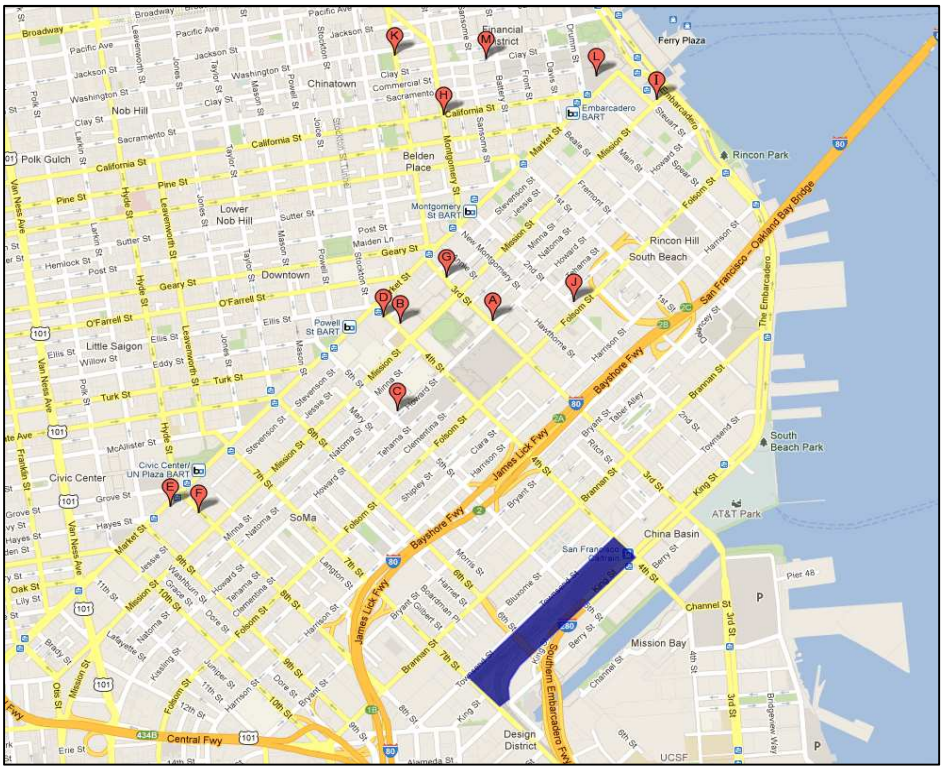
Sources: Smith Travel Research; Economic & Planning Systems, Inc.

Figure 20. Locations of Hotels Surveyed

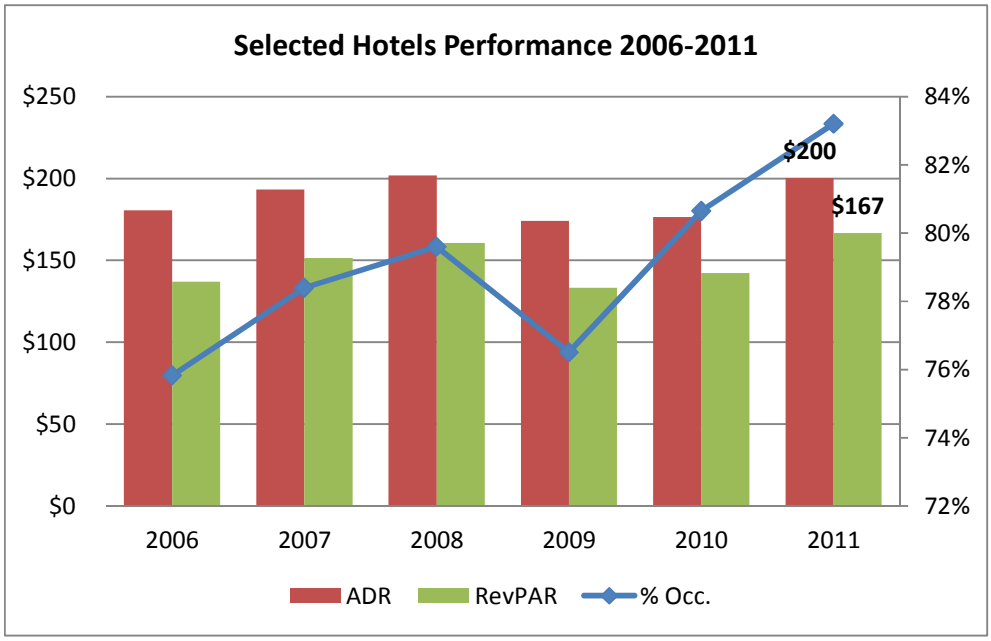


The 13 selected hotels represent more than 6,900 rooms and range in size from 200 rooms to almost 1,500 rooms. The hotels selected represent a range of service provision including:

- Full-service hotels offer a full suite of services including restaurants, bars, gift shops, valet parking, conference and event facilities, and other services
- Limited service hotels typically include limited food service, lounges, and business centers but no room service, on-site restaurants or concierge
- Boutique hotels are hotels located in urban areas, typically with fewer than about 200 rooms, with full-service amenities, and are not part of the large national chains, though boutique hotel owners may own multiple properties.

Figure 21 illustrates the performance of these selected hotels since 2006. As shown, occupancy rates have been strong, above 75 percent since 2006. After a dip in 2009 to 2010, revenue indicators such as Average Daily Rates (ADR) and Revenues per Available Room ("RevPAR" is a metric which combines the room rates paid and occupancy rates to indicate how much revenue is being generated by a room on a daily basis throughout the year) have returned to strong levels in 2011. NEW CHART

Figure 21. ADRs, RevPARs, and Occupancy Rates for 13 Selected Hotels in San Francisco



P:\121000\121058_4thandKing\Data\[STR_Data.xls]2) By Measure

The hotel on the 4th and King site is programmed for roughly 150 rooms in the current AECOM development concepts. This relatively small-sized hotel would likely be developed as a boutique hotel, with full-service amenities and independently owned and operated. Among the hotels

included in the survey, two are boutique hotels—Kimpton Hotel Palomar[4] and Joie De Vivre Hotel Vitale. Advertised room rates for these locations are both above the ADRs reported for the group in **Figure 21** (starting at about $245 at both locations compared with $200 in 2011 for all 13 hotels in the survey).

Boutique hotels tend to command higher RevPARs than full-service and other hotel types, with higher room rates and occupancy rates. However, as shown in the map of hotels surveyed, the site is located in a pioneering area for new hotel development. Also, a 500-room hotel is part of the maximum entitlement in the Mission Bay plan. Assuming growth in demand for hotel rooms in San Francisco is sufficient to justify a new hotel and that hotel is located at the 4th and King site, ADR would likely be priced at the middle or lower end of those surveyed, around $175.

Retail

Market Pricing

While the national retail market has been severely impacted by the economic downturn and the nature and depth of its turnaround is still unclear, lease rates and occupancy rates in San Francisco have not experienced the sharp downturn that has occurred in other, more suburban markets. Of the 3.8 million square feet of retail square footage in large retail centers in San Francisco, the vacancy rate decreased from 7 to 4 percent from 2010 to 2011. Current asking lease rates average $48/sq.ft./yr. (NNN). These statistics for larger centers indicate a relatively healthy retail sector in the City.

While the survey of retail lease rates for sites within large shopping centers provides a sense of the trends in the sector in San Francisco, retail developed at the 4th and King site is envisioned to be ground floor retail integrated into mixed-use development. In the area surrounding the 4th and King site, ground floor retail has been integrated into several residential projects. Safeway grocery store opened across the street from the Caltrain stop in 2002 and a bit farther east on King Street is a bowling alley (formerly a Borders book store). In that same area and continuing on King to the AT&T ballpark, there are a number of restaurants and bars. Food and drinking establishments benefit from tens of thousands of fans descending on King Street for the 80 or so Giants home-games each year, plus other events from time to time.

EPS reviewed asking lease rates for 17 retail sites currently advertised nearby the 4th and King site. **Figure 22** illustrates the locations of the vacant retail stores and **Table 7** reports the asking lease rates. The average asking rate is $30/sq.ft./yr. (NNN). There are several sites on King Street itself very close to the site; these are advertised between $28 and $48/sq.ft./yr. (NNN), a very wide range. The range in listings seems to be related to the quality of the location (e.g., item "I" in the Figure on Division Street is surrounded by light industrial buildings and does not get as much foot traffic as the other sites.)

[4] Kimpton is the largest boutique operator in the US with more than 50 hotels including 8 hotels in San Francisco and properties in San Diego New York, Miami, Portland, Chicago, Washington DC, and Boston, among other locations.

Figure 22. Retail Listings Reviewed (See next table)

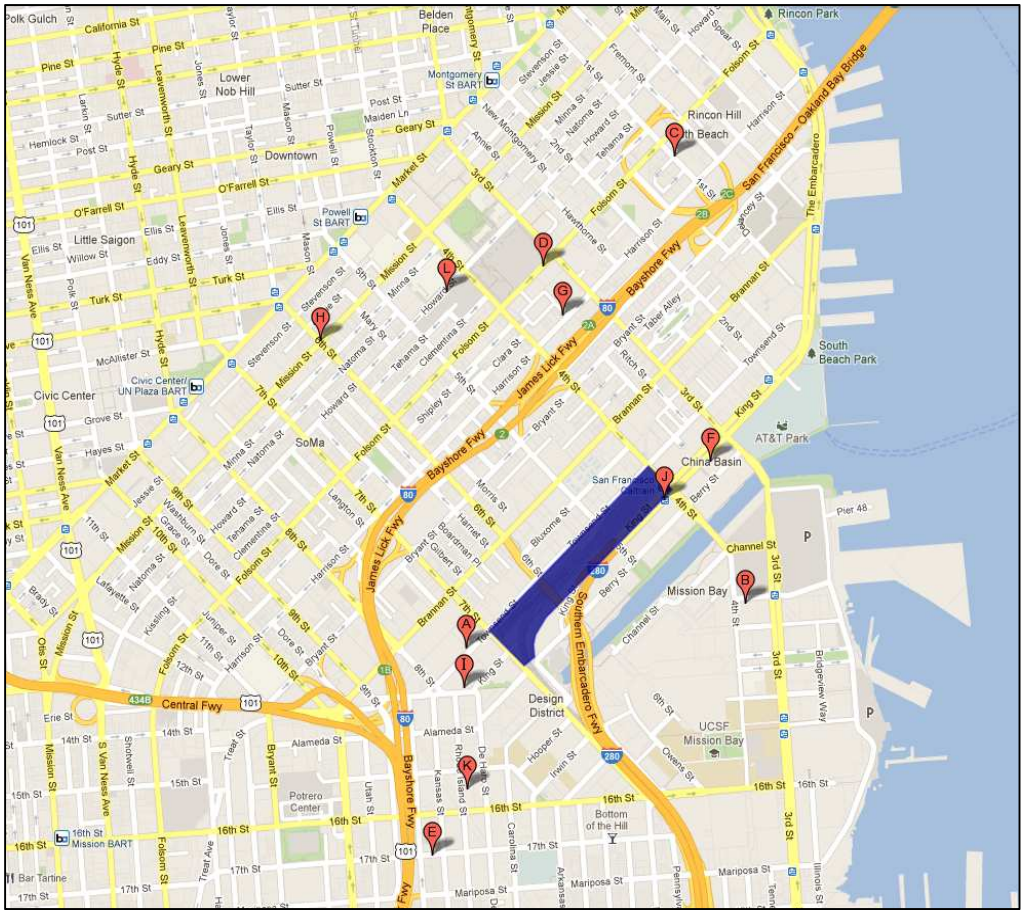


Table 7. Retail Listings Near 4th and King (See previous figure 22 for map of listings)

ID	Address	Available SqFt	$/SqFt/Yr
A	650 Townsend	1,117	$42.00
B	555 Mission Rock	9,743	$30.00
C	333 1st Street	3,892	$36.00
D	725-727 Folsom Street	6,870	$32.00
E	2015 17th St	1,750	$38.00
F	221 King Street	945	$48.00
F	217 King Street	1,418	$48.00
F	215 King Street	2,680	$48.00
G	744 Harrison St	3,000	$15.96
H	87-99 6th St	6,000	$24.00
I	68 Division Street	2,426	$30.00
J	301 King Street	1,095	$28.00
J	303 King Street	1,225	$28.00
K	251 Rhode Island St	4,088	$24.00
L	825 Howard Street	7,240	$24.00
	Average	**3,566**	**$30.08**

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Sources: Loopnet.com; Economic & Planning Systems, Inc.

Retail Development – Right Sizing

While office and residential development in San Francisco are driven by regional job growth captured by San Francisco and the resulting need for new housing for workers, retail growth is driven by the spending of new residents, workers, and visitors. Therefore, in planning concepts for the 4th and King site, it is worth considering the amount of retail square footage which could reasonably be supported by sales. **Table 8** illustrates one metric which may be used to guide retail square footage planning—it estimates roughly the level of spending on retail goods expected from new residents, workers, and hotel visitors and how much may be captured by retail stores on the ground level.

The estimates indicate that the new population in Development Concept 1 could support 92,000 square feet of retail and 96,000 square feet of retail in Development Concept 2. These figures are ***very*** aggressive, as they assume that all residents, workers, and hotel guests on site will spend 50 percent of their total spending on the 4th and King site. Comparing these estimates with the 300,000 to 400,000 square feet of retail included in the Concepts indicates that a significant amount of spending from other sources of demand would need to be captured to support the level of retail square feet included in the Concepts.

If other sources of growth will be relied upon to support the retail development, then current retail vacancy and the pipeline for new retail development should also be considered. **Figure 23** illustrates the roughly 140,000 square feet of retail in the development pipeline in the SoMa,

Mission Bay, Showplace Sq./Potrero, and West SoMa areas. New retail development at 4th and King would need to compete with these new retail locations for spending on retail goods.

Table 8. Review of Retail Demand and Supply for Development Concepts

Retail Spending Calculation Item	Concept 1	Concept 2
Residential		
Number of Households	1,461	1,525
Average Home Sales Price [1]	$750,000	$750,000
Average Household Income [2]	$178,000	$178,000
Percent of Income Spent on Retail [3]	15.3%	15.3%
Retail Spending Per Household	$27,234	$27,234
Capture Rate	50%	50%
Total Residential	$19,894,437	$20,765,925
Office		
Ground Floor Area (square feet)	935,407	969,924
Employees (1 employee per 250 sq ft)	3,742	3,880
Weekly Spending per Employee [4]	$115.60	$115.60
Capture Rate	50%	50%
Total Office	$10,813,305	$11,212,321
Hotel		
Number of Rooms	144	148
Occupancy Rate [5]	80%	80%
Occupancy per Room	1.5	1.5
Hotel Guest Spending per Day [6]	$179	$179
Capture Rate	50%	50%
Total Hotel	$5,647,301	$5,804,171
Total Retail Spending	**$36,355,043**	**$37,782,417**
Annual Sales per Square Foot	$350.00	$350.00
Total Retail Demand (Square Feet)	**104,000**	**108,000**
Retail Supply		
Ground Floor Area (square feet)	388,971	303,395
Annual Sales per Square Foot	$350.00	$350.00
Total Retail Sales	**$136,140,000**	**$106,188,000**
Retail Spending Demand (minus) Retail Supply ($s)	**($99,784,957)**	**($68,405,583)**
Retail Spending Demand (minus) Retail Supply (sq.ft.)	**(284,971)**	**(195,395)**

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[1] See "Residential" section of memo.

[2] Assumes 20% down payment, 30 year mortgage, 5% interest rate, $5,000 in annual HOA fees, and 30% of a household's income spent on housing.

[3] Based on the Consumer Expenditure Survey for households earning over $150,000 annually. Includes food, alcoholic beverages, housekeeping supplies, household furnishings, apparel and services, drugs, medical supplies, entertainment, personal care products and services, tobacco products and smoking supplies, and reading.

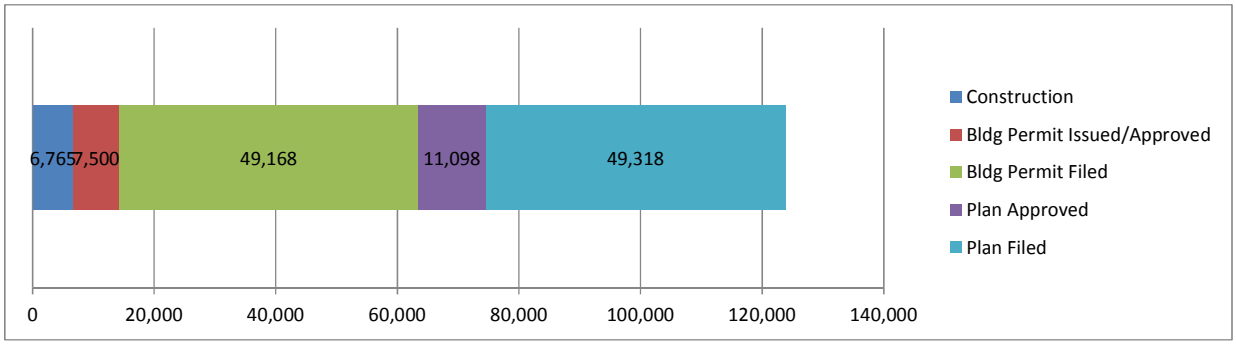
[4] ICSC Research Department 2012. "Office-Worker Retail Spending in a Digital Age". Based on "Total Spending Less Transportation and Online" for urban office workers.

[5] See Hotel section of memorandum for current occupancy rates.

[6] "2011 Visitor Volume & Spending". San Francisco Travel Association Research.

Sources: Economic & Planning Systems, Inc.

Figure 23. Retail Square Feet in the Pipeline



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Source: San Francisco Planning Departments
Includes projects in East SoMa, Mission Bay, Showplace Sq./Potrero, and West SoMa areas.

APPENDIX C

MEMORANDUM

To: Josh Switsky, City of San Francisco
Nick Haskell, AECOM
Adena Friedman, AECOM

From: Darin Smith and Rebecca Benassini

Subject: 4th and King Railyards Preliminary Draft Feasibility Analysis Findings; EPS #121058

Date: September 12, 2012

The Economics of Land Use

Introduction

The draft financial feasibility analysis tests the "Boulevard" and "Highway" land use concepts developed by the 4th and King Team (AECOM, EPS, and City). AECOM worked with the City to define conceptual development programs suitable for the site, with building ranging from 85' to 450' in height and representing a mix of residential, office, hotel, retail, and entertainment uses in addition to some on-site parking. In total, the development programs represent some 3.6 million square feet of development potential on the 19.1 acre site, reflecting an overall floor area ratio of roughly 4.3:1. See **Table 1** for a complete development program by scenario.

EPS conducted market analysis to assess the potential market support and values of such development in this San Francisco location, reviewed case study literature regarding the value impacts associated with development adjacent to urban highways versus examples where the highways have been removed, and estimated the site's value using both comparable land sales and residual land value analysis.

Key Findings

The land value of the 19.1 acre site is estimated to be $148 million under the Highway scenario and $228 million for the Boulevard scenario, as summarized in **Table 2**.

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Berkeley, CA 94710-2257
510 841 9190 tel
510 841 9208 fax

Berkeley
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Los Angeles
Sacramento

www.epsys.com

The Boulevard scenario generates roughly 50 percent more land value than the Highway scenario because of two key differences:

(1) Residential and office uses configured around a Boulevard are assumed to generate slightly higher values than those situated near the existing Highway , consistent with case study research indicating value premiums for adjacent properties after urban freeways are removed; and

(2) The residential uses for the prototypes tested generate higher land values than the office uses tested and the Boulevard scenario includes about 60 percent more residential units that the Highway scenario (1,217 dwelling units compared to 745 units).

Note that these land values reflect a clean and entitled site with the required infrastructure in place. No analysis has been done to evaluate the costs required to prepare and entitle the site.

Supporting Tables

Land value estimates are based on vertical pro formas which simulate estimated building values (capitalized net operating income for all non-residential uses and sale prices for all dwelling units) and compares those values with building development costs. The difference between the building values and building costs is the estimated value of the land, if developed with the programs defined in each scenario. Pro formas organized by use (residential, office, retail/entertainment, and hotel), height, and scenario (Boulevards and Highway) are shown in **Tables 3 through 14.**

Note that each pro forma includes a "net parking cost". The net parking costs are calculated in **Tables 15 and 16** for the Boulevard Highway scenarios. As shown, parking development costs are compared with the capitalized value of net parking revenues. The comparison results in a net cost required to build the parking which has been allocated to the building pro formas by use, based the parking demand generated by each use. The separation of parking costs and revenues from the building pro formas reflects San Francisco's policies on unbundling parking.

Impacts fee estimates are shown in **Table 17**. Along with the Citywide fees, the three tiers of the Eastern Neighborhood fees are also shown. Based on City direction on previous iterations of the analysis for 4th and King, the Eastern Neighborhood Tier One fees are applied to the development pro formas. Note that the Residential pro formas include the provision of Below Market Rate housing onsite instead of paying the in lieu affordable housing development fee.

Table 1
Development Program
4th and King Railyards Valuation; EPS#121058

Land Use	Concept 1: "Boulevard"				Concept 2: "Highway"			
	Up to 85 ft height	86-180 ft. height	More than 180 ft. height	Total	Up to 85 ft height	86-180 ft. height	More than 180 ft. height	Total
Residential units	370	847	-	1,217	335	410	-	745
Residential Sq.Ft.	370,000	847,000	-	1,217,000	335,000	409,500	-	744,500
Office gross sq.ft.	417,500	95,000	1,133,500	1,646,000	366,000	686,500	1,133,500	2,186,000
Hotel rooms			325	325			325	325
Hotel Sq.Ft.			300,000	300,000	-	-	300,000	300,000
Retail gross sq.ft.	203,000	-	-	203,000	203,500	-	-	203,500
Entertainment gross sq.ft.	191,500	-	-	191,500	191,500	-	-	191,500
Total Gross Developable Square Feet	1,182,000	942,000	1,433,500	3,557,500	1,096,000	1,096,000	1,433,500	3,625,500
Parking spaces				1,342				1,096

Sources: AECOM; Economic & Planning Systems, Inc.

Table 2
Residual Land Value Summary
4th and King Railyards Valuation; EPS#121058

Land Use	Concept 1: "Boulevard"				Concept 2: "Highway"			
	Up to 85 ft height	86-180 ft. height	More than 180 ft. height	Total	Up to 85 ft height	86-180 ft. height	More than 180 ft. height	Total
Land Value Estimate per Gross Building Sq. Ft. ($s)								
Residential	$109	$190	N/A	--	$99	$108	N/A	--
Office	$88	$55	$30	--	$85	$32	$5	--
Hotel	N/A	N/A	$20	--	N/A	N/A	$20	--
Retail	$15	N/A	N/A	--	$15	N/A	N/A	--
TOTAL for Program ($s millions)								
Residential	$40.4	$99.5	N/A	$139.8	$33.3	$44.1	N/A	$77.5
Office	$36.9	$5.2	$33.9	$76.0	$31.1	$21.8	$5.6	$58.5
Hotel	N/A	N/A	$6.0	$6.0	N/A	N/A	$6.0	$6.0
Retail /Entertainment	N/A	N/A	N/A	$6.0	$6.0	N/A	N/A	$6.0
Total	$83.3	$104.7	$39.9	**$227.9**	$70.5	$66.0	$11.6	**$148.0**
Value Metrics by Program ($s)								
Total Land Value per Acre				**$11,930,000**				**$7,750,000**
Total Land Value per Land Sq.Ft.				**$274**				**$178**
Total Land Value per Building GSF				**$64**				**$41**

Sources: AECOM; Economic & Planning Systems, Inc.

Table 3: Res. B85
Residential Residual Land Value; Boulevard Scenario ***85-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Units			370
Construction Sq. Ft. (GSF)			**370,000**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**314,500**
Parking Spaces (construction)	0.75 /1,000 NSF		
REVENUE ASSUMPTIONS			
Market Rate Sale Price (2)	$740 /NSF	$491	$181,529,400
BMR Sale Price (3)	$300 /NSF	$56	$20,757,000
Subtotal, Revenue		$547	$202,286,400
(less) Commissions	3% of sale revs.	($16)	($6,068,592)
Total Net Revenue		**$530**	**$196,217,808**
DEVELOPMENT COSTS (4)			
Direct Costs			
Building Construction Cost	$260 /GSF	$260	$96,200,000
Indirect Costs			
Soft Costs	18.0% of direct costs	$47	$17,316,000
Subtotal Total Development Costs (Direct and Indirect)		$307	$113,516,000
Contingency (4)	5.0% of total dev. cost	$15	$5,675,800
Development Fee (4)	15.0% of total dev. cost	$46	$17,027,400
Impact Fees (5)	$12.81 /GSF	$13	$4,739,700
Net Parking Cost (6)		$40	$14,892,500
Total Costs		**$421**	**$155,851,400**
RLV per Gross Building Sq.Ft. and Total RLV		**$109**	**$40,366,408**
Per Unit			**$109,098**

(1) Per AECOM site design.

(2) Based on review of the current market conditions around the site.

(3) Based on review of Mayor's Office of Housing website guidance on affordable pricing. Pricing shown reflects 3-person households making between 70% and 90% of Area Median Income. A total of 22% of all units are assumed to be BMR.

(4) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(5) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012. Reflects all Citywide fees plus Eastern Neighborhood Tier One fees. Note that the project is assumed to provide BMR units onsite, therefore no in lieu fee is included in this impact fee row.

(6) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Mayor's Office of Housing; Economic & Planning Systems, Inc.

Table 4: Res. B160
Residential Residual Land Value; Boulevard Scenario ***160-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Units			847
Construction Sq. Ft. (GSF)			**847,000**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**719,950**
Parking Spaces (construction)	0.75 /1,000 NSF		540
REVENUE ASSUMPTIONS			
Market Rate Sale Price (2)	$775 /NSF	$513.83	$435,209,775
BMR Sale Price (3)	$300 /NSF	$128	$47,516,700
Subtotal, Revenue		$642	$482,726,475
(less) Commissions	3% of sale revs.	($17)	($14,481,794)
Total Net Revenue		**$625**	**$468,244,681**
DEVELOPMENT COSTS (4)			
Direct Costs			
Building Construction Cost	$270 /GSF	$270	$228,690,000
Indirect Costs			
Soft Costs	18.0% of direct costs	$49	$41,164,200
Subtotal Total Development Costs (Direct and Indirect)		$319	$269,854,200
Contingency (4)	5.0% of total dev. co	$16	$13,492,710
Development Fee (4)	15.0% of total dev. co	$48	$40,478,130
Impact Fees (5)	$12.81 /GSF	$13	$10,850,070
Net Parking Cost (6)	$0 space	$40	$34,091,750
Total Costs		**$435**	**$368,766,860**
RLV per Gross Building Sq.Ft. and Total RLV		**$190**	**$99,477,821**
Per Unit			**$117,447**

(1) Per AECOM site design.

(2) Based on review of the current market conditions around the site.

(3) Based on review of Mayor's Office of Housing website guidance on affordable pricing. Pricing shown reflects 3-person households making between 70% and 90% of Area Median Income. A total of 22% of all units are assumed to be BMR.

(4) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(5) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012. Reflects all Citywide fees plus Eastern Neighborhood Tier One fees. Note that the project is assumed to provide BMR units onsite, therefore no in lieu fee is included in this impact fee row.

(6) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Mayor's Office of Housing; Economic & Planning Systems, Inc.

Table 5: Res. H85
Residential Residual Land Value; Highway Scenario ***85-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Units			335
Construction Sq. Ft. (GSF)			**335,000**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**284,750**
Parking Spaces (construction)	0.75 /1,000 NSF		214
REVENUE ASSUMPTIONS			
Market Rate Sale Price (2)	$725.00 /NSF	$481	$161,026,125
BMR Sale Price (3)	$300.00 /NSF	$56	$18,793,500
Subtotal, Revenue		$537	$179,819,625
(less) Commissions	3% of sale revs.	($16)	($5,394,589)
Total Net Revenue		$521	**$174,425,036**
DEVELOPMENT COSTS (4)			
Direct Costs			
Building Construction Cost	$260.00 /GSF	$260	$87,100,000
Indirect Costs			
Soft Costs	18.0% of direct costs	$47	$15,678,000
Subtotal Total Development Costs (Direct and Indirect)		$307	$102,778,000
Contingency (4)	5.0% of total dev. cost	$15	$5,138,900
Development Fee (4)	15.0% of total dev. cost	$46	$15,416,700
Impact Fees (5)	$12.81 /GSF	$13	$4,291,350
Net Parking Cost (6)		$40	$13,483,750
Total Costs		**$421**	**$141,108,700**
RLV per Gross Building Sq.Ft. and Total RLV		**$99**	**$33,316,336**
Per Unit			**$99,452**

(1) Per AECOM site design.

(2) Based on review of the current market conditions around the site.

(3) Based on review of Mayor's Office of Housing website guidance on affordable pricing. Pricing shown reflects 3-person households making between 70% and 90% of Area Median Income. A total of 22% of all units are assumed to be BMR.

(4) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(5) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012. Reflects all Citywide fees plus Eastern Neighborhood Tier One fees. Note that the project is assumed to provide BMR units onsite, therefore no in lieu fee is included in this impact fee row.

(6) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Mayor's Office of Housing; Economic & Planning Systems, Inc.

Table 6: Res. H160
Residential Residual Land Value; Highway Scenario ***160-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Units			410
Construction Sq. Ft. (GSF)			**409,500**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**348,075**
Parking Spaces (construction)	0.75 /1,000 NSF		261
REVENUE ASSUMPTIONS			
Market Rate Sale Price (2)	$760.00 /NSF	$504	$206,338,860
BMR Sale Price (3)	$300.00 /NSF	$56	$22,972,950
Subtotal, Revenue		$560	$229,311,810
(less) Commissions	3% of sale revs.	($17)	($6,879,354)
Total Net Revenue		$543	**$222,432,456**
DEVELOPMENT COSTS (4)			
Direct Costs			
Building Construction Cost	$270.00 /GSF	$270	$110,565,000
Indirect Costs			
Soft Costs	18.0% of direct costs	$49	$19,901,700
Subtotal Total Development Costs (Direct and Indirect)		$319	$130,466,700
Contingency (4)	5.0% of total dev. cost	$16	$6,523,335
Development Fee (4)	15.0% of total dev. cost	$48	$19,570,005
Impact Fees (5)	$12.81 /GSF	$13	$5,245,695
Net Parking Cost (6)	$0 space	$40	$16,482,375
Total Costs		**$435**	**$178,288,110**
RLV per Gross Building Sq.Ft. and Total RLV		**$108**	**$44,144,346**
Per Unit			**$107,801**

(1) Per AECOM site design.

(2) Based on review of the current market conditions around the site.

(3) Based on review of Mayor's Office of Housing website guidance on affordable pricing. Pricing shown reflects 3-person households making between 70% and 90% of Area Median Income. A total of 22% of all units are assumed to be BMR.

(4) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(5) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012. Reflects all Citywide fees plus Eastern Neighborhood Tier One fees. Note that the project is assumed to provide BMR units onsite, therefore no in lieu fee is included in this impact fee row.

(6) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Mayor's Office of Housing; Economic & Planning Systems, Inc.

Table 7: Office B85
Office Residual Land Value; Boulevard Scenario *85-foot buildings*
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Construction Sq. Ft. (GSF)			**417,500**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**354,875**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) (2)	$52.50 /NSF/yr.	$45	$18,630,938
(less) Operating Expenses (3)	24%	($11)	($4,471,425)
(less) Vacancy Rate	5%	($2)	($931,547)
Subtotal, Annual Net Operating Income		**$32**	**$13,227,966**
Capitalized Value (capitalized at 6.5%) (4)	**6.5%**	**$487**	**$203,507,000**
DEVELOPMENT COSTS			
Direct Costs (5)			
Building Construction Cost	$195.00 /GSF	$195	$81,412,500
Tenant Improvements	$50.00 /NSF	$43	$17,743,750
Subtotal Direct Costs		$238	$99,156,250
Indirect Costs (5)			
Soft Costs (% of Direct Costs)	18.0%	$43	$17,848,125
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$8	$3,539,878
Subtotal Indirect Costs		$51	$21,388,003
Subtotal Total Development Costs (Direct and Indirect)		$289	**$120,544,253**
Contingency (5)	5.0% of total dev. cost	$14	$6,027,213
Development Fee (5)	15.0% of total dev. cost	$43	$18,081,638
Impact Fees (6)	$41.82 /GSF	$42	$17,459,850
Net Parking Cost (7)		$11	$4,481,167
Total Costs		**$399**	**$166,594,120**
RLV per Gross Building Sq.Ft. and Total RLV		**$88**	**$36,912,880**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco and inflated to 2012 dollars.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 8: Office B180
Office Residual Land Value; Boulevard Scenario ***180-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Construction Sq. Ft. (GSF)			**95,000**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**80,750**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) (2)	$55.00 /NSF/yr.	$47	$4,441,250
(less) Operating Expenses (3)	24%	($11)	($1,065,900)
(less) Vacancy Rate	5%	($2)	($222,063)
Subtotal, Annual Net Operating Income		**$33**	**$3,153,288**
Capitalized Value (capitalized at 6.5%) (4)	**6.5%**	**$511**	**$48,512,000**
DEVELOPMENT COSTS			
Direct Costs (5)			
Building Construction Cost	$235.00 /GSF	$235	$22,325,000
Tenant Improvements	$50.00 /NSF	$43	$4,037,500
Subtotal Direct Costs		$278	$26,362,500
Indirect Costs (5)			
Soft Costs (% of Direct Costs)	18.0%	$50	$4,745,250
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$9	$843,838
Subtotal Indirect Costs		$59	$5,589,088
Subtotal Total Development Costs (Direct and Indirect)		$336	**$31,951,588**
Contingency (5)	5.0% of total dev. cost	$17	$1,597,579
Development Fee (5)	15.0% of total dev. cost	$50	$4,792,738
Impact Fees (6)	$41.82 /GSF	$42	$3,972,900
Net Parking Cost (7)		$2	$1,019,667
Total Costs		**$456**	**$43,334,472**
RLV per Gross Building Sq.Ft. and Total RLV		**$55**	**$5,177,528**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco and inflated to 2012 dollars.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 9: Office B200+
Office Residual Land Value; Boulevard Scenario ***200-350-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption		Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)				
Construction Sq. Ft. (GSF)				**1,133,500**
Efficiency Ratio	85%			
Leasable Area, Sq. Ft. (NSF)				**963,475**
REVENUE ASSUMPTIONS				
Rental Revenue (Full Service Terms) (2)	$57.75	/NSF/yr.	$49	$55,640,681
(less) Operating Expenses (3)	24%		($12)	($13,353,764)
(less) Vacancy Rate	5%		($2)	($2,782,034)
Subtotal, Annual Net Operating Income			**$35**	**$39,504,884**
Capitalized Value (capitalized at 6.5%) (4)	**6.5%**		**$536.19**	**$607,767,000**
DEVELOPMENT COSTS				
Direct Costs (5)				
Building Construction Cost	$270.00	/GSF	$270	$306,045,000
Tenant Improvements	$50.00	/NSF	$43	$48,173,750
Subtotal Direct Costs			$313	$354,218,750
Indirect Costs (5)				
Soft Costs (% of Direct Costs)	18.0%		$56	$63,759,375
Commissions (% of Rental Revenues)	2.0%	/ year, for 10 yrs	$9	$10,571,729
Subtotal Indirect Costs			$66	$74,331,104
Subtotal Total Development Costs (Direct and Indirect)			$378.08	**$428,549,854**
Contingency (5)	5.0%	of total dev. cost	$19	$21,427,493
Development Fee (5)	15.0%	of total dev. cost	$57	$64,282,478
Impact Fees (6)	$41.82	/GSF	$42	$47,402,970
Net Parking Cost (7)			$29	$12,166,233
Total Costs			**$506**	**$573,829,029**
RLV per Gross Building Sq.Ft. and Total RLV			**$30**	**$33,937,971**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco and inflated to 2012 dollars.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 10:Office H85
Office Residual Land Value; Highway Scenario ***85-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Construction Sq. Ft. (GSF)			**366,000**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**311,100**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) (2)	$50.00 /NSF/yr.	$37	$15,555,000
(less) Operating Expenses (3)	24%	($8.94)	($3,272,697)
(less) Vacancy Rate	5%	($2)	($777,750)
Subtotal, Annual Net Operating Income		**$26**	**$11,504,553**
Capitalized Value (capitalized at 6.5%) (4)	**6.5%**	**$483.59**	**$176,993,000**
DEVELOPMENT COSTS			
Direct Costs (5)			
Building Construction Cost	$195.00 /GSF	$171	$71,370,000
Tenant Improvements	$50.00 /NSF	$37	$15,555,000
Subtotal Direct Costs		$208	$86,925,000
Indirect Costs (5)			
Soft Costs (% of Direct Costs)	18.0%	$37	$15,646,500
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$7	$2,955,450
Subtotal Indirect Costs		$45	$18,601,950
Subtotal Total Development Costs (Direct and Indirect)		$253	**$105,526,950**
Contingency (5)	5.0% of total dev. cost	$13	$5,276,348
Development Fee (5)	15.0% of total dev. cost	$38	$15,829,043
Impact Fees (6)	$41.82 /GSF	$37	$15,306,120
Net Parking Cost (7)		$10.73	$3,928,400
Total Costs		**$399**	**$145,866,860**
RLV per Gross Building Sq.Ft. and Total RLV		**$85**	**$31,126,140**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco and inflated to 2012 dollars.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 11: Office H180
Office Residual Land Value; Highway Scenario ***180-foot buildings***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Construction Sq. Ft. (GSF)			**686,500**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**583,525**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) (2)	$52.50 /NSF/yr.	$45	$30,635,063
(less) Operating Expenses (3)	24%	($10.71)	($7,352,415)
(less) Vacancy Rate	5%	($2)	($1,531,753)
Subtotal, Annual Net Operating Income		**$32**	**$21,750,894**
Capitalized Value (capitalized at 6.5%) (4)	**6.5%**	**$487**	**$334,629,000**
DEVELOPMENT COSTS			
Direct Costs (5)			
Building Construction Cost	$235.00 /GSF	$235	$161,327,500
Tenant Improvements	$50.00 /NSF	$43	$29,176,250
Subtotal Direct Costs		$278	$190,503,750
Indirect Costs (5)			
Soft Costs (% of Direct Costs)	18.0%	$50	$34,290,675
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$8	$5,820,662
Subtotal Indirect Costs		$58	$40,111,337
Subtotal Total Development Costs (Direct and Indirect)		$336	**$230,615,087**
Contingency (5)	5.0% of total dev. cost	$17	$11,530,754
Development Fee (5)	15.0% of total dev. cost	$50	$34,592,263
Impact Fees (6)	$41.82 /GSF	$42	$28,709,430
Net Parking Cost (7)		$10.73	$7,368,433
Total Costs		**$456**	**$312,815,968**
RLV per Gross Building Sq.Ft. and Total RLV		**$32**	**$21,813,032**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco and inflated to 2012 dollars.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 12: Office H200+
Office Residual Land Value; Highway Scenario
4th and King Railyards Valuation; EPS#121058

200-350-foot buildings

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Construction Sq. Ft. (GSF)			**1,133,500**
Efficiency Ratio	85%		
Leasable Area, Sq. Ft. (NSF)			**963,475**
REVENUE ASSUMPTIONS			
Rental Revenue (Full Service Terms) (2)	$55.00 /NSF/yr.	$46.75	$52,991,125
(less) Operating Expenses (3)	24%	($11.22)	($12,717,870)
(less) Vacancy Rate	5%	($2.34)	($2,649,556)
Subtotal, Annual Net Operating Income		**$33.19**	**$37,623,699**
Capitalized Value (capitalized at 6.5%) (4)	**6.5%**	**$510.65**	**$578,826,000**
DEVELOPMENT COSTS			
Direct Costs (5)			
Building Construction Cost	$270.00 /GSF	$270.00	$306,045,000
Tenant Improvements	$50.00 /NSF	$42.50	$48,173,750
Subtotal Direct Costs		$312.50	$354,218,750
Indirect Costs (5)			
Soft Costs (% of Direct Costs)	18.0%	$56.25	$63,759,375
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$8.88	$10,068,314
Subtotal Indirect Costs		$65.13	$73,827,689
Subtotal Total Development Costs (Direct and Indirect)		$377.63	**$428,046,439**
Contingency (5)	5.0% of total dev. cost	$18.88	**$21,402,322**
Development Fee (5)	15.0% of total dev. cost	$56.64	**$64,206,966**
Impact Fees (6)	$41.82 /GSF	$41.82	**$47,402,970**
Net Parking Cost (7)		$10.73	$12,166,233
Total Costs		**$506**	**$573,224,930**
RLV per Gross Building Sq.Ft. and Total RLV		**$5**	**$5,601,070**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco and inflated to 2012 dollars.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 13: Retail/Entertainment
Retail/Entertainment Residual Land Value; Boulevard and Highway Scenarios ***Ground Floor***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Sq. Ft. (Gross)	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Construction Sq. Ft. (GSF)			**394,500**
Efficiency Ratio	95%		
Leasable Area, Sq. Ft. (NSF)			**374,775**
REVENUE ASSUMPTIONS			
Rental Revenue (NNN lease terms) (2)	$38.00 /NSF/yr.	$36	$14,241,450
(less) Operating Expenses (3)	10%	($4)	($1,424,145)
(less) Vacancy Rate	5%	($2)	($712,073)
Subtotal, Annual Net Operating Income		**$31**	**$12,105,233**
Capitalized Value (capitalized at 8.0%) (4)	**8.0%**	**$384**	**$151,315,000**
DEVELOPMENT COSTS			
Direct Costs (5)			
Building Construction Cost	$175.00 /GSF	$175	$69,037,500
Tenant Improvements	$45.00 /NSF	$43	$16,864,875
Subtotal Direct Costs		$218	$85,902,375
Indirect Costs (5)			
Soft Costs (% of Direct Costs)	18.0%	$39	$15,462,428
Commissions (% of Rental Revenues)	2.0% / year, for 10 yrs	$7	$2,705,876
Subtotal Indirect Costs		$46	$18,168,303
Subtotal Total Development Costs (Direct and Indirect)		$264	**$104,070,678**
Contingency (5)	5.0% of total dev. cost	$13	$5,203,534
Development Fee (5)	15.0% of total dev. cost	$40	$15,610,602
Impact Fees (6)	$41.03 /GSF	$41	$16,186,335
Net Parking Cost (7)		$11	$4,234,300
Total Costs		**$368**	**$145,305,449**
RLV per Gross Building Sq.Ft. and Total RLV		**$15**	$6,009,551

(1) Per AECOM site design.

(2) Based on review of the current market conditions around the site.

(3) Based on BOMA 2005 Experience Exchange Report for office building expenses in San Francisco.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Cap rate based on sales across the U.S.

(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in Mission Bay and the Central Waterfront area.

(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.

(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 14: Hotel
Hotel Residual Land Value; Boulevard and Highway Scenarios ***450-foot towers***
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Room	Per Sq. Ft.	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)				
Rooms				325
Sq. Ft. per room				600
Room Sq. Ft				195,000
Other Sq. Ft.				105,000
Construction (Sq. Ft.)				**300,000**
REVENUE ASSUMPTIONS				
Room Revenue				
Average Daily Rate (2)	$210 /room/night	$210	$83	$24,911,250
(less) Vacancy Rate	20%	($42)	($17)	($4,982,250)
Room Revenues, after vacancy		$168	$66	$19,929,000
Other Revenues (3)	35% of room revenues	$59	$23	$6,975,150
Revenues, Room + Other Revenue		$227	$90	$26,904,150
Operating Expenses				
(less) Room and other revenues expenses (3)	30% of room + other rev	($68)	($41)	($8,071,245)
(less) Admin & Gen. (3)	10% of room + other rev	($23)	($14)	($2,690,415)
(less) Marketing (3)	8% of room + other rev	($18)	($11)	($2,152,332)
(less) Property O&M (3)	5% of room + other rev	($11)	($7)	($1,345,208)
(less) Energy Costs (3)	5% of room + other rev	($11)	($7)	($1,345,208)
(less) Management Fee (3)	3% of room + other rev	($7)	($4)	($807,125)
Total Operating Expenses	61%	($138)	($84)	($16,411,532)
Subtotal, Net Operating Income		$88	$6	$10,492,619
Capitalized Value (capitalized at 7.50%) (4)	7.50%	**$430,468**	**$466**	**$139,902,000**
DEVELOPMENT COSTS				
Direct Costs (5)				
Building Construction Cost	$270 /sq. ft.	$249,231	$270	$81,000,000
FF&E		$15,000	$16	$4,875,000
Subtotal Building and Parking Costs		$264,231	$286	$85,875,000
Indirect Costs (5)				
Soft Costs (% of Direct Costs)	18.0%	$47,562	$52	$15,457,500
Subtotal Total Development Costs (Direct and Indirect)		**$311,792**	**$338**	**$101,332,500**
Contingency (5)	5.0% of total dev. cost	$15,590	$17	$5,066,625
Development Fee (5)	15.0% of total dev. cost	$46,769	$51	$15,199,875
Impact Fees (6)	$37.24 /GSF	$34,375	$37	$11,172,000
Net Parking Cost (7)		$3,519	$4	$1,143,771
Total Costs		**$412,045**	**$446**	**$133,914,771**
RLV per Gross Building Sq.Ft., Per Room, and Total RLV		**$18,422**	**$20**	**$5,987,229**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.
(3) Other revenue includes food, beverage, phone, meeting rooms, entertainment and any other purchases made by guests onsite at the hotel. Operating expenses were derived by reference to the Concord Groups's work on the Transbay Terminal and adjusted downward to reflect the planning level nature of this analysis. Without knowing exactly the level of services that may be offered at the hotel, these numbers reflect average expenses for select service hotel types.

(4) Based on Emerging Trends in Real Estate 2012 publication, Urban Land Institute & PriceWaterhouseCoopers. Capitalization rate is based on sales across the U.S. for full-service hotels is about 7.7 percent for 2012.
(5) EPS estimate based on review of Concord Group's work on Transbay Terminal and recent review of proformas for projects in
(6) Per Citywide Development Fee Register, updated December 2011 and effective January 1, 2012.
(7) Net parking cost reflects the different between the value of the parking (capitalized net operating income) and the cost to build the parking. See parking proforma for details.

Sources: Concord Group; Urban Land Institute with Price Waterhouse Coopers; Economic & Planning Systems, Inc.

Table 15: Parking B
Parking Residual Land Value; Boulevard Scenario
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Parking Space	Total
DEVELOPMENT PROGRAM ASSUMPTIONS (1)			
Residential parking	0.75 /dwelling unit		913
Office parking	7% of GSF		329
Hotel parking	1.00 /16 rooms + 1 space for manager		21
Retail/Entertainment Parking	7% pf GSF		79
Total Spaces			1,342
REVENUE ASSUMPTIONS (2)			
Gross Revenue-Reserved (3)	$200.00 /space/month	$1,200	$1,610,595
Gross Revenue-Daily (3)	$10.00 /space/day	$1,825	$2,449,447
Total Gross Revenue		$3,025	$4,060,042
(less) Operating Expenses (4)	40%	($1,210)	($1,624,017)
(less) Vacancy Rate (3)	30%	($908)	($1,218,012)
Subtotal		$908	$1,218,012
Capitalized Value (capitalized at 9.0%) (4)	9.0%	**$10,083**	**$13,533,472**
COST ASSUMPTIONS			
Direct Costs (5)	$42,500 per space	$42,500	$57,041,906
Indirect Costs (4)			
Soft Costs	30%	$12,750	$17,112,572
Contingency (% of total costs)	10%	$4,250	$5,704,191
Profit (% of total costs)	10%	$4,250	$5,704,191
Total Costs		$63,750	**$85,562,859**
Total Residual Land Value		($53,667)	**($72,029,388)**
Cost Allocation to Uses			
Residential parking			($48,984,250)
Office parking			($17,667,067)
Hotel parking			($1,143,771)
Retail/Entertainment Parking			($4,234,300)
Net Cost			**($72,029,388)**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.

[3] Parking rates are estimated based on a review of Colliers International Parking Survey, 2011 for the San Francisco Central Business District (CBD). The amount shown reflects the "low" parking rates from the survey. This reflects the site's position which is outside of the San Francisco's CBD. The spaces are assumed to be split between monthly parkers and daily parkers. Colliers notes that San Francisco garages in the CBD are typically 60-80% full Monday - Friday and for special weekend events.

(4) Based on EPS experience with other projects.

(5) Direct costs reflect an average of $50,000 per underground space and $35,000 per structured space.

Sources: Colliers International Parking Survey; Urban Land

Table 16: Parking H
Parking Residual Land Value; Highway Scenario
4th and King Railyards Valuation; EPS#121058

Item	Assumption	Per Parking Space	Total
DEVELOPMENT PROGRAM ASSUMPTIONS			
Residential parking	0.75 /dwelling unit		558
Office parking	7% of GSF		437
Hotel parking	1.00 /16 rooms + 1 space for manager		21
Retail/Entertainment Parking	7% pf GSF		79
Total Spaces			1,096
REVENUE ASSUMPTIONS			
Gross Revenue-Reserved [3], [5]	$200.00 /space/month	$1,200	$1,315,065
Gross Revenue-Daily [4], [5]	$10.00 /space/day	$1,825	$1,999,995
Total Gross Revenue		$3,025	$3,315,060
(less) Operating Expenses	40%	($1,210)	($1,326,024)
(less) Vacancy Rate	30%	($908)	($994,518)
Subtotal		$908	$994,518
Capitalized Value (capitalized at 9.0%) (4)	9.0%	**$10,083**	**$11,050,199**
COST ASSUMPTIONS			
Direct Costs (6)	$42,500 per space	$42,500	$46,575,219
Indirect Costs			
Soft Costs [7]	30%	$12,750	$13,972,566
Contingency (% of total costs)	10%	$4,250	$4,657,522
Profit (% of total costs)	10%	$4,250	$4,657,522
Total Costs		$63,750	**$69,862,828**
Total Residual Land Value		($53,667)	**($58,812,629)**
Residential parking			($29,966,125)
Office parking			($23,463,067)
Hotel parking			($1,143,771)
Retail/Entertainment Parking			($4,239,667)
Net Cost			**($58,812,629)**

(1) Per AECOM site design.
(2) Based on review of the current market conditions around the site.

[3] Parking rates are estimated based on a review of Colliers International Parking Survey, 2011 for the San Francisco Central Business District (CBD). The amount shown reflects the "low" parking rates from the survey. This reflects the site's position which is outside of the San Francisco's CBD. The spaces are assumed to be split between monthly parkers and daily parkers. Colliers notes that San Francisco garages in the CBD are typically 60-80% full Monday - Friday and for special weekend events.

(4) Based on EPS experience with other projects.

(5) Direct costs reflect an average of $50,000 per underground space and $35,000 per structured space.

Sources: Colliers International Parking Survey; Urban Land

Table 17
Impact Fees
4th and King Railyards Valuation; EPS#121058

Item	Residential	Hotel	Office	Retail
		--- per gross building sq. ft. ---		
Various City-wide Fees				
Child Care	-	$1.06	$1.06	-
Transit Fee	$1.03	$12.06	$11.68	$11.68
Wastewater	$1.03	$1.13	$0.36	$2.21
School	$2.24	$0.09	$0.28	$0.18
Subtotal	$4.30	$14.34	$13.38	$14.07
Eastern Neighborhoods Public Benefits Program (1)				
Affordable Housing	$42.54	$16.52	$22.06	$20.58
Tier 1	$8.51	$6.38	$6.38	$6.38
Tier 2	$12.76	$10.63	$10.63	$10.63
Tier 3	$17.02	$14.89	$14.89	$14.89
Citywide+Eastern Neighborhoods by Tier				
Tier 1	$55.35	$37.24	$41.82	$41.03
Tier 2	$59.60	$41.49	$46.07	$45.28
Tier 3	$63.86	$45.75	$50.33	$49.54

(1) Tiers refer to the intensity of development relative to the intensity achieved with a zoning change. For example, Tier 1 fees refer to sites which do not receive zoning changes that increase heights, as compared to allowable height prior to the rezoning (May 2008), all 100% affordable housing projects, and all housing projects within the Urban Mixed Use (UMU) district.

Tier 2 are applied to all other sites which receive zoning changes that increase heights by one to two stories.

Tier 3 fees are applied to all other sites which receive zoning changes that increase heights by three or more stories and in the Mixed Use Residential District.

Source: City of San Francisco Master Impact Fee Schedule, Updated December 1, 2011 and effective January 1, 2012; Economic & Planning Systems

Formatting indicates the fee scenarios which are used in the feasibility tests.