



MEMO

TO: Valerie Knepper, MTC

CC: Case Study Cities

DATE: June 29, 2007

FROM: Bill Hurrell/Terri O'Connor

SUBJECT: Summary of Findings, MTC Case Study: SFCTA Mission Bay

This memorandum presents a summary of findings regarding the San Francisco County Transportation Authority's (SFCTA) case study for Metropolitan Transportation Commission's (MTC) *Reforming Parking Policies to Support Smart Growth Study*. This memorandum includes a review of existing and project conditions, a review of the initial implications, and makes preliminary recommendations based on the analysis of existing conditions and established policy framework. The existing and projected conditions and policy framework were compiled from the following sources:

- 2004 Mission Bay Life Sciences/Biotechnology parking study, local policies, requirements and parking plans associated with the Mission Bay North and South Redevelopment Plans and Design for Developments, UCSF Campus Master Plan and 16th Street SAR;
- SFCTA model 2025 mode split projections; and
- Zero auto ownership data from the MTC Bay Area Transportation Survey (BATS 2005);

This information includes a review of Mission Bay's Parking Studies (parking requirements are contained in the Mission Bay North and South Design for Developments) and provides a basis for additional Smart Growth parking policy recommendations.

Existing Conditions

Throughout the planning and development of Mission Bay, there has been collaboration among the Redevelopment Agency, City departments, and developers with respect to setting parking maximums and design guidelines. Because Mission Bay is a redevelopment area, the San Francisco Redevelopment Agency (SFRA) set the parking standards in agreement with the San Francisco Planning department in order to support the future 3rd Street light rail and create a transit-oriented community in Mission Bay. While UCSF was not bound by these requirements as a state agency, they agreed to a lower parking ratio than their original plan and moved three of five planned parking garages from the 3rd Street transit

corridor to one more accessible to the freeway on Owens Street. This helped preserve the planned pedestrian and transit character of 3rd Street and the rest of Mission Bay (4th Street through Mission Bay is planned to be a pedestrian-oriented, neighborhood-serving retail corridor). After the adoption of the 1998 Mission Bay North and South Redevelopment Plans, the Redevelopment Agency increased the allowable parking for commercial/industrial use to better support Mission Bay's proposed bio-technology and life science cluster.

Land Use

The Mission Bay Project Area (Study Area) comprises approximately 303 acres bounded by King Street and AT&T Park to the north, the San Francisco Bay to the east, the I-280 freeway to the west and Mariposa Street to the south. Mission Bay sits on prime but underutilized land adjacent to the San Francisco Bay, offering sweeping views of the water and the Bay Bridge. Mission Bay was previously an industrial area, comprised mostly of rail yards. As San Francisco's waterfront changed and the demand for rail decreased, San Francisco was left with large swaths of largely vacant land in Mission Bay. Planning efforts for the area began in 1981 and went through a number of iterations until the plan that exists today was adopted in 1998.

In 1998, after three years of planning, the Mission Bay North and South Redevelopment Plans and other related documents were approved by the Redevelopment Commission, the Planning Commission and by the San Francisco Board of Supervisors. The Redevelopment Plan documents included the Mission Bay North and South Design for Developments¹, detailed development standards, and design guidelines for the area. At the same time in 1998, the Final Subsequent Environmental Impact Report (SEIR) was certified. The Redevelopment Plans call for the transformation of vacant and underutilized railyards into a transit- and pedestrian-oriented residential community and job center, with a life science and biotechnology cluster anchored by a new University of California research campus.

The adopted plan calls for about 6,000 housing units; approximately 750,000 square feet (sq. ft.) of retail and entertainment space; a 43-acre site for a new UCSF campus containing about 2.6 million sq. ft. of medical instructional, research, administrative, and support space and a public school site; approximately 6.6 million sq. ft. of mixed research and development, and office space surrounding the UCSF site; a 500-room hotel; and about 47 acres of open space. Complete build-out of the adopted plan is anticipated to take 20 years.

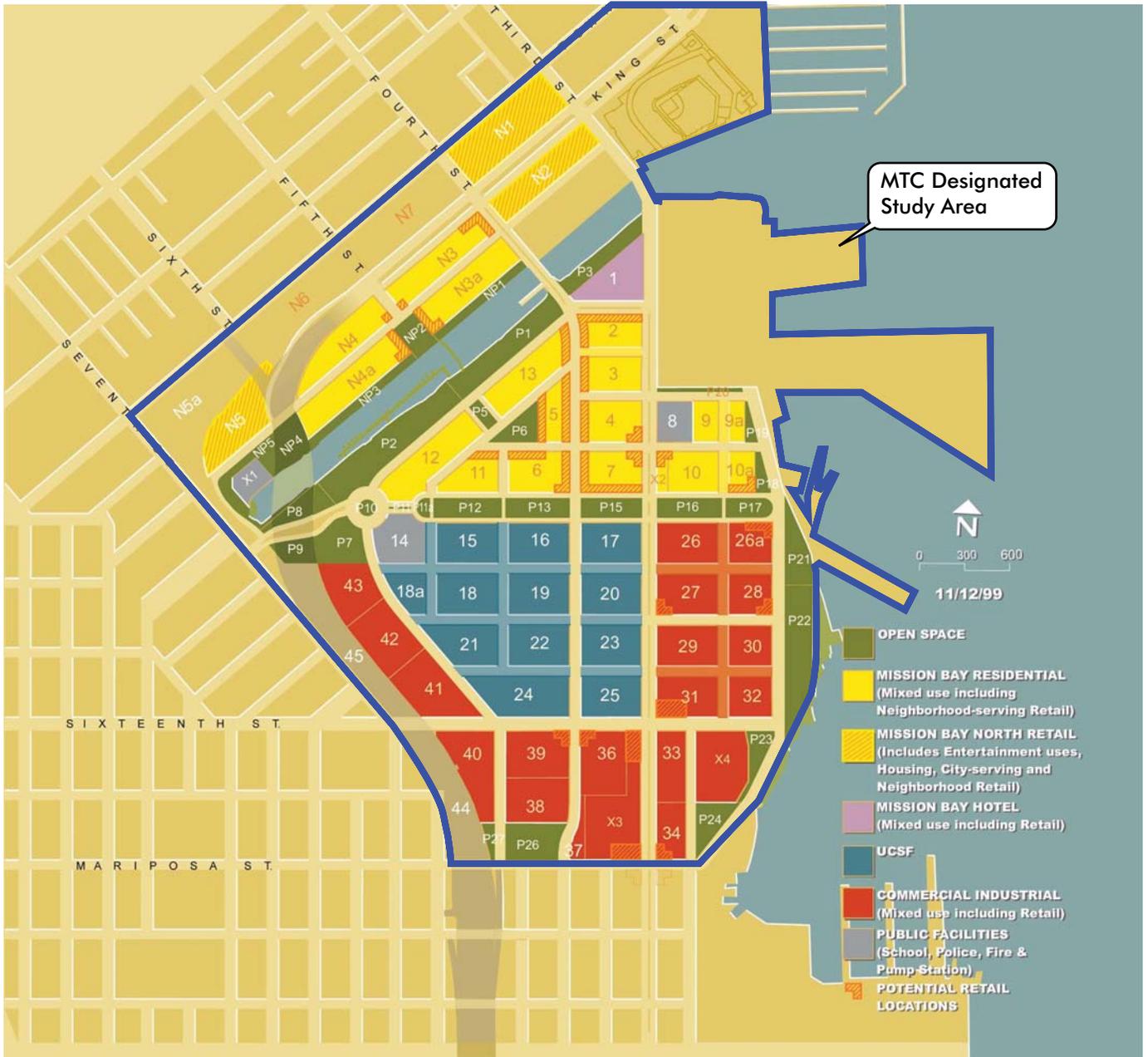
The Land Use Designations contained in the Redevelopment Plans include:

- Open Space
- Mission Bay Residential
 - Mixed Use

¹ The Mission Bay South Design for Development was updated and approved in March 2004.

- Neighborhood-serving Retail
- Mission Bay North Retail
 - Entertainment uses
 - City-serving & Neighborhood Retail
 - Residential
- Mission Bay Hotel
 - Mixed Use w/retail
- UCSF Campus
 - Including ground floor retail along South, 3rd and 4th Streets
- Commercial Industrial
 - Mixed Used w/Retail
- Public Facilities

Figure 1 on the following page presents the Mission Bay Study Area.



Source: Catellus Development Corporation

Parking Requirements

The parking requirements for the Study Area are outlined in the Design for Development, Design Standards section(s) issued for the north and south areas in 1998 and 2004 respectively and are detailed in the table below. The details for physical design requirements such as screening and podium roofs are outlined in the urban parking design elements section. The general parking requirements for Mission Bay North and South include:

- One secure bicycle parking space per 20 vehicle spaces.
- Entrance to off-site parking must be within 600 feet of the building with units being served.
- Ratio of supply of compact to standard size spaces is 50%
 - Compact: 127.5 square feet
 - Standard: 160 square feet

The number of parking spaces allowed in Mission Bay is based upon parking maximums for land use types per square foot of floor area of building structure.

Table 1. Off Street Parking by Land Use	
Land Use: Mission Bay North & South	Number of Parking Spaces
Residential Retail (Excepting specific uses addressed below)	Maximum of one space for each dwelling unit Maximum of one space for each 500 square feet of gross floor area up to 20,000 square feet, plus one space for each 250 square feet in excess of 20,000 square feet. For retail greater than 20,000 square feet, the minimum amount of parking required is 75% of the maximum number of parking spaces allowed. For retail greater than 50,000 gross square feet, a ratio could be established by the Redevelopment Agency based on development specific parking demand and not to exceed 10% greater than the limit stated herein.
Restaurants, bars, clubs, pool hall, dance hall, or similar enterprise.	Maximum of one space for each 200 square feet of gross floor area, where the occupied floor area exceeds 5,000 square feet. For these uses greater than 20,000 square feet, the minimum amount of parking required is 75% of the maximum number of parking spaces allowed.
Theater	Maximum of one space for each eight seats up to 1,000 seats where the number of seats exceeds 50 seats, plus one for each 10 seats in excess of 1,000 seats. The minimum amount of parking required is 75% of the maximum number of parking spaces allowed.
Mission Bay South only	
Commercial Industrial	One space for each 1,000 square feet of gross floor area shall be provided (maximum and minimum); except that two spaces for each 1,000 square feet of gross floor area shall be permitted for up to 1,734,000 feet of gross floor area of life sciences, biotechnology, biomedical, or similar research facility uses. ²

² For purposes of this parking provision only, “life sciences, biotechnology, biomedical or similar research facility uses” shall refer to any structure occupied primarily for such use or uses, provided, however, that any structure occupied primarily for administrative functions shall be subject to the one space per 1,000 square feet of floor area standard.

Commercial Industrial Retail	Commercial Industrial uses subject to Commercial Industrial standards. Retail subject to applicable Retail standards.
Hotel	Maximum of one space per 16 guest bedrooms.

Sources: Mission Bay North, Design for Development (1998), Mission Bay South Design for Development (2004)

Parking Supply and Utilization

In 2004, WSA evaluated the potential changes to the parking requirements for the Life Sciences/Biotechnology uses outlined in the Mission Bay Redevelopment Plan.³ The evaluation was conducted because the original recommended parking allowance as defined in the Mission Bay Plan of 1.0 space per 1,000 square feet of floor area was determined to be low compared to typical parking utilization rates reported by other life science/biotechnology uses in the Bay Area.

WSA's research of the traffic and parking characteristics of life science/biotechnology uses indicates that these uses have a higher demand for parking than Research & Development (R&D) uses because:

1. Their employees travel to and from work outside the peak commute times; and
2. They do not find the use of public transit or carpools as necessary or convenient.

While the life science/biotechnology uses generate more parking demand, and as a result more daily vehicle trips than R&D uses, they generate less traffic in the peak commute hours than R&D uses. As such, the rate used was estimated by WSA as 2.0 spaces per 1,000 sq. ft. based on the comparison of parking demand for similar uses in the Bay Area and adjusted for the urban character of Mission Bay.

Parking Demand Methodology

WSA's comparative analysis of Life Sciences/Biotechnology firms in the Bay Area to the Mission Bay Redevelopment Plan showed similar square footages per employee but marked differences for parking spaces per sq. ft. The original parking analysis for the Mission Bay Redevelopment plan assumed an average density of 290 sq. ft per employee for life science/biotechnology uses, which is consistent with the average employee densities of 275 and 350 sq. ft. per employee reported by major Bay Area biotechnology corporations.⁴

³ The SEIR analyzed the potential impacts of the 1998 Redevelopment Plan. The SEIR was certified in 1998 and the Plans were adopted.

⁴ Chiron located in Emeryville, CA and Genentech located in South San Francisco, CA.

These corporations also reported that their parking needs are in the range of 3.0 to 3.3 spaces per 1,000 sq. ft.⁵ The actual experience of the biotechnology corporations suggests that the parking demand for this type of use is not much lower than conventional office space, which typically requires 3.0 - 3.5 spaces per 1,000 sq. ft in a suburban environment. Based on the more recent experience of the biotechnology corporations, and adjusting for the more urban character of Mission Bay, WSA estimated the actual parking demand of the life science/biotechnology uses to be 2.0 spaces for 1,000 sq. ft.

Parking Supply and Demand

Based on WSA's parking demand methodology, the 1998 Mission Bay Redevelopment Plan would generate a total peak parking demand of 25,242 spaces. The plan called for a supply of 20,426 spaces, resulting in a parking deficiency or shortfall of 4,816 spaces. However, in Mission Bay North there was a substantial reduction in the development program as compared with the original plan⁶ which resulted in a net reduction in planned supply of 1,734 spaces.

Additionally, the developer Catellus proposed to use this reduction in supply in Mission Bay North as a basis for increasing the amount of parking for life science/biotechnology uses in Mission Bay South, without increasing the overall amount of parking in Mission Bay from that envisioned in the SEIR. The adopted change in the parking requirement for commercial industrial uses from 1.0 space per 1,000 sq. ft. to 2.0 spaces per 1,000 sq. ft. up to 1,734,000 square feet of new commercial industrial uses results in an increase in the overall parking supply of 1,734 spaces. This increase equals the reduction in parking supply that has occurred in Mission Bay North, resulting in no net change in the total parking supply for Mission Bay. The allowance for 2 spaces per 1,000 square feet of life sciences/biotechnology is capped at 1,734,000 square feet of use. After the 1,734,000 square feet is built, the allowable parking goes back to 1 space per 1,000 square feet.⁷

In terms of parking demand, the SEIR analysis originally assumed a demand of 1.36 spaces per 1,000 sq. ft. of life science/biotechnology (as represented by a 50/50 percent mix of office and R&D). Increasing this demand factor to 2.0 spaces per 1,000 sq. ft. (with a cap at 1,734,000 square feet) would result in a net increase in parking demand of 1,111 spaces in Mission Bay South. This would be more than offset by

⁵ While these parking ratios are for a more suburban environment than Mission Bay, they are substantially higher than the 1.0 space per 1,000 sq. ft. allowable supply assumed for the Mission Bay office and R&D uses.

⁶ The planned amount of commercial retail has declined from 412,000 sq. ft. to 200,000 sq. ft. and the multiplex moving theater project has been deleted. These changes reduce the total estimated demand for parking from 6,172 spaces to 4,551 spaces, a reduction of 1,620 spaces in peak demand. A reduction in parking supply would also occur, as a total of 3,342 spaces are now planned for Mission Bay North as compared to 5,076 spaces in the original plan.

⁷ Almost six million square feet of life sciences/biotechnology is anticipated in Mission Bay.

the 1,620 decline in demand projected for Mission Bay North. For the total project the overall 4,816 space deficiency in parking projected for the original plan would be reduced to 4,307 spaces.⁸ This 509 space reduction in demand represents 2.0 percent of the total demand, so the net impact of these changes is relatively small in terms of the overall Mission Bay Plan.

Traffic Impacts

According to the WSA report, the increase in parking demand for life science/biotechnology uses from 1.36 to 2.0 spaces per 1,000 sq.ft. would not result in an increase in the impact of the project on peak hour traffic conditions due to reduction of the typical peak hour factor for life sciences/biotechnology uses from the original SEIR estimate of 12.6% to 9.3 % observed at Chiron, a Bay Area biotechnology firm.

In fact, due to reductions in land use Mission Bay North there was an estimated 2,200 reduction in the PM peak hour person trips in vehicles for that portion of the project area. As a result the overall effect in the changes in parking supply and demand will be a net reduction of the traffic impacts of the Mission Bay project.

Parking Discussion

This WSA Parking study and estimated parking demand rate is relevant to the SFCTA's goals because it accounts for the special nature of the land uses in Mission Bay and works within the established parking maximum for the district. It evaluates the future parking needs of the Mission Bay redevelopment area, particularly the life science-biotechnology uses in relation to the overall parking demand for the district. It also helps provide a better understanding of how a parking cap and/or parking bank (smart growth parking model) could work within a district, that has not been fully developed.

SFCTA Model Forecast

The SFCTA countywide travel demand forecasting model (Model) was used to develop the travel forecasts and projected mode split for current (2005) and future (2025) cumulative conditions. This approach results in a cumulative impact assessment for future conditions and takes into account anticipated developments in the vicinity of the study area, plus the expected growth in housing and employment for the remainder of San Francisco and the region.

⁸ Demand: $25,242 + 1,111 - 1,620 = 24,733$

Supply: $20,426 - 1734 + 1734 = 20,426$

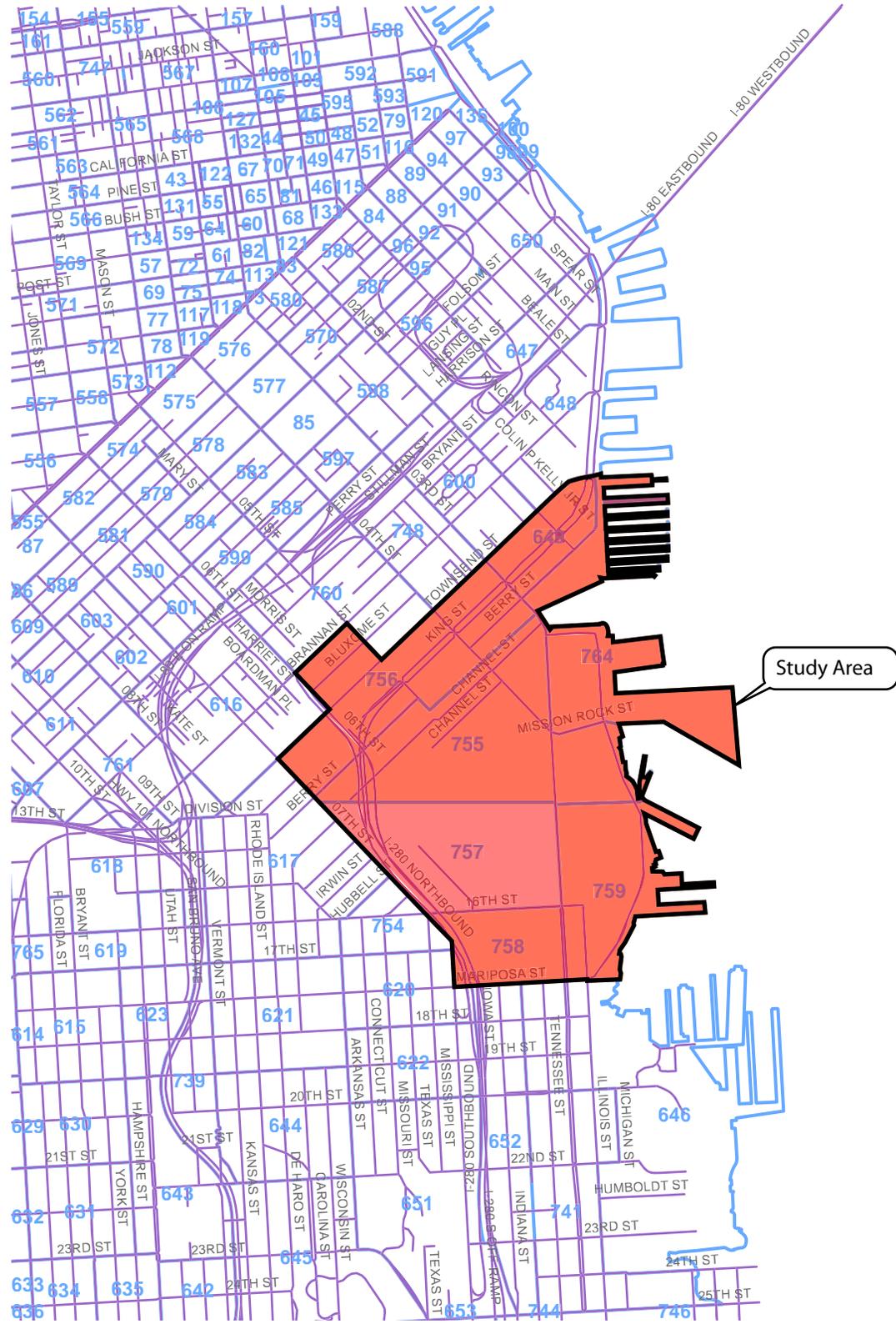
Deficit: $24,733 - 20,426 = 4,307$

Within San Francisco, the San Francisco Planning Department adjusted the forecasts to account for known and pipeline projects to factor ongoing area-wide planning efforts. Overall, the year 2025 cumulative conditions forecasts used in the analysis exceed the ABAG forecasts for San Francisco.

Within the model, the entire Bay Area region was divided into 1,750 Transportation Analysis Zones (TAZs) about 800 of which are in San Francisco and seven of which are in the Mission Bay Study Area. The Mission Bay TAZs are indicated in Figure 2. The most recent version of the Model estimated future travel demand for the entire nine-county Bay Area, based on land use and employment projections developed and adopted by the Association of Bay Area Governments (ABAG). For each TAZ, the Model estimates the travel demand based on the population and employment assumptions, determines the origin and destination and mode of travel (auto, transit, walk and bicycle) for each trip, and assigns those trips to the transportation system (roadway network and transit lines).

Most of the Mission Bay TAZs⁹ show a marked increase in transit mode share in 2025 from 2005, due to the increase in transit accessibility planned in the Project Area. TAZ755, which includes a portion of the UCSF campus, shows a corresponding increase in walking and biking, as well as a significant decrease in automobile share. TAZ759 shows an effective mode switch between automobile and transit, with the growth of the adjacent 3rd Street light rail. TAZ756 and TAZ758 both show an increase in transit share and corresponding decrease in walking share, perhaps due to the close proximity to the 3rd Street light rail and increased MUNI Metro service.

⁹ TAZ649 is currently highly transit accessible with the Mission Bay light rail line and MUNI Metro bus lines; therefore, future improvements in Mission Bay are not projected to alter the mode split.



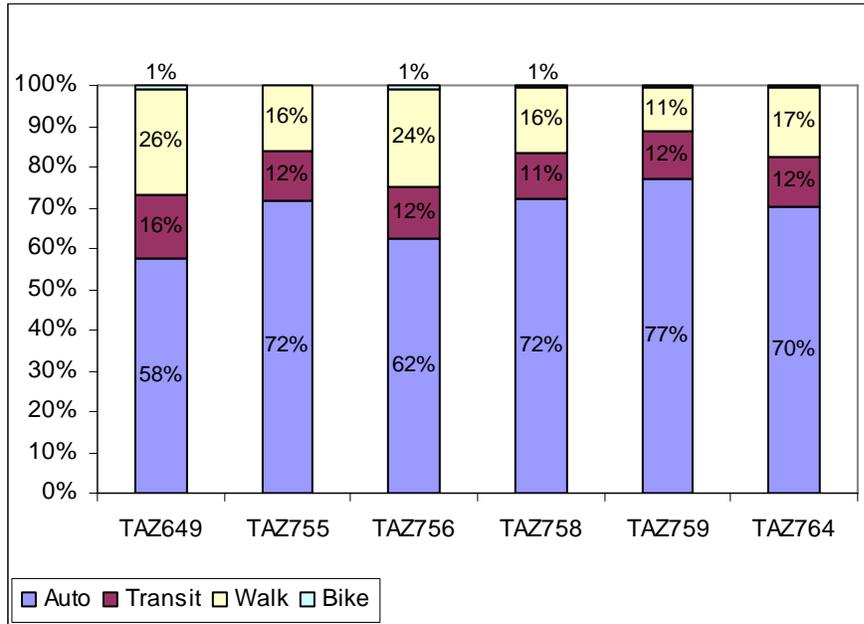
Source: SFCTA



Figure 2
MISSION BAY TAZ
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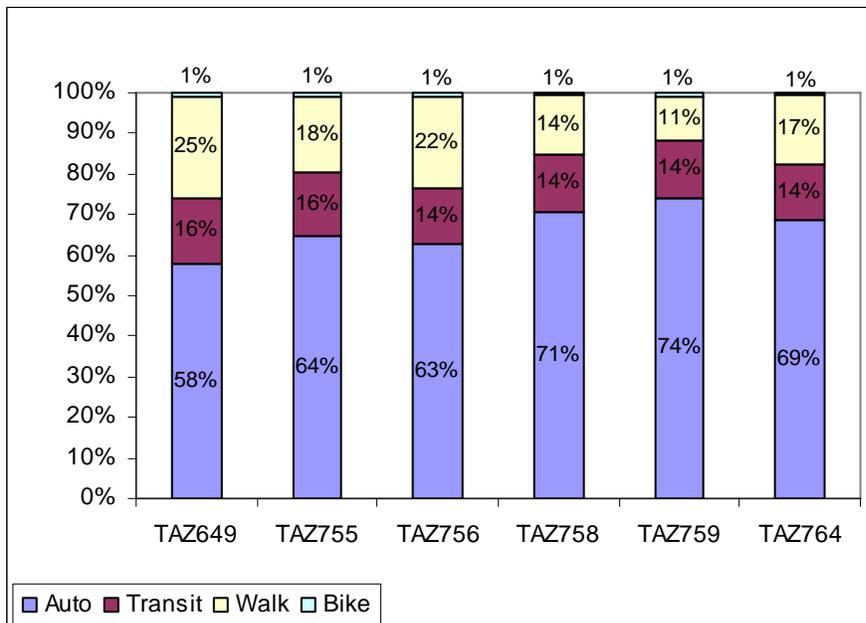
Mode split data from SFCTA's model for the Mission Bay Travel Analysis Zones (TAZ) are shown in Figures 3 and 4.

Figure 3. 2005 Mode Split



Source: SFCTA 2005 Model

Figure 4. 2025 Mode Split

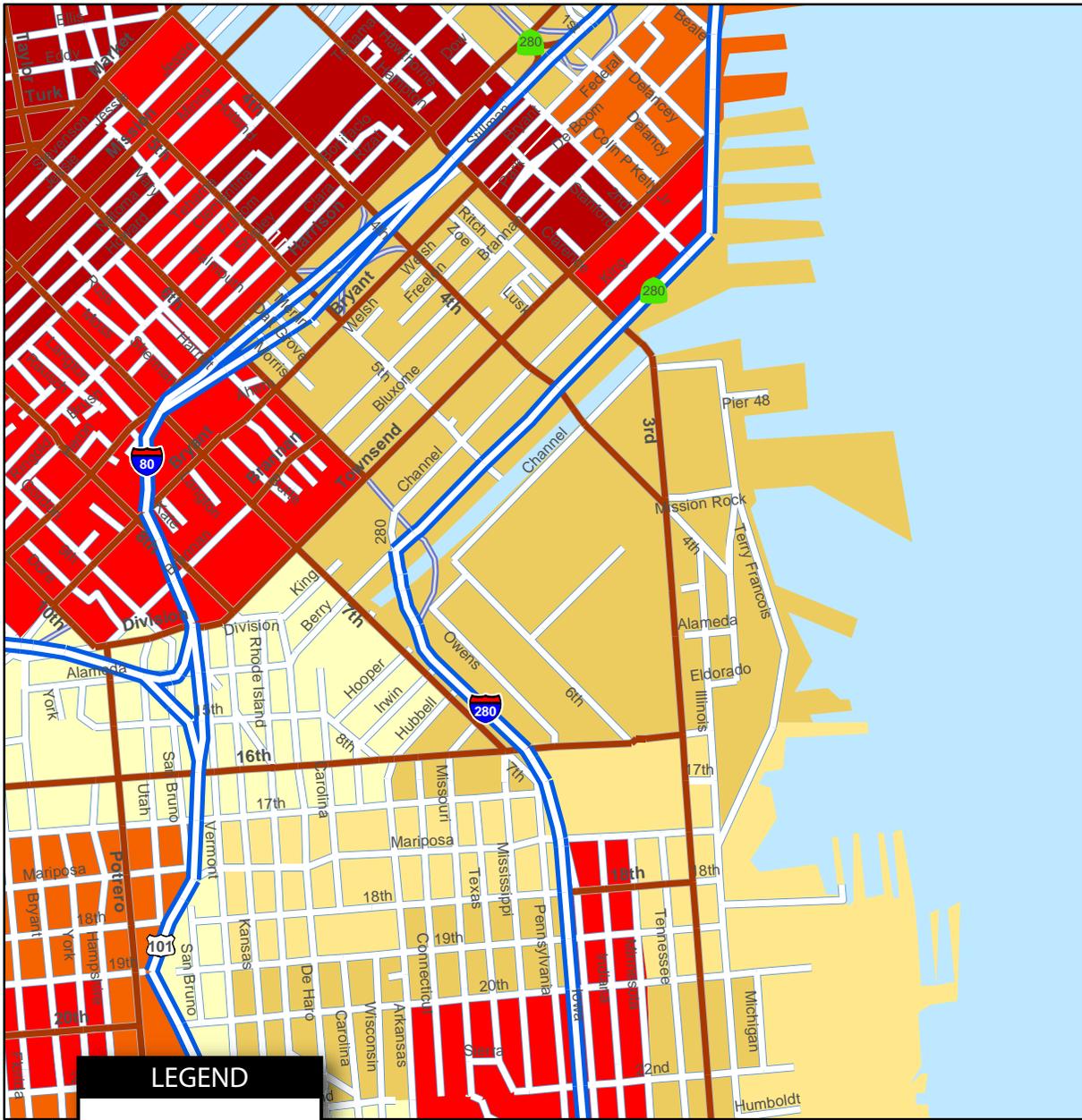


Source: SFCTA 2025 Model

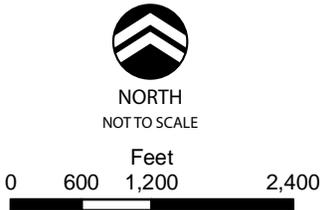
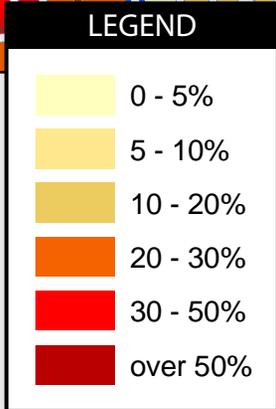
Car Ownership

Zero auto ownership data from the MTC Bay Area Transportation Survey (BATS 2005) indicate a significant proportion of zero car households in the Mission Bay area. There are a significant percentage of households (10-20 percent no-car) throughout the majority of the study area and (30-50 percent no-car) concentrated, at northeastern Mission Bay along King Street and Townsend. Furthermore, neighborhoods immediately adjacent to the study area to the northeast (SOMA) and northwest (Southbeach) are significant, ranging over 50 percent and 30-50 percent zero auto households respectively. The level of car ownership is a good indicator of the potential for many of the smart growth strategies being considered for the Mission Bay District.

Figure 5 on the following page presents zero auto ownership data for the study area.



Source: MTC Analysis of 2005 BATS Data



Income Distribution

Median income data for block groups located within the study area from the 2000 census indicates a range of different income groups within the site (not more than 50 residents in Mission Bay in 2000) and its immediate vicinity. However, there has been considerable change and development since 2000, including a significant amount of new housing and the opening of the Giants Ball Park. The majority of the site including UCSF, North Mission Bay from 3rd Street to 7th Street, and the eastern waterfront falls within the \$55-75,000 group. A much lower income pocket (\$25-40,000) is located to the northeast between Townsend Street and I-280. In contrast, much higher income (over \$85,000) groups are located directly to the south of Mariposa and west of I-280. Figure 6 shows median income by block group.

Due to the limited population in the area during the 2000 census, limited conclusions can be drawn from the available zero auto ownership and income data. According to SFRDA, there were virtually no workers or residents in Mission Bay in the year 2000 and the implementation of Mission Bay remains in its infancy:

- Of the 6,000 housing units to be built, approximately 1,800 have been constructed.
- Of the 31,000 new jobs projected, approximately 2,000 have been created, mostly at UCSF.

Since Mission Bay is still in the early stages of the development process, it is anticipated that the character of the area will be in flux for some time. The developments projected over the next 20 years will include a diverse mix of market rate and affordable (moderate, low and very low income) housing, including rental and ownership units, as well as office/life science technology and commercial space which is projected to create and support 31,000 new jobs. The housing and jobs will be served by the MUNI 3rd Street light rail and bus lines. This indicates a potential future diversity of income groupings, jobs and transportation choices.

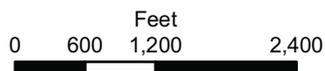
Figure 6 on the following page presents median household income data for the study area.



Source: 2000 Census



NORTH



Urban Parking Design Elements

There are several documents that provide guidance, policy and procedures for parking design and non-motorized connectivity throughout the Mission Bay Study Area. These include the Mission Bay Design for Development for North and South Mission Bay, the Mission Bay Major Phase Applications for the North and South Areas (North: N1, N2, N3/N3a, N4/N4a, South: 2-7&13, 8-10a, 26, 26a, 27, 28, 41, 42, 43, 45)¹⁰ and the Mission Bay UCSF Campus Master Plan and Design Guidelines.

General Parking Design Guidelines

In addition to containing specific parking requirements, Mission Bay's Design for Development document also contains general parking guidelines that ensure that parking facilities are seamlessly integrated into the scale and character of Mission Bay. The guidelines require that parking is always well screened and set back from the public realm, in order to create a distinctly pedestrian orientation in Mission Bay. The general parking guidelines have the following requirements:

Residential Sidewalk Edge

Parking for residential uses should be set back from public streets or provide adequate screening measures and be buffered at grade by street-oriented uses such as housing units with street access, retail uses, residential entrances and foyers, parking podium access stairs and elevators, common areas, community facilities or landscaping.

- Minimum 50% of parking frontage on a lot should be an active use
- Building base along parking frontage should be compatible with adjacent buildings
- Openings to parking areas should be screened to minimize visual impact
- Residential garage doors should be visually opaque and attractively designed
- Curb cuts should be spaced to maximize on-street parking and minimize sidewalk interruptions

Commercial/Industrial Sidewalk Edge

Parking for Commercial/Industrial uses should be set back from public streets and/or buffered at grade by street-oriented uses such as retail, building entrance lobbies, common areas such as cafeterias, business service uses, or landscaping, with the objective of eliminating blank walls.

- Building base along parking frontage should be compatible with adjacent buildings
- Openings to parking areas should be screened to minimize visual impact
- Curb cuts should be spaced to maximize on-street parking and minimize sidewalk interruptions

¹⁰ Major Phase Applications include descriptions of intended block development including: infrastructure development, design standards and guidelines based on Design for Developments and block development details.

Automobile Access to Parking

Avoid breaking up continuity of retail frontage on streets throughout Mission Bay South. Access to parking for commercial and residential uses is discouraged on Third and Fourth Streets.

Pedestrian Access

The design of parking structures should promote the use of public sidewalks and mid-block connections for access to dwelling units from parking structures.

- Pathways and stairways linking parking structures to buildings should be interesting, well-lit and secure
- Direct access from parking lots to lobby/residences should be avoided
- Landscaping, paving and trellises should be used to enhance the pedestrian environment

Residential Podium roofs

The roofs of residential parking podiums should be finished in attractive landscaping, walking surfaces or recreational uses where feasible.

Lighting

Lighting should be designed for vehicular and personal safety, minimizing dark areas and those without clear sightlines. Additionally, light pollution from fixtures and vehicle headlights should be avoided and/or minimized.

Entries

Pedestrian and vehicle entrances to parking garages should receive careful design treatments, in order to visually complement surrounding building design and convey the intensity of use they will receive.

Architectural Design Parking Guidelines

The Design for Development contains other design guidelines related to parking including: architectural design elements (pertaining to façade differentiation and first floor use requirements), street design elements (including sidewalk and bike lane features), and loading access requirements, all of which help to enhance the pedestrian and bicycle network in the Mission Bay Study Area. The architectural and building design requirements that pertain to parking garages are as follows:

Architectural Details for Shared Parking

Wherever feasible, active uses such as retail should be included on the ground floor of satellite parking structures.

Architectural Character

Parking garages should be compatible in color and materials with adjacent buildings and the development pattern in Mission Bay.

- The architecture should distinguish the ground floor from the upper floor facades to form a visual base for the buildings
- Solid wall (non-transparent or non-articulated) surfaces should be avoided at the street level for visual and security reasons

Street Design and Access Guidelines

The Design for Developments contains guidelines for street design elements (including sidewalk and bike lane features), transit connectivity policy, and loading access requirements. These guidelines are as follows:

Loading Access

Loading facilities (and outdoor refuse storage and dumpsters) should be located away from major pedestrian routes and residential uses (including shared with retail) to avoid potential traffic conflicts and nuisance.

Transit First

Streets and pathways should connect to the city's network of bicycle and pedestrian routes. Development should be concentrated and retail areas located to maximize convenience and connections with public transit (including ferry and bike).

Key Street Design

General Design guidelines were provided for key Mission Bay commercial, transit, residential streets and boulevards, indicating a range of sidewalk widths, pathways and landscaping to enhance the pedestrian and bicycling environment in Mission Bay. A number of the design guidelines require bike lanes, bicycle and pedestrian pathways and parks, all of which are intended to link to the city and region's pedestrian and bike path system. The guidelines for Mission Bay's key streets are detailed in Table 2 below.

Table 2. Mission Bay Key Street Design Details

Street Name	Class/ Character	Sidewalk	Bike lane	Path/ Park	Bike/Ped Connectivity	Light rail	Parking lane	Setback
4 th Street	Neighborhood commercial	12-20' bulbouts	4'	N	City to UCSF	Y	8'	0-5'
3 rd Street	Mixed use- transit	12'	N	N		Y	N	0
King Street	Mixed use- transit-arterial	14.6'	N	N		N	10'	0
Owens Street	Boulevard	0-12.5'	N	Y		N	8-11'	20
16 th Street	Arterial	10'	8'	Y	Citywide	N	N	20'
Terry Francois	Boulevard	12.5-15.5'	5'	Y	City/Region	N	8'	0
Mariposa	Arterial	10-20'	N	N	Citywide	N	N	14'
Mission Bay Commons	Boulevard	12'	N	Y	Citywide	N	8'	0
Neighborhood	Minor Street	12'	N	N		N	8'	0'

Sources: Mission Bay Major Phase Applications for North: N1, N2, N3/N3a, N4/N4a, for South: 2-7&13, 8-10a, 26, 26a, 27, 28, 41, 42, 43, 45 (1999) and UCSF Mission Bay Campus Master Plan (1999).

UCSF Mission Bay Campus Master Plan

While the UCSF Mission Bay campus is within the Mission Bay Redevelopment Area, the campus, as a State agency, is not controlled by the Redevelopment Plan, the Design for Development or other Redevelopment Plan documents. Development of the UCSF Mission Bay campus is controlled by the University of California San Francisco 1999 Mission Bay Campus Master Plan and Design Guidelines and the 1996 Long Range Development Plan (LRDP).

The UCSF Mission Bay Campus conforms to the “vara” block grid, the historical unit unique to San Francisco, as does the entirety of the Mission Bay Development (275 feet wide by 412.5 feet long). The grid is intended to maintain traffic and transit connections in the city and preserve view corridors to the surrounding area. The Mission Bay Campus Master Plan focuses on a network of interconnected open spaces and passageways which physically link buildings throughout the campus. This pedestrian landscape was designed as an alternative to sidewalk circulation on vehicular streets. As such, the parking garages for the UCSF Mission Bay Campus were placed at the eastern and western edges of the site to minimize the need for vehicular access.

UCSF Parking Facilities

The Mission Bay UCSF Campus Master Plan designates a total of five 7-8 story above-ground parking garages, three on or adjacent to Owens Street (west side of campus) and two on Third Street (east side of campus):

West side: Garage 18A (6th and 13th Street Access), Garages 18B, 21A (6th Street Access)

East side: Garage 20B (13th Street Access), Garage 23B (15th Street Access)

UCSF Vehicular Streets

A small number of streets on the Mission Bay campus were designed for vehicular access to the designated parking garages. These include 13th Street East, 15th Street East and 6th Street. Thirteenth and Fifteenth Street East are vehicular in design and are used primarily to access and egress the perimeter parking garages. These streets have 14-foot sidewalks and are oriented east-west.

Sixth Street is vehicular in design and is part of the Owens Street gateway.¹¹ It forms part of the UCSF shuttle route and is used to access the parking garages and the future San Francisco Unified School District site. A dedicated drop-off for the school will be located on 6th Street rather than 13th Street to avoid potential conflicts with the access/egress from the 18A parking garage. The sidewalks range from 15 to 20 feet wide.

Overall Building Design Strategy

UCSF's Mission Bay Building Design Guidelines developed an overall building design strategy so that buildings share a basic organization and articulation. These include:

- Maintenance of continuous façade lines along base and parapets
- Building facades should acknowledge and reflect neighboring environment
- Buildings should be articulated with openings and windows

As such, the Parking Garage Design Guidelines and Requirements include:

- 85' height restriction, corner stair towers may exceed restrictions
- 12.5' ground floor height
- 10.5' subsequent floor height

¹¹The Owens Street Gateway is the western entrance to the campus acting as a seam between the campus and the private R&D zone to the west. Campus buildings are set back 20 feet and the area is landscaped with tall spreading trees. Service and loading areas are screened to minimize pedestrian impact. UCSF Master Plan p. C-34.

- Uncovered rooftop parking level
- Articulation: Stair towers integrated to overall mass and surface of building

Smart Growth Parking

Goals

The SFCTA has several goals that it wants to achieve as part of MTC's Smart Growth Parking study:

- Evaluating the future parking needs of the Mission Bay redevelopment area.
- Understanding how a largely vacant and redeveloping area in a densely populated city can benefit from Smart Growth parking policies.
- Developing a parking model that could be applicable for other areas in the city.
- Understanding UCSF's and private development's parking operations within a future transit corridor.
- Assessing parking concerns of existing or new residents in Mission Bay or in areas adjacent to Mission Bay. This includes demand shifts for on-street parking as new residential and mixed use development occurs.

Existing Relevant Policies

San Francisco's existing relevant policies for the Mission Bay area will be discussed and analyzed as to how they contribute to or hinder the City from furthering these goals. The SFCTA administers and oversees the delivery of Prop K, a half-cent local transportation sales tax program, and is the Congestion Management Agency (CMA) for the City of San Francisco. Policies and programs were evaluated within the following documents:

- Mission Bay Subsequent Environmental Impact Report, 1998.
- Mission Bay North and South Infrastructure Plans, 1998.
- UCSF Mission Bay Campus Master Plan, 1999.
- Sixteenth Street Strategic Analysis Report (SAR), 2005.
- Mission Bay North and South Design for Development documents (these contain all parking requirements and guidelines)

As such, the existing and proposed policies impacting the Mission Bay area were evaluated for the provision of the following Smart Growth benefits:

- Density
- Connectivity/Walkability/Livability
- Transit/Mode Choice
- Convenience/Ease of Use
- Progressive Financing/Pricing
- Overall/Overarching Benefits

Mission Bay Infrastructure Plan

The Mission Bay North and South Infrastructure Plans govern construction and development of infrastructure in North and South plan areas consistent with the Redevelopment Plans. The plan also establishes the design and construction standards, criteria and specifications of the areas including streets, blocks, lots and right of way, combined sewer, open space and other infrastructure (i.e. pedestrian bridge, MUNI related), including subdivisions and improvements. The transportation mitigation measures from the SEIR, described below, became requirements in the Mission Bay North and South Infrastructure Plans. Their implementation by the Master Developer is triggered by the following phasing methodology.

- **Adjacency:** When a development occurs in a major phase or for a project, adjacent infrastructure necessary for access and utilities will be constructed
- **Cumulative Development Requirements:** Due to effects of cumulative traffic growth, some key intersections and street segments may reach congested conditions before development occurs on adjacent parcels. Therefore, thresholds have been established for each improvement, based on the number of PM peak vehicle trips that would cause one or more of the plan intersections to deteriorate to unacceptable levels of service.

The project “triggers” are continuously updated as the Mission Bay Project is implemented to ensure that the transportation infrastructure improvements are kept on track with the estimated traffic impact. This includes the private off-street parking supply required to support development as it progresses, in accordance with the Mission Bay Parking requirements.

Benefits:

- Alleviates negative effects of development (e.g. congestion) by incorporating area-wide transportation improvements in phase with development. See SEIR Mitigation Measures.
- Spreads out burden/cost of overall infrastructure improvement to all development projects, encouraging more sustainable development.

Mission Bay SEIR

The Mission Bay SEIR established a series of measures to mitigate transportation related project impacts, outside of transportation improvements already included in the overall project. The transportation measures that were determined to foster an environment of smart growth planning and transit supportive policy, in which parking is one integral piece, are included in the following discussion of relevant policies. The following mitigation measures addressed traffic, transit, and transportation system management to increase alternative mode shares, resulting in a reduced need for parking:

Mitigation Measure: Traffic Mitigation/Congestion Management

- Required several project intersection mitigation measures based on PM peak hour traffic thresholds; affects on-street parking.
- Increased Bay Bridge Tolls during commute hours to discourage single occupancy vehicle (SOV) trips.

Benefits: Overall/Overarching

Mitigation Measure: Transit Service Expansion

- Encourage AC transit to expand Transbay service to accommodate cumulative demand, support funding initiatives.
- Extend N-Judah Line from Embarcadero to Mariposa Street.

Benefits: Transit/Mode Choice

Mitigation Measure: Transportation System Management (TSM)

- Form a Transportation Management Association (TMA) to implement a TSM Plan
- Form a Transportation Coordinating Committee (TCC) to address area wide transportation planning issues and coordinate with other uses and neighborhoods
- Prepare TSM Plan which could include the following elements:
 - Shuttle Bus System from Mission Bay to regional transit stops
 - Transit pass sales in neighborhood retail/commercial buildings
 - Employee transit subsidies
 - Pedestrian signals at Owens Street near pedestrian Bridge, Mission Bay South (MBS)
 - Secure Bicycle parking in all area parking garages (1 bike space/20 auto spaces)
 - Appropriate street lighting

- Transit/pedestrian/bike route information: maps/kiosks
- Provide parking management guidelines for private parking facility operators
- Constrain Parking supply to within UCSF Site (MBS)
- Expand Regional Ferry Service, study feasibility
- Offer/Encourage flexible work schedules

Benefits: Transit/Mode Choice, Connectivity/Walkability/Livability, Convenience/Ease of Use

Consider:

- Requirements for neighborhood employers or a certain size to participate in TSM
- Stronger incentives for non-motorized transit/commute choices, such as:
 - Employer supported/organized carpools
 - Employer provided showers/lockers for bike commuters
 - Regular lunch-time and peak hour shuttle service to transit
 - Real-time transit info at bus and light rail stops
 - Car-share pods provided for employee errands

UCSF Mission Bay Campus Master Plan – Transportation Circulation & Parking

The Mission Bay Campus Master Plan sets forth a series of goals related to transportation circulation and parking with several associated objectives.

GOAL: Access and Circulation – ensure access in and around campus is safe, direct and efficient

- Provide easy access to sites from multiple modes
- Create internal circulation systems that minimize pedestrian conflicts
- Lessen perimeter congestion
- Provide efficient inter-site transportation

Benefits: Convenience/Ease of Use

GOAL: Alternatives – emphasize alternatives to reduce auto traffic in and around campus sites

- Promote car/vanpooling, ridesharing, public transit, and bicycling
- Consolidate sites
- Inter-campus shuttle service
- Maximize utility of public transit
- Disincentivize SOV travel

Benefits: Transit/Mode Choice, Convenience/Ease of Use, Density

GOAL: Parking – provide adequate parking to serve community (patients, visitors, faculty, staff and students) while prioritizing/promoting alternative transit options

- Satellite parking for commuters
- Provide parking by specified user group, short term visitors, outpatients, emergency vehicles, employees, students
- Prioritize parking by user group
- Open parking to community during off-peak hours for reduced rates

Benefits: Convenience/Ease of Use

GOAL: Neighborhood Impacts – Minimize impacts on local traffic congestion and parking shortages

- Consolidate sites to limit extensive people and materials movement
- Locate facilities to emphasize transportation alternatives
- Explore satellite parking w/ shuttle service
- Develop off-street parking supply to divert parking demand away from neighborhood streets
- Explore funding mechanisms through potential parking fees
- Provide parking for community at off-peak hours for reduced rate (shared parking)

Benefits: Overall/Overarching, Convenience/Ease of use, Progressive funding, Transit/Mode Choice

Sixteenth Street Strategic Area Plan (SAR)

Showplace Square, the Mission and Potrero Hill neighborhoods (that are near or adjacent to Mission Bay) are expected to gain 4,300 new housing units and 6,150 new commercial jobs by 2025, not including the Mission Bay development. Combined, these development pressures will increase the need for 16th Street to serve local neighborhood trips, support longer distance freight, and commuter trips. Currently, 16th Street functions both as a neighborhood, pedestrian-scale street and an important city route for auto through-traffic. As this development takes place over the next 20 years, 16th Street's role as a transit and neighborhood serving corridor will need to be greatly enhanced.

As such, the SFCTA recommends that corridor improvements accommodate a greater proportion of newly generated trips by transit, bicycling and walking rather than by SOV. The SAR proposes recommendations for the near-term (within 2 years) and mid-term (between 2-7 years) for accommodating greater proportions of growth in transit trips along the 16th Street corridor with the goal of reduced auto mode share. These strategy recommendations are organized into supply-side and demand-side.

Supply Side Strategies:

- Transit
 - Implementing transit priority measures on 16th Street,
 - Re-examining transit network coverage and service levels to/from adjacent neighborhoods, and
 - Using MUNI's upcoming service planning/network study to identify the most efficient/effective ways to make transit a more attractive mode choice

Benefit: Transit/Mode Choice

- Pedestrian and bicycling infrastructure needed to support local walking/cycling trips.
 - Develop a bicycle facility on 17th Street, with good connections at the eastern end to the 16th Street BART station and beyond to Market Street. (in planning/implementation stages)
 - Address pedestrian infrastructure gaps and safety deficiencies along the corridor from 3rd Street to Market Street.

Benefit: Connectivity/Walkability/Livability,

- Funding:
 - Federal and state grant opportunities
 - Developer contributions
 - TIDF payments,
 - Tax increment financing proceeds from redevelopment areas, or
 - Self-taxing Business Improvement District (BID).

Benefits: Progressive Financing

Demand Side Strategies (Near Term):

- Market-based parking management, and
- Commute benefit programs such as
 - Department of Environment's Commute Benefits
 - Emergency Ride Home package aimed at new/large Mission Bay employers
- Managing freight demand activity by
 - Improving signage
 - Accommodating goods movement amid increasing residential uses

Benefits: Progressive Financing/Pricing, Transit/Mode Choice, Convenience/Ease of Use

Demand Side Strategy (Mid-Term): Ensure that new development adheres to "transit first" principles, especially:

- Market-based approaches to parking management (i.e., unbundling the cost of parking from a residential unit)
- Appropriate pricing of parking
- Providing carshare spaces

Benefits: Progressive Financing/Pricing, Convenience/Ease of Use

Implications for Smart Growth

The San Francisco Redevelopment Agency has set forth several smart growth enabling policies and programs in the Mission Bay District that support its Transit First policy, a set of directives that support mobility not only through collective public transit, but by all alternatives to single occupancy vehicles.

Through these policies, the City has laid substantial groundwork toward establishing the Mission Bay district as an area of future smart growth. Additionally, having instituted these policies prior to substantial new development, the Mission Bay District is poised to grow in a dense, mixed use, transit-supportive and sustainable manner. As such, there is potential to set new policies to further shape the growth of the district.

The Mission Bay District is unique and has shown the ability of the city's agencies to work together to make a densely populated transit-supportive neighborhood with flexibility and long-term planning. Where there are large redevelopment areas in the future, these agencies can look to the Mission Bay Project Plan as an example of how to create a common vision of smart growth. Additionally, the City can look to Mission Bay's example of setting parking maximums for level district goals within the city relying upon the assessed and projected needs of districts or neighborhoods to further propagate their vision.

The City has shown the ability and desire to implement smart growth enabling transportation policies and will likely continue to do so into the future. However, it is important that the community, including UCSF, other large employers, and residents be engaged in the transportation planning process as their community grows in concert with the development. The transportation policies have largely been established – per the Design for Development, the Infrastructure Plans, the SEIR etc. – and now it is important to implement them.

In addition, there are a number of implementable strategies that merit investigation for the area based on the potential for the area and innovative smart growth programs and policies executed in communities throughout the Bay Area and North America.

Smart Growth Parking Strategies

The following policies and programs are suggested for more discussion.

Non-Motorized Connectivity

The future 3rd Street Light Rail and Caltrain Depot are located within Mission Bay. The Redevelopment Agency has recommended several programs in support of non-motorized connectivity as part of the redevelopment plan and Design for Development which will be implemented as Mission Bay continues to be built. In addition to funding through special assessments and development fees, external sources such

as federal funding are available for these enhancements through MTC's Transportation for Livable Communities (TLC) grant program.

The following non-motorized enhancements are included in the Mission Bay project:

- Bike lanes and bicycle parking amenities. All parks have bike parking and all individual buildings must provide bike parking (1 bike space per 20 vehicle spaces).
- Pedestrian amenities such as: wider sidewalks, pedestrian scaled lighting, seating, street trees, enhanced crosswalks. The Mission Bay South Streetscape Master Plan identifies specific locations for pedestrian scaled lighting, street trees, seating and crosswalks. The retail corridor 4th Street, will have enhanced sidewalks and bulb outs to improve pedestrian safety – pursuant to the Major Phase for Blocks 2-13.
- Connections to local and regional bike paths and trails. The proposed bike lanes in Mission Bay were identified to connect with regional bike paths. The Redevelopment Plan and Infrastructure Plan calls for the extension of the Bay Trail through Mission Bay.

TDM Programs and Policies

The Mission Bay Plan, adjusted for life sciences/biotechnology uses calls for 20,426 parking spaces including on- and off-street supply, and a total peak parking demand of 24,733 spaces producing a shortfall of 4,307 spaces. With the planned growth of the Life Sciences/Biotechnology industry in the Mission Bay study area in addition to planned future growth of office space, retail and light industrial development, there is an opportunity for the City of San Francisco to more strongly implement the travel demand management policy requiring new developments of a certain size to provide TDM supportive infrastructure and employers of a certain size to establish TDM programs (as outlined in the SEIR) to encourage and support alternative transportation modes for their employees and reduce the demand for single occupancy vehicle travel. A TSM has been established, but to date few of the suggested policies have been implemented. However, this should change as more employers move to Mission Bay. According to SFRDA one biotech building is open, and as new buildings are constructed and biotech employers arrive in Mission Bay, the TDM programs will be increasingly implemented and enforced.

On-Street Pricing

At this time, available on-street parking in Mission Bay South is free as the area is mostly undeveloped. Current UCSF off-street parking facilities are available to the public for a fee and additional off-street parking will be provided by employers in planned developments. A small portion of the planned parking for the Mission Bay development is designated on-street and should be priced for short term occupancy of one hour or less to encourage the use of the abundant off-street parking.

Rent Rebates

Rent rebates should be explored for both affordable and market rate housing in North Mission Bay where developers have already provided parking and have bundled the costs into the rent. Households who do not require a parking space should be provided with a reduction in rent to reflect the real costs associated with providing parking. If residents are not forced to pay the costs associated with parking spaces, the use of single occupancy vehicles are being incentivized over alternative modes of transit. A city agency such as the DPT may administer this program, where rebates can be provided to the property owner for the number of parking spaces not used by residents in return for a rent reduction to the tenants.

Unbundling Parking

A policy for unbundling parking from residential developments should be explored in the undeveloped areas of South Mission Bay, particularly in developments within walking distance from a transit hub or significant transit service¹² (i.e. Caltrain station, 3rd Street light rail). MTC 2000 BATS data indicate high rates of transit, walking and bike trips¹³, coupled with lower average auto ownership, vehicle trips and VMT for residents living within a half-mile of a transit station or ferry terminal.

Improved Technology and Convenience (South)

Pay and Display Demonstration Project:

Pay and display metering technology helps to institute flexibility in on-street parking pricing and provide convenience to users. Due to its early stage of development, the Mission Bay South area would be a good candidate for a demonstration project of pay and display meters with graduated parking fees which discourage long term on-street parking. This demonstration could be set up for on-street parking on 16th and 4th Streets south of UCSF and west of 3rd Street, and can be triggered by a set level of development.

Parking Management Plan

Mission Bay South

¹² “Households within ½-mile of a station produce between 47% and 60% fewer vehicle miles than their suburban and rural counterparts, which means that emissions per capita is much lower for the ½-mile group.” MTC Sept, 2006. pp43.

¹³ “When broken down by mode, per capita transit trip rates for ½-mile residents are between two and a half and eleven times higher than other residents. Bicycle trip rates for ½-mile residents are almost twice the regional average and are between two and five times higher than residents living more than 1 mile from a rail or ferry stop. The same trend holds for walk trip rates.” *Characteristics of Rail and Ferry Station Area Residents in the San Francisco Bay Area: Evidence from the 2000 Bay Area Travel Survey* *Characteristics of Rail and Ferry Station Area Residents in the San Francisco Bay Area: Evidence from the 2000 Bay Area Travel Survey*. Volume I. MTC Sept 2006. pp 42.

The UCSF currently has a parking management plan which prioritizes user groups and utilizes a shuttle service to maximize the use of satellite parking and local transit connectivity. The remainder of the Mission Bay South development area should be required to coordinate with UCSF and create a comprehensive parking management plan for the district. A comprehensive parking management plan should be considered which:

- Allocates appropriate amounts of parking to different users (e.g. residents, visitors, employees)
 - On-street residential permitted parking
 - Off-street employee parking, satellite parking and shuttle
- Manages demand, availability
 - Prices parking according to peak time and location

Mission Bay North and South Beach

On street parking regulations need re-evaluation around Mission Bay North and AT&T Park (San Francisco Giants Baseball Park). Due to significant development pressure in the north and surrounding South Beach neighborhood, there has been a rapid increase in parking demand and traffic congestion. There appears to be very little on- or off-street supply even during non-game days. Due to their proximity and symbiotic relationship, a parking management plan that considers the unique needs and demands of both neighborhoods should be established.

Parking Supply Flexibility

The majority of the parking policy for the study area has been established by the Mission Bay SEIR which has set a maximum parking requirement or parking cap for the area. This has resulted in the need for a review of every development project within the area that affects parking. What should be considered is a Portland-style approach¹⁴ that provides flexibility within the parking cap, such as a parking bank where spaces can be traded between neighboring parcels and developments without need for an extensive parking study.

Tenant Survey Results

In March 2007, questionnaires distributed at two newly-constructed apartment buildings in Mission Bay asked tenants about their car ownership, workplace location and travel-to-work patterns. While the demographics of the area will likely change significantly as more units are constructed and as triggered

¹⁴ In 1975 the City of Portland, Oregon instituted a strict parking cap, providing for only 40,000 parking spaces in a 300-block area within the downtown area.

infrastructure improvements reshape the area, the survey results reveal some early resident resistance to Mission Bay's smart growth policies.

The survey responses indicate major reliance on single occupancy vehicle trips for work commutes by household heads. Even for workers commuting to the nearby financial and south-of-Market districts, around half reportedly drive to work alone in an automobile. This trend is even more pronounced among workers who commute to the Peninsula/South Bay and the East Bay. According to the survey responses, 82% of household heads working in the Peninsula/South Bay drive alone, as do 100% of those commuting to the East Bay.

Use of non-SOV transportation modes appear to increase markedly for second household workers' commutes, with 39% using MUNI, 17% carpooling, and 28% driving alone to work. This may be primarily due to the low availability of parking, however. Asked to describe their perception of the parking supply, 93% of respondents characterized parking at Mission Bay as "insufficient," indicating a latent drive-alone demand among the surveyed population. Were more parking provided, it seems reasonable to assume that the share of non-SOV transportation modes would decline significantly.

Perhaps in part explaining this demand for greater parking, 44% of surveyed residents work in the Peninsula/South Bay rather than within San Francisco. Despite Mission Bay's proximity to a Caltrain station, the nearby 101 highway and I-280 freeway seem to attract substantially more Mission Bay residents. Of those commuting to the Peninsula/South Bay, only 18% of surveyed residents used Caltrain regularly, while 82% reported driving to work.

Despite significant efforts to encourage transit use and pedestrian activity among Mission Bay residents, the survey results indicate that a sizable portion of tenants are choosing to move to the area for San Francisco's urban attractions rather than for transportation reasons. 62% of survey respondents chose to move to Mission Bay for 'amenities in the area,' compared to only 24% for 'access to transit services' and 11% for 'walking distance to work location.'

Providing access to transit, minimizing parking supply, and encouraging pedestrian amenities may not be sufficient to significantly reduce drive-alone commuting by Mission Bay residents. Given the high demand for Bay Area real estate, the allure of San Francisco's cultural and urban attractions, and an abundance of high-paying jobs along the 280 corridor, Mission Bay's augmentation of transit and sustainable transportation use may depend on encouraging a resident demographic that is more amenable to adopting non-SOV commuting patterns. While some household members do appear to be carpooling, walking, biking, and riding Caltrain or MUNI to work, a sizable portion of residents are likely moving to the area for its proximity to the freeway. Focusing marketing efforts on individuals who work near Mission Bay and are willing to forego car ownership may help to reduce car dependence in the future and fulfill the development's visionary smart growth goals.

Parking Policy Next Steps

Planning officials for San Francisco Redevelopment Authority indicated they intend to change parking pricing in the Mission Bay Area after this study. They also noted that separate from this study, they are exploring shared parking opportunities between the Giants Ballpark and the biotech businesses in Mission Bay.