

TREASURE ISLAND / YERBA BUENA ISLAND REDEVELOPMENT PROJECT Volume 4 – Appendices A-C



**CITY AND COUNTY OF SAN FRANCISCO
PLANNING DEPARTMENT
CASE NO. 2007.0903E**

STATE CLEARINGHOUSE NO. 2008012105

DRAFT EIR PUBLICATION DATE: JULY 12, 2010

DRAFT EIR PUBLIC HEARING DATE: AUGUST 12, 2010

**DRAFT EIR PUBLIC COMMENT PERIOD: JULY 12, 2010 - AUGUST 26, 2010
(EXTENDED TO SEPTEMBER 10, 2010)**

COMMENTS AND RESPONSES PUBLICATION DATE: MARCH 10, 2011

FINAL EIR CERTIFICATION DATE: APRIL 21, 2011

**TREASURE ISLAND / YERBA BUENA ISLAND
REDEVELOPMENT PROJECT
Final Environmental Impact Report
Volume 4 – Appendices A-C**

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Changes from the Draft EIR are indicated by a dot (●) in the left margin.

**TREASURE ISLAND / YERBA BUENA ISLAND
REDEVELOPMENT PROJECT FINAL EIR**

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ISLAND REDEVELOPMENT PLAN NOTICE OF
PREPARATION OF AN ENVIRONMENTAL
IMPACT REPORT AND NOTICE OF PUBLIC
SCOPING MEETINGS**



SAN FRANCISCO PLANNING DEPARTMENT

January 26, 2008

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

**RE: CASE NO. 2007.0903E – TREASURE ISLAND AND YERBA BUENA ISLAND
REDEVELOPMENT PLAN NOTICE OF PREPARATION OF AN ENVIRONMENTAL
IMPACT REPORT AND NOTICE OF PUBLIC SCOPING MEETINGS**

Reception:
415.558.6378

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415.558.6409

Planning
Information:
415.558.6377

To Responsible Agencies, Trustee Agencies, and Interested Parties:

The San Francisco Planning Department has issued a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and a Notice of Public Scoping Meetings for the above-referenced project, described below. The detailed NOP/Notice of Public Scoping Meetings is either attached or is available upon request from Rick Cooper, San Francisco Planning Department, at the above address or at (415) 575-9027. The NOP/Notice of Public Scoping Meetings is also available on-line at www.sfgov.org/site/planning/mea.

Project Description: Treasure Island and Yerba Buena Island (collectively, “the Islands”) are in San Francisco Bay, about halfway between the San Francisco mainland and Oakland. The Islands are the site of the former Naval Station Treasure Island (“NSTI”), which was owned by the United States Navy. NSTI was closed on September 20, 1997 as part of the Base Realignment and Closure III program. The Islands also include a U.S. Coast Guard Station and land occupied by the San Francisco-Oakland Bay Bridge and tunnel structures.

The proposed *Treasure Island and Yerba Buena Island Redevelopment Plan* (“Redevelopment Plan”) would provide the basis for redevelopment of most of the NSTI lands (the “Redevelopment Plan Area” or “project site”) from a primarily low-density residential area with vacant and underutilized nonresidential structures to a new mixed-use community with a retail center, a variety of open space and recreation opportunities, on-site infrastructure, and public and community services. The proposed Redevelopment Plan and other planning documents would establish general land use controls and design standards for the project site. The Redevelopment Plan includes supporting studies that address project design concepts, transportation, infrastructure, community services, affordable housing, jobs, and other aspects of the development. A major component of the proposed Redevelopment Plan is the Sustainability Plan, which includes goals, strategies, and targets for the sustainable redevelopment of the Islands. The proposed Redevelopment Plan would consist of approximately 6,000 residential units, 235,000 square feet of commercial and retail space, 400 to 500 hotel rooms, 300 acres of parks and open space, transportation, bicycle and pedestrian facilities, a ferry terminal/transit hub, public and community services, and utilities. Other components of the proposed redevelopment include supplemental remediation to allow the proposed uses, geotechnical stabilization, and renovation and adaptive re-use of existing historic structures. The Redevelopment Plan would be implemented in four phases from approximately 2009 through 2018.

As stated in the NOP, the Planning Department has determined that an EIR must be prepared for the proposed project prior to any final decision regarding whether to approve the project. The purpose of the EIR is to provide information about potential physical environmental effects of the proposed project, to identify ways to minimize significant effects, and to describe and analyze alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the City to approve or to disapprove the project. However, prior to making any decision, the decision makers must consider the information contained in the EIR.

The Planning Department will hold two **PUBLIC SCOPING MEETINGS** on the EIR. The first will be held on Monday, February 11, 2008, at the Bayside Conference Room, Port of San Francisco, Pier 1, The Embarcadero, San Francisco, CA 94111 from 6:00 to 8:00 pm, and the second on Wednesday, February 13, 2008, at the Ship Shape Building, Building 497, Avenue M and 11th Avenue, Treasure Island, San Francisco, CA 94130 from 6:00 to 8:00 pm. Written comments will be accepted until the close of business (5 PM), February 26, 2008 and should be sent to Bill Wycko, Acting Environmental Review Officer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103-2479.

Should you have questions concerning the environmental review of the proposed project, please contact **Rick Cooper** at the number above. If you work for an agency that is a Responsible or a Trustee Agency, we need to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities. We will also need the name of the contact person for your agency.



SAN FRANCISCO PLANNING DEPARTMENT

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND NOTICE OF PUBLIC SCOPING MEETINGS

Date of this Notice:	January 26, 2008		
Lead Agency:	San Francisco Planning Department 1650 Mission Street, Suite 400, San Francisco, CA 94103-2479		
Agency Contact Person:	Rick Cooper	Telephone: (415) 575-9027	
Project Title:	2007.0903E – Treasure Island and Yerba Buena Island Redevelopment Plan		
Project Sponsor:	Treasure Island Community Development, LLC (TICD) and Treasure Island Development Authority (TIDA)		
Contact Person:	Alexandra Galovich (TICD)	Telephone: (415) 995-4813	
	Jack Sylvan (TIDA)	Telephone: (415) 554-5313	
Project Address:	Treasure Island and Yerba Buena Island		
Assessor’s Block and Lot:	Assessor’s Block 1939, Lots 001 (Treasure Island) and 002 (Yerba Buena Island)		
City and County:	San Francisco		
Project Description:	See attached		

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT. AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance).

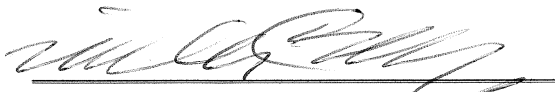
TWO PUBLIC SCOPING MEETINGS will be held pursuant to the State of California Public Resources Code Section 21083.9 and California Environmental Quality Act Guidelines Section 15206 to receive comments concerning the scope of the EIR. The meetings will be held on February, 11, 2008, and February 13, 2008. Please see the attached for more information.

Written comments on the scope of the EIR will be accepted until the close of business (5 PM) on February 26, 2008. Written comments should be sent to Bill Wycko, Acting Environmental Review Officer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103-2479.

Documents relating to the proposed project are available for review, by appointment, at the Planning Department's Major Environmental Analysis office, 1650 Mission Street, Suite 400. Please call Rick Cooper at (415) 575-9027.

State Agencies: We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency. Thank you.

January 25, 2008
Date


Bill Wycko, Acting Environmental Review Officer

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

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TREASURE ISLAND AND YERBA BUENA ISLAND REDEVELOPMENT PLAN CASE NO. 2007.0903E

INTRODUCTION

The San Francisco Planning Department will prepare an environmental impact report (EIR) pursuant to the California Environmental Quality Act (CEQA) to evaluate the physical environmental effects of the proposed Treasure Island and Yerba Buena Island Redevelopment Plan (“Redevelopment Plan” or “the Plan”) and public and private projects and activities that would be implemented pursuant to the Plan (“Development Program”). The Redevelopment Plan and associated Development Program together are the “Proposed Project.”

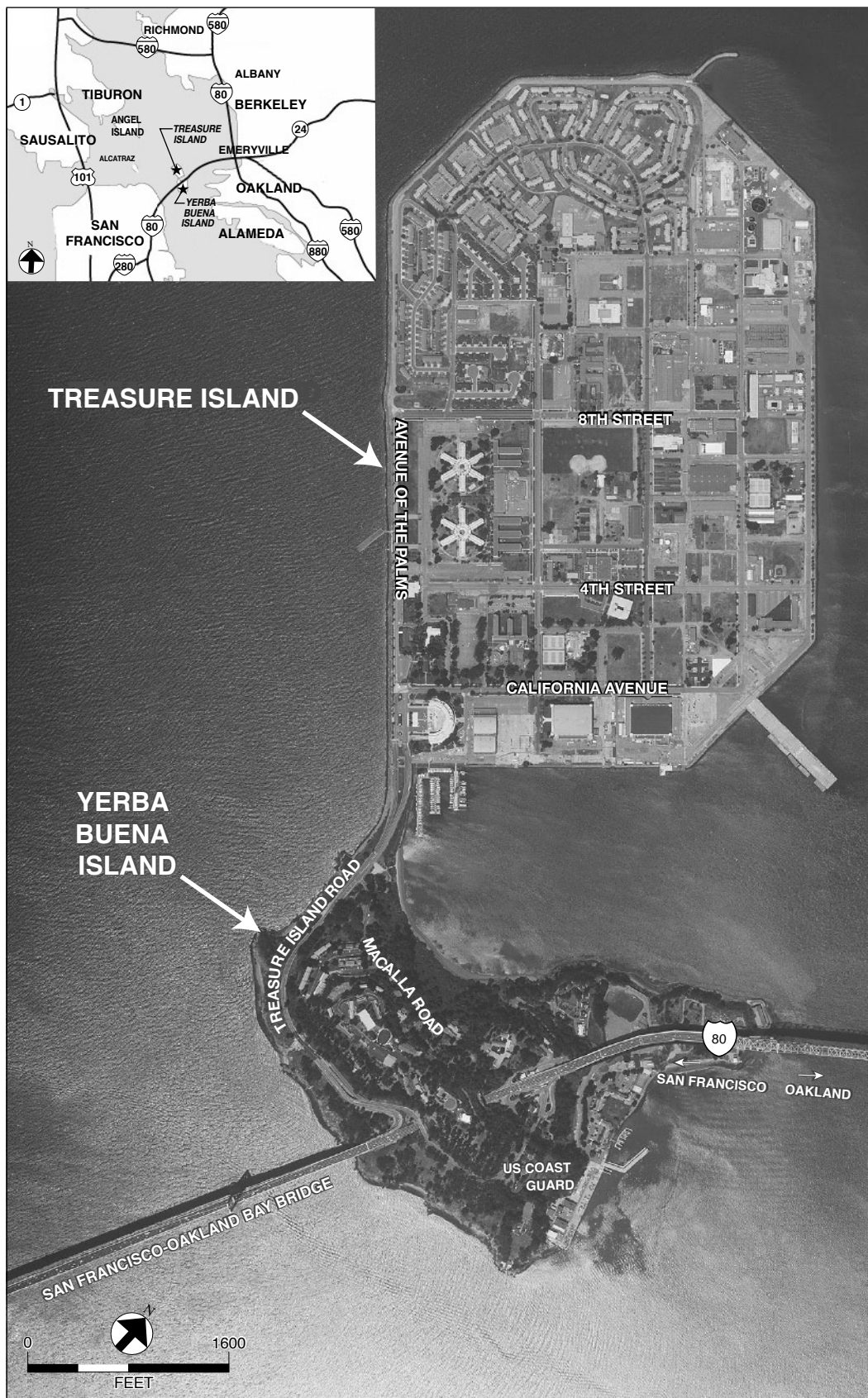
This notice provides a summary of the Proposed Project, identifies environmental topics and issues anticipated to be analyzed in the EIR, and provides the time, date, and location of the public scoping meetings. The EIR will be a project-level EIR on the Redevelopment Plan and the Development Program. The Treasure Island Development Authority (“TIDA”), a single-purpose public agency responsible for the Redevelopment Plan Area, and Treasure Island Community Development, LLC (“TICD”), a private entity chosen as the master developer, are joint sponsors of the Proposed Project.

An Initial Study will not be prepared as part of the environmental review process for the Proposed Project; instead all topics will be addressed in the EIR. Pursuant to CEQA Guidelines Section 15060(d) the San Francisco Planning Department has determined that an Initial Study is not necessary. In the absence of an Initial Study, the EIR will still focus on the significant impacts of the Proposed Project and explain more briefly why other issues would not be significant.

PROJECT LOCATION

Redevelopment Plan Area

The proposed Redevelopment Plan Area includes all of Treasure Island and Yerba Buena Island (collectively, “the Islands”) in San Francisco Bay. (See Figure 1: Regional Location.) The Islands are the site of the former Naval Station Treasure Island (NSTI), which was owned and operated by the United States Navy until its closure in 1997 as part of the Base Realignment and Closure process. The proposed Redevelopment Plan Area encompasses approximately 400 acres of land on Treasure Island, approximately 150 acres of land on Yerba Buena Island and about 550 acres of tidal and submerged lands adjacent to the Islands. The Navy is in the process of conveying most of these areas to TIDA, which currently manages a variety of interim residential, industrial, institutional and recreational land uses. The Redevelopment Plan Area includes Lots 001 and 002 within Assessor’s Block 1939.



SOURCE: Turnstone Consulting

TREASURE ISLAND
2007.0903E

FIGURE 1: PROJECT LOCATION

Treasure Island, which consists entirely of filled land, was constructed during 1936 – 1939; the U.S. Navy took possession of Treasure Island from the City of San Francisco in 1941. Treasure Island currently includes approximately 720 occupiable housing units out of about 900 units total, and approximately 91 buildings containing approximately 2.3 million square feet of present and former non-residential uses. Treasure Island also includes the U.S. Department of Labor Job Corps site on approximately 36 acres in the center of the island. Yerba Buena Island is a natural island that has been used by private parties and the U.S. Army and Navy since the 1840s; the island is steeply sloped and highly vegetated. Within the Redevelopment Plan Area on Yerba Buena Island, there are currently about 80 occupiable housing units out of a total of about 100 housing units and 10 non-residential buildings. The U.S. Coast Guard occupies about 35 acres on the southeast side of Yerba Buena Island, and the California Department of Transportation (“Caltrans”) occupies about 20 acres of Yerba Buena Island with portions of the San Francisco-Oakland Bay Bridge and tunnel.

The entire Redevelopment Plan Area is currently within a P (Public) Use District and a 40-X height and bulk district. In addition, the California Tidelands Trust Doctrine (“Tidelands Trust”) will apply to all portions of Treasure Island to be conveyed to TIDA by the Navy, as well as approximately 2 acres of land on Yerba Buena Island, and all of the tidal and submerged lands to be conveyed to TIDA within the Redevelopment Plan Area.¹ The Job Corps, Coast Guard, and Caltrans properties will not be part of the area controlled by TIDA.

Adjacent and Nearby Uses

Land uses on the Islands that are within the Redevelopment Plan Area but are expected to remain unchanged include the Job Corps educational and training program on Treasure Island; the U.S. Coast Guard Station on Yerba Buena Island; and the San Francisco-Oakland Bay Bridge (“Bay Bridge”) and tunnel structures on Yerba Buena Island. Caltrans is building a new east span of the Bay Bridge, connecting to Yerba Buena Island; completion is expected by 2013.²

The Islands are surrounded by San Francisco Bay waters; the San Francisco mainland is about 2 miles to the west and Oakland is about 2 miles to the east. Uses along and adjacent to the San Francisco waterfront include the Ferry Building, The Embarcadero Promenade, pier bulkhead

¹ The Tidelands Trust limits the types of uses that can be developed on those properties. Under the 1997 Treasure Island Conversion Act (Cal. Health & Safety Code §33492.5), existing uses on Treasure Island that are inconsistent with the Tidelands Trust, such as the existing residential buildings, are permitted to continue for their remaining useful life, defined as no less than 25 years or no more than 40 years from the date of the Act. Later, the Treasure Island Public Trust Exchange Act, as amended, authorized a public trust exchange that would lift the Tidelands Trust restrictions on those areas designated in the proposed Redevelopment Plan for residential and other non-trust uses and transfer the Tidelands Trust to certain portions of Yerba Buena Island that are not currently subject to it.

² The San Francisco-Oakland Bay Bridge Seismic Safety Project web site, <http://baybridge.pantherinternational.com/Display.aspx?ID=8>, accessed December 17, 2007.

buildings and sheds, and the San Francisco downtown financial district. Nearby uses to the east include Port of Oakland container terminal shipping facilities; the former Oakland Army Base, the MacArthur Maze junction of Interstate-80, I-580, and I-880; the joint Union Pacific Intermodal Terminal; the Oakland Naval Supply Center; and downtown high-rise buildings in Oakland. Also to the east are high-rise office and residential buildings, a marina, and regional shopping centers in Emeryville. The former Alameda Naval Air Station on the north end of Alameda Island is southeast of Yerba Buena Island.

Access and Transit

Access to the Redevelopment Plan Area is provided via the Bay Bridge ramps at Yerba Buena Island; a causeway links Yerba Buena Island to Treasure Island. One of the existing ramps is currently being rebuilt as part of the Bay Bridge eastern span replacement project. Improvement and/or replacement of the other ramps is currently under study by the San Francisco County Transportation Authority and the California Department of Transportation (“Caltrans”); improvement or replacement of these ramps, if undertaken, would be a separate project from both the Bay Bridge eastern span currently under construction and the Proposed Project. Impact analysis in the EIR on the Proposed Project will take into account conditions resulting from both the existing ramps and the potential improved or replaced ramps.

The Islands are served directly by San Francisco Municipal Railway (Muni) Line 108, which runs between the Islands and the Transbay Terminal in San Francisco. Currently, there is no direct transit service between the Islands and the East Bay, and no public ferry service to either Island.

PROJECT DESCRIPTION

The overall purpose of the Proposed Project is the conversion of approximately 364 acres on Treasure Island and approximately 95 acres on Yerba Buena Island from a former military base to a dense mixed-use development of residential, commercial, cultural, hotel, and retail uses centered around an Intermodal Transit Hub, with supporting infrastructure, public services and utilities, and a substantial amount of open space.

The basis for the Development Program underlying the Redevelopment Plan is the *Development Plan and Term Sheet for the Redevelopment of Naval Station Treasure Island* endorsed by the San Francisco Board of Supervisors in December 2006, which includes a draft Design Concepts and Strategies Plan, draft Transportation Plan, draft Sustainability Plan and draft Infrastructure Plan, among its many exhibits. Development Program activities carried out pursuant to the Redevelopment Plan would include, among other things, implementation of (1) the final Design Concepts and Strategies Plan and related agreements that address land use, urban form and open space; (2) the final Transportation Plan and related agreements that address measures and strategies related to transit service, parking supply and management, and transportation demand management; (3) the final Sustainability Plan and related agreements that address goals,

principles, strategies and actions to achieve a highly sustainable development; and (4) the final Infrastructure Plan and related agreements that address the infrastructure needs for development of the Islands. The Proposed Project would be implemented through a Disposition and Development Agreement (“DDA”) between TIDA and TICD. Additional aspects of the Proposed Project would be implemented by TIDA either directly or through agreements between TIDA and other entities.

Conceptual Land Use Plan

The Proposed Project includes:

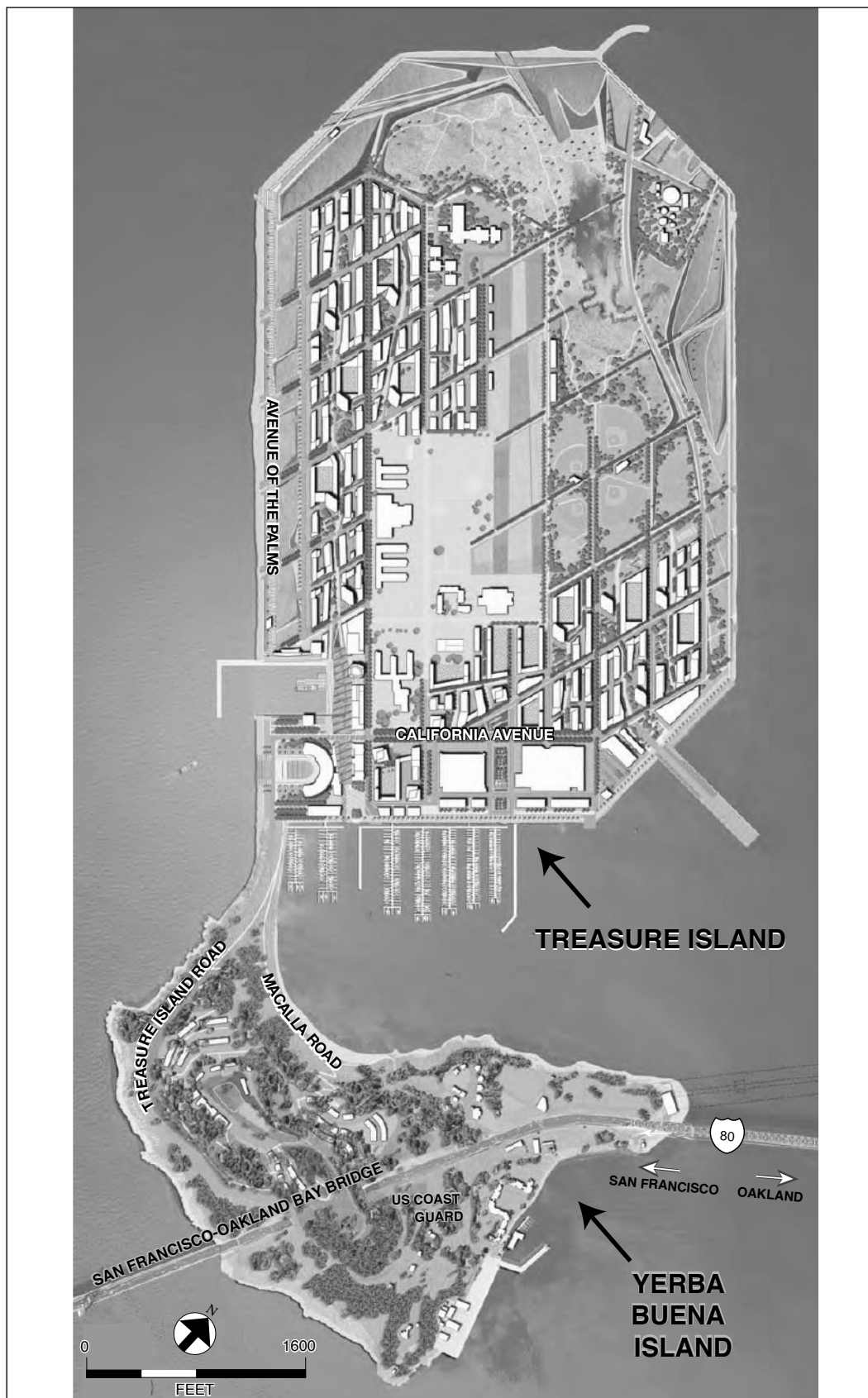
- Stabilization of Treasure Island and the causeway connecting it to Yerba Buena Island;
- Up to approximately 6,000 residential units;
- Up to approximately 270,000 square feet (sq. ft.) of new commercial and retail space;
- Adaptive reuse of Buildings 1, 2, and 3 with up to 325,000 sq. ft. of commercial space;
- Approximately 500 hotel rooms;
- New and/or upgraded public services and utilities;
- Approximately 300 acres of parks and public open space;
- Bicycle, transit, and pedestrian facilities; and
- An Intermodal Ferry Quay/Transit Hub.

The proposed land uses are shown in Figure 2, Conceptual Land Use Plan.

Land Uses

Residential

The Development Program would include up to approximately 6,000 residential units, including approximately 5,700 to 5,850 units on Treasure Island and approximately 150 to 300 units on Yerba Buena Island. Approximately 50 percent of all housing units would be in low-rise buildings (building height 65 feet and lower), 35 percent would be in mid-rise buildings (building height above 65 feet and less than 240 feet), and 15 percent in high-rise buildings (building height greater than 240 feet). The tallest buildings would be located near a densely developed southwest corner of Treasure Island in the “Urban Core” neighborhood, near the proposed Ferry Quay and transit hub. The proposed residences would include housing sized for families. Approximately thirty percent of all units would be affordably priced at a range of below-market rates, including an expansion from 250 to 435 residential units for the existing Treasure Island Homeless Development Initiative (TIHDI) program.



SOURCE: SMWM, Turnstone Consulting

TREASURE ISLAND

FIGURE 2: PROPOSED DEVELOPMENT PLAN

Open Space and Recreation

The Development Program would include approximately 300 acres of publicly accessible pathways, parks, open space, plazas, and shoreline improvements. The recreational and open space uses would include perimeter shoreline and water access, a stormwater treatment wetland, a Great Park covering much of the northeast portion of Treasure Island, a regional recreational facility, and a variety of active and passive recreational areas.

Commercial

The Development Program commercial component would include: approximately 500 hotel rooms; approximately 325,000 sq. ft. of commercial uses in the renovated historic Buildings 1, 2, and 3; retail uses concentrated and organized as a main street between the Ferry Quay/Transit Hub, the Clipper Cove plaza, and historic Buildings 1 and 2; ancillary retail uses along the Clipper Cove marina and in the residential neighborhoods. The total amount of retail space provided in the Development Program's commercial component would not exceed 270,000 sq. ft.

Institutional and Public Services

The Development Program would provide space for a variety of community programs in Building 1, in some of the proposed residential buildings, and possibly in a stand-alone community center. Space for child care also would be provided. The existing, closed public grammar school on Treasure Island would be improved and reopened for use by the San Francisco Unified School District. The existing wastewater treatment plant would be replaced (as discussed below under "Proposed Utilities"). A recycling program would be established and a recycling center/corporation yard would be provided. A joint police/fire station would be provided. The existing Job Corps facility would remain in use in its current location on Treasure Island, under the jurisdiction of the Department of Labor. Similarly, the U.S. Coast Guard facility on Yerba Buena Island would remain in its current location.

Proposed Transportation Plan

Proposed Street System

The roadway system would consist of three levels of public roadways: arterial streets, collector streets, and neighborhood streets. The streets on Treasure Island would be new construction, and the street grid would be re-oriented to maximize the effects of sun and minimize the effects of wind. The street layout on Yerba Buena Island would generally follow the locations of the existing streets. Streets would be designed to prioritize walking, bicycling, and use of the intra-

island shuttle service. All of the proposed residential units on Treasure Island would be within a 15-minute walk of the proposed Intermodal Transit Hub.³

Transit Facilities and Service

The proposed Transportation Plan⁴ relies on the use of alternative transit modes (buses and ferries) for off-Island trips and shuttle/pedestrian/bike facilities for on-Island travel. The Development Program would include the construction of a new ferry quay and terminal and a bus transit facility on the western shore of Treasure Island. These two uses would anchor the proposed Intermodal Transit Hub, which would provide transportation facilities, services, and information. Proposed funding for ferry vessels would provide the opportunity for an operator to initiate ferry service to the Islands between San Francisco and Treasure Island, and the proposed bus transit facility would provide stops for Muni service to San Francisco and East Bay transit service. In addition, the Development Program would include a free shuttle service around the Islands.

Walking and Biking

Shared-use paths would be provided in open space areas, and the busiest roadways would incorporate shareable-width outside lanes or bicycle lanes as appropriate for the traffic volumes and street function. The Islands' walkways and bicycle route network would connect to the planned shared-use path on the Bay Bridge east span and to the recreational paths around the Islands, and would be designed to allow for possible future connections to other pedestrian and bicycle paths. Bike parking would be available at all major destinations, and a bicycle library program would make bikes available for all Island and transit users.

Bay Bridge Access

Automobile access to the Redevelopment Plan Area is only available via the San Francisco-Oakland Bay Bridge ramps at Yerba Buena Island. The Development Program's design is based on the capacity of the existing ramps; accordingly, the Development Program assumes that the ramps would remain unchanged.

The City and Caltrans are separately studying the replacement or improvement of the ramps that connect the Islands to the Bay Bridge in order to improve traffic flow safety. Senate Bill 163 (Migden) chaptered October 13, 2007, requires the California Department of Transportation to work with TIDA on design and engineering of replacement ramps connecting Yerba Buena Island to the Bay Bridge. A Project Study Report was executed by Caltrans on December 19, 2007,

³ Treasure Island Community Development, LLC, *A Sustainable Future for Treasure Island*, October 2006, p. 13.

⁴ The Transportation Plan was prepared as part of the *Development Plan and Term Sheet for the Redevelopment of Naval Station Treasure Island* in 2006.

designating the San Francisco County Transportation Authority as the lead agency for this undertaking. Because the ramp improvements have not yet been approved and funded, the EIR on the Proposed Project will discuss the impacts of the Proposed Project with the existing ramps, and will consider new or improved ramps as part of the future cumulative conditions. Should funding be identified to replace or improve the existing ramps, Caltrans and the City would conduct a separate environment analysis of the selected design(s).

Parking

The Development Program includes the provision of approximately 8,250 parking spaces, all of which would incur a charge for use, on the Islands, of which approximately 6,000 spaces would be for the residential uses. Retail and hotel parking spaces would generally be located in off-street parking garages. Parking spaces would be provided for the other proposed uses through both on- and off-street parking. Visitors to these uses would pay for parking, and the revenues would be used in combination with revenues from transit passes and a congestion pricing program to offset the operating costs associated with the transportation program, such as the off-island transit service, the on-island shuttle service, and the “bicycle library” serving the Islands.

Encouraging Use of Transit and Discouraging Automobile Use

Automobile use would be discouraged through parking pricing, parking management, and congestion pricing as part of a comprehensive transportation management plan designed to discourage driving and promote alternative mode use. The mechanisms proposed include: transportation demand management (TDM) measures to support the use of transit, carpooling, walking and bicycling; trip reduction measures; the mandatory purchase of a comprehensive transit pass; parking pricing policy that all auto users incur a parking charge; implementation of a congestion pricing program; and ramp metering on the access ramps to the Bay Bridge. The congestion pricing program would allow for imposition of fees applicable to residents and other users of Treasure Island who drive on and/or off Treasure Island. The congestion pricing fees could be set and adjusted to reflect traffic patterns, congestion levels, time of day, and other conditions that affect the roadway system.

Proposed Utilities

Water

The Development Program would continue to use the existing primary water supply, which is provided by the San Francisco Public Utilities Commission (SFPUC) through a pipe attached to the western span of the Bay Bridge. The proposed secondary (emergency) water supply would be from the East Bay Municipal Utilities District (EBMUD), through a water main that is being constructed by Caltrans as part of the new eastern span of the Bay Bridge. The existing water storage tanks would be replaced with three new tanks on Yerba Buena Island. The existing water distribution piping on the Islands would be replaced with a proposed new water distribution

system. In addition, the Proposed Project would include the establishment of a backup Bay water supply system for use by the San Francisco Fire Department.

Wastewater

The existing wastewater collection gravity lines, pump stations, and force mains would be completely replaced (in phases) with a new collection system, including gravity lines, force mains, and pump/lift stations. In addition, a new wastewater treatment facility would be constructed at or near the existing plant at the northeastern part of Treasure Island. The replacement wastewater treatment facility would be operated by the San Francisco Public Utilities Commission, and would be designed to handle projected wastewater flows at buildout of the Proposed Project.

Recycled Water

The Development Program includes a program to use recycled water treated to tertiary levels to irrigate open space areas, the urban farm, roadside plantings, public open spaces, and landscape water features, and for appropriate plumbing fixtures within commercial buildings. The Development Program would provide a developable pad for an on-island recycled water plant (part of the proposed wastewater treatment facility), sized to meet the long-term demand. The facility would be implemented by the San Francisco Public Utilities Commission. New distribution piping for recycled water would be provided only on Treasure Island.

Stormwater

The existing stormwater collection system would be replaced with new gravity lines, lift stations, pump stations, and outfalls to the Bay. Stormwater volumes of 0.2-inch per hour (“treatment flows”) would be directed to the treatment facilities around the development prior to discharge to the Bay. Proposed treatment facilities may include bioswales, bio-retention areas, flow-through planters, mechanical filters and wetland areas. Flows larger than the treatment flows, up to the 5-year storm event, would flow in the pipes, bypassing the treatment devices, and flow directly to the Bay. Flows larger than 5-year storm events would flow overland through the proposed street system and drain to the Bay through proposed consolidated outfall structures.

Electricity, Natural Gas, and Telecommunications

Electricity supply for the Proposed Project would be provided through existing dual submarine cables from the Port of Oakland shoreline and replacement electrical lines on land in Oakland. New electrical substations would be constructed on the Islands. Natural gas would be supplied to the Islands through an existing Pacific Gas & Electric (PG&E) submarine pipeline. The telecommunication system on the Islands would be replaced as part of the Development Program. An underground distribution system in a proposed joint trench would accommodate the electric, natural gas, and telecommunications lines. The proposed Infrastructure Plan includes a renewable energy component, involving solar power and small vertical axis wind turbines. The

developed portions of the Redevelopment Plan Area would provide space that would allow installation of enough renewable energy generating capacity to meet, at a minimum, approximately five percent of estimated peak demand. The Proposed Project may also involve third party investors and power providers, through power purchase agreements, in the implementation of renewable energy systems that would produce significantly more than five percent of estimated peak demand.

Central Plant

As a means of increasing overall energy efficiency and improving sustainability, the proposed Infrastructure Plan includes a new central plant using Bay water. The proposed central plant would provide heating and cooling for certain buildings located at the “Urban Core” area. A distribution-piping loop would be buried under the street, and the new buildings would tie into the main piping.

Geotechnical Stabilization

The proposed geotechnical stabilization is intended to improve seismic safety on the Islands and to meet all applicable building and seismic safety standards. The proposed geotechnical stabilization is expected to include the following major components:

- Stabilization of the Viaduct structure and Causeway connecting Treasure Island, Yerba Buena Island, and the Bay Bridge;
- Shoreline stabilization of the Treasure Island perimeter, involving a combination of various techniques and the raising of the existing perimeter berm;
- Ground improvements to the interior of Treasure Island to stabilize utilities, access , and building foundations;
- Building foundations, which would include a range of techniques from mat foundations to pile foundations; and
- Necessary perimeter and building designs to address potential flooding and sea level rise.

Proposed Sustainability Plan

A major component of the Proposed Project is the Sustainability Plan. The Sustainability Plan documents the guiding principles for the Development Program and identifies implementation measures to be undertaken by TICD and other stakeholders. Many of these measures are integral to the Development Program, and are intended to facilitate progressively higher levels of sustainability over time. These include the proposed residential densities, proximity to transit facilities, orientation of streets and buildings, and green building specifications which would be incorporated into the Proposed Project’s Design for Development guidelines and conditions of approval. In addition the Development Program would include strategies intended to achieve Gold certification under the forthcoming Neighborhood Development program of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED-ND) rating system.

Because new technologies and higher performance standards would likely emerge during the phased build-out of the Development Program and beyond, the Sustainability Plan also describes goals, strategies, and targets that could be achieved through collaboration between TIDA, TICD, other government agencies, utility providers, and various organizations. These include a comprehensive transportation demand management program, including the establishment of an on-island transportation coordination office; provision of infrastructure to maximize the on-site production of renewable energy as technologies and delivery mechanisms become available; and a parks and open space program to create, restore and maintain habitat and landscape areas, and other features that would reduce potable water usage. The proposed transportation strategies, including transit-oriented development, parking capacity controls, congestion pricing, ramp metering, and other transportation demand management measures, are intended to achieve greater sustainability through reduced automobile use.

PROJECT PHASING AND CONSTRUCTION

Construction and buildout of the Development Program would be phased and would be anticipated to occur over an approximate 10-year period. Assuming that construction would begin in approximately 2009, the last building constructed would be ready for occupancy in about 2018. However, the actual timing of construction would depend on market conditions and other factors.

The Development Program is expected to involve four major phases. The first phase would include the installation of the infrastructure backbone and geotechnical stabilization; the subsequent phases would include the extension of infrastructure and development of the residential, commercial, open space/recreational, historic, and institutional and public uses. To ensure that existing households have the opportunity to benefit from the proposed redevelopment, the Proposed Project would include a transition housing program for all residents of the Islands at the time of project approval who continuously remain Island residents during the project development.

REQUIRED APPROVALS

Certification of the Final EIR (Planning Commission and TIDA as joint lead agencies, appealable to Board of Supervisors) would be required before any other approvals or permits would be issued. Ultimately, TIDA and the San Francisco Planning Commission would consider an action recommending that the Board of Supervisors approve the Redevelopment Plan, and the San Francisco Board of Supervisors would consider approval of the Plan. The Redevelopment Plan would define the boundaries of the Redevelopment Plan Area and set forth land use guidelines such as the basic land use designations and allowable land uses, and maximum development and heights. In addition, the Redevelopment Plan would authorize TIDA to adopt a Design for Development, which would establish specific land use controls, development standards and design guidelines. The Disposition and Development Agreement would include a Design Review

and Document Approval Procedure, which would set forth the approval processes and standards for development. All City departments having jurisdiction over part or all of the Project site would also approve and enter into an Interagency Cooperation Agreement that would set forth the procedures and standards for permit review.

As described on page 3 above, the Islands include areas subject to the Tidelands Trust, which generally prohibits residential, general office, non-maritime industrial and certain recreational uses. Under the exchange authorized by the California State Legislature, the Trust would be lifted from the portions of Treasure Island that are planned for residential and other non-Trust uses and imposed on portions of Yerba Buena Island that currently are not subject to the Trust.

The required approvals for the Proposed Project include (but are not limited to) the following.

- *Planning Code* Section 101.1 (Priority Policies) findings for the *Treasure Island and Yerba Buena Island Redevelopment Plan* (Planning Commission, Board of Supervisors);
- Actions on Planning Code, Zoning Map and General Plan amendments (Planning Commission, Board of Supervisors);
- Approval of Disposition and Development Agreement and related transactional documents (TIDA, Board of Supervisors);
- Recommendation by TIDA to adopt Redevelopment Plan (TIDA);
- Filing of report and recommendation for approval of Redevelopment Plan to the Board of Supervisors by the Planning Commission (waived if no action within 30 days after receipt of Redevelopment Plan);
- Adoption of Redevelopment Plan by Board of Supervisors;
- Adoption of Design for Development Guidelines (TIDA, subject to final adoption of Redevelopment Plan by Board of Supervisors);
- Adoption of Owner Participation Rules (TIDA);
- Interagency Cooperation Agreements (San Francisco Planning Commission, San Francisco Board of Supervisors, SFMTA, SFPUC, SFFD, SFPD, SFDPW, Department of Building Inspection);
- Approval of subdivision maps (SFDPW, Board of Supervisors);
- Approval of Public Trust Exchange Agreement (TIDA, Board of Supervisors, State Lands Commission);
- Permit for fill and dredging in San Francisco Bay and improvements within the 100-foot shoreline band (San Francisco Bay Conservation and Development Commission);
- Section 404 permit (U.S. Army Corps of Engineers, after agency consultation);
- Water quality certification, NPDES permit, and waste discharge requirements (Regional Water Quality Control Board);
- Approval of new service connection and water meter in Oakland (EBMUD);

- Creation or designation of a Treasure Island Transportation Management Agency (Board of Supervisors);
- Approval of metering system for Bay Bridge ramps (Caltrans) if located on Caltrans property; and
- Demolition and building permits for individual projects within the Redevelopment Plan Area (Department of Building Inspection).

POTENTIAL ENVIRONMENTAL ISSUES

The Proposed Project could result in potentially significant environmental effects. The EIR will examine those effects, identify mitigation measures, and analyze whether proposed mitigation measures would reduce any significant environmental effects to a less than significant level as defined by CEQA. The EIR will be a project-level EIR on the Redevelopment Plan and the Development Program.

The EIR will identify and evaluate alternatives to the Proposed Project. It will analyze a No Project alternative, as well as a plan for a less-intensive development program. An alternative that does not include an exchange of Tidelands Trust properties between Treasure Island and Yerba Buena Island will also be described and analyzed. Another alternative may be developed and addressed, based on the EIR analyses and the potential for the listed alternatives to reduce or avoid the impacts of the Proposed Project found to be significant, while meeting most of the project objectives.

Because the lead agency has determined that an EIR will clearly be required, an Initial Study will not be prepared (as permitted under the CEQA Guidelines Section 15060(d)). The EIR will address all of the environmental topics contained in the environmental checklist used by the City. Each of those topics is described below in relation to the Proposed Project.

Land Use

The Proposed Project is the adoption of the Treasure Island and Yerba Buena Island Redevelopment Plan and implementation of the proposed Development Program, consisting of residential, retail, commercial, institutional and recreational facilities and associated infrastructure that would cover portions of Treasure Island and Yerba Buena Island. The Proposed Project would result in changes in the types and intensities of land uses on Treasure Island and Yerba Buena Island. Treasure Island would be converted from a former military base with interim residential, institutional, and industrial land uses to residential, retail, commercial, hotel, institutional, and open space uses. Because the Project site consists of two islands, separated from other communities by over a mile of open water, there would be few conflicts with existing land uses. The EIR will discuss the effects of the Development Program on the remaining uses on the Islands, including the U.S. Coast Guard and Jobs Corps facilities. The substantial changes in land use resulting from the Development Program would be the basis for many of the potential

physical impacts, such as transportation, air quality, noise, and growth inducement, to be analyzed in the EIR. Similarly, the mix of uses proposed under the Redevelopment Plan would be supported by a comprehensive multi-modal transportation system. Accordingly, the relationship of land uses to each other and to existing and potential future transportation facilities will be an important issue for analysis in the EIR. The EIR will also describe (for informational purposes) the military activities formerly conducted and any military services now offered on Treasure Island and Yerba Buena Island.

Visual Quality and Urban Design

The Islands are visible from many viewpoints in San Francisco, the East Bay, and Marin County. The Development Program would involve the demolition of approximately 1,000 residential units in low-rise buildings and approximately 100 existing non-residential buildings and the construction of low-rise, mid-rise, and high-rise buildings largely concentrated on the southwest corner of Treasure Island. Changes in the visual environment could occur from the development of taller and larger buildings than are now present, from removal of existing buildings, from changes in architectural character, from changes in landscaping, and from the creation of new sources of light or glare. The EIR will describe urban design features of existing structures, visual character, important visual features, and views from public areas on Treasure Island and from representative viewpoints around the Bay. The analysis will address changes in visual quality arising from the Development Program with respect to scenic views, scenic resources, visual character, and light and glare. Photomontages or other simulations will be used to illustrate the potential visual impacts of the Development Program.

Employment, Population and Housing

The Proposed Project could contribute to the growth and concentration of City and regional population. The Plan would result in a substantial increase in the number of residential units on Treasure Island and Yerba Buena Island (up to approximately 6,000 units) compared to existing conditions (about 1,000 existing units, about 80 percent currently occupiable), and therefore a sizable increase in the population on the Islands. The EIR will describe existing conditions related to employment, population, housing, and business activity, and estimate the changes the Development Program would create. It will compare the existing numbers of employees, residents, and visitors to the projected changes that would result with implementation of the Redevelopment Plan. The net new housing demand from employees of businesses that could locate on Treasure Island and Yerba Buena Island will be estimated. Demographic data describing population and households, and information regarding the relationship between jobs and housing in San Francisco and Oakland will be discussed. The EIR will examine whether the Proposed Project would have an effect on citywide job generation or housing demand. In addition, the EIR will discuss proposed housing production and transition plans to limit displacement of existing Island residents.

Archaeological Resources

Previous cultural resources investigations indicate a high likelihood for the presence of archaeological resources. Where development would encounter soils that have not previously been disturbed, there is the potential to disturb archaeological resources. The EIR will describe the prehistoric/historic context of Yerba Buena Island, identify the archaeological resources that may be present, assess potential effects of the Development Program on archaeological resources that may occur, and identify the appropriate mitigation for preservation of archaeological materials when/if encountered.

Historic Architectural Resources

The historic architectural resources on Yerba Buena Island and Treasure Island have been comprehensively studied as part of the property transfer planning process with the U.S. Navy. Treasure Island was designated as State Historic Landmark No. 987 in 1989. Three buildings on Treasure Island and five structures plus one group of buildings on Yerba Buena Island have been found to be eligible for listing on the National Register of Historic Places. All of these historic architectural resources would be retained and reused under the proposed Redevelopment Plan in a manner consistent with the Secretary of Interior Standards for Historic Rehabilitation; thus, identification and evaluation of impacts related to the removal of these resources is not required. The EIR will evaluate the impacts from the proposed renovation and adaptive re-use of historic structures on the Islands, and will discuss the impacts of the proposed new buildings on the existing historic buildings and context. The EIR will also evaluate buildings that have reached or exceeded 50 years of age since the Navy's evaluation occurred in 1997; identify those potentially eligible for the California Register of Historical Places or the National Register of Historic Places, if any; and explain why others were determined not to be eligible. For any identified as eligible, impacts of the Development Program on them will be described.

Transportation

Implementation of the Development Program, including demolition of existing uses and construction of the proposed residences and other uses, would result in changes in traffic volumes and traffic patterns. Since the development is proposed to be transit-oriented, ridership on existing public transit, provided by Muni, would increase, and new transit facilities and service, including the proposed new ferry service, bus service to the East Bay, and intra-island shuttle service would be provided. The primary vehicular access to the Redevelopment Plan Area would be via the Bay Bridge. The development and occupancy of new buildings would therefore affect traffic on the Bridge.

In a transportation report for the Proposed Project, the travel demand will be estimated by using population, square footage, and other relevant information. The EIR transportation analysis will follow the Planning Department's *Transportation Impact Analysis Guidelines for Environmental*

Review, October 2002, with adjustments and additions to address transportation characteristics of the Proposed Project's unique components and location.

Traffic impacts will be analyzed for the AM and PM peak periods. Traffic impacts will be analyzed in relation to existing conditions and in a future context that accounts for cumulative growth in volume of traffic on the Bay Bridge. The traffic analysis will assume that ramps leading to/from the Bay Bridge remain in their current configuration; the analysis of cumulative transportation impacts will consider conditions with the improved ramps that are currently under consideration by Caltrans and the City and without those ramp improvements.

The transportation report will also address impacts on transit and will describe parking and future pedestrian and bicycle conditions. The report will include a quantitative assessment of the project-related impacts to Muni Route 108, which serves Treasure Island, and will include an analysis of pedestrian and bicycle conditions within the area affected by the Development Program, as well as during the AM and PM peak periods in the vicinity of the San Francisco Ferry Building. The transportation report will examine the on-site parking supply, including the number and location of parking spaces. The parking demand and parking surplus/shortfall and potential secondary impacts of parking conditions will be identified. The analysis will take into account the new ferry service and expanded bus service identified in the Treasure Island Transportation Plan as well as proposed TDM measures.

The EIR will summarize the information and conclusions in the transportation report and will identify mitigation for any significant impacts.

Noise

Sensitive receptors on Treasure Island and Yerba Buena Island, such as residences, schools, and wildlife, will be identified. The number of sensitive receptors would increase substantially with the proposed increase in the number of residential units. The EIR will analyze the existing sources and levels of noise on the Project site. Site reconnaissance, short-term noise measurements, and standard references will be used to quantify the existing noise environment. The EIR will discuss construction noise impacts on sensitive receptors. The EIR will also consider impacts from increased vehicle traffic and new stationary noise sources, such as building ventilation equipment. The noise analysis will also consider noise from emergency vehicles and from re-designed freeway ramps if the SFCTA/Caltrans Project Study Report findings are available.

Air Quality

The Development Program would result in changes in traffic volumes and traffic patterns. Increased traffic could generate additional air pollutant emissions on a regional scale. Increased traffic could lead to local "hot spots" with higher concentrations of carbon monoxide.

Construction activities associated with development, including demolition and ground disturbance could increase concentrations of particulate matter. The proposed new uses of Treasure Island and Yerba Buena Island could increase emissions from stationary sources such as boilers and emergency generators.

The EIR will describe existing air quality at the Project site and will discuss existing compatibility with regional air quality plans. In accordance with Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the EIR will evaluate construction-period and operational emissions of criteria air pollutants. The EIR will estimate operational emissions based on Development Program-related changes in motor vehicle traffic and the introduction of new stationary sources. These emissions will be compared to BAAQMD significance thresholds for regional impacts. Although at this time neither the BAAQMD or any other agency has adopted significance criteria for a project's estimated contribution of greenhouse gas emissions (GHGs), the EIR will discuss emissions of greenhouse gases from construction and operation of the Development Program. The EIR will also discuss proposed features of the Proposed Project that would help reduce GHG emissions.

Wind

Treasure Island's location in the center of San Francisco Bay exposes it to a unique microclimate due to a lack of natural windbreaks. The low-lying, relatively flat island experiences strong winds coming from the west through the Golden Gate. The Development Program includes proposals for a number of devices to offer wind protection, including angling the street grid and developing a system of planted windrows. The EIR will discuss pedestrian-level wind hazards that could result from the Proposed Project. Many of the proposed structures in the Development Program are low-rise and it is typically not necessary to consider the wind effects of such development. The EIR will identify performance standards appropriate for mid- and high-rise buildings.

Shadow

The Development Program would add a number of new buildings, some of substantial height. In order to consider the overall effects of the development, including the proposed windrows, modeling and analysis of shadowing will be performed. The EIR will examine the occurrence of shadows on recreational and other outdoor spaces.

Community Services and Utilities

The Development Program would involve replacement or repair of the Islands' existing facilities for water supply, wastewater collection and treatment, stormwater collection and treatment, power, and communications, and addition of a recycled water system. Wastewater and stormwater treatment would be managed in on-site facilities. Water would continue to be

delivered from the San Francisco Public Utilities Commission system with a backup supply from the East Bay Municipal Utilities District. Natural gas would continue to be delivered from the PG&E system. Some electricity could be generated on site, with the remainder provided via two existing submarine cables. Communications would be provided by off-site service providers.

These infrastructure improvements would be put into place while some of the current population is in residence and it would be necessary to continue to provide services without interruption during the upgrading and installation of new facilities. Potential impacts to existing residents will be discussed.

The Development Program would also include facilities for police, fire/emergency medical services, schools, and parks and recreation. The EIR will assess what additional services and facilities are needed to serve the Treasure Island and Yerba Buena Island populations and analyze the impacts of providing these services and facilities. The EIR will also discuss emergency access to the Islands and potential issues related to emergency evacuation, as part of the analysis of police and fire services.

Biology

Treasure Island is a man-made island with a long history of intensive military use. Nevertheless, Treasure Island—and Yerba Buena Island, which is a natural island and heavily vegetated—have become habitat for wildlife such as shorebirds, bats, and marine species. The California Natural Diversity Database reports that several species listed under the California and/or federal endangered species acts, or otherwise considered as having “special status” under CEQA, are present at one or more locations in the Oakland East USGS quadrangle. Eelgrass beds, an important nursery area for many marine species, are present in the shallow waters near Treasure Island and Yerba Buena Island. The Islands’ physical location in the center of San Francisco Bay puts them in proximity to spawning herring, migratory anadromous fish, marine mammals, and migratory waterfowl. The EIR will describe the existing terrestrial and marine biota living on and in the vicinity of Treasure Island and Yerba Buena Island. The EIR will evaluate the impacts of proposed development on plants, animals, and natural communities on the Islands. In addition, the EIR will evaluate the impact of shoreline stabilization and increasing the height of the Treasure Island perimeter berm, construction of the ferry terminal, and pile driving on marine species. The EIR will also evaluate the impact of the installation of storm water treatment wetlands on wildlife including migratory birds.

Geology/Topography

The San Francisco Bay Area is located within one of the most seismically active regions of the United States. Significant earthquakes have occurred in the Bay Area. Treasure Island and Yerba Buena Island are located roughly halfway between two notable faults—the San Andreas and Hayward Fault zones. The Project site has a high risk of being subjected to another moderate to

severe earthquake, involving significant ground shaking that could cause foundation and structural damage to buildings and secondary ground failure. Potential seismic-related hazards include liquefaction, earthquake-induced settlement, tsunamis, and lateral spreading. The Development Program includes proposed geotechnical stabilization strategies, including stabilization of the viaduct and causeway, seismic reinforcement of the perimeter berm forming Treasure Island, stabilization of utilities, and use of appropriate building foundations.

Because the engineering standards for placement of fill were not as stringent in 1936-1939 as they are today, Treasure Island is underlain by poorly engineered (by today's standards) artificial fill that varies in depth and thickness. Beneath the fill are varying thicknesses of compressible Bay Muds. Because of the age of the fill, settlement has already occurred. Placement of new loads, however, could begin a new cycle of settlement. Proposed construction would proceed on the basis of site-specific geotechnical studies and geotechnical and structural engineering standards.

The EIR will describe the geologic, seismic and soils hazards of the Redevelopment Plan Area and analyze impacts of the Development Program. The evaluation will address whether implementation of the Redevelopment Plan would result in significant risk to the people or structures on site. Project-specific geotechnical information and recommendations will be provided.

Hydrology and Water Quality

The Development Program would create the potential for water quality impacts during and after construction. Seismic reinforcement of the perimeter berm and dredging of the ferry terminal may temporarily increase the release of particulates and contaminants from bottom sediments. The Development Program would result in an increase in pervious surfaces compared to existing conditions, and would thus reduce stormwater runoff flows. In addition, the Development Program would replace the existing storm drain system, which does not meet current standards and may be contributing to the release of pollutants from on-site contamination sources. The Redevelopment Plan proposes to treat most stormwater flows on site using methods such as bio-swales, bio-retention areas, flow-through planters, mechanical filters and wetland areas.

Treasure Island is protected by a perimeter berm that surrounds the island. The perimeter berm is currently considered adequate protection from wind-generated and wake-generated waves. However, sea level changes over time could reduce the ability of the perimeter berm to protect the island. The Development Program includes raising the perimeter berm and site grades in developed areas to provide adequate drainage and future protection against waves, tides, and storm-induced flooding.

The residential, retail, and commercial land uses that are proposed would substantially increase the volume of wastewater generated. This wastewater would be treated on site by the existing

and new wastewater treatment plant. In addition, the existing wastewater collection system would be completely replaced.

The EIR will identify the potential change in wastewater and storm water flows and quality. Proposed measures and their effectiveness for reducing storm water quality impacts will be evaluated. The EIR will also evaluate potential flooding hazards, including those exacerbated by potential climate change-induced sea level rise.

Hazards

There are several hazardous waste sites, created during the Navy's use of Treasure Island, within the Redevelopment Plan Area. Some sites have already been remediated; others are still under investigation or currently undergoing remediation by the Navy. Depending on the prior use of the site, the contaminants that may be present include petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), poly-aromatic hydrocarbons (PAHs), dioxins, pesticides, polychlorinated biphenyls (PCBs), lead, and asbestos. The Development Program and any development alternatives proposed are located within property contained on the lists compiled pursuant to Section 65962.5 of the government Code (commonly referenced as the "Cortese List" of hazardous waste sites.) The Redevelopment Plan Area is located within the area referenced on the Cortese List as Naval Station Treasure Island, County of San Francisco, Site Code No. 201210. The Navy is investigating, evaluating, and remediating contaminated sites on Treasure Island under the Department of Defense Installation Restoration Program (IRP) prior to the transfer of the property to TIDA. The IRP follows the Comprehensive Environmental Restoration Compensation and Liability Act (CERCLA) process. The goal of the remedial actions is to eliminate the contamination, or if residual contamination is left in place, to limit exposure pathways that may pose a risk to human health and the environment. Under federal regulations, the remediation efforts must reach a level of cleanup that is sufficient to support a "Finding of Suitability to Transfer" or a "Finding of Suitability of Early Transfer" prior to redevelopment. The Development Program includes remediation beyond that which will be required of the Navy as necessary to support the proposed development program.

The Development Program would involve the use, transport and disposal of hazardous materials for maintenance and cleaning of residences and businesses (paints, solvents, adhesives, and pesticides) on the site.

The EIR will summarize the U.S. Navy activities to investigate and remediate hazards, describe additional remediation beyond the activities planned by the Navy that may be necessary to support proposed development and the commitments included as part of the Proposed Project, and identify impacts related to the additional remediation.

Energy

At buildout, the Development Program would result in a substantial increase in building square footage. According to the Treasure Island Sustainability Plan, the new buildings would be built using green building specifications and employ energy conservation measures that may include use of Energy Star heating and cooling equipment, appropriate building orientation, natural ventilation, optimized building shading, high performance glazing, and solar water heating, and would be constructed to accommodate rooftop photovoltaic installations. The Development Program includes proposals to incorporate facilities that would make it feasible to increase the production of renewable energy by making the use of photovoltaic technology possible and installing demonstration-scale wind turbines. The EIR will describe current energy demand and estimate the net change in electricity use and natural gas consumption from the Development Program. The EIR will assess whether anticipated increases in energy use would be large or wasteful.

Consistency with Plans and Policies

This section of the EIR will summarize project consistency with applicable land use plans and policies, including the *San Francisco General Plan* (“*General Plan*”) and Priority Policies, the Tidelands Trust, the policies of the San Francisco Bay Plan, and other City policies that are designed to avoid or mitigate environmental effects. The EIR will discuss proposed amendments to the *General Plan* and Planning Code. The EIR will discuss the key strategies of the Redevelopment Plan in relationship to *General Plan* policies regarding housing, commercial uses, transportation, and open space and recreational uses, and will discuss the Proposed Project’s Sustainability Plan in relation to the City’s Sustainability Plan. City and regional plans and policies related to energy, air quality, and natural resources will be discussed in their respective technical sections of the EIR.

Cumulative and Growth Inducing Impacts

CEQA requires a discussion of the ways in which a project could induce economic or population growth, directly or indirectly, in the surrounding environment. The principal way that the Development Program could induce growth is through the construction of up to approximately 6,000 new residential units and the net direct and secondary population growth that the proposed residential development would stimulate. The Development Program would also result in new office, retail, entertainment, and community services uses that could directly and indirectly contribute to economic growth. The EIR will discuss the potential for direct and secondary impacts from population and employment resulting from development on Treasure Island and Yerba Buena Island. The EIR will address the potentially significant cumulative impacts of the Proposed Project when considered with other planned development in San Francisco and the East Bay. This analysis will be done for all environmental topics discussed in the EIR and will specify

which areas are expected to result in significant cumulative impacts. Cumulative impacts will be discussed qualitatively, except where quantitative data on other planned development projects are available.

Mitigation Measures

The EIR will identify feasible mitigation measures to reduce or avoid potentially significant impacts identified in the EIR, as well as improvement measures to reduce impacts that are found to be less than significant.

**APPENDIX B: TREASURE ISLAND AND YERBA BUENA
ISLAND REDEVELOPMENT PLAN SCOPING
SUMMARY REPORT**

**TREASURE ISLAND AND YERBA BUENA ISLAND REDEVELOPMENT PLAN
SCOPING SUMMARY REPORT**

TREASURE ISLAND AND YERBA BUENA ISLAND REDEVELOPMENT PLAN SCOPING SUMMARY REPORT

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1.0 PROJECT OVERVIEW

1.1 Background

The proposed Redevelopment Plan Area includes all of Treasure Island and Yerba Buena Island (collectively, “the Islands”) in San Francisco Bay. The Islands are the site of the former Naval Station Treasure Island (NSTI), owned and operated by the U.S. Navy until its closure in 1997 as part of the Base Realignment and Closure process. The proposed Redevelopment Area encompasses approximately 400 acres of land on Treasure Island, approximately 150 acres of land on Yerba Buena Island, and about 645 acres of tidal and submerged lands adjacent to the Islands. The Navy is in the process of conveying most of these areas to the Treasure Island Development Authority (TIDA), a single-purpose public agency responsible for the Redevelopment Plan Area.

1.2 Proposed Project

The Treasure Island and Yerba Buena Island Redevelopment Plan would provide the basis for redevelopment of most of the NSTI lands from a primarily low-density residential area with vacant and underutilized nonresidential structures to a new mixed-use community with a retail center, a variety of open space and recreation opportunities, new and upgraded on-site infrastructure, and public and community services. The proposed Redevelopment Plan and other planning documents would establish general land use controls and design standards for the project site. The Redevelopment Plan includes supporting studies that address project design concepts, transportation, infrastructure, community services, affordable housing, jobs, and other aspects of the development. A major component of the proposed Redevelopment Plan is the Sustainability Plan, which includes goals, strategies, and targets for the sustainable redevelopment of the Islands. The proposed Redevelopment Plan would consist of approximately 6,000 residential units, 270,000 square feet of commercial and retail space, 400 to 500 hotel rooms, 300 acres of parks and open space, transportation, bicycle and pedestrian facilities, a ferry terminal/transit hub, public and community services, and utilities. Other components of the proposed redevelopment include supplemental remediation to allow the proposed uses, geotechnical stabilization, and renovation and adaptive re-use of existing designated historic structures. The Redevelopment Plan would be implemented in four phases from approximately 2009 through 2018.

1.3 Environmental Review

The San Francisco Planning Department is the lead agency implementing environmental review under the California Environmental Quality Act (CEQA) for the proposed Treasure Island/Yerba Buena Island Redevelopment Plan. The Planning Department’s Major Environmental Analysis Division (MEA) is directing preparation of an Environmental Impact Report (EIR) for the project. CEQA requires that the decision-making body and the public be informed about the significant effects of a project and identify ways to avoid or reduce those effects prior to project approval. When a proposed project may have significant effects that are not reduced by mitigation measures included in a project, an EIR must be prepared. As part of the EIR process, the Planning Department conducted public scoping in February 2008 to obtain input from agencies and the public regarding the scope and focus of the EIR.

Following consideration of the public comments received during the scoping process, the Planning Department will prepare a Draft EIR on the proposed Project. The Draft EIR will include a description of the existing environmental conditions on and around the project site, and will identify significant impacts on the physical environment that could be caused by construction or operation of the proposed project. The issues raised during the public scoping process will help to identify potentially significant impacts that should be studied in the EIR and the alternatives that should be discussed in the EIR. The Draft EIR will be circulated for public comment, and written responses will be prepared to comments raising physical environmental issues. Following certification of a Final EIR by the Planning Commission and TIDA as joint lead agencies, actions on the Redevelopment Plan will be considered by TIDA, the Planning Commission, and the Board of Supervisors.

Other public agencies that will be involved in reviewing the project include the U.S. Army Corps of Engineers, California State Lands Commission, San Francisco Bay Conservation and Development Commission, San Francisco Bay Regional Water Quality Control Board, Caltrans, and possibly the Bay Area Air Quality Management District.

2.0 SCOPING PROCESS

The purpose of scoping is to provide the CEQA lead agency with the opportunity to consult directly with interested public agencies, the public, and organizations and other interested parties on matters related to environmental effects associated with the project. The scoping process helps identify alternatives and mitigation measures that should be considered in the EIR. It also assists with the coordination of regulatory agencies, local agencies and other stakeholders who may have different views and concerns regarding environmental issues. Scoping activities can also serve as a means to engage a community, resolve issues early in the EIR process, and foster public participation in the environmental review process.

2.1 Public Notification

On January 26, 2008, the San Francisco Planning Department issued a Notice of Preparation (NOP) of an Environmental Impact Report and Notice of Public Scoping Meetings for the Project. The public comment period extended from January 26 through February 26, 2008. Public notice was provided in a number of ways.

- **NOP and Scoping Meeting Notice Mailing**

Over 500 copies of the NOP and Notice of Public Scoping Meeting were sent to affected public agencies and by U.S. mail to interested groups and individuals on January 26, 2008. The mailing list included the following project stakeholder groups:

- Elected Officials: 7 Full NOP / 5 NOP Cover Notice
- Public Agencies: 32 Full NOP / 150 NOP Cover Notice
- Interested Parties: 32 Full NOP / 192 NOP Cover Notice
- Native American Nations: 1 NOP Cover Notice
- State Clearinghouse: 15 Full NOP

- Informational Repositories (e.g., libraries): 12 Full NOP / 9 NOP Cover Notice
- Media Outlets: 8 Full NOP / 15 NOP Cover Notice
- Individuals: 40 Full NOP / 44 NOP Cover Notice

Copies of the NOP and the NOP cover letter are given in Appendix A.

- **Legal Notices**

As additional notification, legal notices were placed in the *San Francisco Chronicle* (run date January 26, 2008), *Alameda Times-Star* (run date January 26), and the *Oakland Tribune* (run date January 26). Copies of the legal notices are given in Appendix B.

- **Project Website Information**

NOP information related to the project was posted at the San Francisco Planning website at:

<http://www.sfgov.org/site/planning/mea>

- **Copies of the NOP**

A copy of the NOP was available to anyone requesting one from the San Francisco Planning Department.

2.2 Scoping Meeting Overview

Two, 2-hour public scoping meetings were held to solicit input regarding project issues of concern to the community and identify potential environmental effects and potential alternatives to be considered in the environmental review process. The first meeting was held on February 11th at the Port of San Francisco hearing room on Pier 1, and the second meeting was held on February 13th on Treasure Island. The meetings were attended by approximately 9 people (San Francisco: 7 attendees, and Treasure Island: 2 attendees). Meeting proceedings were documented electronically, audio recorded, and transcribed by a court reporter who made a verbatim written transcript of each meeting (Appendix E).

In addition to the meetings described above which were conducted by the San Francisco Planning Department, the Treasure Island / Yerba Buena Island Citizens' Advisory Board (CAB) included a public comment agenda item in its regular meeting held on February 12, 2008. A written transcript of the audio tape of this meeting was prepared and is attached (Appendix E).

2.3 Scoping Meeting Presentations

The meeting format consisted of an overview of the CEQA process provided by Rick Cooper, EIR Coordinator with the San Francisco Planning Department, and a brief description of the proposed project presented by Michael Tymoff of the Mayor's Office representing Treasure Island Development Authority.

2.4 Scoping Meeting Comments

During the public comment portion of the scoping meetings, attendees were given an opportunity to provide input regarding issues of concern to the community and identify environmental effects and potential alternatives to be considered in the environmental review process. Those individuals wishing to speak at the meeting filled out speaker cards, and those who did not wish to speak publicly were encouraged to fill out comment cards or provide written comments

directed to the Planning Department to document their concerns related to physical environmental issues (speaker cards were not used at the Treasure Island / Yerba Buena Island CAB meeting). Meeting attendees were also reminded that project comments could be submitted by U.S. mail, electronic mail, and by facsimile to San Francisco Planning Department representatives (Bill Wycko, Acting Environmental Review Officer) through February 26, 2008 (the conclusion of the public comment period). Copies of the sign-in sheets and speaker cards are given in Appendix C.

2.5 Oral Comments

At least 13 individuals (there were several unidentified individuals in the CAB meeting transcript) spoke at the three scoping meetings.

2.5 Written Comments

As noted at the scoping meetings, written comments were accepted via U.S. mail, electronic mail, and fax addressed to Bill Wycko at the San Francisco Planning Department. Thirteen comment documents were received during the public review period. Copies of the comments received are given in Appendix D.

3.0 LIST OF COMMENTERS

3.1 Oral Comments

Oral comments were given by at least 13 individuals. The commenters are listed below and their comments are summarized in Table 1: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comment Summary, Oral Comments.

- Alice Pilram
- Rob Black
- Liz Hirschhorn
- Suzanne Kim
- Wilma Pang
- Mike DeLane
- George Brown
- Kevil Holl
- Gene Brodsky
- Tim Molinare
- Heather Gallagher
- Eve Bach
- Unidentified speaker(s) at CAB meeting

3.2 Written Comments

Written comments were received from 13 interested parties and agencies. The commenters are listed below and their comments are summarized in Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comment Summary, Written Comments.

- San Francisco Bay Trail (Association of Bay Area Governments)
- Arc Ecology
- Bay Area Air Quality Management District
- Ilana Bar-David

- Bay Conservation and Development Commission
- Caltrans
- U.S. Coast Guard
- East Bay Municipal Utilities District
- Ruth Gravanis
- SF Bicycle Coalition
- San Francisco Department of the Environment
- Sierra Club
- California State Lands Commission

4.0 SCOPING COMMENTS SUMMARY

See Table 1: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comment Summary, Oral Comments, and Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comment Summary, Written Comments.

Table 1: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Oral Comments

Topic	Commenter	Comment
Alternatives	Molinare, Tim	Feb 12 CAB Meeting: EIR should consider a wastewater treatment alternative that provides higher level of treatment and does not require an outfall
Alternatives	Gravanis, Ruth	Feb 12 CAB Meeting: EIR should describe alternatives to the proposed project
Alternatives	Bach, Eve	Feb. 13 Scoping Meeting: Smaller project alternative should not be considered
Alternatives	Bach, Eve	Feb. 13 Scoping Meeting: EIR should consider an alternative but feasible project that has less impact
AQ	Pilram, Alice	Feb. 11 Scoping Meeting: EIR should include global warming
Biology	Kim, Suzanne	Feb 12 CAB Meeting: Concerns regarding introduction of non-native species
Cultural Resources	Holl, Kevin	Feb 12 CAB Meeting: EIR should describe existing archaeological resources and identify their importance; whether discovery would delay construction.
General	Hirschhorn, Liz	Feb. 12 CAB Meeting: Mitigation should include full build-out of facilities
General	Hirschhorn, Liz	Feb. 12 CAB Meeting: Transportation impacts should compare proposed project with current transportation conditions, not the active naval base conditions
General	Bach, Eve	Feb. 13 Scoping Meeting: EIR should be master EIR instead of project-level EIR
Geology	Holl, Kevin	Feb 12 CAB Meeting: EIR should include information about geotechnical stabilization
Geology	Brodsky, Gene	Feb 12 CAB Meeting: EIR should include information about safety of existing Navy housing, including liquefaction and existing building foundations
Hydro	Kim, Suzanne	Feb. 12 CAB Meeting: EIR should address pollution from cars in stormwater runoff
Population, Land Use and Employment	Brown, George	Feb 12 CAB Meeting: EIR should include information about future employment, including goals
Proj Desc	Pang, Wilma	Feb 12 CAB Meeting: EIR should provide description of improvements to the school
Proj Desc	Gallagher, Heather	Feb 12 CAB Meeting: EIR should describe how demolition debris will be removed
Proj Desc	Bach, Eve	Feb. 13 Scoping Meeting: EIR should provide rationale for size of the project
Public Services	DeLane, Mike	Feb 12 CAB Meeting: Identify proposed facilities for the San Francisco Fire Department, and what type of water supply system is planned

Topic	Commenter	Comment
Transportation	Black, Rob	Feb. 12 CAB Meeting: EIR should include impact of construction vehicles on transportation, including on Bay Bridge
Transportation	Kim, Suzanne	Feb 12 CAB Meeting: Concerns related to transportation including shared pedestrian/bike paths (specific comments inaudible)
Transportation	Pang, Wilma	Feb 12 CAB Meeting: Clarify and analyze amount of parking proposed
Transportation	Unidentified	Feb 12 CAB Meeting: EIR should describe enabling legislation for congestion-management program
Transportation	Bach, Eve	Feb. 13 Scoping Meeting: EIR should consider traffic on streets and highways beyond Bay Bridge
Utilities	Unidentified	Feb 12 CAB Meeting: EIR should include information about bypassing treatment for stormwater flows exceeding five-year storms and regarding effectiveness of treatment for smaller volumes
Utilities	Molinare, Tim	Feb. 12 CAB Meeting: EIR should analyze impacts of secondary treatment for wastewater and also an alternate system with a higher level of treatment, using wetlands.

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Alternatives	Arc Ecology	Page 02-1: Reduced density alternative could have bigger impacts
Alternatives	Arc Ecology	Page 09-1: Lower-density alternative won't necessarily have fewer impacts
Alternatives	Arc Ecology	Page 09-2: EIR should include car independence mobility alternative
Alternatives	Arc Ecology	Page 10-1: No-Trust Exchange Alternative would not meet objective
Alternatives	Gravanis, Ruth	Page 1-1: No purpose in studying No Trust Exchange Alternative: doesn't meet project greater impacts on YBI, inconsistent with BCDP policies
Alternatives	Gravanis, Ruth	Page 1-2: EIR should include Maximum Sustainability Alternative (MSA) that keeps project includes targets to minimize environmental harm
Alternatives	Gravanis, Ruth	Page 1-3: MSA could have 1/4 parking spaces of proposed project
Alternatives	Gravanis, Ruth	Page 1-4a: MSA could have measures to increase car independence such visitor-serving with bus/ferries
Alternatives	Gravanis, Ruth	Page 2-3: Treating storms larger than 5-year would eliminate erosion problems on YBI
Alternatives	Gravanis, Ruth	Page 2-4: MSA would include on-island renewables above 5% goal, distributed energy in urban core
Alternatives	Gravanis, Ruth	Page 2-5: MSA would include LEED Platinum as standard
Alternatives	Gravanis, Ruth	Page 2-6: MSA would include variant with re-use or reconfiguration of Job Corps campus
Alternatives	Gravanis, Ruth	Page 2-10: MSA would include target for 1% increase in Bridge traffic, not 5%
Alternatives	Gravanis, Ruth	Page 2-12: Alternatives analysis should include simulations, with view of the islands from vantage points, and points of reference
Alternatives	Gravanis, Ruth	Page 2-13: Alternatives analysis should include discussion of compliance with Transit F
Alternatives	Gravanis, Ruth	Page 2-14: Alternatives analysis should include annual carbon emissions after buildout
Alternatives	Gravanis, Ruth	Page 2-15: Alternatives analysis would include ecosystem damage from management c
Alternatives	Gravanis, Ruth	Page 3-1: EIR should include alternative based on no approval of congestion management
Alternatives	Gravanis, Ruth	Page 3-2: EIR should include alternative based on opportunities after Caltrans finishes
Alternatives	SF Bike Coalition	Page 1-1: EIR should analyze impact of reducing parking spaces to 3,000
Alternatives	SF Dept of Environment	Page 1-1: Less intensive development might not mean fewer impacts
Alternatives	SF Dept of Environment	Page 1-2: Less intensive development might result in less residential support for community transit, resulting in more auto trips

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Alternatives	SF Dept of Environment	Page 1-3: EIR should include minimum impact alternative
Alternatives	SF Dept of Environment	Page 1-4: Minimum-impact alternative should include less use of private cars
Alternatives	SF Dept of Environment	Page 1-5: Minimum-impact alternative should include higher energy-efficiency goals
Alternatives	SF Dept of Environment	Page 1-6: Minimum-impact alternative should include higher CO2 neutrality goals
Alternatives	SF Dept of Environment	Page 1-8: Alternatives analysis should include annual GHG emissions
Alternatives	SF Dept of Environment	Page 1-9: Alternatives analysis should include annual criteria pollutant emissions
Alternatives	SF Dept of Environment	Page 2-01: Minimum-impact alternative should include reduction in parking spaces
Alternatives	SF Dept of Environment	Page 2-02: Minimum-impact alternative should include lower VMT targets
Alternatives	SF Dept of Environment	Page 2-08: Minimum-impact alternative should include higher renewable-energy gener
Alternatives	SF Dept of Environment	Page 2-09: Minimum-impact alternative should include higher green building standards
Alternatives	SF Dept of Environment	Page 2-16: Minimum-impact alternative should include ecosystem-related bio-diversity
Alternatives	Sierra Club	Page 1-01: Wants alternatives that reduce impacts related to cars
Alternatives	Sierra Club	Page 1-03: EIR should analyze carbon emissions impact of all alternatives
Alternatives	Sierra Club	Page 1-04: Alternatives analysis should include comparison of all impacts, using compa example provided (Also pp 3-4)
Alternatives	Sierra Club	Page 2-03: EIR should include off-peak access fee alternative
Alternatives	Sierra Club	Page 2-04: Off-peak access fee alternative should include same features Sierra club su proposed project, plus off-peak access fees to provide \$\$ for alternative modes, plus roi from meters and garages to MTA for transit service
Alternatives	Sierra Club	Page 2-06: EIR should include reduced parking/no ferry alternative

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Alternatives	Sierra Club	Page 2-07: Reduced parking/no ferry alternative should include same features Sierra C proposed project and off-peak access alternative
Alternatives	Sierra Club	Page 2-08: Reduced parking/no ferry alternative should include reduced parking (sugge included)
Alternatives	Sierra Club	Page 2-09: Reduced parking/no ferry alternative should include only retail needed for r term visitors, w/retail uses only on ground and lower floors of residential buildings. Lim that 50% of workers are TI/YBI residents
Alternatives	Sierra Club	Page 2-10: Reduced parking/no ferry alternative should replace reduced retail and flex w/residences
Alternatives	Sierra Club	Page 2-11: Reduced parking/no ferry alternative should devote fee revenue to greater instead of ferry service
Alternatives	Sierra Club	Page 2-12: Reduced parking, less retail, more residential could result in fewer trips, les be divided among more people
Alternatives	Sierra Club	Page 3-1: Purpose of reduced parking/no ferry alternative is to show high energy use c
Alternatives	Sierra Club	Page 3-2: Purpose of reduced parking/no ferry alternative is to show how ferry subsidy used for transit, reducing trips?
Alternatives	Sierra Club	Page 3-3: Purpose of reduced parking/no ferry alternative is to explore alternative use:
Alternatives	Sierra Club	Page 3-4: Alternatives analysis should be based on estimated CO2 emissions per passe ferries, and cars, for assumed average trip length and load factor
Alternatives	Sierra Club	Page 3-5: Alternatives analysis should include total GHG produced per year for each opt
Alternatives	Sierra Club	Page 3-6: Alternatives analysis should include total daily passenger volumes from TI/YI and East Bay, for each mode
Alternatives	Sierra Club	Page 3-7: Alternatives analysis should include daily, discount, and monthly bus and fer
Alternatives	Sierra Club	Page 3-8: Alternatives analysis should include travel times at peak and off-peak for eac walking, waiting, boarding, riding, unboarding
Alternatives	Sierra Club	Page 3-9: EIR should include alternative with use of some or all of Job Corps site for re
AQ	Arc Ecology	Page 11-3: AQ study area should correspond to traffic study area
AQ	BAAQMD	Page 1-1: EIR should include attainment status and implications of non-compliance
AQ	BAAQMD	Page 1-2: EIR should include discussion of health effects of pollution on sensitive recep
AQ	BAAQMD	Page 1-3: EIR should discuss proposal by EPA to lower ozone standards
AQ	BAAQMD	Page 1-4: EIR analysis should be based on BAAQMD CEQA Guidelines

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
AQ	BAAQMD	Page 1-5: [list of what should be analyzed - std]
AQ	BAAQMD	Page 2-1: URBEMIS 2007, 9.2.4 should be used
AQ	BAAQMD	Page 2-2: EIR should include analysis of TACs on sensitive receptors
AQ	BAAQMD	Page 2-3: EIR should include quantitative analysis of construction exhaust emissions
AQ	BAAQMD	Page 2-4: Construction dust emissions should be consistent with BAAQMD Guidelines
AQ	BAAQMD	Page 2-5: EIR should include feasible construction exhaust mitigation (includes exampl
AQ	BAAQMD	Page 2-7: Mitigation for AQ and energy impacts should include minimum level of green
AQ	BAAQMD	Page 2-8: EIR should analyze GHG emissions, using CAPCOA report as guide
AQ	BAAQMD	Page 2-9: Mitigation for GHG should include all feasible measures, including VMT reduc
AQ	Coast Guard	Page 1-4: Additional traffic could cause AQ impacts of concern to USCG
AQ	SF Dept of Environment	Page 2-07: Minimum-impact alternative should include goal for carbon-neutral remedia
Biology	BCDC	Page 2-05: Bay Plan Map 4, Policy 19 is specifically for TI (mentions public access, boar
Biology	BCDC	Page 3-01: Bay Plan ferry policies: terminal location criteria
Biology	BCDC	Page 3-05: EIR should analyze impacts of increased transportation use (all modes) on
Biology	Gravanis, Ruth	Page 3-5: EIR should not assume that USCG would respond quickly to spills in Clipper C
Biology	Gravanis, Ruth	Page 3-6: Bio resources inventory should not rely on EIS data (mentions California quai
Biology	Gravanis, Ruth	Page 3-7: EIR could coordinate with Habitat Management Plan for YBI
Biology	SF Dept of Environment	Page 2-17: Minimum-impact alternative should include highest-rated Bay-friendly land
General	Arc Ecology	Page 02-2: Partial project buildout could have greater impacts than analyzed (also p. 4
General	Arc Ecology	Page 03-1: Funding uncertainties could lead to greater impacts than analyzed
General	Arc Ecology	Page 03-3: EIR should be MEIR, not project level
General	Arc Ecology	Page 08-4: EIR should analyze impacts prior to full buildout, assuming self-mitigating f
General	Arc Ecology	Page 10-2: Baseline should be NOP date, not base closure decision date
General	Bar-David, Ilana	Page 1-1: Live-work artisan colony should include pre-industrial crafts, would entice vis

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
General	Bar-David, Ilana	Page 1-2: live-work colony would complement green emphasis
General	Bar-David, Ilana	Page 1-4: Green biz ctr might attract employees who walk
General	Coast Guard	Page 1-5: YBI road network to BB EB on-ramps goes through USCG property - increase cause impacts
General	Gravanis, Ruth	Page 2-11: MSA would focus on deconstruction rather than demolition
General	Gravanis, Ruth	Page 3-3: Wants us to refer to "sewage" instead of "wastewater"
General	Gravanis, Ruth	Page 3-4: Mitigation measures must be implementable
General	SF Dept of Environment	Page 1-0: See general note
Hazards	Arc Ecology	Page 06-7: Concern that funding not available for long-term dredge disposal
Hazards	Coast Guard	Page 2-3: Project could affect USCG facility and residents/personnel security during cor operation
Hydro	BCDC	Page 3-01: Bay Plan ferry policies: terminal location criteria
Hydro	BCDC	Page 3-02: Ferry terminal should not rapidly fill with sediment, avoid frequent dredgir
Hydro	BCDC	Page 3-13: Bay Plan sea level rise policies: Structures at shoreline or on fill should be expected water level
Hydro	BCDC	Page 3-14: Bay Plan sea level rise policies: local governments should assure that new to existing or future flooding
Hydro	BCDC	Page 3-15: New fill for construction and geotechnical stabilization must be consistent w level rise policies
Hydro	Gravanis, Ruth	Page 2-1: Maximum Sustainability Alternative would assume that all sewage is treated
Hydro	Gravanis, Ruth	Page 2-2: Maximum Sustainability Alternative would treat storms larger than 5-year de additional LID measures
Hydro	SF Dept of Environment	Page 1-7: Minimum-impact alternative should include higher WQ goals
Hydro	SF Dept of Environment	Page 2-10: Minimum-impact alternative should include higher WQ storage, treatment, c
Hydro	SF Dept of Environment	Page 2-13: Minimum-impact alternative should include accommodation of flows greater
Land Use	ABAG	Page 1-1: EIR should discuss ABAG Trail Plan and policies as they relate to the propose

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Land Use	BCDC	Page 1-1: BCDC has Bay and shoreline jurisdiction in project area
Land Use	BCDC	Page 1-3: SF Bay Plan Map Policies relevant to YBI, TI
Land Use	BCDC	Page 1-4: BCDC will review proposed fill placement against stated criteria
Land Use	BCDC	Page 2-02: Public access improvements should include maintenance program and signage
Land Use	BCDC	Page 2-07: EIR should analyze whether project is consistent w/max feasible public access policies, Map policies
Land Use	BCDC	Page 2-09: Bay Plan marina policies: facilities for which fill permitted if minimum and i
Land Use	BCDC	Page 2-11: Plan Map 4, Policies 20 and 21 should be included in project design
Land Use	BCDC	Page 3-04: Public transport, bike systems would be consistent if developed in accordan policies
Land Use	Coast Guard	Page 2-2: Project could affect USCG parking near Hilltop Park at YBI
Land Use	State Lands	Trust 1: Provides description of legislation transferring trust properties to TIDA, includin and submerged lands, limitations on use, and exceptions to those limitations. (pp. 1-2)
Land Use	State Lands	Trust 2: Land exchange parameters summarized (p.2)
Noise	Coast Guard	Page 1-3: Additional traffic could cause noise impacts of concern to USCG
Other	Arc Ecology	Page 04-2: Wanted IS to be prepared
Other	Arc Ecology	Page 10-5: Transportation scoping should be publicly reviewed
Proj Desc	ABAG	Page 1-2: EIR should provide detail on trail connections to BB East Span
Proj Desc	ABAG	Page 1-3: Proposed trail design should consider likely user population (tourists, familie: skaters)
Proj Desc	Arc Ecology	Page 04-1: Bridge ramps should be part of project (also later on p. 4, and p. 7)
Proj Desc	Arc Ecology	Page 05-1: Which features of Development Plan are part of the project?
Proj Desc	Arc Ecology	Page 05-4: Concern that affordable housing commitment could be less than 30% (with
Proj Desc	Arc Ecology	Page 08-2: Project should not begin before WWTP is fully funded
Proj Desc	Arc Ecology	Page 08-5: Some required approvals omitted
Proj Desc	Arc Ecology	Page 08-6: Approvals needed for early transfer
Proj Desc	Bar-David, Ilana	Page 1-3: Suggested design of artisan colony
Proj Desc	BCDC	Page 2-04: Public access improvements should be permanently guaranteed
Proj Desc	BCDC	Page 3-08: EIR should analyze whether new transportation facilities would require Bay

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Proj Desc	Caltrans	Page 1-4: Encroachment permit cannot be issued until Caltrans concerns addressed
Proj Desc	Caltrans	Page 4-1: Project needs to cover costs related to placement of water pipe on BB East S
Proj Desc	Caltrans	Page 4-2: Project needs to include connection to water pipe termination points
Proj Desc	Caltrans	Page 5-1: Would project not use new wastewater line on BB East Span?
Proj Desc	Caltrans	Page 5-2: Would project not use new reclaimed water line on BB East Span?
Proj Desc	EBMUD	Page 1-2: EBMUD service must continue to be used only in case of emergency
Proj Desc	EBMUD	Page 1-3: Minimum flows in pipe to maintain WQ are ok
Proj Desc	EBMUD	Page 1-4: EBMUD will not grant connection and meter in Oakland
Proj Desc	SF Bike Coalition	Page 1-2: EIR should analyze impact of including bike path on BB West Span as part of
Proj Desc	Sierra Club	Page 1-02: Wants variants that reduce impacts related to cars
Proj Desc	Sierra Club	Page 1-06: Buses should be given absolute priority on YBI, TI roads
Proj Desc	Sierra Club	Page 1-10: Bridge access fees should fund West span bikeway
Proj Desc	Sierra Club	Page 2-02: Specified rates at meters on project area streets
Recreation	BCDC	Page 1-2: Bay Plan designates YBI as waterfront park priority use area
Recreation	BCDC	Page 1-5: Project must provide max feasible public access to gain BCDC approval
Recreation	BCDC	Page 2-01: Public access improvements should encourage Bay-related activities and m shoreline
Recreation	BCDC	Page 2-03: Public access improvements should include connection to parking or transit, trails, and access for disabled
Recreation	BCDC	Page 2-05: Bay Plan Map 4, Policy 19 is specifically for TI (mentions public access, boar wildlife)
Recreation	BCDC	Page 2-06: Bay Plan Map 4, Policy 22 is specifically for YBI (public access and recreatic
Recreation	BCDC	Page 2-07: EIR should analyze whether project is consistent w/max feasible public acce policies, Map policies
Recreation	BCDC	Page 2-08: Bay Plan Recreation policies: close to population, clustered for joint use
Recreation	BCDC	Page 2-10: EIR should analyze project impacts on recreation, esp. public access to sho within shoreline band on TI, and impacts to public marina and boat launching facilities fi intensity of use
Recreation	BCDC	Page 2-13: Bay Plan transportation policies: projects should enhance physical/visual a
Recreation	BCDC	Page 3-03: Bay Plan ferry policies: terminal parking location criteria (for public access,

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Recreation	BCDC	Page 3-06: EIR should analyze impacts of increased transportation uses (all modes) on shoreline
Recreation	BCDC	Page 3-07: EIR should analyze impacts of increased transportation uses (all modes) on shoreline
Transportation	Arc Ecology	Page 03-2: Traffic study area should include all roads affected by Bay Bridge traffic
Transportation	Arc Ecology	Page 05-2: Traffic analysis should be based on committed transit improvements
Transportation	Arc Ecology	Page 05-3: Trip generation should reflect higher trip rates from SF units
Transportation	Arc Ecology	Page 06-1: Economic inefficiency of operating a school on an island w/3,800 dwelling u questions as to whether there will be a school (with implications for traffic)
Transportation	Arc Ecology	Page 06-2: Concern that school might not be built (leading to traffic impacts)
Transportation	Arc Ecology	Page 06-3: Concern that commitment to community programs not real (leading to traffi
Transportation	Arc Ecology	Page 06-4: EIR should analyze street hierarchy and potential excess road capacity
Transportation	Arc Ecology	Page 06-5: EIR should analyze walking time for YBI housing
Transportation	Arc Ecology	Page 06-6: EIR should include measures for safe walking and bike connections on YBI
Transportation	Arc Ecology	Page 07-1: Mode split should be based on committed transit improvements
Transportation	Arc Ecology	Page 07-2: EIR should analyze whether proposed parking exceeds demand (and thus le
Transportation	Arc Ecology	Page 08-1: Replacement for congestion pricing should be identified
Transportation	Arc Ecology	Page 10-3: Traffic analysis should be based on committed transit improvements
Transportation	Arc Ecology	Page 10-4: Traffic mitigation should emphasize parking supply
Transportation	Arc Ecology	Page 10-6: Weekend traffic should be analyzed
Transportation	Arc Ecology	Page 10-7: Trip shift to off-peak hours should be analyzed, considering off-peak bridge
Transportation	Arc Ecology	Page 11-1: Cumulative analysis should include congestion on roads feeding the Bay Bri
Transportation	Arc Ecology	Page 11-2: Traffic analysis should include truck impacts
Transportation	Arc Ecology	Page 11-4: Ambulances need dedicated access to Bay Bridge
Transportation	Arc Ecology	Page 11-5: Cumulative analysis should include all projects affecting Bay Bridge feeder
Transportation	BCDC	Page 2-12: Bay Plan transportation policies: projects should include trails that connect other trails
Transportation	Caltrans	Page 1-1: Planning Department responsible for mitigation of impacts to state highways fair share, financing, scheduling, and implementation
Transportation	Caltrans	Page 1-2: Mitigation details shall be discussed for all measures
Transportation	Caltrans	Page 1-3: Any required improvements to be completed before occupancy

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Transportation	Caltrans	Page 2-1: [comments on EIR transportation scope - not repeated here] (pp. 2-4)
Transportation	Caltrans	Page 3-1: EIR should coordinate traffic study with DPH walkable-bikeable TI study
Transportation	Caltrans	Page 3-2: Wants transit, ped, bike trips to be modeled and multimodal LOS used in analysis
Transportation	Caltrans	Page 3-3: Impacts of mitigation measures on peds and cyclists should be discussed
Transportation	Caltrans	Page 3-4: Mitigation for ped/cyclist conditions resulting from traffic improvements should be discussed
Transportation	Caltrans	Page 3-5: Ramps PSR does not include scope, cost, schedule
Transportation	Caltrans	Page 3-6: Study area should include ramps, BB toll plaza, SF freeways
Transportation	Coast Guard	Page 1-2: Increased traffic and modified traffic patterns during construction and operation could impact USCG ability to access its facilities
Transportation	Coast Guard	Page 1-6: Project could alter public transit service to islands during construction and operation
Transportation	Coast Guard	Page 2-1: USCG wants sponsor to consider leasing parking on TI to CG as part of project
Transportation	Gravanis, Ruth	Page 1-4b: MSA could have measures to increase car independence such as takehome measures to reduce car ownership, residential marketing geared toward car-free residents
Transportation	Gravanis, Ruth	Page 2-7: MSA would include programs to keep residents and employees on the island; encourage use of public transit
Transportation	Gravanis, Ruth	Page 2-8: MSA would include ample carsharing pods
Transportation	Gravanis, Ruth	Page 2-9: MSA would include fees for auto use all day
Transportation	SF Bike Coalition	Page 1-3: EIR should consider design TICD design strategies for bike/ped connections to and from the island
Transportation	SF Bike Coalition	Page 1-4: EIR should analyze BB bike shuttle and its impacts
Transportation	SF Bike Coalition	Page 1-5: EIR should analyze impact of limiting cars on neighborhood streets
Transportation	SF Bike Coalition	Page 1-6: EIR should analyze different types of bike facilities on neighborhood and arterial streets
Transportation	SF Bike Coalition	Page 2-1: EIR should analyze impacts of traffic calming features
Transportation	SF Bike Coalition	Page 2-2: EIR should analyze "robust" bike parking program
Transportation	SF Bike Coalition	Page 2-3: EIR should analyze impact of bike-sharing program
Transportation	SF Bike Coalition	Page 2-4: EIR should analyze separate bike and ped pathways around central terminal
Transportation	SF Dept of Environment	Page 2-03: Minimum-impact alternative should include additional incentives for minimizing car use
Transportation	SF Dept of Environment	Page 2-04: Minimum-impact alternative should include lockers at transit hub

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Transportation	SF Dept of Environment	Page 2-05: Minimum-impact alternative should include weather-protected spaces for bi
Transportation	SF Dept of Environment	Page 2-06: Minimum-impact alternative should include bus service that minimizes tran:
Transportation	Sierra Club	Page 1-05: Impacts analysis should be based on same transit fares as on the SF mainla
Transportation	Sierra Club	Page 1-07: Buses should have priority to access the Bay Bridge
Transportation	Sierra Club	Page 1-08: Basic ferry fares should be 2x Muni adult fare
Transportation	Sierra Club	Page 1-09: Project should include peak-hour access fees to limit bridge congestion
Transportation	Sierra Club	Page 2-01: Garage parking fees should be at least what is charged in City CBD
Transportation	Sierra Club	Page 2-05: Off-peak access fee alternative may need to include fees from SF to TI and
Transportation	State Lands	Trust 3: "Competitive transportation management plan" must not discriminate among T
Utilities	Arc Ecology	Page 08-3: Design of WWTP should account for potential Job Corps expansion
Utilities	BAAQMD	Page 2-6: EIR should include estimate of increased project and cumulative energy use,
Utilities	Coast Guard	Page 1-1: Concern that installation of electric substations, replacement of telecommuni
Utilities	EBMUD	Page 1-1: Emergency water from EBMUD should not exceed capacities planned for TI/Y
Utilities	SF Dept of Environment	Page 2-11: Minimum-impact alternative should include maximum use of recycled water
Utilities	SF Dept of Environment	Page 2-12: Minimum-impact alternative should include minimum use of domestic water
Utilities	SF Dept of Environment	Page 2-14: Minimum-impact alternative should include graywater systems in residence
Utilities	SF Dept of Environment	Page 2-15: Minimum-impact alternative should include climate-appropriate landscaping
Visual	BCDC	Page 2-13: Bay Plan transportation policies: projects should enhance physical/visual a

Table 2: Treasure Island / Yerba Buena Island Redevelopment Plan EIR NOP Comments Summary

Public Comment Period January 26, 2008 to February 26, 2008

Written Comments

Topic	Commenter	Comment
Visual	BCDC	Page 3-09: Bay Plan visual policies: bayfront development should enhance bay user/vi
Visual	BCDC	Page 3-10: Bay Plan visual policies: views of Bay shall be maintained, enhanced, or pr
Visual	BCDC	Page 3-11: Bay Plan visual policies: shoreline development should be clustered
Visual	BCDC	Page 3-12: Project should be consistent with Bay Plan policies on Design and Scenic Vi

APPENDIX A

NOP



SAN FRANCISCO PLANNING DEPARTMENT

January 26, 2008

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

**RE: CASE NO. 2007.0903E – TREASURE ISLAND AND YERBA BUENA ISLAND
REDEVELOPMENT PLAN NOTICE OF PREPARATION OF AN ENVIRONMENTAL
IMPACT REPORT AND NOTICE OF PUBLIC SCOPING MEETINGS**

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

To Responsible Agencies, Trustee Agencies, and Interested Parties:

The San Francisco Planning Department has issued a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and a Notice of Public Scoping Meetings for the above-referenced project, described below. The detailed NOP/Notice of Public Scoping Meetings is either attached or is available upon request from Rick Cooper, San Francisco Planning Department, at the above address or at (415) 575-9027. The NOP/Notice of Public Scoping Meetings is also available on-line at www.sfgov.org/site/planning/mea.

Project Description: Treasure Island and Yerba Buena Island (collectively, “the Islands”) are in San Francisco Bay, about halfway between the San Francisco mainland and Oakland. The Islands are the site of the former Naval Station Treasure Island (“NSTI”), which was owned by the United States Navy. NSTI was closed on September 20, 1997 as part of the Base Realignment and Closure III program. The Islands also include a U.S. Coast Guard Station and land occupied by the San Francisco-Oakland Bay Bridge and tunnel structures.

The proposed *Treasure Island and Yerba Buena Island Redevelopment Plan* (“Redevelopment Plan”) would provide the basis for redevelopment of most of the NSTI lands (the “Redevelopment Plan Area” or “project site”) from a primarily low-density residential area with vacant and underutilized nonresidential structures to a new mixed-use community with a retail center, a variety of open space and recreation opportunities, on-site infrastructure, and public and community services. The proposed Redevelopment Plan and other planning documents would establish general land use controls and design standards for the project site. The Redevelopment Plan includes supporting studies that address project design concepts, transportation, infrastructure, community services, affordable housing, jobs, and other aspects of the development. A major component of the proposed Redevelopment Plan is the Sustainability Plan, which includes goals, strategies, and targets for the sustainable redevelopment of the Islands. The proposed Redevelopment Plan would consist of approximately 6,000 residential units, 235,000 square feet of commercial and retail space, 400 to 500 hotel rooms, 300 acres of parks and open space, transportation, bicycle and pedestrian facilities, a ferry terminal/transit hub, public and community services, and utilities. Other components of the proposed redevelopment include supplemental remediation to allow the proposed uses, geotechnical stabilization, and renovation and adaptive re-use of existing historic structures. The Redevelopment Plan would be implemented in four phases from approximately 2009 through 2018.

As stated in the NOP, the Planning Department has determined that an EIR must be prepared for the proposed project prior to any final decision regarding whether to approve the project. The purpose of the EIR is to provide information about potential physical environmental effects of the proposed project, to identify ways to minimize significant effects, and to describe and analyze alternatives to the proposed project. Preparation of an NOP or EIR does not indicate a decision by the City to approve or to disapprove the project. However, prior to making any decision, the decision makers must consider the information contained in the EIR.

The Planning Department will hold two **PUBLIC SCOPING MEETINGS** on the EIR. The first will be held on Monday, February 11, 2008, at the Bayside Conference Room, Port of San Francisco, Pier 1, The Embarcadero, San Francisco, CA 94111 from 6:00 to 8:00 pm, and the second on Wednesday, February 13, 2008, at the Ship Shape Building, Building 497, Avenue M and 11th Avenue, Treasure Island, San Francisco, CA 94130 from 6:00 to 8:00 pm. Written comments will be accepted until the close of business (5 PM), February 26, 2008 and should be sent to Bill Wycko, Acting Environmental Review Officer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103-2479.

Should you have questions concerning the environmental review of the proposed project, please contact **Rick Cooper** at the number above. If you work for an agency that is a Responsible or a Trustee Agency, we need to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities. We will also need the name of the contact person for your agency.



SAN FRANCISCO PLANNING DEPARTMENT

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND NOTICE OF PUBLIC SCOPING MEETINGS

Date of this Notice:	January 26, 2008		
Lead Agency:	San Francisco Planning Department 1650 Mission Street, Suite 400, San Francisco, CA 94103-2479		
Agency Contact Person:	Rick Cooper	Telephone: (415) 575-9027	
Project Title:	2007.0903E – Treasure Island and Yerba Buena Island Redevelopment Plan		
Project Sponsor:	Treasure Island Community Development, LLC (TICD) and Treasure Island Development Authority (TIDA)		
Contact Person:	Alexandra Galovich (TICD)	Telephone: (415) 995-4813	
	Jack Sylvan (TIDA)	Telephone: (415) 554-5313	
Project Address:	Treasure Island and Yerba Buena Island		
Assessor’s Block and Lot:	Assessor’s Block 1939, Lots 001 (Treasure Island) and 002 (Yerba Buena Island)		
City and County:	San Francisco		
Project Description:	See attached		

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT. AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance).

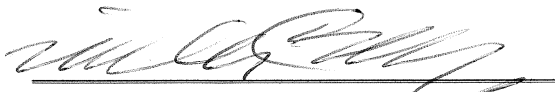
TWO PUBLIC SCOPING MEETINGS will be held pursuant to the State of California Public Resources Code Section 21083.9 and California Environmental Quality Act Guidelines Section 15206 to receive comments concerning the scope of the EIR. The meetings will be held on February, 11, 2008, and February 13, 2008. Please see the attached for more information.

Written comments on the scope of the EIR will be accepted until the close of business (5 PM) on February 26, 2008. Written comments should be sent to Bill Wycko, Acting Environmental Review Officer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103-2479.

Documents relating to the proposed project are available for review, by appointment, at the Planning Department's Major Environmental Analysis office, 1650 Mission Street, Suite 400. Please call Rick Cooper at (415) 575-9027.

State Agencies: We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency. Thank you.

January 25, 2008
Date


Bill Wycko, Acting Environmental Review Officer

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

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

TREASURE ISLAND AND YERBA BUENA ISLAND REDEVELOPMENT PLAN CASE NO. 2007.0903E

INTRODUCTION

The San Francisco Planning Department will prepare an environmental impact report (EIR) pursuant to the California Environmental Quality Act (CEQA) to evaluate the physical environmental effects of the proposed Treasure Island and Yerba Buena Island Redevelopment Plan (“Redevelopment Plan” or “the Plan”) and public and private projects and activities that would be implemented pursuant to the Plan (“Development Program”). The Redevelopment Plan and associated Development Program together are the “Proposed Project.”

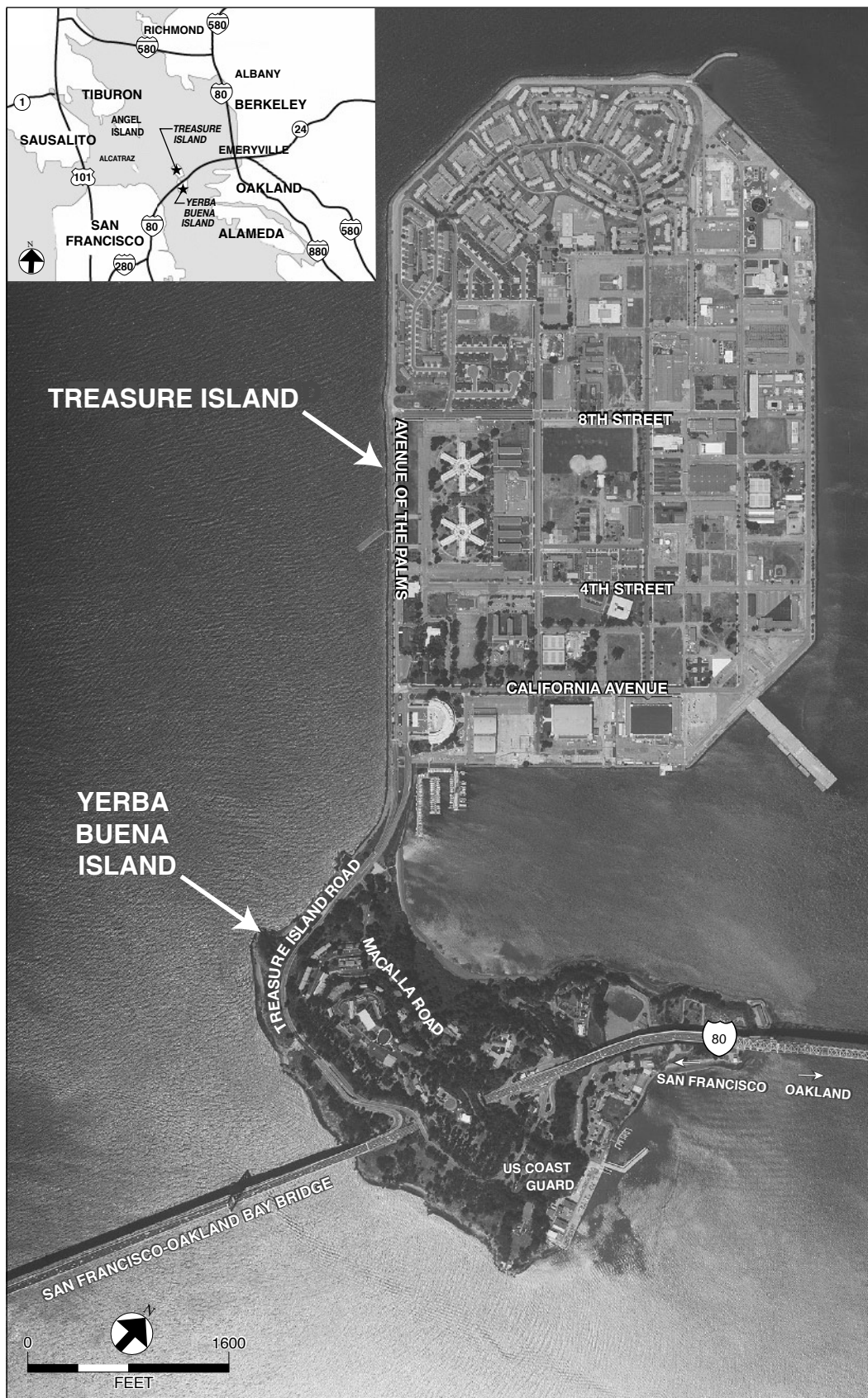
This notice provides a summary of the Proposed Project, identifies environmental topics and issues anticipated to be analyzed in the EIR, and provides the time, date, and location of the public scoping meetings. The EIR will be a project-level EIR on the Redevelopment Plan and the Development Program. The Treasure Island Development Authority (“TIDA”), a single-purpose public agency responsible for the Redevelopment Plan Area, and Treasure Island Community Development, LLC (“TICD”), a private entity chosen as the master developer, are joint sponsors of the Proposed Project.

An Initial Study will not be prepared as part of the environmental review process for the Proposed Project; instead all topics will be addressed in the EIR. Pursuant to CEQA Guidelines Section 15060(d) the San Francisco Planning Department has determined that an Initial Study is not necessary. In the absence of an Initial Study, the EIR will still focus on the significant impacts of the Proposed Project and explain more briefly why other issues would not be significant.

PROJECT LOCATION

Redevelopment Plan Area

The proposed Redevelopment Plan Area includes all of Treasure Island and Yerba Buena Island (collectively, “the Islands”) in San Francisco Bay. (See Figure 1: Regional Location.) The Islands are the site of the former Naval Station Treasure Island (NSTI), which was owned and operated by the United States Navy until its closure in 1997 as part of the Base Realignment and Closure process. The proposed Redevelopment Plan Area encompasses approximately 400 acres of land on Treasure Island, approximately 150 acres of land on Yerba Buena Island and about 550 acres of tidal and submerged lands adjacent to the Islands. The Navy is in the process of conveying most of these areas to TIDA, which currently manages a variety of interim residential, industrial, institutional and recreational land uses. The Redevelopment Plan Area includes Lots 001 and 002 within Assessor’s Block 1939.



SOURCE: Turnstone Consulting

TREASURE ISLAND
2007.0903E

FIGURE 1: PROJECT LOCATION

Treasure Island, which consists entirely of filled land, was constructed during 1936 – 1939; the U.S. Navy took possession of Treasure Island from the City of San Francisco in 1941. Treasure Island currently includes approximately 720 occupiable housing units out of about 900 units total, and approximately 91 buildings containing approximately 2.3 million square feet of present and former non-residential uses. Treasure Island also includes the U.S. Department of Labor Job Corps site on approximately 36 acres in the center of the island. Yerba Buena Island is a natural island that has been used by private parties and the U.S. Army and Navy since the 1840s; the island is steeply sloped and highly vegetated. Within the Redevelopment Plan Area on Yerba Buena Island, there are currently about 80 occupiable housing units out of a total of about 100 housing units and 10 non-residential buildings. The U.S. Coast Guard occupies about 35 acres on the southeast side of Yerba Buena Island, and the California Department of Transportation (“Caltrans”) occupies about 20 acres of Yerba Buena Island with portions of the San Francisco-Oakland Bay Bridge and tunnel.

The entire Redevelopment Plan Area is currently within a P (Public) Use District and a 40-X height and bulk district. In addition, the California Tidelands Trust Doctrine (“Tidelands Trust”) will apply to all portions of Treasure Island to be conveyed to TIDA by the Navy, as well as approximately 2 acres of land on Yerba Buena Island, and all of the tidal and submerged lands to be conveyed to TIDA within the Redevelopment Plan Area.¹ The Job Corps, Coast Guard, and Caltrans properties will not be part of the area controlled by TIDA.

Adjacent and Nearby Uses

Land uses on the Islands that are within the Redevelopment Plan Area but are expected to remain unchanged include the Job Corps educational and training program on Treasure Island; the U.S. Coast Guard Station on Yerba Buena Island; and the San Francisco-Oakland Bay Bridge (“Bay Bridge”) and tunnel structures on Yerba Buena Island. Caltrans is building a new east span of the Bay Bridge, connecting to Yerba Buena Island; completion is expected by 2013.²

The Islands are surrounded by San Francisco Bay waters; the San Francisco mainland is about 2 miles to the west and Oakland is about 2 miles to the east. Uses along and adjacent to the San Francisco waterfront include the Ferry Building, The Embarcadero Promenade, pier bulkhead

¹ The Tidelands Trust limits the types of uses that can be developed on those properties. Under the 1997 Treasure Island Conversion Act (Cal. Health & Safety Code §33492.5), existing uses on Treasure Island that are inconsistent with the Tidelands Trust, such as the existing residential buildings, are permitted to continue for their remaining useful life, defined as no less than 25 years or no more than 40 years from the date of the Act. Later, the Treasure Island Public Trust Exchange Act, as amended, authorized a public trust exchange that would lift the Tidelands Trust restrictions on those areas designated in the proposed Redevelopment Plan for residential and other non-trust uses and transfer the Tidelands Trust to certain portions of Yerba Buena Island that are not currently subject to it.

² The San Francisco-Oakland Bay Bridge Seismic Safety Project web site, <http://baybridge.pantherinternational.com/Display.aspx?ID=8>, accessed December 17, 2007.

buildings and sheds, and the San Francisco downtown financial district. Nearby uses to the east include Port of Oakland container terminal shipping facilities; the former Oakland Army Base, the MacArthur Maze junction of Interstate-80, I-580, and I-880; the joint Union Pacific Intermodal Terminal; the Oakland Naval Supply Center; and downtown high-rise buildings in Oakland. Also to the east are high-rise office and residential buildings, a marina, and regional shopping centers in Emeryville. The former Alameda Naval Air Station on the north end of Alameda Island is southeast of Yerba Buena Island.

Access and Transit

Access to the Redevelopment Plan Area is provided via the Bay Bridge ramps at Yerba Buena Island; a causeway links Yerba Buena Island to Treasure Island. One of the existing ramps is currently being rebuilt as part of the Bay Bridge eastern span replacement project. Improvement and/or replacement of the other ramps is currently under study by the San Francisco County Transportation Authority and the California Department of Transportation (“Caltrans”); improvement or replacement of these ramps, if undertaken, would be a separate project from both the Bay Bridge eastern span currently under construction and the Proposed Project. Impact analysis in the EIR on the Proposed Project will take into account conditions resulting from both the existing ramps and the potential improved or replaced ramps.

The Islands are served directly by San Francisco Municipal Railway (Muni) Line 108, which runs between the Islands and the Transbay Terminal in San Francisco. Currently, there is no direct transit service between the Islands and the East Bay, and no public ferry service to either Island.

PROJECT DESCRIPTION

The overall purpose of the Proposed Project is the conversion of approximately 364 acres on Treasure Island and approximately 95 acres on Yerba Buena Island from a former military base to a dense mixed-use development of residential, commercial, cultural, hotel, and retail uses centered around an Intermodal Transit Hub, with supporting infrastructure, public services and utilities, and a substantial amount of open space.

The basis for the Development Program underlying the Redevelopment Plan is the *Development Plan and Term Sheet for the Redevelopment of Naval Station Treasure Island* endorsed by the San Francisco Board of Supervisors in December 2006, which includes a draft Design Concepts and Strategies Plan, draft Transportation Plan, draft Sustainability Plan and draft Infrastructure Plan, among its many exhibits. Development Program activities carried out pursuant to the Redevelopment Plan would include, among other things, implementation of (1) the final Design Concepts and Strategies Plan and related agreements that address land use, urban form and open space; (2) the final Transportation Plan and related agreements that address measures and strategies related to transit service, parking supply and management, and transportation demand management; (3) the final Sustainability Plan and related agreements that address goals,

principles, strategies and actions to achieve a highly sustainable development; and (4) the final Infrastructure Plan and related agreements that address the infrastructure needs for development of the Islands. The Proposed Project would be implemented through a Disposition and Development Agreement (“DDA”) between TIDA and TICD. Additional aspects of the Proposed Project would be implemented by TIDA either directly or through agreements between TIDA and other entities.

Conceptual Land Use Plan

The Proposed Project includes:

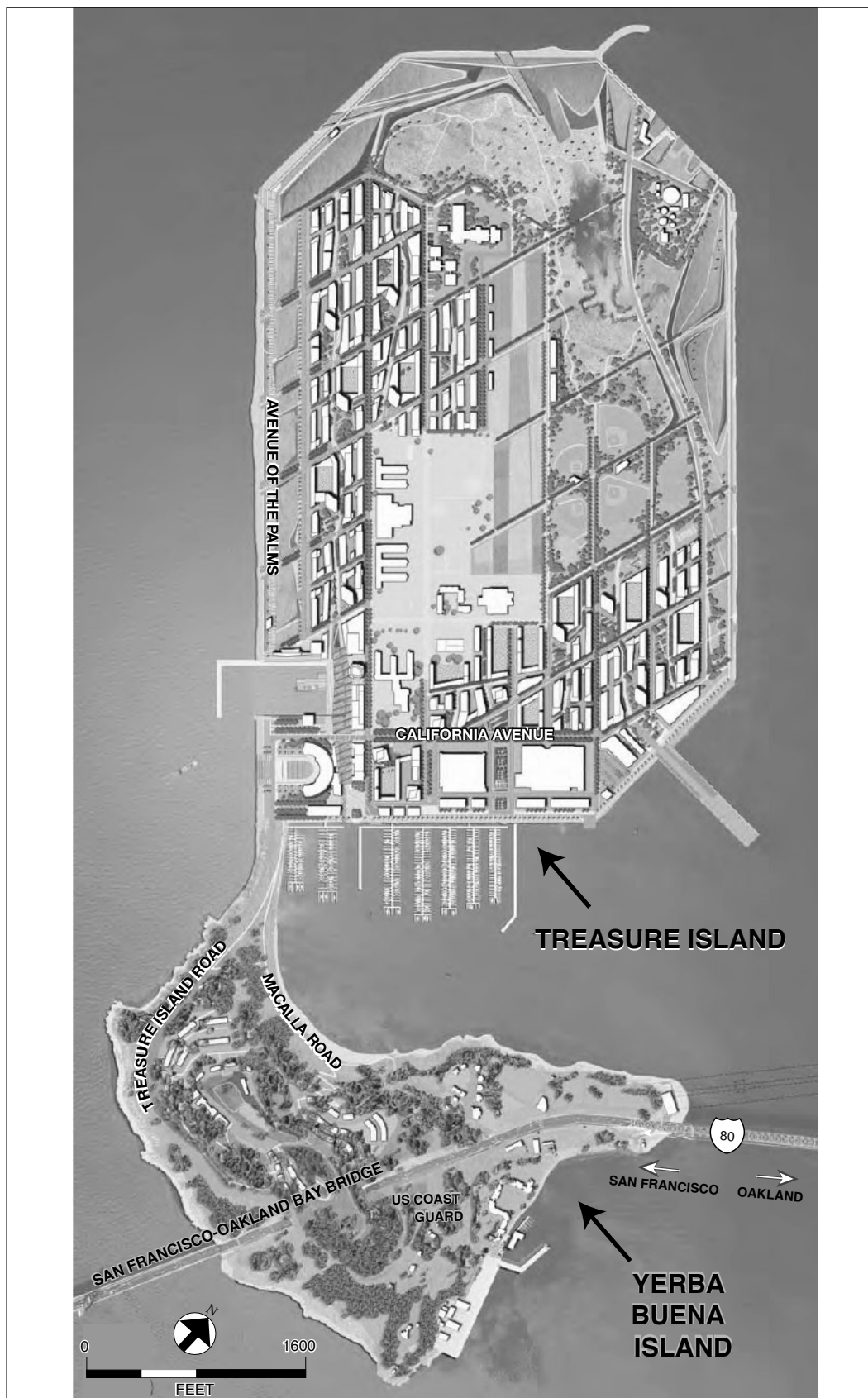
- Stabilization of Treasure Island and the causeway connecting it to Yerba Buena Island;
- Up to approximately 6,000 residential units;
- Up to approximately 270,000 square feet (sq. ft.) of new commercial and retail space;
- Adaptive reuse of Buildings 1, 2, and 3 with up to 325,000 sq. ft. of commercial space;
- Approximately 500 hotel rooms;
- New and/or upgraded public services and utilities;
- Approximately 300 acres of parks and public open space;
- Bicycle, transit, and pedestrian facilities; and
- An Intermodal Ferry Quay/Transit Hub.

The proposed land uses are shown in Figure 2, Conceptual Land Use Plan.

Land Uses

Residential

The Development Program would include up to approximately 6,000 residential units, including approximately 5,700 to 5,850 units on Treasure Island and approximately 150 to 300 units on Yerba Buena Island. Approximately 50 percent of all housing units would be in low-rise buildings (building height 65 feet and lower), 35 percent would be in mid-rise buildings (building height above 65 feet and less than 240 feet), and 15 percent in high-rise buildings (building height greater than 240 feet). The tallest buildings would be located near a densely developed southwest corner of Treasure Island in the “Urban Core” neighborhood, near the proposed Ferry Quay and transit hub. The proposed residences would include housing sized for families. Approximately thirty percent of all units would be affordably priced at a range of below-market rates, including an expansion from 250 to 435 residential units for the existing Treasure Island Homeless Development Initiative (TIHDI) program.



SOURCE: SMWM, Turnstone Consulting

TREASURE ISLAND

FIGURE 2: PROPOSED DEVELOPMENT PLAN

Open Space and Recreation

The Development Program would include approximately 300 acres of publicly accessible pathways, parks, open space, plazas, and shoreline improvements. The recreational and open space uses would include perimeter shoreline and water access, a stormwater treatment wetland, a Great Park covering much of the northeast portion of Treasure Island, a regional recreational facility, and a variety of active and passive recreational areas.

Commercial

The Development Program commercial component would include: approximately 500 hotel rooms; approximately 325,000 sq. ft. of commercial uses in the renovated historic Buildings 1, 2, and 3; retail uses concentrated and organized as a main street between the Ferry Quay/Transit Hub, the Clipper Cove plaza, and historic Buildings 1 and 2; ancillary retail uses along the Clipper Cove marina and in the residential neighborhoods. The total amount of retail space provided in the Development Program's commercial component would not exceed 270,000 sq. ft.

Institutional and Public Services

The Development Program would provide space for a variety of community programs in Building 1, in some of the proposed residential buildings, and possibly in a stand-alone community center. Space for child care also would be provided. The existing, closed public grammar school on Treasure Island would be improved and reopened for use by the San Francisco Unified School District. The existing wastewater treatment plant would be replaced (as discussed below under "Proposed Utilities"). A recycling program would be established and a recycling center/corporation yard would be provided. A joint police/fire station would be provided. The existing Job Corps facility would remain in use in its current location on Treasure Island, under the jurisdiction of the Department of Labor. Similarly, the U.S. Coast Guard facility on Yerba Buena Island would remain in its current location.

Proposed Transportation Plan

Proposed Street System

The roadway system would consist of three levels of public roadways: arterial streets, collector streets, and neighborhood streets. The streets on Treasure Island would be new construction, and the street grid would be re-oriented to maximize the effects of sun and minimize the effects of wind. The street layout on Yerba Buena Island would generally follow the locations of the existing streets. Streets would be designed to prioritize walking, bicycling, and use of the intra-

island shuttle service. All of the proposed residential units on Treasure Island would be within a 15-minute walk of the proposed Intermodal Transit Hub.³

Transit Facilities and Service

The proposed Transportation Plan⁴ relies on the use of alternative transit modes (buses and ferries) for off-Island trips and shuttle/pedestrian/bike facilities for on-Island travel. The Development Program would include the construction of a new ferry quay and terminal and a bus transit facility on the western shore of Treasure Island. These two uses would anchor the proposed Intermodal Transit Hub, which would provide transportation facilities, services, and information. Proposed funding for ferry vessels would provide the opportunity for an operator to initiate ferry service to the Islands between San Francisco and Treasure Island, and the proposed bus transit facility would provide stops for Muni service to San Francisco and East Bay transit service. In addition, the Development Program would include a free shuttle service around the Islands.

Walking and Biking

Shared-use paths would be provided in open space areas, and the busiest roadways would incorporate shareable-width outside lanes or bicycle lanes as appropriate for the traffic volumes and street function. The Islands' walkways and bicycle route network would connect to the planned shared-use path on the Bay Bridge east span and to the recreational paths around the Islands, and would be designed to allow for possible future connections to other pedestrian and bicycle paths. Bike parking would be available at all major destinations, and a bicycle library program would make bikes available for all Island and transit users.

Bay Bridge Access

Automobile access to the Redevelopment Plan Area is only available via the San Francisco-Oakland Bay Bridge ramps at Yerba Buena Island. The Development Program's design is based on the capacity of the existing ramps; accordingly, the Development Program assumes that the ramps would remain unchanged.

The City and Caltrans are separately studying the replacement or improvement of the ramps that connect the Islands to the Bay Bridge in order to improve traffic flow safety. Senate Bill 163 (Migden) chaptered October 13, 2007, requires the California Department of Transportation to work with TIDA on design and engineering of replacement ramps connecting Yerba Buena Island to the Bay Bridge. A Project Study Report was executed by Caltrans on December 19, 2007,

³ Treasure Island Community Development, LLC, *A Sustainable Future for Treasure Island*, October 2006, p. 13.

⁴ The Transportation Plan was prepared as part of the *Development Plan and Term Sheet for the Redevelopment of Naval Station Treasure Island* in 2006.

designating the San Francisco County Transportation Authority as the lead agency for this undertaking. Because the ramp improvements have not yet been approved and funded, the EIR on the Proposed Project will discuss the impacts of the Proposed Project with the existing ramps, and will consider new or improved ramps as part of the future cumulative conditions. Should funding be identified to replace or improve the existing ramps, Caltrans and the City would conduct a separate environment analysis of the selected design(s).

Parking

The Development Program includes the provision of approximately 8,250 parking spaces, all of which would incur a charge for use, on the Islands, of which approximately 6,000 spaces would be for the residential uses. Retail and hotel parking spaces would generally be located in off-street parking garages. Parking spaces would be provided for the other proposed uses through both on- and off-street parking. Visitors to these uses would pay for parking, and the revenues would be used in combination with revenues from transit passes and a congestion pricing program to offset the operating costs associated with the transportation program, such as the off-island transit service, the on-island shuttle service, and the “bicycle library” serving the Islands.

Encouraging Use of Transit and Discouraging Automobile Use

Automobile use would be discouraged through parking pricing, parking management, and congestion pricing as part of a comprehensive transportation management plan designed to discourage driving and promote alternative mode use. The mechanisms proposed include: transportation demand management (TDM) measures to support the use of transit, carpooling, walking and bicycling; trip reduction measures; the mandatory purchase of a comprehensive transit pass; parking pricing policy that all auto users incur a parking charge; implementation of a congestion pricing program; and ramp metering on the access ramps to the Bay Bridge. The congestion pricing program would allow for imposition of fees applicable to residents and other users of Treasure Island who drive on and/or off Treasure Island. The congestion pricing fees could be set and adjusted to reflect traffic patterns, congestion levels, time of day, and other conditions that affect the roadway system.

Proposed Utilities

Water

The Development Program would continue to use the existing primary water supply, which is provided by the San Francisco Public Utilities Commission (SFPUC) through a pipe attached to the western span of the Bay Bridge. The proposed secondary (emergency) water supply would be from the East Bay Municipal Utilities District (EBMUD), through a water main that is being constructed by Caltrans as part of the new eastern span of the Bay Bridge. The existing water storage tanks would be replaced with three new tanks on Yerba Buena Island. The existing water distribution piping on the Islands would be replaced with a proposed new water distribution

system. In addition, the Proposed Project would include the establishment of a backup Bay water supply system for use by the San Francisco Fire Department.

Wastewater

The existing wastewater collection gravity lines, pump stations, and force mains would be completely replaced (in phases) with a new collection system, including gravity lines, force mains, and pump/lift stations. In addition, a new wastewater treatment facility would be constructed at or near the existing plant at the northeastern part of Treasure Island. The replacement wastewater treatment facility would be operated by the San Francisco Public Utilities Commission, and would be designed to handle projected wastewater flows at buildout of the Proposed Project.

Recycled Water

The Development Program includes a program to use recycled water treated to tertiary levels to irrigate open space areas, the urban farm, roadside plantings, public open spaces, and landscape water features, and for appropriate plumbing fixtures within commercial buildings. The Development Program would provide a developable pad for an on-island recycled water plant (part of the proposed wastewater treatment facility), sized to meet the long-term demand. The facility would be implemented by the San Francisco Public Utilities Commission. New distribution piping for recycled water would be provided only on Treasure Island.

Stormwater

The existing stormwater collection system would be replaced with new gravity lines, lift stations, pump stations, and outfalls to the Bay. Stormwater volumes of 0.2-inch per hour (“treatment flows”) would be directed to the treatment facilities around the development prior to discharge to the Bay. Proposed treatment facilities may include bioswales, bio-retention areas, flow-through planters, mechanical filters and wetland areas. Flows larger than the treatment flows, up to the 5-year storm event, would flow in the pipes, bypassing the treatment devices, and flow directly to the Bay. Flows larger than 5-year storm events would flow overland through the proposed street system and drain to the Bay through proposed consolidated outfall structures.

Electricity, Natural Gas, and Telecommunications

Electricity supply for the Proposed Project would be provided through existing dual submarine cables from the Port of Oakland shoreline and replacement electrical lines on land in Oakland. New electrical substations would be constructed on the Islands. Natural gas would be supplied to the Islands through an existing Pacific Gas & Electric (PG&E) submarine pipeline. The telecommunication system on the Islands would be replaced as part of the Development Program. An underground distribution system in a proposed joint trench would accommodate the electric, natural gas, and telecommunications lines. The proposed Infrastructure Plan includes a renewable energy component, involving solar power and small vertical axis wind turbines. The

developed portions of the Redevelopment Plan Area would provide space that would allow installation of enough renewable energy generating capacity to meet, at a minimum, approximately five percent of estimated peak demand. The Proposed Project may also involve third party investors and power providers, through power purchase agreements, in the implementation of renewable energy systems that would produce significantly more than five percent of estimated peak demand.

Central Plant

As a means of increasing overall energy efficiency and improving sustainability, the proposed Infrastructure Plan includes a new central plant using Bay water. The proposed central plant would provide heating and cooling for certain buildings located at the “Urban Core” area. A distribution-piping loop would be buried under the street, and the new buildings would tie into the main piping.

Geotechnical Stabilization

The proposed geotechnical stabilization is intended to improve seismic safety on the Islands and to meet all applicable building and seismic safety standards. The proposed geotechnical stabilization is expected to include the following major components:

- Stabilization of the Viaduct structure and Causeway connecting Treasure Island, Yerba Buena Island, and the Bay Bridge;
- Shoreline stabilization of the Treasure Island perimeter, involving a combination of various techniques and the raising of the existing perimeter berm;
- Ground improvements to the interior of Treasure Island to stabilize utilities, access , and building foundations;
- Building foundations, which would include a range of techniques from mat foundations to pile foundations; and
- Necessary perimeter and building designs to address potential flooding and sea level rise.

Proposed Sustainability Plan

A major component of the Proposed Project is the Sustainability Plan. The Sustainability Plan documents the guiding principles for the Development Program and identifies implementation measures to be undertaken by TICD and other stakeholders. Many of these measures are integral to the Development Program, and are intended to facilitate progressively higher levels of sustainability over time. These include the proposed residential densities, proximity to transit facilities, orientation of streets and buildings, and green building specifications which would be incorporated into the Proposed Project’s Design for Development guidelines and conditions of approval. In addition the Development Program would include strategies intended to achieve Gold certification under the forthcoming Neighborhood Development program of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED-ND) rating system.

Because new technologies and higher performance standards would likely emerge during the phased build-out of the Development Program and beyond, the Sustainability Plan also describes goals, strategies, and targets that could be achieved through collaboration between TIDA, TICD, other government agencies, utility providers, and various organizations. These include a comprehensive transportation demand management program, including the establishment of an on-island transportation coordination office; provision of infrastructure to maximize the on-site production of renewable energy as technologies and delivery mechanisms become available; and a parks and open space program to create, restore and maintain habitat and landscape areas, and other features that would reduce potable water usage. The proposed transportation strategies, including transit-oriented development, parking capacity controls, congestion pricing, ramp metering, and other transportation demand management measures, are intended to achieve greater sustainability through reduced automobile use.

PROJECT PHASING AND CONSTRUCTION

Construction and buildout of the Development Program would be phased and would be anticipated to occur over an approximate 10-year period. Assuming that construction would begin in approximately 2009, the last building constructed would be ready for occupancy in about 2018. However, the actual timing of construction would depend on market conditions and other factors.

The Development Program is expected to involve four major phases. The first phase would include the installation of the infrastructure backbone and geotechnical stabilization; the subsequent phases would include the extension of infrastructure and development of the residential, commercial, open space/recreational, historic, and institutional and public uses. To ensure that existing households have the opportunity to benefit from the proposed redevelopment, the Proposed Project would include a transition housing program for all residents of the Islands at the time of project approval who continuously remain Island residents during the project development.

REQUIRED APPROVALS

Certification of the Final EIR (Planning Commission and TIDA as joint lead agencies, appealable to Board of Supervisors) would be required before any other approvals or permits would be issued. Ultimately, TIDA and the San Francisco Planning Commission would consider an action recommending that the Board of Supervisors approve the Redevelopment Plan, and the San Francisco Board of Supervisors would consider approval of the Plan. The Redevelopment Plan would define the boundaries of the Redevelopment Plan Area and set forth land use guidelines such as the basic land use designations and allowable land uses, and maximum development and heights. In addition, the Redevelopment Plan would authorize TIDA to adopt a Design for Development, which would establish specific land use controls, development standards and design guidelines. The Disposition and Development Agreement would include a Design Review

and Document Approval Procedure, which would set forth the approval processes and standards for development. All City departments having jurisdiction over part or all of the Project site would also approve and enter into an Interagency Cooperation Agreement that would set forth the procedures and standards for permit review.

As described on page 3 above, the Islands include areas subject to the Tidelands Trust, which generally prohibits residential, general office, non-maritime industrial and certain recreational uses. Under the exchange authorized by the California State Legislature, the Trust would be lifted from the portions of Treasure Island that are planned for residential and other non-Trust uses and imposed on portions of Yerba Buena Island that currently are not subject to the Trust.

The required approvals for the Proposed Project include (but are not limited to) the following.

- *Planning Code* Section 101.1 (Priority Policies) findings for the *Treasure Island and Yerba Buena Island Redevelopment Plan* (Planning Commission, Board of Supervisors);
- Actions on Planning Code, Zoning Map and General Plan amendments (Planning Commission, Board of Supervisors);
- Approval of Disposition and Development Agreement and related transactional documents (TIDA, Board of Supervisors);
- Recommendation by TIDA to adopt Redevelopment Plan (TIDA);
- Filing of report and recommendation for approval of Redevelopment Plan to the Board of Supervisors by the Planning Commission (waived if no action within 30 days after receipt of Redevelopment Plan);
- Adoption of Redevelopment Plan by Board of Supervisors;
- Adoption of Design for Development Guidelines (TIDA, subject to final adoption of Redevelopment Plan by Board of Supervisors);
- Adoption of Owner Participation Rules (TIDA);
- Interagency Cooperation Agreements (San Francisco Planning Commission, San Francisco Board of Supervisors, SFMTA, SFPUC, SFFD, SFPD, SFDPW, Department of Building Inspection);
- Approval of subdivision maps (SFDPW, Board of Supervisors);
- Approval of Public Trust Exchange Agreement (TIDA, Board of Supervisors, State Lands Commission);
- Permit for fill and dredging in San Francisco Bay and improvements within the 100-foot shoreline band (San Francisco Bay Conservation and Development Commission);
- Section 404 permit (U.S. Army Corps of Engineers, after agency consultation);
- Water quality certification, NPDES permit, and waste discharge requirements (Regional Water Quality Control Board);
- Approval of new service connection and water meter in Oakland (EBMUD);

- Creation or designation of a Treasure Island Transportation Management Agency (Board of Supervisors);
- Approval of metering system for Bay Bridge ramps (Caltrans) if located on Caltrans property; and
- Demolition and building permits for individual projects within the Redevelopment Plan Area (Department of Building Inspection).

POTENTIAL ENVIRONMENTAL ISSUES

The Proposed Project could result in potentially significant environmental effects. The EIR will examine those effects, identify mitigation measures, and analyze whether proposed mitigation measures would reduce any significant environmental effects to a less than significant level as defined by CEQA. The EIR will be a project-level EIR on the Redevelopment Plan and the Development Program.

The EIR will identify and evaluate alternatives to the Proposed Project. It will analyze a No Project alternative, as well as a plan for a less-intensive development program. An alternative that does not include an exchange of Tidelands Trust properties between Treasure Island and Yerba Buena Island will also be described and analyzed. Another alternative may be developed and addressed, based on the EIR analyses and the potential for the listed alternatives to reduce or avoid the impacts of the Proposed Project found to be significant, while meeting most of the project objectives.

Because the lead agency has determined that an EIR will clearly be required, an Initial Study will not be prepared (as permitted under the CEQA Guidelines Section 15060(d)). The EIR will address all of the environmental topics contained in the environmental checklist used by the City. Each of those topics is described below in relation to the Proposed Project.

Land Use

The Proposed Project is the adoption of the Treasure Island and Yerba Buena Island Redevelopment Plan and implementation of the proposed Development Program, consisting of residential, retail, commercial, institutional and recreational facilities and associated infrastructure that would cover portions of Treasure Island and Yerba Buena Island. The Proposed Project would result in changes in the types and intensities of land uses on Treasure Island and Yerba Buena Island. Treasure Island would be converted from a former military base with interim residential, institutional, and industrial land uses to residential, retail, commercial, hotel, institutional, and open space uses. Because the Project site consists of two islands, separated from other communities by over a mile of open water, there would be few conflicts with existing land uses. The EIR will discuss the effects of the Development Program on the remaining uses on the Islands, including the U.S. Coast Guard and Jobs Corps facilities. The substantial changes in land use resulting from the Development Program would be the basis for many of the potential

physical impacts, such as transportation, air quality, noise, and growth inducement, to be analyzed in the EIR. Similarly, the mix of uses proposed under the Redevelopment Plan would be supported by a comprehensive multi-modal transportation system. Accordingly, the relationship of land uses to each other and to existing and potential future transportation facilities will be an important issue for analysis in the EIR. The EIR will also describe (for informational purposes) the military activities formerly conducted and any military services now offered on Treasure Island and Yerba Buena Island.

Visual Quality and Urban Design

The Islands are visible from many viewpoints in San Francisco, the East Bay, and Marin County. The Development Program would involve the demolition of approximately 1,000 residential units in low-rise buildings and approximately 100 existing non-residential buildings and the construction of low-rise, mid-rise, and high-rise buildings largely concentrated on the southwest corner of Treasure Island. Changes in the visual environment could occur from the development of taller and larger buildings than are now present, from removal of existing buildings, from changes in architectural character, from changes in landscaping, and from the creation of new sources of light or glare. The EIR will describe urban design features of existing structures, visual character, important visual features, and views from public areas on Treasure Island and from representative viewpoints around the Bay. The analysis will address changes in visual quality arising from the Development Program with respect to scenic views, scenic resources, visual character, and light and glare. Photomontages or other simulations will be used to illustrate the potential visual impacts of the Development Program.

Employment, Population and Housing

The Proposed Project could contribute to the growth and concentration of City and regional population. The Plan would result in a substantial increase in the number of residential units on Treasure Island and Yerba Buena Island (up to approximately 6,000 units) compared to existing conditions (about 1,000 existing units, about 80 percent currently occupiable), and therefore a sizable increase in the population on the Islands. The EIR will describe existing conditions related to employment, population, housing, and business activity, and estimate the changes the Development Program would create. It will compare the existing numbers of employees, residents, and visitors to the projected changes that would result with implementation of the Redevelopment Plan. The net new housing demand from employees of businesses that could locate on Treasure Island and Yerba Buena Island will be estimated. Demographic data describing population and households, and information regarding the relationship between jobs and housing in San Francisco and Oakland will be discussed. The EIR will examine whether the Proposed Project would have an effect on citywide job generation or housing demand. In addition, the EIR will discuss proposed housing production and transition plans to limit displacement of existing Island residents.

Archaeological Resources

Previous cultural resources investigations indicate a high likelihood for the presence of archaeological resources. Where development would encounter soils that have not previously been disturbed, there is the potential to disturb archaeological resources. The EIR will describe the prehistoric/historic context of Yerba Buena Island, identify the archaeological resources that may be present, assess potential effects of the Development Program on archaeological resources that may occur, and identify the appropriate mitigation for preservation of archaeological materials when/if encountered.

Historic Architectural Resources

The historic architectural resources on Yerba Buena Island and Treasure Island have been comprehensively studied as part of the property transfer planning process with the U.S. Navy. Treasure Island was designated as State Historic Landmark No. 987 in 1989. Three buildings on Treasure Island and five structures plus one group of buildings on Yerba Buena Island have been found to be eligible for listing on the National Register of Historic Places. All of these historic architectural resources would be retained and reused under the proposed Redevelopment Plan in a manner consistent with the Secretary of Interior Standards for Historic Rehabilitation; thus, identification and evaluation of impacts related to the removal of these resources is not required. The EIR will evaluate the impacts from the proposed renovation and adaptive re-use of historic structures on the Islands, and will discuss the impacts of the proposed new buildings on the existing historic buildings and context. The EIR will also evaluate buildings that have reached or exceeded 50 years of age since the Navy's evaluation occurred in 1997; identify those potentially eligible for the California Register of Historical Places or the National Register of Historic Places, if any; and explain why others were determined not to be eligible. For any identified as eligible, impacts of the Development Program on them will be described.

Transportation

Implementation of the Development Program, including demolition of existing uses and construction of the proposed residences and other uses, would result in changes in traffic volumes and traffic patterns. Since the development is proposed to be transit-oriented, ridership on existing public transit, provided by Muni, would increase, and new transit facilities and service, including the proposed new ferry service, bus service to the East Bay, and intra-island shuttle service would be provided. The primary vehicular access to the Redevelopment Plan Area would be via the Bay Bridge. The development and occupancy of new buildings would therefore affect traffic on the Bridge.

In a transportation report for the Proposed Project, the travel demand will be estimated by using population, square footage, and other relevant information. The EIR transportation analysis will follow the Planning Department's *Transportation Impact Analysis Guidelines for Environmental*

Review, October 2002, with adjustments and additions to address transportation characteristics of the Proposed Project's unique components and location.

Traffic impacts will be analyzed for the AM and PM peak periods. Traffic impacts will be analyzed in relation to existing conditions and in a future context that accounts for cumulative growth in volume of traffic on the Bay Bridge. The traffic analysis will assume that ramps leading to/from the Bay Bridge remain in their current configuration; the analysis of cumulative transportation impacts will consider conditions with the improved ramps that are currently under consideration by Caltrans and the City and without those ramp improvements.

The transportation report will also address impacts on transit and will describe parking and future pedestrian and bicycle conditions. The report will include a quantitative assessment of the project-related impacts to Muni Route 108, which serves Treasure Island, and will include an analysis of pedestrian and bicycle conditions within the area affected by the Development Program, as well as during the AM and PM peak periods in the vicinity of the San Francisco Ferry Building. The transportation report will examine the on-site parking supply, including the number and location of parking spaces. The parking demand and parking surplus/shortfall and potential secondary impacts of parking conditions will be identified. The analysis will take into account the new ferry service and expanded bus service identified in the Treasure Island Transportation Plan as well as proposed TDM measures.

The EIR will summarize the information and conclusions in the transportation report and will identify mitigation for any significant impacts.

Noise

Sensitive receptors on Treasure Island and Yerba Buena Island, such as residences, schools, and wildlife, will be identified. The number of sensitive receptors would increase substantially with the proposed increase in the number of residential units. The EIR will analyze the existing sources and levels of noise on the Project site. Site reconnaissance, short-term noise measurements, and standard references will be used to quantify the existing noise environment. The EIR will discuss construction noise impacts on sensitive receptors. The EIR will also consider impacts from increased vehicle traffic and new stationary noise sources, such as building ventilation equipment. The noise analysis will also consider noise from emergency vehicles and from re-designed freeway ramps if the SFCTA/Caltrans Project Study Report findings are available.

Air Quality

The Development Program would result in changes in traffic volumes and traffic patterns. Increased traffic could generate additional air pollutant emissions on a regional scale. Increased traffic could lead to local "hot spots" with higher concentrations of carbon monoxide.

Construction activities associated with development, including demolition and ground disturbance could increase concentrations of particulate matter. The proposed new uses of Treasure Island and Yerba Buena Island could increase emissions from stationary sources such as boilers and emergency generators.

The EIR will describe existing air quality at the Project site and will discuss existing compatibility with regional air quality plans. In accordance with Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines, the EIR will evaluate construction-period and operational emissions of criteria air pollutants. The EIR will estimate operational emissions based on Development Program-related changes in motor vehicle traffic and the introduction of new stationary sources. These emissions will be compared to BAAQMD significance thresholds for regional impacts. Although at this time neither the BAAQMD or any other agency has adopted significance criteria for a project's estimated contribution of greenhouse gas emissions (GHGs), the EIR will discuss emissions of greenhouse gases from construction and operation of the Development Program. The EIR will also discuss proposed features of the Proposed Project that would help reduce GHG emissions.

Wind

Treasure Island's location in the center of San Francisco Bay exposes it to a unique microclimate due to a lack of natural windbreaks. The low-lying, relatively flat island experiences strong winds coming from the west through the Golden Gate. The Development Program includes proposals for a number of devices to offer wind protection, including angling the street grid and developing a system of planted windrows. The EIR will discuss pedestrian-level wind hazards that could result from the Proposed Project. Many of the proposed structures in the Development Program are low-rise and it is typically not necessary to consider the wind effects of such development. The EIR will identify performance standards appropriate for mid- and high-rise buildings.

Shadow

The Development Program would add a number of new buildings, some of substantial height. In order to consider the overall effects of the development, including the proposed windrows, modeling and analysis of shadowing will be performed. The EIR will examine the occurrence of shadows on recreational and other outdoor spaces.

Community Services and Utilities

The Development Program would involve replacement or repair of the Islands' existing facilities for water supply, wastewater collection and treatment, stormwater collection and treatment, power, and communications, and addition of a recycled water system. Wastewater and stormwater treatment would be managed in on-site facilities. Water would continue to be

delivered from the San Francisco Public Utilities Commission system with a backup supply from the East Bay Municipal Utilities District. Natural gas would continue to be delivered from the PG&E system. Some electricity could be generated on site, with the remainder provided via two existing submarine cables. Communications would be provided by off-site service providers.

These infrastructure improvements would be put into place while some of the current population is in residence and it would be necessary to continue to provide services without interruption during the upgrading and installation of new facilities. Potential impacts to existing residents will be discussed.

The Development Program would also include facilities for police, fire/emergency medical services, schools, and parks and recreation. The EIR will assess what additional services and facilities are needed to serve the Treasure Island and Yerba Buena Island populations and analyze the impacts of providing these services and facilities. The EIR will also discuss emergency access to the Islands and potential issues related to emergency evacuation, as part of the analysis of police and fire services.

Biology

Treasure Island is a man-made island with a long history of intensive military use. Nevertheless, Treasure Island—and Yerba Buena Island, which is a natural island and heavily vegetated—have become habitat for wildlife such as shorebirds, bats, and marine species. The California Natural Diversity Database reports that several species listed under the California and/or federal endangered species acts, or otherwise considered as having “special status” under CEQA, are present at one or more locations in the Oakland East USGS quadrangle. Eelgrass beds, an important nursery area for many marine species, are present in the shallow waters near Treasure Island and Yerba Buena Island. The Islands’ physical location in the center of San Francisco Bay puts them in proximity to spawning herring, migratory anadromous fish, marine mammals, and migratory waterfowl. The EIR will describe the existing terrestrial and marine biota living on and in the vicinity of Treasure Island and Yerba Buena Island. The EIR will evaluate the impacts of proposed development on plants, animals, and natural communities on the Islands. In addition, the EIR will evaluate the impact of shoreline stabilization and increasing the height of the Treasure Island perimeter berm, construction of the ferry terminal, and pile driving on marine species. The EIR will also evaluate the impact of the installation of storm water treatment wetlands on wildlife including migratory birds.

Geology/Topography

The San Francisco Bay Area is located within one of the most seismically active regions of the United States. Significant earthquakes have occurred in the Bay Area. Treasure Island and Yerba Buena Island are located roughly halfway between two notable faults—the San Andreas and Hayward Fault zones. The Project site has a high risk of being subjected to another moderate to

severe earthquake, involving significant ground shaking that could cause foundation and structural damage to buildings and secondary ground failure. Potential seismic-related hazards include liquefaction, earthquake-induced settlement, tsunamis, and lateral spreading. The Development Program includes proposed geotechnical stabilization strategies, including stabilization of the viaduct and causeway, seismic reinforcement of the perimeter berm forming Treasure Island, stabilization of utilities, and use of appropriate building foundations.

Because the engineering standards for placement of fill were not as stringent in 1936-1939 as they are today, Treasure Island is underlain by poorly engineered (by today's standards) artificial fill that varies in depth and thickness. Beneath the fill are varying thicknesses of compressible Bay Muds. Because of the age of the fill, settlement has already occurred. Placement of new loads, however, could begin a new cycle of settlement. Proposed construction would proceed on the basis of site-specific geotechnical studies and geotechnical and structural engineering standards.

The EIR will describe the geologic, seismic and soils hazards of the Redevelopment Plan Area and analyze impacts of the Development Program. The evaluation will address whether implementation of the Redevelopment Plan would result in significant risk to the people or structures on site. Project-specific geotechnical information and recommendations will be provided.

Hydrology and Water Quality

The Development Program would create the potential for water quality impacts during and after construction. Seismic reinforcement of the perimeter berm and dredging of the ferry terminal may temporarily increase the release of particulates and contaminants from bottom sediments. The Development Program would result in an increase in pervious surfaces compared to existing conditions, and would thus reduce stormwater runoff flows. In addition, the Development Program would replace the existing storm drain system, which does not meet current standards and may be contributing to the release of pollutants from on-site contamination sources. The Redevelopment Plan proposes to treat most stormwater flows on site using methods such as bio-swales, bio-retention areas, flow-through planters, mechanical filters and wetland areas.

Treasure Island is protected by a perimeter berm that surrounds the island. The perimeter berm is currently considered adequate protection from wind-generated and wake-generated waves. However, sea level changes over time could reduce the ability of the perimeter berm to protect the island. The Development Program includes raising the perimeter berm and site grades in developed areas to provide adequate drainage and future protection against waves, tides, and storm-induced flooding.

The residential, retail, and commercial land uses that are proposed would substantially increase the volume of wastewater generated. This wastewater would be treated on site by the existing

and new wastewater treatment plant. In addition, the existing wastewater collection system would be completely replaced.

The EIR will identify the potential change in wastewater and storm water flows and quality. Proposed measures and their effectiveness for reducing storm water quality impacts will be evaluated. The EIR will also evaluate potential flooding hazards, including those exacerbated by potential climate change-induced sea level rise.

Hazards

There are several hazardous waste sites, created during the Navy's use of Treasure Island, within the Redevelopment Plan Area. Some sites have already been remediated; others are still under investigation or currently undergoing remediation by the Navy. Depending on the prior use of the site, the contaminants that may be present include petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), poly-aromatic hydrocarbons (PAHs), dioxins, pesticides, polychlorinated biphenyls (PCBs), lead, and asbestos. The Development Program and any development alternatives proposed are located within property contained on the lists compiled pursuant to Section 65962.5 of the government Code (commonly referenced as the "Cortese List" of hazardous waste sites.) The Redevelopment Plan Area is located within the area referenced on the Cortese List as Naval Station Treasure Island, County of San Francisco, Site Code No. 201210. The Navy is investigating, evaluating, and remediating contaminated sites on Treasure Island under the Department of Defense Installation Restoration Program (IRP) prior to the transfer of the property to TIDA. The IRP follows the Comprehensive Environmental Restoration Compensation and Liability Act (CERCLA) process. The goal of the remedial actions is to eliminate the contamination, or if residual contamination is left in place, to limit exposure pathways that may pose a risk to human health and the environment. Under federal regulations, the remediation efforts must reach a level of cleanup that is sufficient to support a "Finding of Suitability to Transfer" or a "Finding of Suitability of Early Transfer" prior to redevelopment. The Development Program includes remediation beyond that which will be required of the Navy as necessary to support the proposed development program.

The Development Program would involve the use, transport and disposal of hazardous materials for maintenance and cleaning of residences and businesses (paints, solvents, adhesives, and pesticides) on the site.

The EIR will summarize the U.S. Navy activities to investigate and remediate hazards, describe additional remediation beyond the activities planned by the Navy that may be necessary to support proposed development and the commitments included as part of the Proposed Project, and identify impacts related to the additional remediation.

Energy

At buildout, the Development Program would result in a substantial increase in building square footage. According to the Treasure Island Sustainability Plan, the new buildings would be built using green building specifications and employ energy conservation measures that may include use of Energy Star heating and cooling equipment, appropriate building orientation, natural ventilation, optimized building shading, high performance glazing, and solar water heating, and would be constructed to accommodate rooftop photovoltaic installations. The Development Program includes proposals to incorporate facilities that would make it feasible to increase the production of renewable energy by making the use of photovoltaic technology possible and installing demonstration-scale wind turbines. The EIR will describe current energy demand and estimate the net change in electricity use and natural gas consumption from the Development Program. The EIR will assess whether anticipated increases in energy use would be large or wasteful.

Consistency with Plans and Policies

This section of the EIR will summarize project consistency with applicable land use plans and policies, including the *San Francisco General Plan* (“*General Plan*”) and Priority Policies, the Tidelands Trust, the policies of the San Francisco Bay Plan, and other City policies that are designed to avoid or mitigate environmental effects. The EIR will discuss proposed amendments to the *General Plan* and Planning Code. The EIR will discuss the key strategies of the Redevelopment Plan in relationship to *General Plan* policies regarding housing, commercial uses, transportation, and open space and recreational uses, and will discuss the Proposed Project’s Sustainability Plan in relation to the City’s Sustainability Plan. City and regional plans and policies related to energy, air quality, and natural resources will be discussed in their respective technical sections of the EIR.

Cumulative and Growth Inducing Impacts

CEQA requires a discussion of the ways in which a project could induce economic or population growth, directly or indirectly, in the surrounding environment. The principal way that the Development Program could induce growth is through the construction of up to approximately 6,000 new residential units and the net direct and secondary population growth that the proposed residential development would stimulate. The Development Program would also result in new office, retail, entertainment, and community services uses that could directly and indirectly contribute to economic growth. The EIR will discuss the potential for direct and secondary impacts from population and employment resulting from development on Treasure Island and Yerba Buena Island. The EIR will address the potentially significant cumulative impacts of the Proposed Project when considered with other planned development in San Francisco and the East Bay. This analysis will be done for all environmental topics discussed in the EIR and will specify

which areas are expected to result in significant cumulative impacts. Cumulative impacts will be discussed qualitatively, except where quantitative data on other planned development projects are available.

Mitigation Measures

The EIR will identify feasible mitigation measures to reduce or avoid potentially significant impacts identified in the EIR, as well as improvement measures to reduce impacts that are found to be less than significant.

APPENDIX B

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Notice Type : Other Notices

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NOTICE OF PREPARATION OF EIR AND NOTICE OF PUBLIC SCOPING MEETINGS

Notice is hereby given to the general public of the following actions under the Environmental Review Process. Review of the documents concerning these projects can be arranged by calling (415) 575-9025 and asking for the staff person indicated. The initial evaluation conducted by the Planning Department determined that the following project(s) may have significant effects on the environment and that an Environmental Impact Report (EIR) must be prepared. 2007.0903E - Treasure Island and Yerba Buena Island Redevelopment Plan. The proposed Treasure Island and Yerba Buena Island Redevelopment Plan area includes all of Treasure Island and Yerba Buena Island (collectively, "the Islands") in San Francisco Bay (Assessor's Block 1939, Lots 001 and 002). The Islands are the site of the former Naval Station Treasure Island (NSTI), which was owned and operated by the United States Navy until its closure in 1997 as part of the Base Realignment and Closure process. The Navy is in the process of conveying most of these areas, which currently include a variety of residential, industrial, institutional and recreational land uses, to the Treasure Island Development Authority (TIDA). The Redevelopment Plan includes the following: stabilization of Treasure Island and the causeway connecting it to Yerba Buena Island; up to approximately 6,000 residential units; up to approximately 270,000 square feet of new commercial and retail space; adaptive reuse of the historic Buildings 1, 2, and 3 with up to 325,000 square feet of commercial space; up to approximately 500 hotel rooms; new and/or upgraded public services and facilities; approximately 300 acres of public open space; bicycle, transit, and pedestrian utilities, and; an intermodal ferry quay/transit hub. (COO-PER) Notice is hereby given to the general public as follows: The Planning Department will hold two PUBLIC SCOPING MEETINGS on the EIR, the first on Monday, February 11, 2008, at the Bayside Conference Room, Port of San Francisco, Pier 1, The Embarcadero, San Francisco, CA 94111 from 6:00 to 8:00pm, and the second on Wednesday, February 13, 2008, at the Ship Shape Building, Building 497, Avenue M and 11th Avenue, Treasure Island, San Francisco, CA 94130 from 6:00 to 8:00pm. Written comments will also be accepted until the close of business on February 26, 2008, and should be sent to Bill Wycko, Acting Environmental Review Officer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103. The NOP/Notice of Public Scoping Meetings will be available on-line at www.sfgov.org/site/planning.

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In the matter of

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The Alameda Times-Star

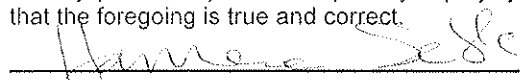
I am a citizen of the United States; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the Legal Advertising Clerk of the printer and publisher of The Alameda Times-Star, a newspaper published in the English language in the City of Alameda, County of Alameda, State of California.

I declare that The Alameda Times-Star is a newspaper of general circulation as defined by the laws of the State of California as determined by this court's order, dated September, 17, 1951, in the action entitled In the Matter of the Ascertainment and Establishment of the Standing of The Alameda Times-Star as a Newspaper of General Circulation, Case Number 236092. Said order states that "The Alameda Times-Star is a newspaper of general circulation within the City of Alameda, and the County of Alameda, and the State of California, within the meaning and intent of Chapter 1, Division 7, Title 1 [§§ 6000 et seq.] of the Government Code of the State of California." Said order has not been revoked, vacated or set aside.

I declare that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

1/26/2008

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.


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The Alameda Times-Star, #841463
January 26, 2008

Oakland Tribune

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In the matter of

PUBLIC NOTICE

The Oakland Tribune


I am a citizen of the United States; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the Legal Advertising Clerk of the printer and publisher of The Oakland Tribune, a newspaper published in the English language in the City of Oakland, County of Alameda, State of California.

I declare that The Oakland Tribune is a newspaper of general circulation as defined by the laws of the State of California as determined by this court's order, dated December 6, 1951, in the action entitled In the Matter of the Ascertainment and Establishment of the Standing of The Oakland Tribune as a Newspaper of General Circulation, Case Number 237798. Said order states that "The Oakland Tribune is a newspaper of general circulation within the City of Oakland, and the County of Alameda, and the State of California, within the meaning and intent of Chapter 1, Division 7, Title 1 [§§ 6000 et seq.], of the Government Code of the State of California. "Said order has not been revoked, vacated, or set aside.

I declare that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

1/26/2008

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.



Public Notice Advertising Clerk

Legal No.

0000841456

Notice is hereby given to the general public of the following actions under the Environmental Review Process. Review of the documents concerning these projects can be arranged by calling (415) 575-9025 and asking for the staff person indicated.

NOTICE OF PREPARATION OF EIR AND NOTICE OF PUBLIC SCOPING MEETINGS

The initial evaluation conducted by the Planning Department determined that the following project(s) may have significant effects on the environment and that an Environmental Impact Report (EIR) must be prepared.

2007.0903E - Treasure Island and Yerba Buena Island Redevelopment Plan.

The proposed Treasure Island and Yerba Buena Island Redevelopment Plan area includes all of Treasure Island and Yerba Buena Island (collectively, "the Islands") in San Francisco Bay (Assessor's Block 1939, Lots 001 and 002). The Islands are the site of the former Naval Station Treasure Island (NSTI), which was owned and operated by the United States Navy until its closure in 1997 as part of the Base Realignment and Closure process. The Navy is in the process of conveying most of these areas, which currently include a variety of residential, industrial, institutional and recreational land uses, to the Treasure Island Development Authority (TIDA).

The Redevelopment Plan includes the following: stabilization of Treasure Island and the causeway connecting it to Yerba Buena Island; up to approximately 6,000 residential units; up to approximately 270,000 square feet of new commercial and retail space; adaptive reuse of the historic Buildings 1, 2, and 3 with up to 325,000 square feet of commercial space; up to approximately 500 hotel rooms; new and/or upgraded public services and utilities; approximately 300 acres of public open space; bicycle, transit, and pedestrian facilities, and; an intermodal ferry quay/transit hub.

Notice is hereby given to the general public as follows:

The Planning Department will hold two PUBLIC SCOPING MEETINGS on the EIR, the first on Monday, February 11, 2008, at the Bayside Conference Room, Port of San Francisco offices, Pier 1, San Francisco, CA 94111 from 6:00 to 8:00pm, and the second on Wednesday, February 13, 2008, at the Ship Shape Building, Building 497, Avenue M and 11th Avenue, Treasure Island, San Francisco, CA 94130 from 6:00 to 8:00pm. Written comments will also be accepted until the close of business on February 26, 2008, and should be sent to Bill Wycko, Acting Environmental Review Officer, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103. The NOP/Notice of Public Scoping Meetings will be available on-line at www.sfgov.org/site/planning. (COOPER)

The Oakland Tribune, #841456
January 26, 2008

APPENDIX C

SCOPING MEETING MATERIALS



**SAN FRANCISCO
PLANNING DEPARTMENT**

City and County of San Francisco • 1650 Mission Street, Suite 400 • San Francisco, California • 94103

**PUBLIC SCOPING MEETING
TREASURE ISLAND/YERBA BUENA ISLAND REDEVELOPMENT PLAN EIR
FEBRUARY 11, 2008**

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**SAN FRANCISCO
PLANNING DEPARTMENT**

City and County of San Francisco • 1650 Mission Street, Suite 400 • San Francisco, California • 94103

**PUBLIC SCOPING MEETING
TREASURE ISLAND/YERBA BUENA ISLAND REDEVELOPMENT PLAN EIR
FEBRUARY 13, 2008**

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SAN FRANCISCO PLANNING DEPARTMENT

City and County of San Francisco • 1650 Mission Street, Suite 400 • San Francisco, California • 94103

PUBLIC SCOPING MEETING TREASURE ISLAND/YERBA BUENA ISLAND REDEVELOPMENT PLAN EIR FEBRUARY 11, 2008

PRINT NAME	ADDRESS	TELEPHONE/E-MAIL
1. Amylyn Jean-Baptiste	49 Stevenson St.	amylyn.jean-baptiste@earthlink.net
2. Alex Gionchi	4 Embarrasado Center Suite 2200	agaborch@wmspbusiness.com
3. Cheay Loke	" "	kloke@wmspartners.com
4. Alice Pilram	302 Nimitz Unit B S.F. 94130	415-722-4281 alicepilram@yahoo.com
5. Christy Herron	Oakland	ch@marzke-day.com
6. Leo A. Lozano	PO Box 5027 Bakersfield, CA	leo.lovato@uscc.mil
7. Jim Melina	193 Santa Monica St	for information@jim-melina.com
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SAN FRANCISCO PLANNING DEPARTMENT

City and County of San Francisco • 1650 Mission Street, Suite 400 • San Francisco, California • 94103

PUBLIC SCOPING MEETING TREASURE ISLAND/YERBA BUENA ISLAND REDEVELOPMENT PLAN EIR FEBRUARY 13, 2008

PRINT NAME	ADDRESS	TELEPHONE/E-MAIL
1. NEAL PATEL	995 Market St 1550 SF CA	neal@stbike-org. 415 431 2453 x312
2. Eve Bach	4634 Third St - 94124	evebach@parvceology.org
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SAN FRANCISCO PLANNING DEPARTMENT

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S P E A K E R C A R D

NAME:

ADDRESS:

KEY POINT(S) TO BE DISCUSSED (BRIEFLY DESCRIBE IN ONE SENTENCE OR LESS)



SAN FRANCISCO PLANNING DEPARTMENT

City and County of San Francisco • 1650 Mission Street, Suite 400 • San Francisco, California • 94103

S P E A K E R C A R D

NAME:

ADDRESS:

KEY POINT(S) TO BE DISCUSSED (BRIEFLY DESCRIBE IN ONE SENTENCE OR LESS)

APPENDIX D

SCOPING COMMENT LETTERS



RECEIVED

APR 01 2008

CITY & COUNTY OF S.F.
PLANNING DEPARTMENT
M.F.D.

March 27, 2008

Mr. Bill Wycko
Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

Subject: Case No. 2007.0903E—Treasure Island and Yerba Buena Island Redevelopment Plan
Notice of Preparation of EIR

Dear Mr. Wycko:

Thank you for the opportunity to provide these (late) comments regarding the above-referenced project. The Bay Trail Project is a nonprofit organization administered by the Association of Bay Area Governments (ABAG) that plans, promotes and advocates for the implementation of a continuous 500-mile bicycling and hiking path around San Francisco Bay. When complete, the trail will pass through 47 cities, all nine Bay Area counties, and cross seven toll bridges. To date, slightly more than half the length of the Bay Trail alignment has been developed.

For the past 3+ years, the Bay Trail Project has been coordinating with the Mayor's Office of Redevelopment and Kenwood Investments regarding the potential for the planned multi-use trail around the perimeter of Treasure Island and the network of trails on Yerba Buena Island to be incorporated into the regional Bay Trail system upon completion. All parties are in agreement that the new trail around the island would be a spectacular addition to the Bay Trail system.

In the DEIR, please discuss ABAG's Bay Trail Plan and its policies as they relate to the proposed trails on Treasure and Yerba Buena Islands. While plans for the perimeter path around Treasure Island are relatively clear, connections from the new east span of the San Francisco/Oakland Bay Bridge are less so. Please provide detailed descriptions and drawings regarding how connections will be made from the new bridge onto and off of both islands for bicyclists and pedestrians. It will be important to remember that in the absence of a pathway on the west span of the bridge connecting the islands to San Francisco, cyclists and pedestrians coming to the Islands will be largely recreational users as opposed to commuters. Tourists, families with children, wheelchair users and skaters are likely to be the prime user group until such time as the west span path is built. As such, please give careful consideration to the width and slope of the pathways leading from the bridge to the respective Islands.

We look forward to working with the Mayor's Office, the Treasure Island Redevelopment Authority, and the developer to ensure a world-class Bay Trail on and around Treasure and Yerba Buena Islands. Please do not hesitate to contact me at (510) 464-7909, or by e-mail at maureeng@abag.ca.gov if you have any questions regarding the Bay Trail.

Sincerely,

Maureen Gaffney
Bay Trail Planner

Arc Ecology

4634 Third Street · San Francisco California 94124

Phone: 415 643 1190 X303 · Fax: 415 643 1142 · e-mail: evebach@arcecolgy.org

February 26, 2008

Mr. Bill Wycko

Acting Environmental Review Officer

San Francisco Planning Department

1650 Mission St, Suite 400

San Francisco, CA 94103-2479

By Fax: 415 558 6409

By e-mail: bill.wycko@sfgov.org

rick.cooper@sfgov.org

SUBJECT: **COMMENTS ON NOTICE OF PREPARATION**
2007.0903E – Treasure Island and Yerba Buena Island Redevelopment Plan

Dear Mr. Wycko:

Thank you for providing the opportunity to comment on the Notice of Preparation for this ambitious Project. We appreciate that you have arranged for two scoping meetings and have in addition discussed environmental review of the Project with the Citizens Advisory Board.

As you may know, Arc Ecology has actively participated in the planning process for the reuse and redevelopment of Treasure and Yerba Buena Islands (TI). We have supported efforts by the Treasure Island Development Authority (TIDA) and Treasure Island Community Development (TICD) to create a project that exemplifies environmental sustainability by responding creatively to both the requirements and opportunities that this challenging site presents. Environmental sustainability is a necessity in part because TI depends for land access on the bridge that is a main source of traffic congestion extending for 7-8 mile along the regional highway system and beyond to feeder streets in San Francisco and Oakland. TI also presents unique opportunities for sustainable development because the site is publicly owned land (much of it in the Public Trust) and will be almost completely rebuilt at a time, and in a political setting, where environmental values are high priority.

As active participants in TI planning, we have observed the many ways that environmental sensibilities have informed design of the Proposed Project. We look forward to an EIR that tests and improves upon environmentally sensitive features of the Project. In particular, we want to ensure that the many innovative programmatic responses to TI challenges will operate over the life of the Project as its sponsors hope.

1 OVERVIEW OF THE PROJECT'S ISLAND CONTEXT

Before providing page by page comments on the NOP text, we would like to address important environmental implications of TI's special geographic context. The location of this Project on a very small island with land access that depends on the Bay Bridge presents unusual considerations that must inform its environmental review:

- Traffic impacts are not proportional to Project size;

- Adequate funding of the Development Plan and Term Sheet¹, including exhibits must be ensured to reach the outcomes projected over the life of the Proposed Project;
- Traffic impacts do not diminish over distance from the Project.

These issues will be addressed specifically in the discussion of relevant impacts, but a short discussion of the general implications follows.

1.1 Traffic impacts are not proportional to Project size.

Since the version of TI redevelopment described in the 2004 EIR, we have witnessed the evolution of a project that has grown substantially in order to become financially feasible; in the process its potential to be a model of environmental sustainability has grown. The 6,000 housing units currently proposed would utilize less acreage than the 3,800 previously proposed. The number and density of the additional units can enable residents to meet their needs for many goods and services without leaving the island. Most importantly, a densely populated neighborhood can support frequent, convenient, and inexpensive transit service that fosters accessibility independent of the private automobile.

The same logic dictates that reducing development intensity would not necessarily mitigate environmental impacts. Nor would a less intensively developed project be a suitable EIR alternative, which must feasibly achieve Project objectives with reduced environmental impacts.² For example, moderate reductions in Project size would probably create a project below thresholds needed to support neighborhood retail services, public services, and public transportation, potentially increasing rather than decreasing off-island (primarily auto) trips. An alternative small enough to significantly reduce less off-island traffic would be financially infeasible due to the high fixed infrastructure costs at Treasure Island. A project limited to existing units at Treasure Island and a few hundred residential units at Yerba Buena Island would abandon Project objectives “to provide extensive public benefits to the City such as significant amounts of new affordable housing, increased public access and open space, transportation improvements and recreational and entertainment opportunities, while creating jobs and a vibrant, sustainable community.”³

The need for threshold population levels to support transit and other services also suggests that failure to achieve full buildout could generate unanticipated environmental impacts. EIRs typically treat the “project” as an envelope of impacts, such that partial implementation, like a smaller project, is assumed to generate less impact. The TI Project description appears to share this assumption since it states that the Project will have “up to 3800 units,” even though the impacts of a smaller project might be greater.

¹ TICD, LLC. *Treasure Island Development Plan and Term Sheet*, September 2006, as adopted by the San Francisco Board of Supervisors, file number 06498 12/12/06

² **PRC§ 21002. Approval of projects; feasible alternative or mitigation measures.** The Legislature finds and declares that it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required by this division are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.

³ TICD *op cit* page 7

Partial implementation would also be problematic since the Proposed Project is intended to be self-mitigating. Partial implementation of the sustainability plan, the transportation plan, or the infrastructure plan, for examples, would unleash a wide spectrum of environmental impacts that full realization of those plans would be more likely to avoid.

1.2 Adequate funding of the Development Plan and Term Sheet including exhibits must be ensured to reach the outcomes projected over the life of the Proposed Project;

The Proposed Project includes a rich array of services (e.g., transit, public safety, schools, shopping) intended to support a pedestrian- and transit-oriented community life style intended to reduce traffic that the Project would otherwise generate. However, the never-ending expense of operating these services at the levels required by a small island community will be higher than elsewhere in the city. TI's small size (even as enlarged) and geographic isolation imposes diseconomies of scale and precludes sharing service areas with other neighborhoods for the provision of public safety, schools, health, library and other public services, as well as limiting the variety of neighborhood commercial enterprises. The ferry slip cut into the Treasure Island landfill will require periodic dredging and disposal of the spoils. The Project's lack of dedicated sources of funding to fully cover such operating expenses and its reliance on public and private agencies that are beyond the City's control foreshadows ongoing risk of funding shortfalls, with the threat that projected levels of service will not be sustained over the life of the Project.

1.3 Traffic impacts do not dissipate over distance.

Although traffic congestion resulting may occur on the TI site itself (particularly backup at bridge on-ramps) and the bridge, more serious disruptions will occur on the regional highway system (US 101 and I-80, 580, and 880), on and off-ramps, and the city streets that in effect function together to meter traffic on the bridge itself. Under most traffic conditions, traffic on the bridge itself ordinarily flows freely where there are no merging lanes. Currently traffic merging onto the bridge from TI does not usually interrupt the free flow since the short merging lane regulates the volume of traffic joining traffic on the bridge. However even when traffic during the p.m. peak is flowing, there are typically backups five to ten miles to the south and the east. Therefore the EIR must analyze a region of impact (ROI) for the Project's traffic effects that captures the far flung effects of adding Project traffic volumes, both the metered traffic adding to the a.m. peak and unmetered traffic to the p.m. peak.

2 PAGE-BY-PAGE REVIEW AND COMMENTS OF THE NOP

The comments that follow trace the general issues above as they inform specific potential impacts, mitigations, and alternative projects.

2.1 Introduction

2.1.1 "The EIR will be a project-level EIR on the Redevelopment Plan and the Development Program"

[page 1]

Given the wide scope of this Project, the long build-out period, possibilities for incorporating portions of the Job Corps site into the Project, explorations currently under way for ramp redesign, and market and other uncertainties, a Master Environmental Impact Report (MEIR)⁴ would

⁴ CEQA Guidelines: PRC §15175 - §15179.5

be more appropriate than a project level document. The current intention to prepare an independent EIR for bridge ramp improvements once agreement is reached on their configuration segments what is essentially a single project since there would be no compelling reason to rebuild the ramps absent redevelopment of TI. Substantial changes to the ramps will create changes to this Project's environmental impacts even absent pursuit of modifications of and additions to the Proposed Project. The MEIR provides a streamlined way to track these interdependent changes but provides the City and developer with flexibility.

- 2.1.2 "An Initial Study will not be prepared as part of the environmental review process for the Proposed Project, instead all topics will be addressed in the EIR."

[page 1]

At a meeting of the TI Citizens Advisory Board, I requested that the NOP include an Initial Study, not because it was required but because it would provide early information about the Project's sponsors' thinking about environmental issues. Although we appreciate the discussion of potential impacts included in this NOP, it lacks the comprehensiveness of an Initial Study; in particular it lacks a summary of mitigations that San Francisco requires an Initial Study to include.⁵ In addition the specific question posed by the Initial Study Checklist is a very useful tool to prevent inadvertently overlooking potential impacts.

2.2 Project Location – Access and Transit

- 2.2.1 "Improvement and/or replacement of the other ramps is currently under study by the San Francisco County Transportation Authority and the California Department of Transportation ('Caltrans'); improvement or replacement of these ramps, if undertaken, would be a separate project from both the Bay Bridge eastern span currently under construction and the Proposed Project. Impact analysis in the EIR on the Proposed Project will take into account conditions resulting from both the existing ramps and the potential improved or replaced ramps."

[Access and Transit, page 4]

As mentioned above, future ramp improvements could be a critical feature of the final design of the Proposed Project, since the outcome of current negotiations could lead to major modifications. A MEIR would avoid segmenting environmental analysis of these strongly linked approvals while still providing flexibility in dealing with the present level of uncertainty

2.3 Project Description –Conceptual Land Use Plan

- 2.3.1 "The Proposed Project includes...up to approximately 6,000 residential units...up to approximately 270,000 square feet (sq ft.) of new commercial and retail space;"

[page 5]

This appears to reflect the invalid assumption that a smaller project will have less impact on the environment. "The Redevelopment Plan includes exhibits that address project design concepts (Exhibit E), transportation (Exhibits J and L), infrastructure (Exhibit I), community services (Exhibit Q), affordable housing (Exhibits L and O), jobs (Exhibit M), sustainability (Exhibit K), and other aspect of the development."⁶ These studies, plus the Financing Plan and Transaction Structure (Exhibit R) and the Fiscal Impacts Analysis (Exhibit S) are based on the

⁵ "Mitigation measures and improvement measures identified in the discussion for the applicable topic areas will be summarized here." [page 13, "San Francisco Initial Study Form, Annotated Final Version" (July 26, 2006)]

⁶ San Francisco Planning Department, NOP cover sheet, January 26, 2008

assumption that the full 3800 units would be developed. It is not clear whether these plans could be implemented at an equivalent level for a smaller plan. Concerns that the developer may want to reduce the size of the Project are highlighted by the current crisis and long term uncertainties of the real estate market.

2.3.2 "The Proposed Project includes...bicycle, transit, and pedestrian facilities; and An Intermodal Ferry Quay/Transit Hub."

[page 5]

This description, plus the description on page 9 of the Transportation Plan's encouragement of transit suggests that the Project does not include the levels of transit service that are included in the Transportation Plan. **Which features of the Development Plan are included and which are excluded from the Proposed Project?**

Failure of the project to commit to providing transit services at least at the level projected in the Transportation Plan raises concerns about the relevance of the trip analysis in the Transportation Plan. The EIR must base its independent trip analysis on levels of transit service that the City can rely upon the Redevelopment Plan to deliver.

2.3.3 "Approximately 50 percent of all housing units would be in low-rise buildings (building height 65 feet and lower)"

[Land Uses-Residential page 5]

In specifying a maximum, this characterization of the height of half the housing units assumes that a shorter building will have less impact than a taller one. Like the assumption that less development equals less impact, categorizing multi-family housing in six-storey buildings (with off-site parking) together with single family housing that will be furthest from the transit hub obscures the greater traffic impact of the single family units. The EIR needs to make a clear distinction between multi-family units with shared parking and single family units with attached or specifically designated parking in order to capture the much higher rates of automobile trips by residents in the latter.

2.3.4 "Approximately thirty percent of all units would be affordably priced at a range of below-market rates, including an expansion from 250 to 435 residential units for the existing Treasure Island Homeless Development Initiative (TIHDI) program."

[Land Uses-Residential page 5]

The plans presented to the public have consistently spoken of 30% affordable housing as a *minimum*. There are traffic implications to the mix of affordable and market rate units since car ownership rates – hence trip rates –are lower for the affordable units

2.3.5 "The recreational and open space uses would include ...a stormwater treatment wetland..."

[Land Uses Residential – Open Space and Recreation page 7]

We are pleased that the stormwater treatment wetland is now included in the Redevelopment Project Area Plan.

- 2.3.6 "The Development Program would provide space for...community programs... [and] child care. The existing, closed public grammar school on Treasure Island would be improved and reopened for use by the San Francisco Unified School District."

[Land Uses Residential – Institutional and Public Services page 7]

Ensuring that an improved school and space for community programs will be available is a necessary first step in providing TI with a school and operating programs at TI. However, for a school to materialize, the San Francisco Unified School District will have to reopen a school that they closed along with others as a cost-saving measure. The economic inefficiency of operating an elementary school on an island with 3,800 dwelling units – many of which will not house families with children – raises questions whether there will actually be a school and what grades it will include. The answer to those questions has obvious implications for the projection of off-island automobile trips and car ownership rates.

To some extent, the same questions arise concerning community programs and child care. The variety of community programs that will be available on-island will depend on the prices charged for the space and, in many cases, the availability of public funding. The necessity to travel off the island for services ranging from religious worship to health care to library will generate automobile trips.

The likelihood that a school, child care facility, community programs, and services required by residents will be financially feasible on TI over the long term will depend to some extent on TI population size.

2.4 Project Description – Proposed Transportation Plan

- 2.4.1 "The roadway system would consist of three levels of public roadways: arterial streets, collector streets, and neighborhood streets."

[Proposed Street System – page 7]

Except to link the multi-modal transportation node to the bridge, arterial streets should not be needed since TI is essentially a single neighborhood. The EIR should analyze the proposed street hierarchy at TI to prevent the construction of excess capacity, which would encourage vehicular traffic and reduce pedestrian and bicycle safety.

- 2.4.2 "All of the proposed residential units on Treasure Island would be within a 15-minute walk of the proposed Intermodal Transit Hub."

[Proposed Street System – page 7]

Walking time should be calculated for housing on Yerba Buena Island and measures proposed to ensure safe walking and bicycle connections.

- 2.4.3 "The Development Program would include the construction of a new ferry quay and terminal..."

[Transit Facilities and Service – page 8]

Since the new quay will require excavating landfill that created Treasure Island, the spoils will need to be tested for contaminants prior to disposal. In addition the design of the ferry landing will require on-going dredging of the excavated channel branching off of the Bay. The Project needs to ensure that adequate funding will be available on a continuing basis for proper upland disposal of the dredge spoils.

2.4.4 “Proposed funding for ferry vessels would provide the opportunity for an operator to initiate ferry service to the Islands between San Francisco and Treasure Island, and the proposed bus transit facility would provide stops for Muni service to San Francisco and East Bay transit service.”

[Transit Facilities and Service – page 8]

Since the Proposed Project includes only an “opportunity” for ferry service, and bus stops rather than bus service, the modal split used to calculate auto trips must not assume that ferry service will be available or that bus service will be at the levels projected in the Transportation Plan. This statement is confusing since all presentations to the public of this Project have stressed transit linkages.

2.4.5 “Should funding be identified to replace or improve the existing ramps, Caltrans and the City would conduct a separate environment analysis of the selected design(s).”

[Bay Bridge Access – page 9]

As mentioned above, ramp improvements necessitated (and probably paid for in part) by TI redevelopment should be considered part of the Proposed Project and analyzed in a MEIR.

2.4.6 “The Development Program includes the provision of approximately 8,250 parking spaces...”

[Parking – page 9]

Since parking is an important determinant of modal choice, the EIR needs to analyze whether supplying the 8,250 parking spaces negotiated as part of the Term Sheet would exceed parking demand.⁷ The EIR must not assume that ITE or San Francisco neighborhood parking standards are relevant since both the need and demand for parking will be reduced by features of the Proposed Project that do not rely on non-City funding and that would reduce rates of car ownership and use by residents, and car travel by employees and visitors:

- **Land use plan** – a high level of on-island trips by residents will be made on foot or by bicycle compared to a typical San Francisco residential neighborhood, and the concentration of employment and visitor attractions at the transit node will reduce the need for parking through Treasure Island;
- **Transportation Demand Management Program** - the shuttle service and bicycle library will further reduce on-island car trips by residents and also visitors;
- **Parking fees** – plans to charge for parking will reduce demand, depending on charges;
- **Shared parking** – allows a smaller supply of parking spaces to serve a given level of demand by means of a higher average occupancy rate;
- **Mandatory transit passes** – depending on the level of pre-paid service, increases the likelihood of transit use for off-island travel;
- **Car share program** – will reduce car ownership, with corresponding reduction in need for parking;

Since parking supply, location, and price are factors that strongly influence modal choice, calculations that assume generous parking ratios (based on occupancy rates lower than 85%, for example), have the potential to generate significant environmental impacts. The demand for parking is elastic, enabling parking management tools for the design of traffic mitigations.⁸ (See Attachment 1 for additional references on this subject.)

⁷ San Francisco Planning Department, *Transportation Impact Analysis Guidelines for Environmental Review*, October 2002.

⁸ Litman, Todd. “Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior” Victoria Transport Policy Institute, 11 April, 2007 <http://www.vtpi.org/tranelas.pdf>

- 2.4.7 "Automobile use would be discouraged through parking pricing, parking management, and congestion pricing...The mechanisms proposed include...implementation of a congestion pricing program...The congestion pricing fees could be set and adjusted to reflect traffic patterns, congestion levels, time of day, and other conditions that affect the roadway system."

[Encouraging Use of Transit and Discouraging Automobile Use – page 9]

Given the Governor's unfortunate veto of enabling legislation for the congestion pricing program, alternative mitigations to accomplish these ends should be proposed in the EIR. Features included in the "car independence mobility alternative" (described below) are examples of such measures.

2.5 Project Description – Wastewater

- 2.5.1 "In addition, a new wastewater treatment facility would be constructed..."

[page 10]

The Financing Plan and the Fiscal Analysis in the TI Term Sheet do not provide for funds to construct the wastewater treatment facility. Construction of the Proposed Project must not begin until *full* funding for the new system is secure, even though replacement of the existing system will be phased in.

- 2.5.2 "The replacement wastewater treatment facility...would be designed to handle projected wastewater flows at buildout of the Proposed Project."

[page 10]

Since there is a possibility that the site of the Job Corps may become available in the future, design of wastewater system should anticipate expansion.

3 PROJECT PHASING AND CONSTRUCTION

- 3.1.1 "However, the actual timing of construction would depend on market conditions and other factors."

[page 12]

Since the timing of full buildout of the Proposed Project is uncertain, the EIR must analyze the potential for impacts to be generated ahead of mitigations, and to propose measures to ensure that mitigations (including self-mitigating features of the Project) are synchronized to potential impacts.

4 REQUIRED APPROVALS

- 4.1.1 Additional approval will be necessary to fully implement the Proposed Project.

The list of required approvals omits those by public agencies that the Proposed Project relies upon to implement some of its most important features: San Francisco Unified School District, Alameda Contra Costa Transit District, San Francisco Bay Area Water Emergency Transportation Authority, and the California Legislature and Governor (enabling legislation for congestion management fees). Approvals of an early transfer will require approval by the Governor and the California Department of Toxic Substances Control in addition to the Regional Water Quality Control Board. Approval of the TI Redevelopment Plan will need approval from taxing agencies that share San Francisco property tax receipts.

5 POTENTIAL ENVIRONMENTAL ISSUES

5.1 Alternatives

5.1.1 "The EIR will identify and evaluate alternatives to the Proposed Project. It will analyze a No Project alternative, as well as a plan for a less-intensive development program."

[page 14]

As we have discussed earlier in these comments, unlike the typical project, a "less-intensive development program" cannot be assumed to meet the requirements that an EIR alternative generate less environmental impact.

*"Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. ...The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives."*⁹

We request a "car independence mobility alternative." It would include the same or greater intensity of development as the Proposed Project plus additional features to enable most residents, employees, and visitors to forego routine private automobile travel without sacrificing mobility. Features of this alternative would include all of the following:

- Time limits for all on-street parking ranging from 30 minutes to 2 hours;
- Parking fees that fully amortize construction and land costs (including pro-rated infrastructure costs, such as Treasure Island stabilization, based on square footage) and full operating costs, including enforcement;
- Leasing (rather than sale) of all residential off-street parking, with a system prioritizing need based on factors such as disability and employment location;
- Mandatory transit passes for residents, employees, and hotel guests covering the full cost of all bus and ferry travel;
- TIDA contracts with San Francisco and East Bay bus and ferry service providers specifying 24-hour, 7-day service with short daytime headways;
- Community-wide membership in a car share organization;
- Establishment of an island-focused taxi or jitney service;
- Dedicated or queue-jumping access to the bridge for buses, taxis; van pools, emergency vehicles;
- Maximum 15 mph speed limit for all TI roads;
- TDM services that include car pool and van pool match making;
- Purchases delivery;
- Supervised pathways enabling children living on Treasure Island to walk or bicycle to school without crossing major roadways.

⁹ PRC 15126.6 ((a

5.1.2 "An alternative that does not include an exchange of Tidelands Trust properties between Treasure Island and Yerba Buena Island will also be described and analyzed."

[page 14]

Such an alternative that presumably would limit all new residential and most commercial construction to Yerba Buena Island could avoid the high fixed costs of soil stabilization that make a smaller project infeasible on Treasure Island. However, such an alternative would sacrifice the nine objectives of the Proposed Project that are bulleted on pages 7 and 8 of the Development Plan. Unless such an alternative is being seriously entertained by the City and the developer, it would not contribute insights to a public dialog about ways that environmental impacts of the Proposed Project could be mitigated. If such an alternative is under consideration, there needs to be an extensive public discussion since it is in conflict with all previous concepts.

5.2 Employment, Population and Housing

5.2.1 "The EIR will describe existing conditions related to employment, population, housing, and business activity..."

[– page 15]

The baseline for the evaluation of these and all potential impacts by this EIR should be conditions on the date of this NOP (January 26, 2008), and not "the physical conditions which were present at the time that the federal decision for the closure or realignment of the base or reservation became final."¹⁰

5.3 Transportation

5.3.1 "In a transportation report for the Proposed Project, the travel demand will be estimated by using population, square footage, and other relevant information."

[page 16]

As we have discussed earlier in these comments, additional critical variables include features of the Proposed Project that are designed to shift travel mode choices to transit to the extent that implementation of projected services and programs will occur. In the design of mitigations, emphasis should be placed on factors such as parking that affect the competitive attractiveness of transit.

The scoping for the Transportation Report should be available for public review prior to its finalization.

5.3.2 "Traffic impacts will be analyzed for the AM and PM peak periods."

[page 17]

Daily and weekend traffic impacts should also be analyzed. Since a possible result of the congestion management program would be to shift trips to off-peak hours, it will be important to track the ripple effects and to understand how much roadway capacity is available at other times of the day to absorb the spillover. Bridge-related traffic congestion extends from early morning until late evening on both weekdays and weekends.

¹⁰ PRC §15229

- 5.3.3 "Traffic impacts will be analyzed in relation to existing conditions and in a future context that accounts for cumulative growth in volume of traffic on the Bay Bridge."

[page 17]

The concern is not traffic volume *on the Bay Bridge*; it is congestion on the *roads and highways that serve the bridge*. The issue is delay rather than volume since a congested typically serves a smaller number of vehicles than one with flowing traffic.

5.3.4 Truck traffic

The EIR needs to analyze truck traffic impacts, including those related to demolition, construction, and on-going deliveries.

5.4 Air Quality

- 5.4.1 "Increased traffic could lead to local 'hot spots' with higher concentrations of carbon monoxide."

[page 17]

As for transportation impacts, the Region of Influence for air quality needs to extend to the full area (both highways and city streets) that will be impacted by additional bridge traffic.

5.5 Community Services and Utilities

- 5.5.1 "The EIR will also discuss emergency access to the Islands and potential issues related to emergency evacuation, as part of the analysis of police and fire services."

[page 19]

Dedicated access to the bridge is needed to ensure that ambulances can get to a hospital quickly when there is a backup due to metering.

5.6 Cumulative Impacts

- 5.6.1 "The EIR will address the potentially significant cumulative impacts of the Proposed Project when considered with other planned development in San Francisco and the East Bay."

[page 22]

The discussion of cumulative traffic impacts must include all projects that will contribute to the congestion of city streets and highway sections that are impacted by bridge traffic.



ATTACHMENT 1

REFERENCES ON PARKING MANAGEMENT AS A FACTOR IN MODAL CHOICE

Hensher, David A. and Jenny King (2001), "Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District," *Transportation Research A*, Vol. 35, No. 3 (www.elsevier.com/locate/tra), March 2001, pp. 177-196.

Hess, Daniel B. (2001), *The Effects of Free Parking on Commuter Mode Choice: Evidence from Travel Diary Data*, Lewis Center for Public Policy Studies, UCLA

Kuppam, Arun R., Ram M. Pendyala, and Mohan A. V. Gollakoti (1998), "Stated Response Analysis of the Effectiveness of Parking Pricing Strategies for Transportation Control," *Transportation Research Record 1649*, TRB (www.trb.org), pp. 39-46.

Kuzmyak, Richard J., Rachel Weinberger and Herbert S. Levinson (2003), *Parking Management and Supply: Traveler Response to Transport System Changes, Chapter 18*, Report 95, Transit Cooperative Research Program; TRB (www.trb.org).

Litman, Todd "Guide to Calculating Mobility Management Benefits" Victoria Transport Policy Institute July 13, 2007

Litman, Todd "Parking Management Strategies, Evaluation and Planning "Victoria Transport Policy Institute August 24, 2007.

Mildner, Gerard, James Strathman and Martha Bianco, "Parking Policies and Commuting Behavior," *Transportation Quarterly*, Vol. 51, No. 1, Winter 1997, pp. 111-125.

Morrall, John and Dan Bolger (1996), "The Relationship Between Downtown Parking Supply and Transit Use," *ITE Journal*, February 1996, pp. 32-36.

Shiftan, Yoram (1999), "Responses to Parking Restrictions: Lessons from a Stated Preference Survey in Haifa and Their Policy Implications," *World Transport Policy And Practice*, Vol. 5, No. 4 (www.ecologica.co.uk/wtpp05.4.pdf), pp. 30-35.



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March 4, 2008

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CITY & COUNTY OF S.F.
PLANNING DEPARTMENT
NOP

Bill Wycko
Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

Subject: Treasure Island and Yerba Buena Island Redevelopment Plan NOP

Dear Mr. Wycko:

Bay Area Air Quality Management District (District) staff reviewed your agency's Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Treasure Island and Yerba Buena Island Redevelopment Plan (Project). We understand that the Project would provide the basis for redevelopment from a primarily low-density residential area with vacant and underutilized structures to a mixed use community with public and community services. The Project would consist of approximately 6,000 residential units, 235,000 square feet of commercial and retail space, 400-500 hotel rooms, 300 acres of open space, bicycle and pedestrian facilities, transportation and transit infrastructure, community services, and utilities.

The District has the following specific comments on the environmental analysis that should be included in the EIR.

1. The EIR should provide background information regarding the District's attainment status for all criteria pollutants and the implications for the region if these standards are not attained by statutory deadlines. A discussion of the health effects of air pollution, especially on sensitive receptors, should be provided. In addition, a discussion of the implications resulting from the U.S. Environmental Protection Agency's (EPA) current proposal to lower the national ozone standards to be more health protective should be provided.
2. The *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans (1999)* provide guidance on how to evaluate a project's construction, operational and cumulative impacts. You may download a copy from the District's web site at: <http://www.baaqmd.gov/pln/ceqa/index.htm>. The EIR should provide a detailed analysis of the Project's potential effects on local and regional air quality from construction, operations and cumulative impacts for each of the project alternatives being considered. The EIR should estimate daily and annual volatile organic compounds (VOCs), nitrogen oxides (NOx), and particulate matter (PM_{2.5}) emissions from stationary, area and mobile sources resulting from long-term project operation and compare them to the significance

criteria in the *BAAQMD CEQA Guidelines*. We recommend utilizing URBEMIS 2007, version 9.2.4, for estimating emissions.

3. The EIR should estimate and evaluate the potential impacts of toxic air contaminants (TACs) on sensitive receptors as a result of project implementation. We suggest utilizing ARB's *Air Quality and Land Use Handbook: A Community Health Perspective*, (<http://www.arb.ca.gov/ch/landuse.htm>) for guidelines on siting sensitive land uses. We recommend that the EIR evaluate any risks with siting land uses near major transportation corridors and other emission sources.
4. We recommend that the EIR include a quantitative analysis of the criteria pollutant emissions that would be generated from construction equipment exhaust during project construction for each of the project alternatives being considered. Construction equipment generates fugitive dust emissions, exhaust emissions of criteria pollutants, and TACs, specifically diesel particulate matter, a known carcinogen. The EIR should require that all associated construction activities comply with the dust mitigation measures in the District's CEQA guidelines. We encourage that the EIR include all feasible mitigation measures to reduce construction equipment exhaust emissions. Such measures could include but are not limited to: maintaining properly tuned engines; minimizing the idling time of diesel powered construction equipment to two minutes; using alternative powered construction equipment (i.e., CNG, biodiesel, electric); using add-on control devices such as diesel oxidation catalysts or particulate filters; using equipment that meets California Air Resources Board's (ARB) most recent certification standard for off-road heavy duty diesel engines; phasing project construction; and limiting the operating hours of heavy duty equipment.
5. We understand that the Project would result in a substantial increase of energy use. The EIR should evaluate the Project's potential to increase the demand for energy from utilities. Increasing the demand for electricity, natural gas, and gasoline may result in an increase of criteria air pollutant emissions from combustion, as well as an increase in greenhouse gas emissions, which can impact regional air quality. We recommend that the EIR discuss energy demand of the Project at build-out, including any cumulative impacts, such as the need to build peaker power plants to provide power during peak demand. When identifying strategies to minimize the Project's impact on energy and air quality, the EIR should include feasible mitigation measures that require a minimum level of green building measures for new development.
6. We recommend that the EIR analyze GHG emissions. The California Air Pollution Control Officers Association (CAPCOA) recently released a resource document addressing GHG emissions from projects subject to CEQA. The resource document, *CEQA and Climate Change*, contains an overview of available tools and models for evaluating GHG emissions and strategies for mitigating potentially significant GHG emissions from projects. The report may be downloaded from <http://www.capcoa.org>. The Project should seek to minimize its contribution to climate change by implementing all feasible mitigation measures to reduce GHG emissions, especially those measures targeting the Project's vehicle miles traveled, as transportation represents approximately 50 percent of the Bay Area's GHG emissions.

If you have any questions regarding these comments, please contact Sigalle Michael, Environmental Planner, at (415) 749-4683.

Sincerely,

A handwritten signature in black ink, reading "Jean Roggenkamp". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Jean Roggenkamp
Deputy Air Pollution Control Officer

JR:SM

cc: BAAQMD Director Gavin Newsom
BAAQMD Director Jake McGoldrick
BAAQMD Director Chris Daly

Ilana Bar-David
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ilana@bardavid.net
415/387-6890

February 26, 2008

Bill Wycko, Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

Re: Case No.2007.0903E -- Treasure Island and Yerba Buena Island
Redevelopment Plan

Dear Mr. Wycko,

Allow me to introduce myself. My name is Ilana Bar-David and I serve on the Fort Mason Center board. I attended the SPUR Sustainability Committee meeting this month and was updated on the status of the Treasure Island Redevelopment Plan. Ruth Gravis encouraged me to send you my thoughts regarding the inclusion of an artist colony on Treasure Island. I am delighted to fax this to you to be considered as the vision for Treasure Island evolves.

An artisan crafts colony would offer a very unique destination in the Bay Area as a center for traditional crafts. This live/work artist colony, focusing on pre-Industrial technological crafts such as printing, ceramics, glass blowing, musical instrument making, wrought iron and paper making, would complement the "green" emphasis in the development of Treasure Island. Such a colony would provide an anchor and centralization of various dying artistic traditions. Cobbled streets, store fronts and open studios for interacting with the public for purposes of education and sale, would offer a special and memorable experience for the visitor/passersby. The revival, restoration and preservation of such crafts, many of which have a strong historical presence in the Bay Area, would further enhance the pioneering sustainable vision of Treasure Island, entice visitors, and reduce commute congestion.

We also discussed the possibility of establishing a green business center on the island that would attract non-industrial enterprises that focus on sustainability. People who work in such environments might also be attracted to living on the island and thus "walking their talk" to work and thereby also reducing commute congestion.

Please feel free to contact me if you have any questions about these ideas.

Ilana Bar-David
Ilana Bar-David



Making San Francisco Bay Better

February 27, 2008

Bill Wycko, Acting Environmental Review Office
1650 Mission Street, Suite 400
San Francisco, California 94103-2479

SUBJECT: Notice of Preparation of an Environmental Impact Report for the Treasure Island and Yerba Buena Island Redevelopment Plan; Case. No. 2007.0903E; BCDC Inquiry File No. MC.MC.0703.1

Dear Mr. Wycko:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of the Environmental Impact Report (EIR) for the Treasure Island and Yerba Buena Island Redevelopment Plan. The San Francisco Bay Conservation and Development Commission (BCDC or Commission) has not reviewed the NOP, but the following staff comments are based on the *San Francisco Bay Plan* (Bay Plan) as amended through November 2007, the McAteer-Petris Act, and staff review of the NOP.

Jurisdiction. BCDC jurisdiction includes Bay waters up to the shoreline, and the land area between the shoreline and the line 100 feet upland and parallel to the shoreline, which is defined as the Commission's 100-foot "shoreline band" jurisdiction. The shoreline is located at the mean high tide line, except in marsh areas, where the shoreline is located at five feet above mean sea level. An essential part of BCDC's regulatory framework is the Commission's Bay Plan. The Bay Plan includes findings and policies that direct the Commission's review of proposed projects and priority land use designations for certain areas around the Bay to ensure that sufficient areas around the Bay are reserved for important water-oriented uses such as ports, water-related industry, parks, and wildlife areas. The Bay Plan also includes Map Policies that are geographically specific. There are several Map Policies that are relevant to Treasure Island and Yerba Buena Island.

BCDC's jurisdiction in the project area includes Bay jurisdiction and shoreline band jurisdiction. The Yerba Buena Island portion of the project is also designated in the Bay Plan as a waterfront park priority use area.

Fill and Public Access. For the portions of the project that would include placing fill in the Bay, the project would be reviewed to ensure that there was no alternative, upland location for the fill; that the fill proposed was the minimum necessary for the project; and that the fill was sited and designed to have the minimum impact on Bay resources.

With respect to public access, the Commission can only approve a project within its jurisdiction if it provides maximum feasible public access, consistent with the project. The Bay Plan policies on public access state, in part that, "[i]n addition to the public access to the Bay provided by waterfront parks, beaches, marinas, and fishing piers, maximum feasible access to and along the waterfront and on any permitted fills should be provided in and through every new development in the Bay or on the shoreline." Public access improvements provided as a condition of any approval should be consistent with the project and the physical environment, including

protection of natural resources, and provide for the public's safety and convenience. The improvements should be designed and built to encourage diverse Bay-related activities and movement to and along the shoreline, should permit barrier-free access for the physically handicapped to the maximum feasible extent, should include an ongoing maintenance program, and should be identified with appropriate signs. The policies also direct that "[a]ccess to the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available." The public access policies also state that the access should be permanently guaranteed, include an ongoing maintenance program and identified with signage.

In addition to the general public access policies, the Bay Plan Map policies contain public access direction specific to Treasure Island and Yerba Buena Island. Bay Plan Map 4, Policy 19 states for Treasure Island, "[i]f and when not needed by the Navy, redevelop for public use. Provide continuous public access to the Bay in a manner protective to sensitive wildlife. Provide parking and water access for users of small craft at the north end of Treasure Island." Bay Plan Map 4, Policy 22 for Yerba Buena Island also contains specific direction for public access and recreation that should be incorporated into the design for projects on Yerba Buena Island, including "[a] large public open space at the center of Yerba Buena Island" and "[a] linked system of trails near the shoreline and at the upper elevations that connect vista points and open spaces."

The EIR should evaluate whether projects detailed in this plan, including the new ferry terminal, commercial complexes, and proposed pedestrian and bicycle paths provide maximum feasible public access and are consistent with BCDC's public access policies and the Bay Plan Map Policies.

Recreation. The Bay Plan Policies on Recreation state, in part, "[a]ny concentrations of facilities should generally be as close to major population centers as is feasible" and that "[d]ifferent types of compatible public and commercial recreational facilities should be clustered to the extent feasible to permit joint use of ancillary facilities and provide greater range of choice for users." Specific recreation policies on marinas state, in part, "[f]ill should be permitted for marina facilities that must be in or over the Bay, such as breakwaters, shoreline protection, berths, ramps, launching facilities, pump-out and fuel docks, and short-term unloading areas. Fill for marina support facilities may be permitted at sites with difficult land configurations provided that the fill in the Bay is the minimum necessary and any unavoidable loss of Bay habitat, surface area, or volume is offset to the maximum extent feasible, preferably at or near the site." The policies also state that, "[n]o new marina or expansion of any existing marina should be approved unless water quality and circulation will be adequately protected and, if possible, improved" and that, "[a]ll projects approved should provide public amenities such as viewing areas, restrooms and public parking; substantial physical and visual access; and maintenance for all facilities. Frequent dredging should be avoided."

The EIR should examine the effects that this development will have on recreation on Treasure Island, particularly in the shoreline band and in the public's access to the shoreline. Potential negative effects on public marina and boat launching facilities from increased intensity of use should be evaluated. Additionally, Yerba Buena Island is designated in the Bay Plan (Map 4) as a waterfront park priority use area. Bay Plan Map 4, Policies 20 and 21 are relevant to both Treasure Island and Yerba Buena Island and should be included in the design of any projects proposed for the islands.

Transportation. Bay Plan Policies on Transportation state, in part, "[t]ransportation projects on the Bay shoreline...should include pedestrian and bicycle paths that will either be part of the Bay trail or connect the Bay Trail with other regional and community trails. Transportation projects should be designed to maintain and enhance visual and physical access to the Bay and along the

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Bill Wycko
February 27, 2008
Page 3

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Bay shoreline." Bay Plan transportation policies on ferries state, in part, "[f]erry terminals should be sited at locations that are near navigable channels, would not rapidly fill with sediment and would not significantly impact tidal marshes, tidal flats or other valuable wildlife habitat. Wherever possible, terminals should be located near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of the Bay."

Development of more extensive public transportation and bicycle transportation systems are consistent with the Bay Plan as long as these are developed in accordance with Bay Plan policies. The EIR should examine the effects increased transportation usage of all modes will have on public access to the shoreline, wildlife, and recreation. The EIR should also examine whether new bay fill will be needed for the construction of new transportation facilities.

Appearance, Design and Scenic Views. The Bay Plan Policies on Appearance Design and Scenic Views state, in part, "[a]ll bayfront development should be designed to enhance the pleasure of the user or viewer of the Bay. Maximum efforts should be made to provide, enhance or preserve views of the Bay and shoreline, especially from public areas. Shoreline developments should be built in clusters, leaving open area around them to permit more frequent views of the Bay. Views of the Bay from roads should be maintained by appropriate arrangements and heights of all developments and landscaping between the view areas and the water."

The NOP proposes a large increase in the amount of development on Treasure Island and the intensity of use of the waterfront. This development should be consistent with Bay Plan policies on Design and Scenic Views.

Sea Level Rise and Safety of Fills. Bay Plan findings and policies anticipate the need for planning associated with safety of fills and sea level rise. The safety of fills findings state, in part, "[s]tructures on fill or near the shoreline should be above the highest expected water level during the expected life of the project. Bay water levels are likely to increase in the future because of a relative rise in sea level. Relative rise in sea level is the sum of: (1) a rise in global sea level and (2) land elevation change (lifting and subsidence) around the Bay." Bay Plan policies on safety of fills state, in part, "[l]ocal governments and special districts with responsibilities for flood protection should assure that their requirements and criteria reflect future relative sea level rise and should assure that new structures and uses attracting people are not approved in flood prone areas or in areas that will become flood prone in the future, and that structures and uses that are approvable will be built at stable elevations to assure long-term protection from flood hazards."

In addition to consistency with other BCDC policies new fill needed for construction and geotechnical stabilization projects in BCDC jurisdiction that involve bay fill must be consistent with the Bay Plan policies on the safety of fill and sea level rise.

If you have any questions regarding this letter, or any other matter, please contact me by phone at 415-352-3649 or email sahryec@bcdc.ca.gov.

Sincerely,



SAHRYE COHEN
Coastal Planning Analyst

SC/gg

cc: Andrea Contreras, Planning Staff San Francisco Planning Department

DEPARTMENT OF TRANSPORTATION

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*Flex your power!
Be energy efficient!*

February 26, 2008

Mr. Bill Wycko
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

SF080060
SF-80-7.72
SCH#2008012105

Dear Mr. Wycko:

Treasure Island and Yerba Buena Island Redevelopment Plan – Notice of Preparation (NOP) and the Transportation Impact Study Draft Final Scope of Work (TISSOW)

Thank you for including the California Department of Transportation (Department) in the early stages of the environmental review process for the proposed project. The comments presented below are based on the NOP of an Environmental Impact Report (EIR) and the TISSOW for the Treasure Island and Yerba Buena Island Redevelopment Plan. As lead agency, the San Francisco Planning Department is responsible for all project mitigation, including improvements to state highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures in the EIR. Any required roadway improvements should be completed prior to the issuance of a certificate of occupancy. While an encroachment permit is only required when the project involves work in the State Right of Way (ROW), the Department will not issue an encroachment permit until our concerns are adequately addressed. Therefore, we strongly recommend that the lead agency ensures resolution of the Department's concerns prior to submittal of an encroachment permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.

Forecasting

On page 2 of the TISSOW, it states that traffic counts will be taken from 1:00 to 3:00 PM on a single Saturday. Presumably, this time period is thought to be the peak period for weekend traffic, although it should be confirmed that this is the peak period at the particular location. However, since weekend traffic volumes are far more variable than weekday volumes, a number of counts appear justified, including some where special events such as Forty-Niner or Giants games or major events at the Moscone Center are occurring.

On pages 2 and 3 of the TISSOW it states that, "discussion of parking conditions will be based on qualitative information contained in the Transfer and Reuse of Naval Station Treasure Island EIR." Please include the information used in addition to noting the reference. We are not able to comment on whether this is an appropriate basis.

On page 3 of the TISSOW, a statement is made that the document will include "justification for why East Bay freeway interchanges and local streets are not included as part of the impact analysis." The Department recommends consideration and analysis before this decision is made.

The "Treasure Island Transportation Plan" is referenced throughout the Scope of Work as a source of information to be used in the study. Since we are not familiar with this plan we can't comment if this is appropriate. Please provide this document for our reference. If this plan uses trip generation rates lower than those in the Institute of Transportation Engineers' Trip Generation, 7th Edition, these rates will need to be justified.

The "San Francisco Transportation Impact Analysis Guidelines for Environmental Review" is cited as providing the analysis methodology for this project. When analyzing the impacts to state highways, the methods used should be compatible with the Caltrans' "Guide for the Preparation of Traffic Impact Studies" located at the following website:

<http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf>.

In any case, the methods used should always be evaluated to ensure they are appropriate for this project.

On page 4 of the TISSOW, reference is made to the "Land Transfer and Reuse Plan Environmental Impact Report." Any material used from this document should be discussed and justified in the Treasure Island Development Plan environmental documents.

On page 5 of the TISSOW, it states that Fehr & Peers will use "methods developed for the United States Environmental Protection Agency (EPA)" to measure the effects of transit oriented development on trip generation. These methods need to be thoroughly discussed and justified to ensure they are appropriate in this case.

Similarly, the "trip generation elasticities" referenced on page 5 of the TISSOW need to be thoroughly discussed and justified.

Please provide a definition for the "cumulatively considerable" used in the second line on page 8 of the TISSOW.

On page 17 of the TISSOW, the document states that "traffic impacts will be analyzed for the AM and PM peak periods....in relation to existing conditions and in a future context that accounts for cumulative growth in volume of traffic on the Bay Bridge." This suggests that the focus will be on a more or less symmetrical daily commute. A critical consideration is potential additional traffic due to the anticipated presence of retail to serve Island residents as well as traffic generated by other land uses on Treasure Island including a hotel (500 hotel rooms) and 325,000 square feet of commercial uses in renovated historic buildings and "retail uses concentrated and organized as a main street." Assuming that traffic generated by these land use activities is significant, it is suggested that the documents be more specific with respect to sources of all traffic accessing Yerba Buena Island and Treasure Island.

It is not stated which, if any, travel demand model will be used to analyze this project. For a project of this scope, a travel demand model would be an appropriate analysis tool. Will one be used, and if so, which one?

Community Planning

The Department encourages EIR development coordination, to the extent practicable, with the "Walkable-Bikeable Treasure Island" study being led by the San Francisco Department of Public Health. We assume that you will model transit, pedestrian and bicycle trips as well as motorized vehicle traffic, and that multimodal level of service (LOS) or performance measures will be employed in your analysis of impacts. In addition, please analyze secondary impacts on pedestrians and bicyclists that may result from any mitigation measures for traffic impacts and describe any pedestrian and bicycle mitigation measures that would in turn be needed as a means of maintaining and improving access to mass transit facilities and reducing traffic impacts on state highways.

Highway Operations

Under the section, "Project Description/Proposed Transportation Plan/Bay Bridge Access" on page 8 of the NOP, the second paragraph makes reference to an approved Project Study Report (PSR) to improve the freeway ramps. However, it should be noted that the approved document was a Project Study Report-Project Development Support (PSR-PDS), which only defines support costs for project development. Therefore, the cost, scope, and schedule associated with the project are not covered in the PSR-PDS.

Under the section, "Potential Environmental Issues/Transportation" on page 17 of the NOP, the study area is not defined for the analysis of AM and PM peak periods. The Department recommends that the analysis cover the ramps in both directions of the bridge, the westbound approach east of the site (i.e., the Bay Bridge toll plaza), and the eastbound approach west of the project site (i.e., the freeways in San Francisco).

Please assess in greater detail intersections 2, 3, 8, and 10 under Task 2 on page 1 of the TISSOW. While we agree that the remaining nine intersections would provide a more thorough traffic study, the traffic impacts from the proposed project would likely have a relatively small impact at many of these intersections because the number of possible destinations would dilute traffic volumes from Treasure Island to any particular intersection. However, the Department recommends three additional intersections be included in the study:

- Bryant Street/Sterling Street
- Bryant Street/5th Street/I-80 EB on-ramp
- Harrison Street/5th Street/I-80 WB off-ramp

Under Task 2 on page 2 of the TISSOW, the second paragraph states that count data will be collected at up to three locations on Treasure Island and Yerba Buena Island. The Department recommends that all ramps be incorporated into these counts. Please be aware of ramp and road closures due to on-going construction on the Bay Bridge east span before data collection occurs.

We concur with the discussion concerning peak period queuing; however, while queuing is an important performance measure, we recommend that travel time data also be collected and documented as part of the existing conditions.

On page 2 of the TISSOW, it states that the average and 85th percentile speed on the bridge will be measured. However, this does not seem practical assuming traditional methods of measuring 85th percentile speeds. A more practical and probably more appropriate method to collect speed data on the bridge would be to use probe vehicles or "floating cars" performing a series of runs across the bridge.

Under Task 3 on page 3 of the TISSOW, the last bullet indicates that intersection LOS will be reported. Note that, in general, since measures of effectiveness (MOE) for the overall intersection typically do not adequately describe the operation and may actually mask a deficient condition on one or more approaches, MOEs for intersections need to be determined and reported for each approach leg. In addition, we consider LOS by itself to be an inadequate MOE for describing traffic operational conditions. LOS may be used as a secondary MOE. For intersections, however, acceptable MOEs include flow (output), average control delay, queue (length or number of vehicles), and number of vehicles /capacity (V/C) ratio. For freeway and ramp operations, flow (output), speed, and travel time/delay are acceptable MOEs.

Under Task 3 on page 4 of the TISSOW, the first bullet indicates that the Highway Capacity Manual (HCM) methodology will be used for analysis of ramp operations. Note that HCM methodology is not applicable for congested conditions, which may be the case for some, or all, of the ramps.

The analysis of Bay Bridge existing operation, under the second bullet on page 4 of the TISSOW, seems to focus only on the queuing on the approaches, but not on the operation of the bridge itself. The operation of the bridge as well as its approaches should be covered in terms of queuing (extent and duration), flow rates, travel times, speeds, and bottleneck locations.

Under Task 5 on page 7 of the TISSOW, the comment above for Task 3 regarding intersection LOS applies to this task.

The fourth and fifth bullets and the second paragraph under Task 5 on page 7 of the TISSOW indicate that 2030 will be the future year analyzed. We recommend that the future year for this analysis be consistent with the future year that will be used for the project studies for the proposed new ramps.

Proposed Utilities

Water – The plan assumes that a secondary water supply will use a pipe being constructed on the new east span of the Bay Bridge. This project will need to cover the Department's construction and support costs for placing this pipe on the new east span. Connection to the pipe termination points will need to be designed and constructed – these are not part of the Department's project.


Mr. Bill Wycko/ San Francisco Planning Department
February 26, 2008
Page 5

Wastewater – The NOP states that a new wastewater treatment facility would be constructed on Treasure Island. Does this mean that the City will not use the sewer line constructed on the new east span of the Bay Bridge?

Recycled Water – The NOP states that piping for recycled water would be provided only on Treasure Island. Does this mean that the City will not use the reclaimed water line constructed on the new east span of the Bay Bridge?

Should you have any questions regarding this letter, please call Lisa Carboni of my staff at (510) 622-5491.

Sincerely,


for TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: State Clearinghouse

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
Maintenance & Logistics
Command Pacific

Chief, Civil Engineering Division
1301 Clay Street, Suite 700N
Oakland, CA 94612-5203
Staff Symbol: (sts)
Phone: (510) 637-5505
FAX: (510) 637-5513
Email: charles.p.wallis@uscg.mil

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FEB 28 2008

16475

CITY & COUNTY OF S.F.
PLANNING DEPARTMENT
M E A

FEB 27 2008

Mr. Rick Cooper
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

Subject: Notice of Preparation of an Environmental Impact Report (EIR) and Notice of Public of Scoping Meetings – Treasure Island and Yerba Buena Island Redevelopment Plan

Dear Mr. Cooper:

Thank you for the opportunity to review the Notice of Preparation (NoP) for the Treasure Island (TI) and Yerba Buena Island (YBI) Redevelopment Plan EIR. The Coast Guard reviewed the notice and has the following concerns:

First and foremost, the Coast Guard runs an essential “24/7” mission at its facility on YBI. Our facilities there require uninterrupted utility service from the City of San Francisco Public Utilities Commission. With the City’s plan to replace and upgrade public services and utilities on the islands, the Coast Guard is concerned that utility services to our facilities might be interrupted during construction activities.

Next, some of the proposed utility replacements and upgrades that concern the Coast Guard most include: 1) Replacement of water tanks on YBI; 2) Replacement of the waste water treatment plant (WWTP) on TI; 3) Installation of new electrical substations; and 4) Replacement of the telecommunication system. It is important that the City works closely with the Coast Guard to assure that none of the above actions would interrupt utility services to any Coast Guard facility on YBI.

Also, the increased traffic volume and changes in their patterns, both during and after construction, may limit the ability of Coast Guard personnel to access their facilities quickly, and at all hours. Even with mitigation, the additional traffic might still be a cause for concern to the Coast Guard because of potential noise and air pollution. This is the case, since the YBI roadway network connecting the eastbound bridge on-ramp, passes through Coast Guard property. The proposed plan may also impact the public transit service to and from the islands during and after construction.

Furthermore, Coast Guard missions at YBI have increased and intensified in recent years. This has resulted in increased personnel, as well as a need for additional parking spaces. To meet this requirement we have identified a need for approximately 52,000 square feet of additional

Subj: Notice of Preparation of an Environmental Impact Report (EIR)
and Notice of Public of Scoping Meetings – Treasure Island and
Yerba Buena Island Redevelopment Plan

16475

parking. The most viable option to solve this parking deficit would be to lease parking spaces on TI. As such, the Coast Guard requests the City consider this request in its Plan. Additionally, the Coast Guard is concerned about the impacts the Plan might have on our limited parking spaces near Hilltop Park on YBI.

Finally, the Coast Guard is concerned about security for its residents, personnel, as well as its facility during and after construction. This concern stems from the proposed increase of up to 6,000 residential units and 2,000 employees on TI and YBI, as well as other proposed recreational activities such as bike trails on the islands.

In closing, the Coast Guard is fully supportive of the City's Redevelopment Plan as long as the Coast Guard's essential missions on YBI are not negatively affected during and after construction.

Should you have any questions, please contact me at (510) 637-5505.

Sincerely,

A handwritten signature in black ink, appearing to read 'Patrick Wallis', with a long horizontal stroke extending to the right.

PATRICK WALLIS
Chief, Shore Team South
U. S. Coast Guard
Civil Engineering Division
By direction

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February 21, 2008

FEB 26 2008

CITY & COUNTY OF S.F.
PLANNING DEPARTMENT
M E A

Bill Wycko, Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479

Re: Notice of Preparation of an Environmental Impact Report – Treasure Island and Yerba Buena Island Redevelopment Plan (Case No 2007.0903E)

Dear Mr. Wycko:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the Treasure Island and Yerba Buena Island (TI/YBI) Redevelopment Plan. EBMUD has the following comments.

EBMUD currently provides emergency water supply to TI/YBI through a special agreement with the San Francisco Public Utilities Commission, Navy and Islands. The emergency water from EBMUD should not exceed the capacities originally designed and planned for TI/YBI. EBMUD researched the demands on the existing service and there has been a general upward trend since 2004 in water usage. The demand is well within the amount estimated in the original service agreement; however, please be aware that this service must continue to be a back-up service and used only in case of emergency when full water supply is not readily available from San Francisco. Minimum flows to maintain water quality in the pipeline from Emeryville are acceptable.

On page 13, the last bullet under Required Approvals states that “Approval of new service connection and water meter in Oakland (EBMUD)” is required. The project is outside of the EBMUD’s Ultimate Service Boundary, thus an additional service connection and meter will not be granted.

On page 9, Proposed Utilities, Water, and on page 19, Community Services and Utilities, top paragraph, the text should be changed from “East Bay Municipal **Utilities** District” to “East Bay Municipal **Utility** District.”

Bill Wycko, Acting Environmental Review Officer
February 21, 2008
Page 2

If you have any questions concerning this response, please contact David J. Rehnstrom,
Senior Civil Engineer, Water Service Planning at (510) 287-1365.

Sincerely,

A handwritten signature in black ink, appearing to read 'W.R. Kirkpatrick', with a large, stylized loop at the end.

William R. Kirkpatrick
Manager of Water Distribution Planning

WRK:TNS:sb
sb08_039.doc

74 Mizpah Street
San Francisco, CA 94131
(415) 585-5304
<gravanis@earthlink.net>

February 26, 2008

Mr. Bill Wycko, Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco CA 94103-2479

Re: Case 2007.0903E - TI/YBI EIR Scoping Comments

Dear Mr. Wycko:

I have a number of comments on the NOP for the TI/YBI Redevelopment Plan EIR.

Defining the alternatives

Of special concern is the selection of the alternatives to be assessed. I do not see the purpose in studying an alternative that assumes that there will be no Public Trust exchange. The project objectives could not possibly be met this way, and if they could (if anywhere near 6,000 dwelling units could be placed on YBI), the automobile-related impacts would be at least as harmful as in the Proposed Project alternative, and the development would present additional negative impacts including major destruction of wildlife habitat. Also, this level of development on YBI would be in violation of BCDC's Bay Plan. The Public Trust trade has already been authorized by the legislature and there is no reason to believe that it would not be implemented by the State Lands Commission. Comparing a no-trust-trade alternative to the Proposed Project alternative would not give decision makers and the public any useful information, and I see no point in spending valuable time and resources on it.

An alternative that would give us useful information is one that uses the same development intensity as the Proposed Project alternative while minimizing or avoiding the potential negative impacts. Such an alternative would maximize the sustainability of the project by setting targets for the lowest possible environmental harm and by identifying the means to achieve these targets. For example, to eliminate car-related impacts, the elements of a maximum sustainability alternative would include only one-quarter of the parking spaces in the Proposed Project alternative and would increase the desirability of car independence through a variety of means including grocery delivery service and take-home grocery carts for residents and visitor-serving uses that lend themselves to ferry or bus travel (experiences to enjoy rather than things to buy). In addition to the measures to discourage driving mentioned in the NOP, there would be specific efforts to reduce car ownership (not just car use), and a marketing program for the sale and rental of the new residential units that targets those who are ready to enjoy a car-free lifestyle.

Mr. Bill Wycko, page 2

Where the Proposed Project alternative calls for a developable pad for a recycled water plant, the maximum sustainability alternative would assume that all sewage will be treated to the tertiary level. The stormwater management program would be designed to treat flows from events larger than the five-year storm, through additional LID measures such as cisterns for roof runoff storage. The erosion problems on YBI, especially in Clipper Cove, caused by stormwater discharges would be eliminated

On-island energy production would exceed the 5% of peak demand referenced in the NOP. The distributed energy system concept would extend beyond the urban core area. The green building standard would be increased to some equivalent of LEED platinum.

The land use program would include a variant in which the Job Corps Center is relocated off-island or reconfigured to allow for more compact development. A program to encourage TI/YBI residents to work on the islands and island employees to reside on the islands would reduce the "citywide job generation or housing demand" or both.

The maximum sustainability alternative would set targets for minimizing automobile ownership, because people who own cars are more likely to use them, and parking spaces are never a highest and best land use. Providing space for people to store their cars increases the cost of housing and decreases the value of public space. Ample carsharing pods would be made available. A fee for private auto use on and off the island would be collected all day; cars have impacts on the environment regardless of the time of day, even those with zero tail pipe emissions. Congestion-based pricing could be on top of the 24-hour fee. Instead of aiming for no more than a 5% increase in Bay Bridge traffic, the cap would be 1%.

The word "demolition" would be replaced with "deconstruction" throughout.

Comparison of alternatives

In comparing visual impacts, please include renderings, photomontages or computerized simulations that include various views of the islands, along with reference points such as the top of YBI and the Bay Bridge towers, taken from sea-level vantage points.

Please compare the alternatives for their level of compliance with SF's Transit First Policy

It would be useful to know the total annual carbon emissions projected for each alternative after build-out.

The alternatives comparison would assess the ecosystem damage that would result from various levels of management of invasive exotic plants and animals.

Mr. Bill Wycko, page 3

Additional scenarios to be analyzed:

- What if the project fails to receive state approval for the proposed Congestion Management Pricing program? (Studying such an alternative would make more sense than studying a non-Trust-trade alternative.)
- What opportunities will materialize when (if!) Caltrans finishes its work on the East Span of the Bay Bridge? For example, what might be the impacts of public reuse of the restored Torpedo Factory?

Additional concerns

Because many San Franciscans use the term "wastewater" to mean both sewage and stormwater, please help avoid confusion by saying "sewage" when you mean sewage.

Mitigation measures must be implementable. In the Programmatic EIR, the mitigation measure listed for the potential removal of roosting habitat for the black-crowned night heron was consultation with CA Department of Fish and Game. Subsequent talks with DFG staff revealed that the resources did not exist for such a consultation.

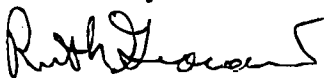
With regard to the sensitive habitat within Clipper Cove, please note the following quote from the Draft DEIR, page 4-133: "While the potential for spills cannot be eliminated entirely, existing regulatory requirements minimize the potential for spills to occur, require timely response to accidental spills, and reduce the potential for nonpoint sources to cause significant adverse impacts on surface water quality. The Coast Guard would have a quick response time, given its proximity to the site, and spills would be contained and would have less-than-significant impacts on biological resources." Perhaps we shouldn't be so optimistic.

The inventory of biological resources must not rely on data gathered for the EIS and used in TI/YBI Sustainability Plan. If California quail or Lewis' woodpecker have been sighted on YBI, please document carefully. ☺

It may be useful to coordinate with the Board of Supervisors-mandated Habitat Management Plan for YBI.

I appreciate the opportunity to comment. Please contact me if I can make any of these suggestions more understandable.

Yours truly,



Ruth Gravanis



995 Market Street Suite 1550
San Francisco, CA 94103

415.431.BIKE
415.431.2468 fax
www.sfbike.org

PROMOTING THE BICYCLE FOR EVERYDAY TRANSPORTATION

February 26, 2008

Bill Wycko
Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission St., Suite 400
San Francisco, CA 94103

Dear Mr. Wycko,

On behalf of the 8,500-member San Francisco Bicycle Coalition, I would like to submit the following comments concerning the Treasure Island and Yerba Buena Island Redevelopment Plan Notice of Preparation of an Environmental Impact Report (EIR) – Case no. 2007.0903E.

The EIR should contain any required analysis of the following items:

- The current plan calls for approximately 6,000 parking spaces for approximately 6,000 residential units. The EIR should investigate the environmental impact of limiting this number to 3,000 parking spaces.
- A Pedestrian/Bicycle/Maintenance Pathway on the West Span of the Bay Bridge and the impacts on regional traffic flows, air quality, congestion, and transit. As you know, such a pathway is currently being constructed on the East Span of the Bay Bridge, and a pathway on the West Span would help alleviate the traffic issues predicted after Treasure Island is developed and more trips on and off the island are generated.
- The EIR should look at the design strategies set forth by the Treasure Island Community Development, LLC for bicycle and pedestrian connections from Treasure Island to the East Span of the Bay Bridge.
- If required, analysis of a Bicycle Shuttle as a transit option for bicycle commuters traveling from Treasure Island to San Francisco and the East Bay, and its effects on congestion, air quality, and traffic.
- The impact of limiting automobiles on “neighborhood streets,” as described in the Transportation Plan.
- If required, analysis of different types of bicycle facilities on “arterial streets” and “collector streets,” as described in the Transportation Plan. Kinds of bicycle facilities that may be implemented include, but are not limited to: bicycle lanes

Continued on next page




Continued from previous page

separated by raised medians or other barriers, “bike boxes” at intersections, and bicycle boulevards.

- Utilization of numerous traffic calming features and policies on all of Treasure Island streets and impacts on traffic, air quality, and congestion.
- If required, analysis of a robust bicycle parking program, including, but not limited to, designated bicycle parking rooms at clusters of residential units, at retail and commercial places (both on-sidewalk or on-street), and excellent facilities at the Island’s multi-modal central transportation hub.
- If required, analysis of the impact of a bicycle-sharing program.
- If required, analysis of a clear and separate bicycle and pedestrian pathways around the central terminal near Building One.

Thank you and please do not hesitate to contact me if you have any further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Neal Patel". The signature is fluid and cursive, with the first name "Neal" and last name "Patel" clearly distinguishable.

Neal Patel
Community Planner
Treasure Island Community Transportation Planning Project
San Francisco Bicycle Coalition
neal@sfbike.org



SF Environment

Our home. Our city. Our planet.



GAVIN NEWSOM
Mayor

JARED BLUMENFELD
Director

February 25, 2008

Mr. Bill Wycko, Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco CA 94103-2479

Re: Case 2007.0903E – TI/YBI EIR Scoping Comments

Dear Mr. Wycko:

On behalf of the Department of the Environment, I am pleased to be able to submit comments to you relating to Environmental Impact Report (EIR) Scoping for the redevelopment of Treasure Island and Yerba Buena Island (TI/YBI). This is a critical project that will advance the sustainability of the Islands and has the potential to establish an international model for ecological urban development. This Department has been involved in the planning of this project for more than five years.

The TI/YBI Notice of Preparation (NOP) states that the Planning Department will prepare four alternatives, one of which would be an analysis of a "less intensive development program." However, less intensive development does not necessarily mean a reduction in environmental impacts. "Less intensive" could mean that there are not enough residents to support neighborhood-serving commercial uses, necessitating more trips off-island; and without the patronage needed to support frequent and reasonably priced transit, the impacts related to private automobile use could be worse. If the intent is to create an alternative that reduces or avoids the significant impacts of the Proposed Project, then we would recommend that the EIR include a "Minimum-Impact Alternative" instead of or in addition to a "less intensive development" alternative.

The Minimum-Impact Alternative would call for less use of the private automobile and higher goals for energy efficiency, carbon neutrality and water-quality. It should also measure the total quantity of greenhouse gases and other criteria pollutants generated each year. This alternative may include the following characteristics:

Department of the Environment, City and County of San Francisco
11 Grove Street, San Francisco, CA 94102
Telephone: (415) 355-3700 • Fax: (415) 554-6393
Email: environment@sfgov.org • www.sfenvironment.com

Transportation

- A reduction in the number of parking spaces, including reducing retail and commercial parking;
- Lower targets for vehicle miles traveled;
- Additional incentives for minimizing automobile ownership, not just car use;
- Lockers at the transit hub so that visitors would be able to leave packages, extra shoes etc., there instead of in the trunks of cars – allowing fuller enjoyment of the variety of activities that the islands have to offer;
- Weather-protected space for bikes on the ferries;
- Bus service to, from and on the islands that minimizes the number of transfers required;

- Higher green building standards – higher LEED and Green Point Rated levels; and

Water Conservation and Water Quality

- Higher standards for storm water discharges: higher level of treatment, greater detention times; more storage and reuse of roof runoff;
- Maximum use of recycled water;
- Minimum use of domestic water;
- Accommodation of flows greater than the 5-year storm event;
- Gray water systems in residential buildings and hotels; and
- Climate-appropriate landscaping, requiring minimal supplemental water.

Resource Conservation

Energy Conservation and Carbon Neutrality (non-transportation)

- Remediation process to be as carbon neutral as possible,
- Higher renewable energy generation targets, including on-island generation and use of distributed energy systems

Biology

- Biodiversity targets that protect and restore ecosystems, not just sensitive species; and
- Highest Green Point Rated points (or equivalent) for Bay-Friendly landscaping – for water conservation, Bay water quality, and habitat value.

The Department of the Environment recognizes that the EIR is an informational document prepared in accordance with the terms of CEQA and provides decision makers with an analytical tool to make decisions about the project. Our Department looks forward to working with TIDA and the Planning Department on many of these programs in an effort to enhance this project's environmental benefits and hold it up as a model for other development not only in San Francisco but in the Bay region.

Thank you for consideration of these comments. Please feel free to contact Jennifer Kass at 415-355-3762 for clarification of any of these suggestions.

Sincerely,



Jared Blumenfeld

**SIERRA CLUB
SAN FRANCISCO GROUP**

85 Second Street, Box SFG, San Francisco, CA 94105

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PLANNING DEPARTMENT
M.E.A.

February 25, 2008

Mr. Bill Wycko, Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco CA 94103-2479
FAX 558-6409

Re: Case 2007.0903E -- Treasure Island – EIR Scoping Comments

Dear Mr. Wycko:

The Sierra Club requests that the following be included in the subject EIR:

- 1) Description and assessment of an alternative or alternatives and variants that reduce the impacts related to the private automobile, and**
- 2) A comparative analysis of all alternatives with respect to carbon emissions and other impacts.**

We attach a draft table to show the alternatives and variants to be studied and compared.

For 1) The Developers Base Alternative to be described and studied should include the following elements:

- a) Basic bus fares and fast pass rates the same as on the SF mainland and East Bay at the time of the study
- b) Buses given absolute priority on TI and YBI roadways.
The purpose of this and the element c) below is: Improved priorities are a low cost method to make buses more attractive to riders and encourage people to drive less in order to reduce carbon emissions.
- c) Priority for buses to flow onto the bridge
- d) Basic ferry fares to be twice the Muni adult fare, per previous project studies
- e) Peak-hour access fees set to limit bridge travel congestion impacts (a project requirement).
- f) Some of the bridge access fees to fund a portion of the proposed West span bikeway.

g) Garage parking fees – hourly, daily and monthly – at a minimum, to be the same as the lowest priced City-owned garage within the central business district.

h) Curb-side and open space meter rates to be the same as Zone Three neighborhood commercial except that meters within 1,000 feet of a garage shall be \$0.50 per hour higher than the garage.

For 1) The Off-peak Access Fee Alternative to be described and studied should include a, b, c, d, e, f, g and h) above and the following elements:

i) All of the revenue from parking meters on TI and 25% of commercial garage fees (the same as SF mainland) flow to the SFMTA to provide essential transit services to TI residents and visitors, as a way to meet the requirement that revenue from Trust Lands are to be used on the Land.

j) Off-peak access fees set to provide any necessary additional subsidies to ferry travel, bus transit to Oakland, on-island shuttle buses, and all other TI/YBI alternative mobility modes.

The purposes of this element are: 1) High tolls, all day every day of the week, on the Golden Gate Bridge, set to fund maintenance and ferries and buses as alternate modes, to limit bridge congestion, work reasonably well. 2) The developer's Base Alternative uses revenues, from sources which in mainland San Francisco are used to fund Muni transit. This element replaces any funds diverted by i) above. In addition, if the study shows that off-peak access fees from SF to TI, necessary to replace funds from parking used in the Base Alternative for other uses, are greater than the Bay Bridge tolls, then access fees should also be collected from Oakland to TI traffic.

For 1) The Reduced Parking and Commercial and No Ferry Service Alternative to be described and studied should include a, b, c, d, e, f, g, h, i and j) above and the following elements:

k) Reduced Parking: For this alternative, the supply of parking would be limited as follows: Residential 0.75 off-street parking spaces per unit maximum; Hotels 0.1 parking spaces per room; Retail and "Flex" (commercial) Space 0.2 spaces per 1,000 square feet; Marina 0.3 parking spaces per berth, and reduced curbside and open space parking based on maximum mobility and pedestrian ambiance alternatives.

The purpose of this element is to determine the impacts of a reduced supply of parking, the same similar uses in mainland SF.

l) Reduced Retail and Commercial Uses. Retail space would be limited to only provide all (if practical) residential and short-term visitor needs. "Flex" (commercial) space would be limited such that at least fifty percent of workers will be TI/YBI residents. This should not affect Trust permitted hotels. This alternative shall include increased residential supply to replace at least the reduced square footage of retail and commercial uses, from the Base Alternative. All of the retail and commercial would be located at ground and lower stories of residential buildings, so that most TI residents can shop and get to their on-island work sites on foot.

m) No ferry service. Peak and Off-peak Access fees set per e and j) above, but with all of the net funds (not used for j) above uses, except ferries) us as additional subsidies to reduce the cost of SF fast passes and an East Bay bus equivalent, for TI/YBI residents. Reduced parking and commercial, even with greater residential may result in less driving and

therefore less total revenues, than the sum of e) and j) above, to be divided among a greater numbers of residents.

The purposes of this element are: 1) Show the impacts of the high energy consumption of ferries. 2) Show of the impacts of using ferry subsidy funds to further reduce the cost of transit and thereby reduce driving. 3) Consider alternate uses of the ferry dock area.

For 2) Comparative analysis: A thorough comparison of the alternatives should be made, using a table or matrix such as the one attached, to allow for evaluation of the comparative merits of the alternatives. Evaluation criteria should be included that will produce the following information for each alternative and variant:

a) The total quantity of green house gases and pollutants released per passenger carried from TI/YBI to their respective terminals in San Francisco or East Bay bus stop by buses, ferries and automobiles (to a nearby downtown parking garage), based on the average passenger load for each trip for a typical week day.

b) Total greenhouse gases emitted per year. The Club believes that for a project on an island barely above sea level, it is especially critical to compare the production of global warming gases.

c) Total daily passenger volumes from TI/YBI to the SF mainland and East Bay for each mode, at project completion,

d) Daily, discount and monthly bus and ferry fares.

e) Travel times at peak and off-peak for each mode, showing time for: walking; waiting, boarding, unboarding and riding.

3) The study should also discuss the possible alternative uses and impacts of using some or all of the Job Corp site for residential development to bring more TI residents closer to retail and transit.

Please feel free to contact me for any clarification.

Very truly yours,

Howard Strassner, Chair Transportation Committee
419 Vicente, San Francisco CA 94116, 661-8786, (h,w)
email: ruthow@dslexteme.com

Attachment: Draft Table

	Developer's Base Choice.	Off-peak Access Fee	Reduced Parking & Retail, No Ferry
Number of Units	6,000	6,000	
Square Feet Comm			
Muni Fare Daily/Monthly			
Ferry Fare Daily/Monthly			
Peak Access Fee	\$/access		
Off-Peak Fee Access Fee	-0-	\$/access	
Daily 108 Riders			
Daily AC Riders			
Daily Ferry Riders			
Peak Autos to SF			
Peak Autos to EB			
Daily Autos to SF			
Daily Autos to EB			
Garage Parking Fee hourly/daily/mo			
Meter rates hourly			
Travel Time Bus to SF			
Travel Time Ferry to SF			
Travel Time Auto to SF			
CO2 Ferry to SF			
CO2 Auto to SF			
CO2 Auto to EB			
CO2 Bus to SF			
CO2 Bus to EB			
Total Annual CO2			

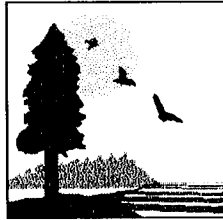
CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

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FEB 27 2008

CITY & COUNTY OF S.F.
PLANNING DEPARTMENT
M E A



PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
Relay Service From TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922

Contact Phone: (916) 574-1227
Contact FAX: (916) 574-1324

February 25, 2008

File Ref: G11-00

Bill Wycko
Acting Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Ste 4000
San Francisco, CA 94103-2479

Dear Mr. Wycko:

Thank you for the opportunity to comment on the Treasure Island and Yerba Buena Island Redevelopment Plan Notice of Preparation of an Environmental Impact Report and Notice of Public Scoping Meetings.

For background, the SLC has jurisdiction and authority over all ungranted tidelands, submerged lands, and the beds of navigable rivers, sloughs, lakes, etc. All tide and submerged lands, granted or ungranted, as well as navigable rivers, sloughs, etc., are impressed with the common law public trust. The public trust is a sovereign public property right held by the State or its delegated trustee for the benefit of all the people. This right limits the uses of these lands to waterborne commerce, navigation, fisheries, open space, recreation, or other recognized public trust purposes.

In the case of Treasure Island, the California Legislature has granted all tide and submerged lands, whether filled or still existing, to the Treasure Island Development Authority (TIDA) (Chapter 898, Statutes of 1997). As stated in Chapter 898 as amended (by Chapter 542, Statutes of 2004 and Chapter 660, Statutes of 2007), all former and exiting tide and submerged lands on Naval Station Treasure Island will be subject to the public trust upon their release from federal ownership (Section 3 (b) (2)). Chapter 898, as amended, further recognizes that public trust lands at Treasure Island are to be used for public trust purposes. However, there are two exceptions, first short term leases may be issued for property for which there is no immediate trust-related need (Section 8 (b)); and buildings which were built for a non-trust use and which are now incapable of being put to a public trust use may be used for non-trust purposes consistent with the reuse plan for their remaining useful lives, to be set by agreement at between 25 and 40 years (Section 9). Reference should be made to Chapter 898 itself for further requirements related to these non-trust uses.

In its statutory role as administrator of the public trust, the State Lands Commission must protect the public's interests in trust lands and ascertain that the property is used for purposes consistent with the public trust. The State Lands Commission may allow an exchange if it finds that the property to be freed of the trust is not necessary or useful for public trust purposes. In a land exchange, these findings are made in the context of an exchange of equally valuable lands to be impressed with the public trust. The configuration and potential utility of lands for public trust purposes is to be improved through an exchange.

We support that the Environmental Impact Report (EIR) recognizes, for informational purposes, that discussions are ongoing regarding a land exchange involving parts of Treasure Island and Yerba Buena Island. Representatives of TIDA, the developer, staff of the State Lands Commission, and the Office of the Attorney General have met to discuss the parameters of a land exchange. Also, meetings have occurred with public interest groups and individuals regarding an exchange. Through an exchange, the public trust could be terminated on lands at Treasure Island that are located away from the shoreline and no longer useful for public trust purposes. At the same time, the public trust would be imposed upon land at Yerba Buena Island which is useful for public trust purposes. Chapter 898, as amended, authorizes land exchanges (Section 11), provided all required findings can properly be made.

Based on the information provided on the competitive transportation management plan, it is important to note that any charges must be non-discriminatory for all users of Treasure Island. Care must be taken not to authorize preferential treatment of the residents of Treasure Island.

On a separate point, the EIR should recognize that the tide and submerged lands granted to the United States by Chapter 81, Statutes of 1897 are reversionary lands. Title to these properties should pass to the State of California, which will then deed them to TIDA to hold in trust through Chapter 898, Statutes of 1997, as amended.

Thank you again for the opportunity to comment. As requested in the notice, please note that I will be the contact person for the State Lands Commission and may be reached at (916) 574-1227 or via email at katog@slc.ca.gov should you have any questions or concerns.

Sincerely,

A handwritten signature in cursive script that reads "Grace Kato".

Grace Kato
Public Land Management Specialist

APPENDIX E

TRANSCRIPTIONS

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SAN FRANCISCO PLANNING DEPARTMENT

PUBLIC SCOPING MEETING RE:

CASE NO. 2007.0903E

TREASURE ISLAND AND YERBA BUENA ISLAND

REDEVELOPMENT PLAN

MONDAY, FEBRUARY 11, 2008

PIER 1, BAYSIDE CONFERENCE ROOM

SAN FRANCISCO, CA

ORIGINAL

Reported by: Freddie Reppond

CLARK REPORTING & VIDEOCONFERENCING

216 SHATTUCK AVENUE, SUITE 201

BERKELEY, CA 94704

(510) 486-0700

A P P E A R A N C E S

For SF Planning Department:

Rick Cooper

Michael Tymoff

From the Public:

Alice Pilram

[The proceeding began at 6:19 p.m.]

MR. COOPER: Welcome, everyone, to tonight's public scoping meeting for Treasure Island and Yerba Buena Island Redevelopment Plan EIR. Let's open the meeting, the purpose of which is to obtain public comment regarding the scope of the issues to be addressed in the draft environmental impact report for the project.

My name is Rick Cooper; and I am an environmental planner in the San Francisco Planning Department. With me today are -- outside the door is Andrea Contreras. We and one more Planning Staff, Patrice Siefers, are the coordinators of the environmental impact report, or EIR, for this project. My function this evening is to moderate the scoping meeting.

Seated in the room tonight are some people I'd like to introduce. To my right here is Michael Tymoff as well as Jack Sylvan, representing the Treasure Island Development Authority, cosponsor of the redevelopment plan, as well as coleads on the EIR. Also seated here this evening are representatives of Treasure Island Community Development LLC, the private cosponsor of the redevelopment plan. As well as, also, we have members of the Turnstone Consulting, EIR consultants on this

1 project.

2 As you came in, hopefully you have signed in
3 our sign-up sheet. Otherwise, please make sure to do so
4 before you leave tonight. Andrea is outside to assist
5 you. Also, if you'd like to speak, please do fill out a
6 speaker card, which we'll be collecting. So far no one
7 has signed those. So later on you'll have an
8 opportunity to, if you wish to.

9 Another item that you can pick up if you wish
10 is a comment form; and you can fill that out this
11 evening. We'll be collecting them before we break
12 tonight.

13 A couple of housekeeping items: Restrooms are
14 located out the door and to the left and to the left one
15 more time. We request that you kindly turn off the
16 ringers on your cellphones and pagers and step outside
17 the room, if you need to talk on your phone.

18 The purpose of the meeting tonight is to
19 assist us in the EIR for the proposed project to comply
20 with the requirements of the California Environmental
21 Quality Act, or CEQA. It's a very public process, so
22 the main reason for this meeting is to solicit both
23 written and oral comments or suggestions concerning the
24 scope and focus of the EIR. This is your opportunity to
25 assist the department by sharing any information you may

1 have that will be useful in the preparation of the EIR
2 regarding potential physical and environmental effects
3 of the proposed plan. Your comments could help to
4 identify significant environmental issues that determine
5 the depth of analysis, identify resource issues not
6 requiring detailed analysis, or identify reasonable
7 project alternatives.

8 This is not a meeting about the merits of the
9 proposed project or about whether to approve or
10 disapprove the proposed project. We are here tonight to
11 listen to your comments and information and not here to
12 discuss or debate your views.

13 Your participation in this matter is both a
14 statement of this evening's meeting's importance and an
15 opportunity to collect information for use by the EIR
16 team that will develop the CEQA documents.

17 In just a moment you will see a brief
18 presentation from Michael regarding the proposed plan.
19 And after that I'll speak to you just briefly about the
20 process from here. Then we'll open up the meeting for
21 public comments.

22 We have a court reporter here with us tonight
23 to make a verbatim transcript of the proceedings, so I
24 request that you speak slowly and clearly -- probably
25 slower than I have so far -- so the reporter can make an

1 accurate transcript, which will become part of the
2 public record for the process.

3 After all the speakers have commented, we'll
4 wrap up the meeting.

5 Now I'll hand things over to Michael Tymoff,
6 who will speak to you about the proposed plan.

7 MR. TYMOFF: Good evening. I'm Michael
8 Tymoff. I work in the Mayor's office on behalf of the
9 Treasure Island Development Authority. Thank you for
10 joining us tonight.

11 I'm going to give a brief overview of the
12 redevelopment project, starting off just briefly with
13 the overview; talk a little bit about the planned
14 process to date and timeline; and then go over kind of
15 the four main areas of the plan -- the land-use plan;
16 sustainability; transportation plan; and infrastructure.
17 And then talk a little bit about the implementing steps
18 as we're moving forward in the project phasing.

19 I'll try to be brief, because I think I can
20 safely say more people in the room know more about this
21 project than the people who know little about this
22 project, because most of the people in this project --
23 who work on the project -- are here in this room.

24 So the timeline: In 1993 the base was
25 selected for closure. And then in '94 a reuse committee

1 was formed, which resulted in a draft reuse plan being
2 published in 1996. This was really a policy document
3 that continues to guide the planning process. It's
4 really a general-plan level that looked at proposed uses
5 for the Islands.

6 In '97 the base closed and the City took on a
7 lease with the Navy and began interim operations. In
8 2000 a procurement process was started to select a
9 prospective master developer, which resulted in Treasure
10 Island Community Development being selected in 2003 and
11 the current development planning process being
12 initiated.

13 In 2005 TIDA and the Planning Commission
14 certified a programmatic EIR, which will be the basis
15 for the transfer of the land; and that was done on the
16 draft reuse plan. That's in contrast to this current
17 EIR, which is a project-level EIR on the redevelopment
18 plan and the projects and activities which will be
19 carried out pursuant to that redevelopment plan.

20 And then in December of 2006, TICD and TIDA's
21 development plan and term sheet was endorsed by the
22 Board of Supervisors after 200-some meetings, so a very
23 extensive public process -- the most extensive publicly
24 vetted project in San Francisco's history.

25 And then just in January of 2008 we issued the

1 Notice of Preparation and are anticipating the draft EIR
2 in 2009.

3 So quickly to go over the land uses, this is
4 an aerial view of the existing conditions out on
5 Treasure Island and Yerba Buena Island.

6 Just real quickly, the redevelopment plan
7 captures the entirety of both islands, including the
8 35-acre Job Corps parcel, which will remain in its
9 current use on Treasure Island; and then the 36-acre
10 Coast Guard parcel, which is on the eastern side of the
11 Bay Bridge that will also remain in this operation.

12 Currently, there's about 800 residential
13 units -- approximately 700 of them on Treasure Island
14 and approximately a hundred on Yerba Buena Island.
15 There's three main historically significant billings --
16 Buildings 1, 2, and 3, creatively named. There's also a
17 district which has been listed on the National Register,
18 which is the Great Whites. There's nine structures in
19 this area. There's also a torpedo building, which is
20 out on the end as well. FHWA/Caltrans owns in fee about
21 10 acres and then have about 20 acres of aerial
22 easements.

23 And this is the plan for tomorrow. We think
24 it will be an example of sustainable master-planning
25 community, bar none. Quickly, the development program

1 -- about 6,000 residential units, 30 percent of which
2 will be affordable -- up to 500 hotel rooms. That's
3 split between three different hotel types, which I'll
4 talk about a little bit later. Approximately 300 acres
5 of open space. And up to 325,000 square feet of
6 commercial space in Buildings 1, 2, and 3.

7 And then a significant jobs and
8 community-benefits package. Really quickly, one of the
9 aims of the project is to create a new San Francisco
10 neighborhood with a real mixture of incomes and people.
11 And so to do that there is a real diversity of product
12 types, ranging from two- to four-story townhomes through
13 mid-rises. And each of the super blocks has an icon
14 neighborhood tower ranging between 18 to 24 stories.
15 And then there's a number of high-rise towers that you
16 can see right here around the urban core; and those are
17 ranging from 35 to 55 stories.

18 As I mentioned before, pretty robust
19 affordable housing package -- 1,800 units. Those will
20 be delivered in a variety of ways. TIDA has as one of
21 our partners the Treasure Island Homeless Development
22 Initiative, which is a consortium of about ten
23 organizations that will be responsible for having 435
24 affordable units developed; and those will be for
25 formerly homeless folks. TIDA organizations provide

1 both housing and services to the formerly homeless.
2 About 750 are inclusionary homes that will be developed
3 by TICD; and then TIDA will cause to be developed about
4 625.

5 There's also a transition plan in place to
6 make sure that all the folks that are living out on the
7 island have the opportunity to transition into new units
8 as they're built at their existing rates; and that will
9 be a phased program as the development gets built out
10 over time.

11 Quickly, some of the other uses that form kind
12 of the retail and commercial urban core of the area.
13 There's about 275,000 square feet of both
14 visitor-serving and resident-serving retail; and that
15 will be organized around this main street very close to
16 the intermodal transit hub. As I mentioned earlier,
17 there's a couple different hotel types. This is a
18 50-key spa facility. This is a condo hotel.

19 And similarly, along Clipper Cove, we're
20 looking at a time-share hotel. Also, as I mentioned,
21 commercial uses for Buildings 1, 2, and 3. Again, as
22 I'll talk about a little bit later, in the
23 transportation plan, by clustering the development into
24 a compact footprint, that leaves us with about 200 acres
25 on Treasure Island proper and a hundred acres on YBI for

1 a very diverse range of open space and parks programs.
2 And we think that, in addition to creating a new
3 neighborhood for San Francisco, we are also going to be
4 creating a regional open-space system, again with a
5 great variety of programs. So we have an urban farm;
6 what's termed as the Great Park; includes stormwater
7 wetlands, treatment wetlands, some kayak-launch and
8 board-sailing areas, a regional sports facility; largely
9 natural areas on Yerba Buena Island; and then a series
10 of neighborhood parks as well as this Cityside art park
11 with views back to the city.

12 One of the other mandates for the project is
13 that it be self-sufficient; and so to do that we are
14 providing a series of essential public services and
15 facilities, including a police and fire station located,
16 again, close to the urban core; an elementary school.
17 Other facilities include childcare, which will be
18 located in Building 1, as well as distributed throughout
19 in these neighborhood towers; as well as a mix of
20 community spaces. Also, as I mentioned, the stormwater
21 wetlands and a new wastewater treatment facility will be
22 provided.

23 Again, one of the mandates for the project is
24 for it to become one of the largest -- or become the
25 most sustainable large development project in the

1 history of the United States -- make no small plans,
2 right?

3 So we're doing that in a couple ways. First
4 of all, from kind of a site-planning exercise, so
5 everything outside of the footprint of the building we
6 have committed to achieving a LEED-gold certification as
7 part of the U.S. Greenbuilding Council's LEED for
8 neighborhood-development program. And that really looks
9 at mixing land uses; creating walkable, compact
10 development; providing high-quality transit; looking at
11 best practices in terms of stormwater treatment. We've
12 got about 50 percent of the total land area as open
13 space, most of which will be native landscape.

14 And then on the building front, all buildings
15 will be required to comply with the greenbuilding
16 specifications that have been tailored specifically to
17 Treasure Island; a number of strategies to reduce -- or
18 to exceed -- Title 24 standards by 20 to 30 percent.

19 Also, in the central core there will be a
20 central heating and water -- or excuse me -- a central
21 heating and cooling plant to provide heating and cooling
22 to these buildings and to share resources. There will
23 also be a robust system of roof-mounted photovoltaic to
24 provide on-island renewable energy.

25 Again, on the transportation plan, I think the

1 single biggest thing we can do is create a dense
2 development around an intermodal transit hub. Again,
3 the mandate is for this transportation package to be
4 self funding, self-sufficient. There's a number of
5 things that we're doing both at the site-design level as
6 well as through some incentives to promote a
7 transit-oriented lifestyle and to minimize the impacts
8 of automobiles onto the Bay Bridge.

9 This diagram is a nice diagram just to talk
10 about walking radiuses. We've got about 80 percent of
11 all units within a 10- to 15-minute walk, which is this
12 ring; and then within a 5- to 10-minute walk of the
13 intermodal facility, with about 50 percent of the units.
14 The densities are around 90 to a hundred units per acre.
15 And that, as I mentioned before, gives us the
16 opportunity to create a large open-space system and
17 reduces the need for infrastructure into those outlying
18 areas, providing high-quality frequent transit service,
19 so there's an interconnected system of ferry service
20 connecting the island to San Francisco at 10- to
21 12-minute headways; buses providing service to Transbay
22 as well as possibly a line to the Civic Center; to
23 Fourth and King for the Caltrain line. Those will be at
24 5-minute headways and then at 7- to 11-minute headways.
25 And then also an east bus service at 7-minute headways.

1 There will also be an on-island free shuttle serving
2 transportation throughout the Islands.

3 As I mentioned before, some of the
4 incentives -- it's a system of carrots and sticks. So
5 prepaid transit passes will be made requisite in the
6 cost of housing out there. There will be a bike library
7 and a car-share program. And then some of the
8 disincentives to minimize impacts on the bridge are
9 congestion pricing, so people that will be getting on at
10 am. and p.m. peak hours will be charged for getting onto
11 the bridge, ramp metering. So, again, a safety valve to
12 allow, as the bridge is at capacity, letting people on
13 and off the bridge with a light. And then there will be
14 a TDM -- a transmit-demand management district --
15 specifically created to manage -- dynamically manage --
16 all of these programs to make sure that they are
17 functioning properly and working together
18 synergistically.

19 Infrastructure: Again, because of the unique
20 nature of this being a man-made island, one of the first
21 phases of construction is to stabilize the entire
22 perimeter of the island as well as the viaducts which
23 connect the ramps to this main corridor down to TI and
24 also Yerba Buena Island, stabilizing the causeway which
25 connects the two islands and then possibly stabilizing

1 the utility trunk backbone corridor and then cutting the
2 ferry key for the intermodal hub.

3 And then all new infrastructure systems -- so
4 delivering distribution systems -- stormwater,
5 wastewater, domestic water supply and storage, as well
6 as backup supply. And then all the dry utilities --
7 gas, electric, communication -- will be provided new.
8 They will be phased in so that all the folks living out
9 here right now will have uninterrupted service. But
10 when we're all done it's going to be a completely new
11 infrastructure out there.

12 So to conclude on project implementation, as I
13 mentioned before, the development plan and term sheet
14 was endorsed in December of 2006. We expect the EIR to
15 be certified and the disposition and development
16 agreement to be approved in 2009 with transfer of the
17 land from the Navy to the city and the first phase of
18 infrastructure in 2010, with the first home sales -- or
19 pad sales -- in 2012; and then a build-out year of 2018.

20 So quickly to go through the phases, as I
21 mentioned, this first phase would consist of geotech
22 stabilization, the infrastructure backbone, and cutting
23 the ferry key. The second phase will be cityside and
24 Clipper Cove neighborhoods; the elementary school;
25 wastewater treatment plant and stormwater; the first

1 phase of Yerba Buena Island West; and then open space on
2 Yerba Buena Island, as well as the urban core and the
3 intermodal transit hub -- creating it there really early
4 on in the project.

5 The third phase will be the eastside
6 neighborhood -- this recreational facility, regional
7 sports facility; and then two areas in the Yerba Buena
8 Island of housing. And then the historic district.

9 And then the final phase is this remainder of
10 the open-space system -- the Great Park, the core
11 towers -- these orange squares; the urban farm, which is
12 about a 20-acre parcel in here; and then this last edge
13 of the cityside neighborhood. That's what we think we
14 might look like.

15 MR. COOPER: Thank you, Michael.

16 Now I'd like to briefly explain to you the
17 CEQA process we'll be following for preparation of the
18 EIR.

19 The first step of the process was the issuance
20 of a Notice of Preparation and the public scoping
21 meeting. This notice was sent on January 26th to
22 solicit participation in determining the scope of the
23 EIR from the agency and the public who are involved. It
24 provided a description of the proposed redevelopment
25 plan and indicated where written comment on the scope

1 may be sent. The notice indicated that written comments
2 should be submitted by Tuesday, February 26th. Extra
3 copies of the NOP are available outside the door here
4 with the other materials.

5 The next step of the process will be
6 publication of the EIR, which will be distributed with
7 public review for a period of about 45 days. Oral
8 comments will also be accepted at a Planning Commission
9 hearing on the draft EIR which be held about a month
10 after publication of the draft. The draft will contain
11 analysis of the potential physical and environmental
12 effects of the proposed project, provide feasible
13 mitigation measures to address any effects found to be
14 potentially significant, and present potential
15 alternatives to the proposal that would avoid or reduce
16 and identify the impacts of the project. The EIR will
17 be sent to various agencies and interested parties,
18 including those who signed in tonight. Others will
19 receive a notice that is available for their review.

20 The verbal comments we receive tonight
21 regarding the physical effects of the project and in
22 writing will be carefully reviewed and taken into
23 account as applicable to the preparation of the draft
24 EIR. Please note, however, written response to comments
25 received during the scoping will not be prepared.

1 However, the EIR team will read each letter and review
2 the transcript of the comments made to help us focus the
3 EIR analysis as appropriate.

4 Following the close of the draft EIR comment
5 period, the department will prepare a
6 comments-and-responses document which will contain
7 written responses to all substantive comments received
8 during the EIR review period. The comments-and-response
9 document will be distributed to those who commented on
10 the draft, EIR, various agencies, and other parties.

11 About two weeks after publication of the
12 comments-and-response document, a hearing will be held
13 before the Planning Commission and Treasure Island
14 Development Authority, where they will be asked to
15 certify the final EIR, which will consist of the draft
16 EIR together with the C&R document.

17 Please note that certification of the EIR does
18 not indicate that the project will be approved or
19 disapproved. Rather, it would satisfy the CEQA
20 environmental-review requirements for the proposed
21 project. Approval or disapproval is a completely
22 separate consideration from the accuracy of the EIR.

23 We are ready to open up the hearing now for
24 public comment. You may hear contrasting viewpoints. I
25 would respectfully request that all people respect the

1 comments of others. When you come up to the microphone,
2 please state your name and address and if you represent
3 an organization; and you may be asked to spell your name
4 for the benefit of the court reporter.

5 It's now time to open up for any speakers. Do
6 we have any?

7 Okay. Well, thank you very much for coming
8 this evening. Are you sure? Anybody? Going once.

9 MS. PILRAM: Does that include questions we
10 have?

11 MR. COOPER: Oh, by all means.

12 MS. PILRAM: Okay. I have a question.

13 MR. COOPER: Sure. Please.

14 MS. PILRAM: My name is Alice Pilram. That's
15 P-i-l-r-a-m. I am a resident on Yerba Buena Island.

16 And I just have a question if the
17 environmental impact report is going to take into
18 account current stories about global warming, because
19 Treasure Island sits right at sea level. And I know
20 right now -- I'm also a member of the RAB -- and they're
21 doing work on the far end of the island where they're
22 trenching out right now. And they have gone down
23 approximately four feet and hit Bay water. So it's a
24 very watery island. And I just wondered if those
25 concerns were going to be addressed in the environmental

1 impact report.

2 MR. COOPER: With due respect, I think we will
3 just take that as a comment.

4 MS. PILRAM: Okay.

5 MR. COOPER: I think those issues should be
6 covered in the document.

7 MS. PILRAM: I believe so.

8 MR. COOPER: So, again, if you don't mind,
9 please fill out a speaker card for us.

10 MS. PILRAM: Sure.

11 MR. COOPER: Thank you.

12 Any other speakers?

13 Okay. Well, thank you all very much for your
14 attendance this evening. I'm available for a few more
15 minutes following the conclusion; and feel free to
16 contact me in the Planning Department. My phone number
17 is 575-9027 in the 415 area. Thank you very much.

18 [The hearing ended at 6:46 p.m.]

19

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23

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25

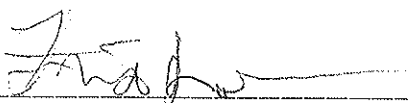
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COUNTY OF SAN FRANCISCO)

CERTIFICATE OF REPORTER

I, the undersigned, a duly authorized
Shorthand Reporter and licensed Notary Public, do hereby
certify that on the date indicated herein that the above
proceedings were taken down by me in stenotype and
thereafter transcribed into typewriting and that this
transcript is a true record of the said proceedings.

IN WITNESS WHEREOF I have hereunto set my hand on
this 21st day of February, 2008.



FREDDIE REPPOND

TREASURE ISLAND/YERBA BUENA ISLAND

CITIZENS' ADVISORY BOARD

Tuesday, February 12, 2008

Tape transcription

Transcribed by: Freddie Reppond

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1 attorney's office, who's representing both Planning and
2 TIDA, in essence.

3 And so the purpose of this meeting really is
4 to solicit your comments on the NOP. And I'd like to
5 turn it over to Rick so that he can give you an
6 overview of the process, where we are -- the overall
7 EIR process -- respective roles of TIDA, TICD, the
8 Planning Department; and then give a brief overview of
9 the purpose of the Notice of Preparation and
10 public-comment period.

11 MR. COOPER: Good evening, everyone. Again,
12 I'm Rick Cooper from the Planning Department. And I'm
13 the coordinator for the EIR for the redevelopment plan.
14 I have two other staff members in my department working
15 with me -- Andrea Contreras and Patrice Seifers. And
16 we are actually a co-lead agency with TIDA on the
17 environmental impact report. And we also have
18 Turnstone Consulting on board as our EIR consultant,
19 who also work with us in the development of the
20 environmental impact report.

21 Just to give you a very brief description, the
22 environmental impact report is a requirement of the
23 California Environmental Quality Act, or CEQA, which
24 requires an environmental review of projects as defined
25 under the law. And the purpose of this is to provide

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1 information on the project and to disclose potentially
2 significant environmental impacts; to provide feasible
3 mitigation measures for those impacts; and to, also,
4 disclose impacts that would be significant and
5 unavoidable. It also is to provide feasible
6 alternatives to the proposal that would reduce or avoid
7 those impacts as [inaudible] in that document.

8 So this Notice of Preparation, which we
9 published on January 26th, was the first document that
10 we've issued as part of this process, which is a very
11 public process. The Notice of Preparation is to
12 provide the public and interested -- I'm sorry --
13 responsible agencies with notification that the process
14 is beginning and to solicit feedback regarding the
15 scope of the analysis that we should be doing regarding
16 those physical and environmental effects.

17 So we're now in the middle of that period. We
18 have conducted a public scoping meeting last night in
19 the Port Building down on the waterfront. We'll be
20 having another meeting tomorrow night on the island.
21 They are all public-noticed meetings; and we've also
22 run an ad in the newspaper and are soliciting comments
23 either orally at those meetings, as well as tonight;
24 and, also, written comments can be sent to the address
25 that's found in the Notice of Preparation. The close

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1 -- that's a 30-day comment period. That comment period
2 is closing the 26th of this month. So I would
3 encourage any of you or other interested parties to
4 either attend one of these meetings or write those
5 comments and send them to us at the address provided.

6 Following that, we'll then dive into working
7 on the EIR itself, taking those comments into account;
8 and we're conducting background studies that will then
9 inform what is written in the document; and we expect
10 that we'll be able to publish what's called the draft
11 EIR, the DEIR, the latter part of this year. And at
12 that point there will be a 45-day public comment
13 period, where people will be able to review the
14 document and provide comments either at a public
15 hearing or, again, in a written format. Following
16 that, we will then take all those comments that are
17 made on the adequacy of the document and respond to
18 them in a comments-to-responses document. And then,
19 finally, that document along with the draft EIR will be
20 taken before the TIDA board and the Planning Commission
21 for certification. The certification would indicate
22 that they believe that we have adequately considered
23 the environmental impacts of the project and a complete
24 and accurate document. And at that point the
25 environmental review will be complete.

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1 It's important to note that certification of
2 the EIR does not indicate whether the plan should or
3 should not be approved. It's an informational
4 document; and at that point the decision-making bodies
5 can go ahead and work on their approvals, but this is
6 the first step in that process.

7 So that's all I really have to say at this
8 point. I would remind you that we're really here to
9 hear your comments to us on what you believe we should
10 be considering in the scope of work on this EIR. I'm
11 not really here to conduct a dialogue with you on those
12 potential impacts, but we will take all of your
13 comments very seriously. And I may, if I feel the
14 need, break in to perhaps ask questions for
15 clarification. But, otherwise, I'm just here to take
16 notes and we'll listen to all of your comments.

17 With that, I'll turn it over to Michael.

18 MR. TYMOFF: Also, I'd just like to add to
19 that, as we're giving comments, if you can just state
20 your name before you deliver the comment, because we
21 are recording this and will have it transcribed.

22 You've all received a copy of the Notice of
23 Preparation. And in the interest of time, I'm just
24 going to go briefly through a summary of what's in the
25 Notice of Preparation. As Rick mentioned, the purpose

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1 of the NOP is to provide a summary of the project.
2 There will be a much more detailed project description
3 in the draft EIR, so the NOP describes where the
4 project is; what it is; and then addresses the
5 environmental topics and issues that will be analyzed
6 as part of the EIR. Contrasted to the EIR, which was
7 certified in 2005, this is a project-specific EIR on
8 the redevelopment plan area. The previous one was a
9 programmatic, based on the 1996 reuse plan; and this
10 will be a stand-alone document, not tiered off of that.

11 Also, listed in the NOP, an additional study
12 is not being prepared. We have used the environmental
13 checklist that the City typically uses. And MEA has
14 made the determination that all environmental topics
15 will be contained and analyzed in the EIR. Having said
16 that, the EIR is going to focus on the significant
17 impacts and more briefly described by other impacts may
18 or may not be significant.

19 So briefly again on the project description
20 summary, the proposed redevelopment plan area captures
21 all of Treasure Island and YBI -- 400 acres on Treasure
22 Island, 150 on YBI -- and includes the formerly
23 accepted residential areas on both Treasure Island and
24 YBI -- about 720 existing occupiable housing units on
25 TI and 80 on YBI. And then the redevelopment plan also

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1 includes 550 acres of submerged lands. Additionally,
2 the redevelopment area captures the Job Corps campus on
3 TI, which is 35 acres; and the U.S. Coast Guard
4 facility, which is about 35 acres, on YBI. Those will
5 remain in their current uses.

6 The proposed project that's being analyzed
7 does not include the Caltrans ramps, which Jack
8 described later. They will be analyzed in the EIR as
9 both in their existing condition and in their new and
10 improved in-place condition as part of the [inaudible]
11 conditions. The development plan and term sheet, which
12 was endorsed in 2006, forms -- is the underlying basis
13 for the redevelopment plan. And, again, the
14 project-level EIR is on both the redevelopment plan and
15 then all the public and private projects and activities
16 that will be carried out pursuant to that. So that's
17 termed in the NOP as the development program. And then
18 the proposed project is the development program and the
19 redevelopment plan in total.

20 Quickly, just to review the development
21 program: 6,000 new homes; 30% affordable, 1,800 units;
22 approximately 270,000 square feet of resident- and
23 visitor-serving retail organized around a main street
24 of the intermodal transit hub; approximately 325,000
25 square feet of commercial uses in Buildings 1, 2, and 3

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1 that will be adaptively reused in conformance with the
2 Secretary of the Interior's standards; up to 500 hotel
3 rooms; approximately 300 acres of open space with a
4 network of bicycle and pedestrian trails; and then, as
5 we were discussing earlier, all-new facilities
6 infrastructure and a suite of public services; and
7 then, as I mentioned, the intermodal transit hub and
8 [inaudible].

9 The program's expected to be built out in four
10 major phases over a ten-year period. We're expecting
11 that will happen in 2010. The EIR will analyze the
12 project at full build-out.

13 And then, real quickly, just a summary of the
14 environmental effects: Again, the purpose of the
15 meeting tonight is not to have a conversation,
16 dialogue, or debate about the potential impacts. But
17 it's for you guys to provide comments about what we
18 should be analyzing. So the EIR will analyze the
19 potential impacts, identify mitigation measures, and
20 analyze whether those mitigation measures will reduce
21 the impacts to or below a less-than-significant level.
22 And then, as Rick mentioned, the EIR will also ID and
23 analyze alternatives, including a no-project
24 alternative; an alternative which does not include a
25 trust-exchange between Treasure Island and YIB; and

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1 then another possible alternative based on the EIR
2 analysis.

3 And then, finally, feasible mitigation
4 measures and improvements will be ID'd -- identified --
5 to reduce or avoid those potentially significant
6 impacts.

7 So that was about as quickly as I could go
8 through this. We really wanted to reserve the time to
9 you guys to provide us with your comments, recognizing
10 that we've got a couple additional, more exciting agenda
11 items for tonight. So, with that, shall we just turn it
12 over and have you guys start [inaudible] the comments?

13 MR. SYLVAN: I do just want to reiterate that
14 -- of course, we can answer questions, but unlike the
15 typical CAB meeting, where there's a lot of dialogue
16 back and forth arguing the merits of stuff, the goal is
17 not for us to have that same dialogue about whether the
18 project is the right project in terms of the project or
19 whether we're doing the environmental review in the
20 right way. It's for you to tell us the things that you
21 think we should be looking at in the environmental
22 review process that, as we start that analysis for the
23 draft EIR, we have that guidance from you all.

24 MR. TYMOFF: So you may see Jack and I
25 [inaudible]

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1 UNIDENTIFIED SPEAKER: [inaudible].

2 MR. SYLVAN: I was assuming that Karen would
3 handle it the same way that the CAB -- and then at the
4 end there would be public comment.

5 MS. KNOWLES-PEARCE: Always is.

6 UNIDENTIFIED SPEAKER: I have a process
7 question. Is there a difference between what an
8 individual CAB member might put out as a comment versus
9 something that --

10 [CROSS-TALK]

11 UNIDENTIFIED SPEAKER: -- versus something
12 that the whole CAB would vote on and say, Here's a
13 comment. Here it is as a CAB-voted thing. What are we
14 doing here tonight --

15 MS. KNOWLES-PEARCE: That's one of our issues.
16 While we did get this document significantly prior to
17 our meeting, which was a nice change, the NOP wasn't
18 published until the end of January. And we held off
19 this meeting until after the NOP was published so we
20 could see what it says. So we have the predicament of
21 not meeting again before public comment has closed.

22 MR. SYLVAN: So can I just -- I think, for the
23 purposes of what we're trying to accomplish, which is
24 in addition to the public scoping meetings we're
25 having, we wanted to give the CAB an opportunity to

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1 have their -- basically their own scoping meeting. And
2 so, from the standpoint of providing guidance on things
3 that we should be looking at in the EIR, I don't think
4 it actually is that important to distinguish between a
5 personal comment from a CAB member versus something
6 that the entire CAB formally agrees that they --
7 because the fact is that we have to respond to whatever
8 the issues are. And even if there's not consensus in
9 the CAB on what those issues are, we should just get
10 them all out on the table. And then we'll -- through
11 the process we'll just have to deal with them all.
12 Okay.

13 MS. KNOWLES-PEARCE: And we did do this
14 before, but it was for the other plan, the first plan.
15 And we did submit formal comments in writing.

16 MR. SYLVAN: I think you did that on the draft
17 EIR, which, again, it's a different step in the
18 process.

19 [CROSS-TALK]

20 UNIDENTIFIED SPEAKER: -- likely that comment
21 period within that will [inaudible]

22 MR. COOPER: I should say that [inaudible]

23 UNIDENTIFIED SPEAKER: It's my understanding
24 that the NOP doesn't [inaudible]. We can give
25 comments.

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1 MR. SYLVAN: That's correct.

2 UNIDENTIFIED SPEAKER: The response is only on
3 the comments made on the draft at the other end
4 [inaudible]

5 MR. TYMOFF: But those comments are used as we
6 finalize the scope.

7 MR. SYLVAN: The purpose of getting comments
8 now is that the NOP -- for you all, it's a different
9 animal, because the NOP, for people who haven't been
10 involved in the project, is to tell them what the
11 project is and give them an opportunity to say, well,
12 you know, we actually think that you should be looking
13 at this in terms of environmental impacts. With you
14 all, you already understand the project, so the bulk of
15 the NOP is telling you stuff that you already know.
16 The purpose of this is we're about to go engage in a
17 massive analytical process with the REI, our
18 consultant, to do the analysis that goes into the draft
19 EIR. And what you all tell us you're interested in
20 being looked at will shape how we do the analysis and
21 actually will be responded to in the draft EIR. It's
22 not an immediate response. It comes when you see the
23 draft, which is after, you know, we do all that work.
24 MR. BLACK: I was just going to suggest. Can
25 we -- I'd love to start so that we can start seeing how

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1 it works.

2 [CROSS-TALK]

3 MR. BLACK: -- remind people to state your
4 name before.

5 MR. SYLVAN: Do we want to move this more into
6 the middle, so we want to make sure we get people's --
7 we actually have verbatim what you say, so we're going
8 to transcribe this.

9 MR. BLACK: Rob Black. On page 17, you talk
10 about -- under "Noise," you talk about you'll be
11 looking at the impact of noise during the construction
12 time, but under "Transportation," you don't talk about,
13 it doesn't look like, the impacts of construction
14 vehicles. And I think that's going to be a significant
15 impact while construction is taking place on the bridge
16 on-and-off ramps because of the scope of scale. So I'd
17 like to make sure that you're looking at the
18 construction phase under "Transportation" [inaudible]

19 MS. KNOWLES-PEARCE: I'd like to make one
20 other request, too, which you just reminded me. If
21 you're -- if you're referring to something specific in
22 this document, will you refer to the page and paragraph
23 number so we know where to go if you're talking about
24 that. Okay? Thanks, Rob.

25 Liz.

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1 MS. HIRSCHHORN: Two comments. I'm Liz

2 Hirschhorn. And first comment's a general comment.

3 And that is that the mitigations that might come out of
4 this process, I would suggest also look at beyond the
5 master developer, that this plan also has a future pad
6 individual development; and so those mitigations should
7 extend beyond this planning period in front of us, but
8 also to full build-out of the facilities.

9 And then the second comment is a little more
10 specific. In the NOP page -- pages -- where you're
11 talking about the transportation programs and different
12 -- different types of uses -- walking, et cetera. I'm
13 on page -- pages 8 and 9. And it's not specific
14 wording, so I won't point to a paragraph. But my
15 general comment is there's a lot of discussion in the
16 previous DEIR that compared the impacts to what was
17 preexisting Caltrans data, if you will -- preexisting
18 to any of the current uses of Treasure Island. It was
19 all based on when it was a base -- an active base. And
20 I don't see anything -- I've just scanned this -- but I
21 don't see anything addressed about what the reference
22 point of what that evaluation of the traffic impacts on
23 the bridge would be. And I'd like to encourage that
24 evaluation, compare this proposed project with the
25 current -- the current existing conditions, not the

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1 previous active base status of the bridge. Thank you.

2 MS. KNOWLES-PEARCE: Suzanne.

3 MS. KIM: I'm Suzanne Kim. On page 9 on the
4 parking section, to also look at [inaudible]
5 transportation but also [inaudible]. And then on page
6 [inaudible] talking about the walking and biking,
7 they're talking about the shared paths [inaudible].
8 Just what [inaudible].

9 UNIDENTIFIED SPEAKER: [inaudible]

10 MS. KIM: Okay.

11 MR. COOPER: So, again, [inaudible] previous
12 comment, you're referring to runoff --

13 MS. KIM: Runoff, pollution from cars,
14 automobiles -- looking at that [inaudible] would you
15 look at that as a [inaudible]

16 MS. PANG: A while back --

17 MS. KNOWLES-PEARCE: State your name, Wilma.

18 MS. PANG: I'm Wilma Pang. I remember we
19 talked about the parking unit per unit. It goes back
20 and forth whether it's two or one. Is this the figure
21 that we arrived at [inaudible]. You know that parking
22 we talked about [inaudible].

23 UNIDENTIFIED SPEAKER: I'm not making a
24 controversy over the amount of parking. I'm just
25 saying that I would like to study that [inaudible].

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1 MS. KNOWLES-PEARCE: I think it was Liz -- I
2 don't think it was you, Suzanne -- on page 17, the
3 second paragraph, it says "Traffic impacts will be
4 analyzed in relation to both existing and future
5 contexts."

6 Other comments? Michael.

7 MR. DELANE: Mike DeLane. I just want to
8 reaffirm. I think it's on page 10, the first paragraph
9 [inaudible] San Francisco Fire Department. It's very
10 important to make sure that that does happen and
11 particularly what type of system is used [inaudible]

12 MR. BLACK: Rob Black. Within this scope of
13 this EIR, going forward, would this also include the
14 marina renovation? Or is that going to be separate?

15 MR. SYLVAN: The marina renovation was covered
16 in the previous EIR.

17 MR. BLACK: And that's what we will stay with?

18 MR. SYLVAN: Right. That's not a part of this
19 plan.

20 MS. KNOWLES-PEARCE: And nothing's changed.
21 They haven't done anything in years, because they
22 really -- they're waiting for the Navy. They've
23 presented a plan and they're waiting for land to be
24 transferred.

25 George.

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1 MR. BROWN: George Brown. On page 15 they're
2 talking about the employment, the population, and
3 housing. I see a lot of numbers [inaudible] other
4 pages in there, you know, they're providing certain
5 numbers [inaudible] but I don't see much about
6 employment here. And I would hope that they would
7 include some type of goal, which I know there are some
8 goals within the City, but this EIR, all I see is it
9 says it will compare the existing number of employees,
10 residents, and visitors [inaudible]. So maybe there
11 could be a little more information [inaudible] San
12 Francisco [inaudible]

13 MR. HOLL: Kevin Holl. On page 11, you have a
14 heading called "Geotechnical Stabilization." My only
15 comment would be to strictly scrutinize the proposed
16 geotech stabilization [inaudible].

17 MS. KNOWLES-PEARCE: Gene.

18 MR. BRODSKY: Geotechnical stabilization.

19 MS. KNOWLES-PEARCE: This is Gene Brodsky
20 speaking.

21 MR. BRODSKY: Gene Brodsky. Failure to review
22 the safety of the former Navy housing at the northern
23 end of TI in regard to liquefaction and the existing
24 building foundations.

25 UNIDENTIFIED SPEAKER: On the storm-water

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1 [inaudible] of stormwater it talks about the flows
2 greater than a five-year storm bypassing all treatment
3 processes. I think there needs to be some -- that
4 technology has only been around for ten or fifteen
5 years; and there's not really a lot of data to show
6 that that's a viable process to [inaudible]. It's on
7 10.

8 MR. MOLINARE: Tim Molinare. I want to read
9 from responses to comments on Treasure Island
10 development plan, a term sheet that's an exhibit that
11 was produced about a year and a half ago regarding
12 wastewater-treatment facility. It's referred to on
13 page 10 of your document. It says that as part of the
14 final design options for treatment of secondary
15 effluent to improve levels via treatment of treatment
16 wetlands will be explored to determine the cost of
17 land-use impact. The following language has been added
18 to the infrastructure plan, working with the builder
19 and the operator of the new wastewater-treatment
20 facility: The facility will be the most appropriate
21 treatment technology available and feasible at the time
22 with the goal to maximize treatment in wetlands and
23 minimize direct discharge to the Bay.

24 So my comment coming off of that is I think
25 this EIR, as part of its scope, should look at an

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1 alternative to the presently proposed secondary
2 effluent treatment with outflow to the Bay. That's
3 what you're planning at this point, but I think that
4 the EIR should look at the impacts of that and then
5 look at an alternate system which would treat the
6 effluent to a higher level, which could be used on-site
7 and treated thorough the wetlands and ultimately
8 discharged directly to the Bay without using an outfall
9 and maintaining an outfall and all of that.

10 MS. KNOWLES-PEARCE: Suzanne.

11 MS. KIM: Suzanne Kim. Introduction of
12 non-native species [inaudible]

13 UNIDENTIFIED SPEAKER: Having lived out there,
14 there's lots of cats.

15 MS. KNOWLES-PEARCE: As an aside, if anyone's
16 a cat lover, read Jon Carroll today. It's hysterical.
17 Just an aside.

18 Yes, Wilma.

19 MS. PANG: Wilma Pang. On page 7,
20 "Institutional and Public Services," fifth line. I'm
21 interested about the school -- existing closed public
22 grammar school on Treasure Island would be improved and
23 reopened. What do you mean by "improved"? You mean --
24 how is the word "improved" -- what does it mean?
25 Rebuild it or renovate it?

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1 MS. KNOWLES-PEARCE: Be more specific about
2 what they mean. Okay.

3 Do I see another hand back here?

4 MS. GALLAGHER: Heather Gallagher. On page
5 16, talking about transportation and 18 talking about
6 demolition. And what I'm curious about is what happens
7 to all that demolished stuff and [inaudible].

8 UNIDENTIFIED SPEAKER: You're talking about
9 the existing stuff?

10 MS. GALLAGHER: Yeah. How can you demolish
11 something at Treasure Island and not do something with
12 that stuff that's on it?

13 UNIDENTIFIED SPEAKER: They buried it before.

14 [CROSS-TALK]

15 MS. KNOWLES-PEARCE: Wait till the ferry
16 service is established and then truck it all off back
17 here.

18 UNIDENTIFIED SPEAKER: [inaudible]

19 MR. HOLL: Kevin Holl. On page 16 there's a
20 heading called "Archeological Resources." My question
21 is, Is there -- it states that there's a high
22 likelihood for the presence of archeological resources.
23 My question is, Is there any thought at this time there
24 would be some type of archeological find that would, in
25 fact, slow down or prevent the construction of any part

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1 of the project?

2 MS. KNOWLES-PEARCE: Is it old enough to have
3 archeological [inaudible]

4 UNIDENTIFIED SPEAKER: Yerba Buena Island --

5 MS. KNOWLES-PEARCE: Yerba Buena. No, I know.

6 UNIDENTIFIED SPEAKER: [inaudible]

7 MS. KNOWLES-PEARCE: Are there any other
8 comments right now?

9 [End of Side B of
10 Audiotape 1/Start of
11 Side A of Audiotape 2]

12 MS. KNOWLES-PEARCE: There we go. Okay. Any
13 more CAB comments?

14 Okay. Public comments. Ruth?

15 UNIDENTIFIED SPEAKER: Ruth [inaudible] Not a
16 comment but a question. What I'm wondering is if you
17 can tell us a little bit more about the project
18 alternatives [inaudible]. Can you tell us what you're
19 thinking in terms of [inaudible]

20 MR. COOPER: I really couldn't at this time.
21 [inaudible]

22 UNIDENTIFIED SPEAKER: [inaudible]

23 MS. KNOWLES-PEARCE: Name, please.

24 UNIDENTIFIED SPEAKER: [inaudible] a major
25 component of the transportation plan was the

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1 congestion-management program. And that is called out
2 in the Notice of Preparation [inaudible] enabling
3 legislation for this program [inaudible] by the
4 Governor, so that I guess what my question is, Is where
5 is Plan B, the same question I've been asking for a
6 very long time.

7 MS. KNOWLES-PEARCE: Any other comments?
8 Questions? Thank you.

9 MR. COOPER: Thank you all very much for the
10 questions and comments.

11 MR. SYLVAN: It's also possible -- you may hit
12 me under the table for saying this -- but you also can
13 submit comments in writing directly to the Planning
14 Department.

15 MR. COOPER: As I said in my opening comments.

16 MR. SYLVAN: Oh, you did. Sorry.

17 MR. COOPER: Please feel free. And, also,
18 I'll put my phone number -- 415-575-9027. I'll leave a
19 few cards tonight as well. Please feel free to contact
20 me if you have any questions or if you have any further
21 comments or feedback.

22 MS. KNOWLES-PEARCE: E-mail.

23 MR. COOPER: E-mail?

24 MS. KNOWLES-PEARCE: Yeah, because I think if
25 -- you will take comments by e-mail, right?

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1 MR. COOPER: Yes.

2 MS. KNOWLES-PEARCE: 'Cause that's an easy way
3 for people to --

4 MR. COOPER: It's very simple.
5 rick.cooper@sfgov.org. And [inaudible]

6 MS. KNOWLES-PEARCE: Could you repeat that.

7 MR. COOPER: [inaudible] And here are some
8 cards as well [inaudible]

9 MS. KNOWLES-PEARCE: Great. Thank you so
10 much.

11 MR. COOPER: Thank you all very much.

12 MS. KNOWLES-PEARCE: Okay. Good.

13 Michael, why don't you do the calendar next.

14 MR. TYMOFF: I think the last time we met we
15 passed out a forward development planning schedule that
16 was more robust and included [inaudible]. This is for
17 this calendar year. So we're obviously in February.
18 Other agenda items we haven't yet gone over is the
19 amended and restated bylaws. We talked [inaudible].
20 Kind of three major efforts that are ongoing throughout
21 this year. That's the refinement of the land plan and
22 the design for development process, whereby we'll just
23 define the three-dimensional form of the island and
24 then codify that in the design guidelines -- design for
25 development document; and also set forth the design

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SAN FRANCISCO PLANNING DEPARTMENT

PUBLIC SCOPING MEETING RE:

CASE NO. 2007.0903E

TREASURE ISLAND AND YERBA BUENA ISLAND

REDEVELOPMENT PLAN

WEDNESDAY, FEBRUARY 13, 2008

BUILDING 497

TREASURE ISLAND

SAN FRANCISCO, CA

ORIGINAL

Reported by: Freddie Reppond

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A P P E A R A N C E S

For SF Planning Department:

Rick Cooper

Michael Tymoff

From the Public:

Eve Bach, Arc Ecology

1 (The proceeding began at 6:10 p.m.)

2 MR. COOPER: Good evening and welcome. Rick
3 Cooper of Planning department staff.

4 And given the few people that we have
5 tonight -- and I'm pretty sure that most of you of are
6 fairly aware of the CEQA process as well as the plan --
7 I want to shorten my comments quite a bit so we can move
8 on to the public comments.

9 Just to reiterate, this public scoping meeting
10 and the one we held on Monday night are kicking off the
11 public portion of the CEQA process and EIR for the
12 redevelopment plan for Treasure Island/Yerba Buena
13 Island. We are in the middle of a 30-day comment period
14 that will close on the 26th of this month. We welcome
15 public comment tonight. And you can fill out a form and
16 hand those comments to Andrea Contreras my colleague,
17 who along with Pat Siefers in our office -- the three of
18 us constitute the Planning Department EIR team. Our
19 co-lead agency is TIDA, for purposes of the EIR.

20 And I would just ask, when you make your
21 comments tonight, to please speak nice and slowly and
22 clearly so the court reporter can make a clear verbatim
23 transcript of tonight's proceeding. Following the
24 comment period, we'll proceed with developing the EIR
25 and we'll publish the draft EIR, hopefully, by the end

1 of this year/early 2009. There will be a 45-day public
2 comment period on that.

3 In addition, when we prepare our
4 comments-and-responses document and publish that, there
5 will be a certification that's done by both the TIDA
6 board and the Planning Commission that will be noticed;
7 and you will have an opportunity at that time to comment
8 on the entire document prior to us requesting
9 certification before those two bodies.

10 So with that, I'll turn this over to Michael
11 Tymoff for a brief presentation on the redevelopment
12 plan.

13 MR. TYMOFF: Good evening. Welcome.

14 I think most of us know the plan pretty well,
15 so I don't want to -- so I'll keep to brevity and get to
16 the comment period -- just run through the plan, talk a
17 little bit about the planning process and the timeline
18 up till now and up through publishing of the draft and
19 then get into the meat of the redevelopment plan.

20 What's called the development program in the
21 NOP is largely comprised of the land uses and the
22 sustainability plan, transportation plan,
23 infrastructure, and improvement. And then, lastly, just
24 talk a little bit about project phasing and implementing
25 the next steps.

1 I think most of you know that in '93 the base
2 was selected for closure. And in '94 a citizens' reuse
3 committee was formed, which resulted in a reuse plan in
4 '96. So it's really a policy guide and
5 general-plan-level document which continues to guide the
6 process today.

7 In 1997 the base stopped operating and the
8 City entered into a lease agreement with the Navy for
9 interim operations. In 2000 TIDA began a procurement
10 process to select a master developer, which then
11 resulted in 2003 selecting TICD as the master developer.

12 In 2005, a programmatic EIR was certified by
13 the TIDA board and the Planning Commission that was
14 based on the draft reuse plan; and that is a standard
15 document. This is project-specific, a project-level
16 EIR, not tiered off of that project. The programmatic
17 EIR also cleared the marina, which is not being analyzed
18 as part of the project EIR.

19 And then in December of 2006 the development
20 plan was endorsed by the Board of Supervisors. We just
21 published a Notice of Preparation January 26th, with a
22 comment period through February 26th. And as Rick
23 mentioned, we're hoping to have a draft out by end of
24 the year.

25 So this is Treasure Island today. Existing

1 uses: About 720 occupable units out on the northwest
2 end of Treasure Island; about 80 on Yerba Buena Island.
3 There's a couple of existing federally owned parcels --
4 the Job Corps and the Coast Guard -- 35 acres and
5 36 acres. Those will remain, but are included in the
6 redevelopment plan area. There's also three
7 historically significant buildings that will be restored
8 -- adaptatively reused -- per the Secretary of the
9 interior standards; and then a district -- the Great
10 Whites -- a collection of nine buildings; then the
11 torpedo building out on the tip of Yerba Buena Island.

12 Treasure Island tomorrow: The development
13 program. And I think that most of us know that 6,000
14 residential units; up to 500 hotel rooms; 270,000 square
15 feet of retail organized around the main street, both
16 visitor-serving and resident-serving retail.
17 Approximately 300 acres of open space on both islands.
18 Then, as I mentioned, about 325,000 square feet of
19 commercial uses in Buildings 1, 2, and 3. Then robust
20 jobs, economic-development, and community-benefits
21 package.

22 So one of the mandates for the project is to
23 create a family-friendly neighborhood, or a series of
24 neighborhoods. We are doing that through a diversity of
25 product types and with the goal of creating an authentic

1 mixed-income, mixed-age community; and then also a
2 diversity from an architectural and urban-design
3 standpoint to create a diversity of building types to
4 create an interesting skyline and urban form.

5 So you have townhomes, two to four stories;
6 five-story mid-rises; eight to twelve neighborhood
7 towers, 18 to 24 stories; and then high-rises between
8 400 and 600 feet. Those high-rises are these yellow
9 guys, so those are clustered around this intermodal
10 transit facility. And really trying to create -- we
11 have a diagram later in the presentation -- but creating
12 the densest population around the transit facility.

13 Again, robust affordable housing and
14 transition plan. Thirty percent of the homes will be
15 affordable at different income ranges -- 1,800 homes.
16 Those will be delivered in three ways. TIDA will cause
17 to be developed about 435 -- TIDA is Treasure Island
18 Homeless Development Initiative. It's a consortium of
19 ten nonprofits that provides affordable housing and
20 services to formerly homeless persons. About 750 of
21 those units will be provided within the market-rate
22 buildings and the inclusionary homes; and then TIDA will
23 cause to be developed about 625 homes. Also as part of
24 the development -- disposition of the development
25 agreement -- we will get to a transition plan to make

1 sure that all the folks that are living out on the
2 island who are in good standing through DDA will have an
3 opportunity to move into new units as they're coming
4 along at their existing rents. Then, again, the
5 development will be phased in such a way that folks will
6 not be displaced until the adequate units are available
7 for them to move into.

8 Quickly, I mentioned the intermodal facility.
9 And this diagram just talks about the main-street
10 retail, the commercial uses, and the historical
11 structures and then the hotels. This is a condo hotel,
12 a 50-key spa facility. Open-space program -- again, I
13 think one of the goals of the project is to really
14 create a regional destination. We think we'll be able
15 to do that through the creation of a diversity of open
16 space and park types as well as programs. We've got the
17 cityside park on the western shoreline, our art and
18 sculptural park, a series of neighborhood parks within
19 the block -- 20-acre urban farm, agricultural park.
20 This area out here is being called the Great Park, not
21 unlike what you see out at Crissy Field, with a wetland
22 for stormwater treatment and habitat creation. Out here
23 you have a board-sailing and kayak-launch facility.
24 There's opportunities for some camping and activities
25 out here; and then a regional sports facility.

1 Public access out on Pier 1, Treasure Island
2 sailing center, the marina -- again, not part of this
3 project, to be analyzed under the EIR, but that will
4 happen in concert roughly on the same timeline as the
5 project. And then a trail system, including providing
6 an access from the east span; a bicycle path that will
7 wind its way through TI and then along the shoreline for
8 continuous pedestrian and bike access. Then a hilltop
9 park at the top of Yerba Buena Island.

10 Community facilities: Police and fire
11 station, childcare facilities, and TI museum in Building
12 1. As I mentioned, an urban farm; life-learning academy
13 out here currently; and we anticipate them being in the
14 redevelopment project. New wastewater-treatment plant
15 that we're working with the PUC on developing. As I
16 mentioned, stormwater wetlands. Currently closed
17 elementary school that we will be working with the San
18 Francisco Unified School District to provide -- we're
19 not sure whether that's a renovation. It's a new
20 structure, but in some form it will come back; likely to
21 be K-5; and ultimately maybe K-8.

22 Then, again, in the neighborhood a series of
23 community rooms to provide residents the central
24 services for daily needs. Then this art park on the
25 eastern shoreline.

1 Sustainability: At the master-plan level
2 there's commitment to achieving LEED for neighborhood
3 development gold. This is in its pilot phase right now,
4 but we really look at all of the facets of
5 sustainability outside of the footprint of the
6 buildings. You see some of the strategies. A lot of it
7 has to do with compact development -- pedestrian and
8 friendly environments, location, efficiency,
9 transportation programs. So there's a lot of inherent
10 pieces of the project that are really LEED benchmarks.
11 Then at the building level, all buildings will have to
12 comply with the greenbuilding specifications that have
13 been developed with San Francisco Environment.

14 Transportation: Some of the guiding
15 principals -- as I mentioned, the transit-oriented
16 land-use plan creating the highest density areas around
17 the intermodal transit facility. Transportation system
18 needs to be self-funding and self-sufficient; and then
19 minimizing the impacts of autos on the Bay Bridge.

20 This is a diagram just showing the walking
21 distances from the intermodal transit facility. So 8
22 percent of all units are within a 10- to 15-minute walk
23 of that facility; and approximately 50 percent of them
24 are within a 5 to 10-minute walk of the facility.

25 Transit service: Frequent high-quality

1 transit service, including a ferry from Treasure Island
2 to San Francisco at 12-minute headways; MUNI service to
3 Transbay and possibly Civic Center and then maybe Fourth
4 and King or a second route yet to be determined. Those
5 are anticipated at 5-minute headways to Transbay and
6 then 7- to 10-minute headways. East Bay service --
7 approximately 11-minute headways; and then an on-island
8 shuttle. So when the buses come, they'll just circulate
9 around -- drop off and pick up, lay over around the
10 intermodal facilities, and then return to a destination
11 in San Francisco and the East Bay; and then folks will
12 have access to their homes through the shuttle service.

13 Some of the pieces of the transportation plan,
14 including both incentives and disincentives for folks to
15 use cars: On the incentive side, transit passes will be
16 provided at cost as part of your housing cost. There
17 will be a bike-library program as well as a car-share
18 program.

19 Then on the disincentive side the
20 congestion-pricing program -- all parking is paid,
21 including residential units, will be unbundled from your
22 unit, both physically and financially. Ramp metering --
23 as folks get on the bridge, kind of a safety valve, as
24 the bridge gets backed up, it will facilitate people
25 getting on and off the island. And then a

1 transit-parking district and all these various programs
2 -- an on-island transit coordinator.

3 Infrastructure: Because of the unique
4 characteristics of this being a man-made island in the
5 middle of the Bay, the first phase of improvements will
6 include stabilizing the perimeter of the island, cutting
7 a ferry key, and then stabilizing both causeway and the
8 viaduct structures with the bridge and ramps down to
9 Yerba Buena Island.

10 All-new domestic water supply; wastewater and
11 stormwater facilities. And then all the dry
12 utilities -- gas, electric, communications -- will be
13 entirely replaced again in a phased manner so that
14 utilities and essential services are continuous
15 throughout construction.

16 Real quickly, just kind of the key milestones
17 to the development schedule: As I mentioned, the term
18 sheet was endorsed in 2006. We expect the EIR to be
19 certified and approval of the disposition and
20 development agreement in 2009, with property transferred
21 from the Navy to the City; and first phase of
22 construction in 2010, with first pad sales in 2012; and
23 about a 10-year buildout. Project completion in 2018.

24 I talked about this phase earlier -- the
25 geotechnical stabilization of the perimeter of the island;

1 the ferry key; and then the infrastructure backbone.
2 The next phase -- these two neighborhoods -- Clipper
3 Cove and cityside park; the core; the wastewater
4 treatment facility; the school; the first Yerba Buena
5 Island neighborhood; and open-space system.

6 Phase 3 is the eastside neighborhood; the
7 regional rec facility; Yerba Buena Island east; and then
8 the Great White historical district renovation.

9 And then the fourth phase is this remainder --
10 the open-space system and the Great Park as well as the
11 agricultural park and the towers in the urban core.

12 That's it.

13 MR. COOPER: Thank you, Michael.

14 So at this point we welcome public comment on
15 this scope and contents of the EIR. As far as I can
16 tell, I think we have one speaker. Please state your
17 name and address for the record and speak clearly for
18 the court reporter.

19 EVE BACH: Eve Bach, Arc Ecology.

20 If this project is implemented the way that
21 the Board of Supervisors endorsed it, it will be a
22 wonderful project. But as many of you know who have
23 followed or listened to my concerns over the years, the
24 big question is will all aspects of it be implemented.

25 My very first question has to do with what are

1 the -- what is considered the project? It includes
2 certain aspects of the plan as it was included in the
3 item sheet but not all of them. It doesn't include the
4 sustainability plan, the community-services plan, and so
5 on.

6 It seems to me that when the TIDA board
7 adopted this as the preferred alternative and the Board
8 of Supervisors adopted it with certain conditions, that
9 that was the project in its entirety, with all of the
10 pieces that they were endorsing. And to pick out
11 certain pieces of it, it's not the same project. It
12 doesn't have all of the same aspects to it. And that
13 speaks to a somewhat larger concern that I have about
14 one of the complications and one of the challenges about
15 doing an environmental review of this project.

16 Typically, when a project is subjected to
17 environmental review, it is the envelope that is -- the
18 envelope of the project that is evaluated. And when you
19 have a project like this, that in many ways is supposed
20 to be a self-mitigating project, it's not absolutely
21 clear to me how the environmental review process will
22 deal with the fact that some of it may be implemented
23 and some of it may not be implemented.

24 Just in the number of units, for example, the
25 Notice of Preparation talks about up to 6,000 units.

1 Well, the integrity of the plan -- this is not a plan
2 where impacts reduce as the project gets smaller. This
3 is a project that had to become large enough to meet
4 certain thresholds for goods and services, for
5 transportation. It had to be large enough. So this
6 environmental-review document has to do some kind of
7 sensitivity analysis or has to account for the fact that
8 simply making it smaller doesn't reduce impacts.

9 That will be important in talking about an
10 alternative, but it will also be important about talking
11 about the project itself. That we need to know -- we
12 need to know about those thresholds and the ability to
13 meet those thresholds. I understand that that creates
14 challenges of its own for the developer in terms of
15 being able to adjust to the market, but I think that has
16 to be reconciled to the fact that a project we have
17 already seen of 3,000 or 4,000 units -- 3,800, I think,
18 was the previous one -- didn't cut it.

19 So that -- and I will go on about this at
20 greater length in writing and try to make this comment a
21 little bit more straightforward, but I think you
22 probably understand the gist of that concern.

23 The other concern has to do with what you were
24 talking about; and it's a related concern, in some ways,
25 of the alternatives. What was mentioned in the Notice

1 of Preparation was to do a less intensive development.

2 Well, remember that the alternative, if it is to meet
3 the requirements and the spirit of CEQA, which is to use
4 alternatives as a way of understanding what better could
5 happen, what could be imposed as mitigation -- it has to
6 be both feasible -- and we already know that the
7 3800-unit project was not feasible. So bringing in a
8 project of about that scale, knowing that it's
9 infeasible, would really not be cricket. And it also
10 has to have lesser impacts so that it's going to be
11 important not to do the kind of conventional CEQA thing
12 of cutting the units in half and saying that that's your
13 alternative.

14 The other alternative that was mentioned was
15 to have one that -- without the public-trust trade. And
16 I can understand any rationale for having such a -- for
17 having such an alternative. There are many
18 uncertainties about this project, but the one
19 near-certainty is you have the enabling legislation to
20 do the trade. You have been working with the State
21 Lands Commission. There is no reason to suppose that
22 you have to have a Plan B for that eventuality,
23 particularly since you are going blithely ahead with the
24 congestion management, where there is indeed real
25 uncertainty.

1 Arc Ecology will try to propose an
2 alternative -- or at least features of an alternative --
3 that should be evaluated that will hopefully meet the
4 criteria of lesser impact; and we will try to make it
5 feasible within our limited capacity to evaluate that.

6 So one of the -- to continue on the track of
7 will this project actually be implemented and all of the
8 features of it, one of the things that we know from the
9 financial plan that was developed is that many of the
10 self-mitigating features of this plan -- the
11 transportation plan, the solid-waste management
12 facility, the affordable housing, the school on site --
13 all of those are not baked into the financing of the
14 plan. There are -- in some cases, such as
15 transportation and housing, there is some contribution
16 of capital costs; but for the ferry there are some
17 projections for operating costs. But as the Board of
18 Supervisors confirmed, one of the real problems with all
19 of this is that implementing those self-mitigating
20 features requires other agencies to spend money, whether
21 it is the City and County of San Francisco, whether it
22 is AC Transit, whether it is the San Francisco Unified
23 School District, or whether it is TIDA. All of the
24 risks for actually -- not all of the risks -- but a very
25 large proportion of the risks for actually implementing

1 those features have been spun off of the project.

2 There has to be some way in evaluating -- if
3 these were proposed as mitigations, they wouldn't
4 qualify, because the full financing of them would not be
5 available -- or even the project's contributions to
6 those costs. I think we need to have the same kinds of
7 standards applied for a self-mitigating project, that
8 there has to be some level of certainty that the
9 project, as it's been proposed -- which is great -- is
10 the project that will actually be built, will actually
11 be operating.

12 On a different topic, I -- given the large
13 number of approvals that are needed for this project and
14 given the many aspects of the project and the long-term
15 buildout of this project, I would suggest that you do
16 this as a master EIR rather than a -- rather than a
17 project-level EIR. If you did that, you would also be
18 be able then to take into account and deal with the ramp
19 improvements that are currently being worked on. The
20 idea of having those as a totally separate EIR, I think,
21 begins to segment the project, because the only reason
22 really for doing those ramp improvements is this
23 project. I think a master EIR would give you some of
24 the flexibility that you need and deal with some of the
25 phasing-in and some of what is currently uncertain and

1 allow you to deal with it in a more systematic way.

2 The final thing I think I would like to draw
3 to your attention that caught my eye in the Notice of
4 Preparation has to do with the traffic analysis. As you
5 may remember, in the earlier EIR -- the project-level
6 EIR -- the region of impact that was looked at was just
7 the bridge itself. And that was a major flaw in the
8 EIR. At the time in the comments I wrote -- I compared
9 it to looking at the impacts of filling up a bathtub and
10 continuing to add more water. The bathtub doesn't get
11 any fuller, but the downstairs neighbor has water coming
12 through the ceiling. Well, that is what the analysis of
13 traffic was in that earlier EIR. It looked just at the
14 traffic on the bridge and, lo and behold, they came to
15 the conclusion that the bridge is already full. So
16 there are no impacts for adding more traffic, because
17 you can't have any more.

18 What is incontrovertible is that the bridge is
19 the source of congestion on the regional highway system,
20 probably extending eight miles south and eight miles to
21 the east; that where the congestion and the decrease in
22 the level of service takes place is on city streets
23 leading to the freeway system and further back in the
24 freeway system where there is merging. The bridge
25 itself is pretty much -- unless there's an accident --

1 is a free-flow situation. So to look just at the bridge
2 really is to avoid and to ignore what are the true
3 traffic impacts. You have to look at a much larger
4 region of impact; and the impact to both the regional
5 system as a -- for a radius that is defined by the
6 bridge's impact on the system and on the city streets in
7 San Francisco that feed the bridge.

8 The metering that is one of the baked-in
9 mitigations would deal with a.m. traffic, but p.m.
10 traffic you don't have that -- you don't have that
11 ability; and it is the p.m. traffic that is even the
12 more serious congestion problem. So let me just leave
13 it to say that I hope you won't make that mistake again,
14 that it was a very serious flaw; that I hope the Navy
15 made you do it, that you don't really want to do it
16 yourself.

17 Anyhow, I will have more to say; but I
18 appreciate your setting up the two scoping sessions.
19 And in the past I've appreciated the help I've received
20 from all of the staff and look forward to working with
21 you again, not to block the project -- quite the
22 contrary -- but to make sure that the project that you
23 have all worked so hard to present to people and to
24 prepare is actually the project that everybody is going
25 to have to live with in the future.

1 MR. COOPER: Thank you very much for you
2 thoughtful comments.

3 Do we have any other speakers tonight?

4 Okay. Well, that concludes our meeting.
5 Thank you very much. And I look forward -- well, you
6 will be receiving copies of the draft EIR at a later
7 date. And we look forward to your comments at that
8 time.

9 That concludes our meeting.

10 (Meeting ended at 6:48 p.m.)
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CERTIFICATE OF REPORTER

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IN WITNESS WHEREOF I have hereunto set my hand on this 21st day of February, 2008.

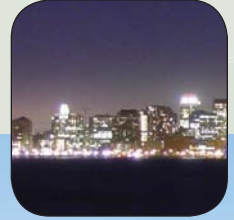
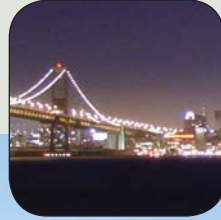
FREDDIE REPPOND

APPENDIX C: TRANSPORTATION IMPACT STUDY



FEHR & PEERS
TRANSPORTATION CONSULTANTS

332 Pine Street, 4th Floor
San Francisco, CA 94104



Prepared for the City of San Francisco

Treasure Island and Yerba Buena Island Redevelopment Plan

Case Number: 2007.0903!

Transportation Impact Study

July 7, 2010
SF07-0340

**Treasure Island and Yerba Buena Island Redevelopment Plan
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Prepared for:

The City of San Francisco

and

Turnstone Consulting

Prepared by:

Fehr & Peers

July 2010

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1. INTRODUCTION

The Treasure Island Development Authority ("TIDA") and Treasure Island Community Development, LLC ("TICD") are proposing a Redevelopment Plan for Treasure Island and Yerba Buena Island in the City and County of San Francisco, California. The Redevelopment Plan would be implemented through a Disposition and Development Agreement ("DDA") between TIDA and TICD, a *Design for Development* ("D4D") that sets forth the development standards and guidelines, and other ancillary documents. The Project would govern redevelopment on most of Treasure Island and portions of Yerba Buena Island. The Proposed Project would replace existing low-density residential, commercial and light industrial development with a new mixed-use, transit-oriented development that includes housing, retail/commercial space, recreational open space, and community facilities. For purposes of this Transportation Impact Study, the "Proposed Project" is the Development Program set forth in the Project Description in the Draft EIR.

1.1 REPORT ORGANIZATION

This report describes the results of a transportation impact analysis conducted to evaluate the transportation-related impacts of the Proposed Project. The report also describes the transportation-related impacts associated with the Proposed Project with an enhanced level of transit service that is described in the Project Description but which lacks a committed funding source. The report also analyzes a reduced project alternative, both with the level of transit service that would be provided as part of the Proposed Project and with the expanded level of transit service. A description of the applicable land use and transportation aspects of the Proposed Project and the analysis methodology used to determine project impacts are in this chapter. The remainder of the report describes the process and results of the analysis and is divided into the following chapters:

- **Chapter 2 – Project Setting** describes the operating conditions of the existing transportation network in the project vicinity, generally including both Treasure Island and Yerba Buena Island and portions of Downtown San Francisco, as appropriate. Generally, the transportation system analyzed includes the surrounding roadway network, weekday AM and PM, as well as Saturday peak hour traffic volumes, intersection performance, and freeway operations. Additionally, this section describes the existing public transit network, pedestrian facilities, and bicycle facilities.
- **Chapter 3 – Travel Demand Analysis** includes the Proposed Project's trip generation, trip distribution, mode split, and trip assignment forecasts, as well as parking, loading, and construction travel demand. This chapter also describes how congestion pricing, ramp metering, and the varying levels of transit service considered in this analysis would affect the project's overall trip generation and mode split.
- **Chapter 4 – Transportation Impact Analysis** describes the operating conditions of the transportation network after the addition of travel demand from the Proposed Project and the Reduced Development Project Alternative. This analysis is conducted for (i) a scenario with only transit service improvements for which full funding has been identified and for (ii) a scenario in which more transit service¹ is provided (the Expanded Transit Scenario). For each scenario, the operations of the transportation system are described for existing plus project conditions and cumulative Year 2030 conditions. This section also describes the impacts on parking, loading, the transit network, and the bicycle and pedestrian facilities. Lastly, this section describes potential impacts of project construction on the transportation network.

1. The frequencies used in this study for the proposed transit service have changed since the 2006 *Transportation Plan*, although the general nature of the service is consistent.

- **Chapter 5 – Mitigation Measures** sets forth the proposed mitigation measures developed to reduce project impacts.

1.2 PROJECT DESCRIPTION

Treasure Island and Yerba Buena Islands (the “Islands”) are in San Francisco Bay, about halfway between the San Francisco mainland and the City of Oakland. Treasure Island contains approximately 397 acres of land and Yerba Buena Island includes approximately 152 acres. The Islands are within the City and County of San Francisco, near the boundary with Alameda County. The San Francisco-Oakland Bay Bridge (“SFOBB”) provides direct access to Yerba Buena Island, which is linked to Treasure Island via a causeway.

Treasure Island was originally constructed to host the Golden Gate International Exposition in 1939. It was subsequently used by the United States Navy as Naval Station Treasure Island (“NSTI”) until 1993, when it was de-commissioned. Since the base was officially closed in 1997, the Treasure Island Development Authority (“TIDA”) has been responsible for the operations and maintenance of the base serving as the base caretaker through a Cooperative Agreement with the Navy, pending final disposition of the land from the Navy to TIDA.

Yerba Buena Island is a natural island that has been used by private parties and by the U.S. Army and Navy since the 1840s. The project setting is shown on **Figure 1** on page 3.

1.2.1 Land Uses – Existing

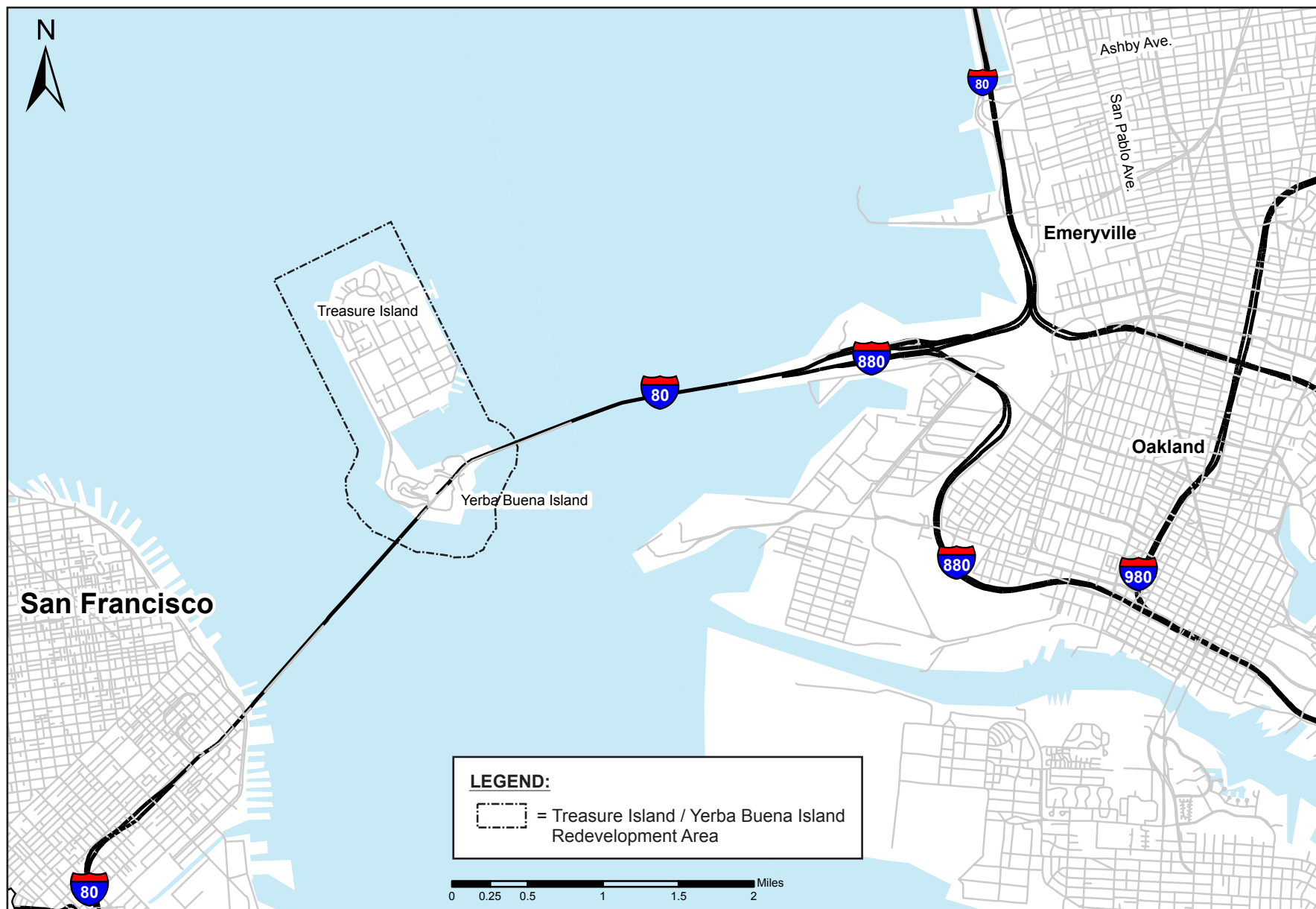
The existing land uses on Treasure Island include two-, four-, and eight-unit two-story residential apartment buildings, as well as unoccupied barracks for resident service personnel. Non-residential buildings on Treasure Island include offices, a café, several event venues, a guard shack, warehouse/storage/manufacturing, a childcare center, a fire station and fire training academy, a wastewater treatment plant, a gymnasium, film production facilities, and a yacht club. Other buildings on Treasure Island are unoccupied but available for lease, or are unoccupied because they are in hazardous condition or are within a remediation site. Many of the existing non-residential buildings are used by small businesses. The U.S. Department of Labor maintains a 37-acre campus for a large career training organization, the Treasure Island Job Corps. The Job Corps campus includes group housing for 710 students. Recreation facilities on the island include a marina, ball fields, a gym, theater, bowling alley, fitness center, tennis courts, a picnic area, and open space.

The U.S. Coast Guard occupies approximately 47 acres of land on Yerba Buena Island including a U.S. Coast Guard Station on the southeast side of Yerba Buena Island that includes housing, administrative facilities, open storage and docks, buoy maintenance facilities, and a lighthouse. The California Department of Transportation (“Caltrans”) occupies approximately 20 acres of Yerba Buena Island with portions of the SFOBB and a tunnel that connects the bridge’s east and west spans. In addition, Yerba Buena Island includes about 80 habitable housing units and 10 non-residential buildings.

1.2.2 Land Uses – Proposed

The Proposed Project would remove most of the existing structures in the plan area and replace them with the following new development:

- Up to 8,000 dwelling units, including approximately 7,700 to 7,800 units on Treasure Island and 200 to 300 units on Yerba Buena Island. The residential units would be provided in low-, mid-, and high-rise buildings with a mix of housing types available to a wide range of households and income levels;
- 100,000 square feet of new office uses;



Source: Fehr & Peers, 2009; BKF Engineers, 2008

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROJECT SETTING

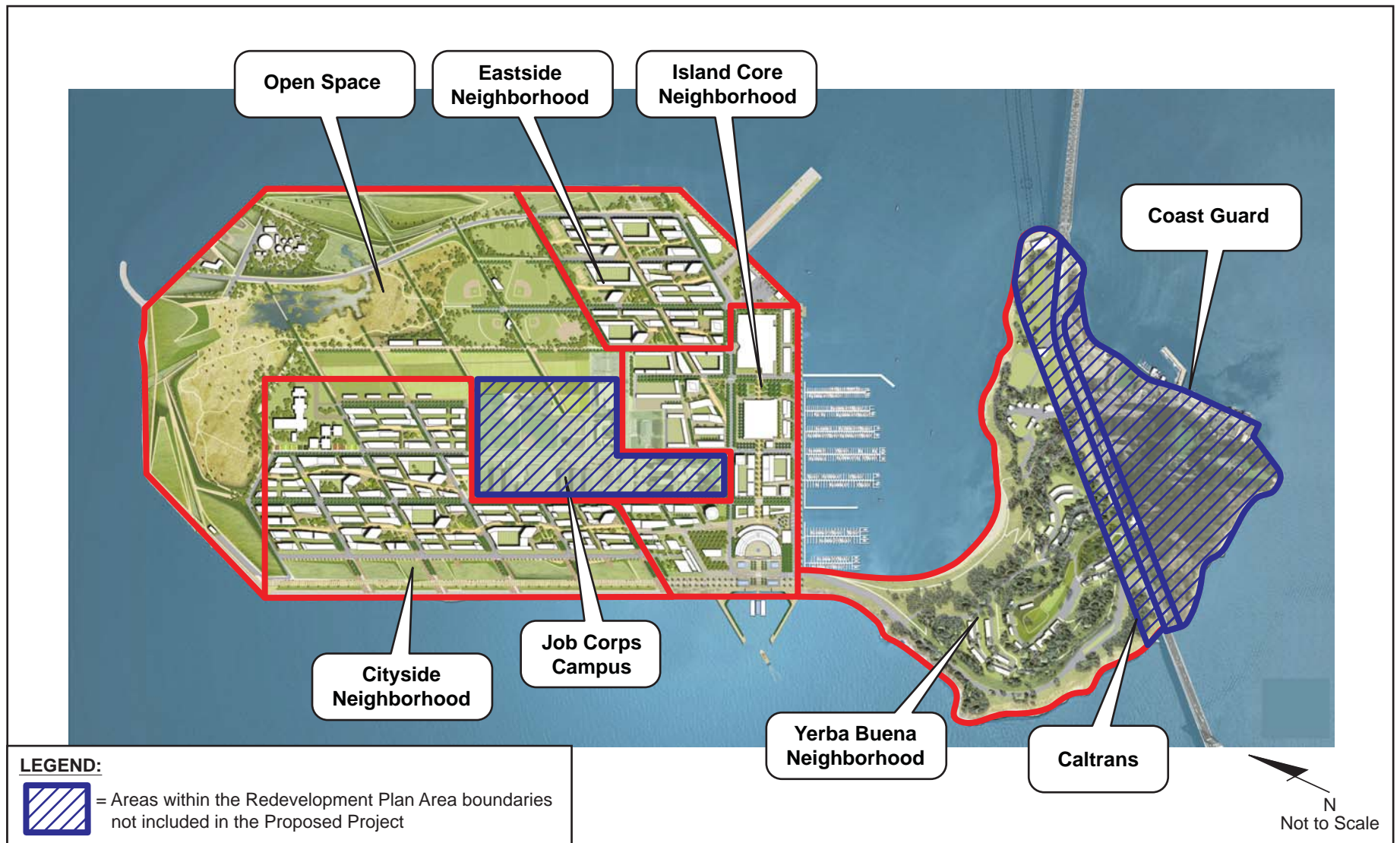
FIGURE 1

- Up to approximately 140,000 square feet of new retail uses, including a mix of neighborhood-serving (grocery store, drug store, dry cleaners, etc.) visitor serving and destination retail (restaurants, specialty shops, etc.);
- Up to approximately 269,000 square feet of adaptive re-use of three existing buildings on the southwest quadrant of Treasure Island. Uses for these three buildings include:
 - 67,000 square feet of additional retail (which, when combined with the 140,000 square feet of new retail yields a total of 207,000 square feet of retail proposed on the Islands);
 - 30,000 square feet of community-serving uses, such as small offices;
 - 22,000 square feet of food production/manufacturing; and
 - 150,000 square feet of entertainment uses.
- Up to approximately 273,500 square feet of institutional uses, including:
 - 105,000 square foot elementary school (rehabilitation and/or expansion of existing school);
 - 30,000 square feet for police/fire services;
 - 13,500 square feet for community facilities, (precise programming to be determined, but could include facilities such as youth/senior centers, a library or reading room, support services, etc.);
 - 35,000 square feet of community center uses;
 - 15,000 square feet for a sailing center; and
 - 75,000 square feet of cultural/museum space.
- Up to approximately 500 hotel rooms, including a 50-room wellness spa, 70 timeshare units, and an approximately 300 to 380 room full-service hotel.
- Up to approximately 300 acres of public recreational parks and open space including a 40-acre regional sports facility. The sports facility would consist of organized ball fields. During weekday AM and PM peak hours, the fields would be open for use with reservations only, and no scheduled events would occur before 6:30 PM (30 minutes after the end of the PM peak hour). All fields would be used for scheduled events on weekends. Although the exact program for the sports facility has not been determined, the following has been assumed as a reasonable allocation of field space:
 - 6 soccer fields;
 - 4 baseball fields;
 - 8 batting cages;
 - 6 softball fields; and
 - 6 volleyball courts.
- Expansion of the existing 100-berth marina near Clipper Cove to provide up to 400 berths².

2. Construction of the additional marina berths has already been approved, as part of the *Transfer and Reuse of Naval Air Station Treasure Island FEIR* (June 2006, State Clearinghouse #1996092073) and is not technically part of the Proposed Project. Landside services for the marina are part of the Proposed Project and the additional berths are included in the cumulative analysis, but the travel demand associated with the additional berths is not included as part of this project.

The existing residential housing on the Islands would be replaced as part of the project; the existing low- to moderate-income housing on the island would be replaced as part of the approximately 2,400 affordable units included in the project. The existing market-rate housing on Treasure Island would also be replaced as part of the proposed market-rate housing. The existing 37-acre Treasure Island Job Corps campus would remain in operation. On Yerba Buena Island, the existing Coast Guard facilities and approximately 10 acres of Caltrans property would remain. **Figure 2** on page 6 presents the Redevelopment Plan area on the Islands. The area has been broken into smaller neighborhoods for the evaluation purposes in this report. **Table 1** on page 5 summarizes the land uses proposed for the project. The Proposed Project also includes a new street network, which is described in Section 1.2.4 (on page 10) and is depicted on **Figure 5** (page 11).

TABLE 1 – LAND USE PROGRAM	
Use	Amount
Residential	8,000 dwelling units
New Office	100,000 square feet
Neighborhood-Serving Retail ¹	75,000 square feet ²
Other Retail ³	95,000 square feet
Restaurant	37,000 square feet
Community-Oriented Services/Offices	30,000 square feet
Food Production/Manufacturing	22,000 square feet
Recreation/Entertainment	150,000 square feet
School	105,000 square feet
Police/Fire	30,000 square feet
Community Center ⁴	48,500 square feet
Hotel	500 rooms
Sailing Center	15,000 square feet
Museum/Cultural Use	75,000 square feet
General Open Space	260 acres
Athletic Fields	40 acres
Notes: 1. Neighborhood-serving retail includes uses designed to offer services to residents of Treasure Island, including dry cleaners, hardware stores, grocery stores, movie rental store, etc. 2. Plan calls for 25,000 square feet of neighborhood-serving retail in the Cityside and Eastside neighborhoods. For analysis purposes, this study assumes retail split based on proportion of residential units in each of the two neighborhoods. 3. Other retail includes shopping more likely to attract visitors from outside of the Islands, such as formula retail, boutique stores, etc. 4. Includes 13,500 of miscellaneous small community facilities and a 35,000 square foot community center. Source: TICD & TIDA, 2009	



Source: Treasure Island Development Authority and Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

REDEVELOPMENT PLAN AREA

FIGURE 2

1.2.3 SFOBB Access

The SFOBB provides the only vehicular access onto and off of the Islands. The western portion of the SFOBB, which travels between the Islands and mainland San Francisco, has recently been seismically retrofitted. The eastern span, which connects between the Islands and the East Bay, is currently being reconstructed. The existing ramps between Yerba Buena Island and the SFOBB are currently geometrically substandard. To address this, as a separate project, the San Francisco County Transportation Authority (“SFCTA”) and Caltrans are evaluating alternatives for reconstructing some of these ramps. Although those improvements are part of a separate effort and not part of the Proposed Project, they are described here so that the discussion of the project’s proposed vehicular circulation system can be understood in the proper context.

Currently, there are six on- and off-ramps to the SFOBB at Yerba Buena Island. The existing ramp configuration is shown on **Figure 3** on page 8. There will continue to be six ramps with the proposed improvements; however, they will be modified as follows (and illustrated in **Figure 4** on page 9):

As part of the East Span Seismic Safety Project (“ESSSP”), the following ramp changes will occur (based on the numbering shown on **Figures 3** and **4**):

1. The eastbound on-ramp on the east side of Yerba Buena Island will be reconstructed entirely as part of the replacement of the SFOBB eastern span. The new ramp will be in a similar location to the existing ramp, but will provide increased acceleration distance. This is the only ramp improvement that has been approved and funded to date and should be completed by 2013.

The SFCTA and Caltrans are currently evaluating alternatives for the following ramps:

2. The westbound on-ramp on the east side of Yerba Buena Island would remain open to all traffic, but would be completely reconstructed to provide greater acceleration distance. The ramp would also be outfitted with ramp metering traffic signals to meter the flow of traffic onto the westbound SFOBB from the Islands. A separate bypass lane would be provided for high-occupancy vehicles, which is assumed for purposes of this analysis to be vehicles with three or more passengers (HOV3+).
3. The westbound off-ramp on the east side of Yerba Buena Island, which is currently a left-hand exit, would be removed and replaced with a new right-hand exit that distributes exiting traffic onto Macalla Road, just west of the proposed reconstructed westbound on-ramp.
4. The westbound on-ramp on the west side of Yerba Buena Island would not be modified geometrically. However, it would be restricted to transit and emergency vehicle-use only, providing exclusive access for transit and emergency vehicles departing the Islands destined for the San Francisco mainland.

The following changes are expected for the remaining two ramps on Yerba Buena Island:

5. The eastbound off-ramp on the west side of Yerba Buena Island would remain unchanged from its current configuration.
6. The eastbound off-ramp on the east side of Yerba Buena Island, which was closed at the time that data was collected for this analysis, has recently been re-opened with no changes to its configuration. Following completion of bridge construction activities, the ramp will have signage and lighting improvements only.

In addition to ramp changes, the SFCTA and Caltrans are also evaluating retrofit of the nine viaduct structures on the west side of Yerba Buena Island. Retrofit of these structures is separate from this project. As the retrofit would be a seismic safety project only and no changes to roadway alignment or capacity are proposed, the transportation impacts described in this report would be the same whether the retrofit project was implemented or not.



Source: Yerba Buena Island Internal Road Network and Connection with Treasure Island Final Report, AECOM, 2009

Note: 1. Eastbound off-ramp reopened in Fall 2009.

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING ACCESS RAMPS WITH EXISTING ROADWAYS

FIGURE 3



Source: Yerba Buena Island Internal Road Network and Connection with Treasure Island Final Report, AECOM, 2009

Note: 1. Eastbound off-ramp reopened in Fall 2009.

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROPOSED ACCESS RAMPS WITH EXISTING ROADWAYS

FIGURE 4

1.2.4 Proposed Street Network

The Proposed Project would include a number of improvements to the roadway network on the Islands.

1.2.4.1 Treasure Island

The Proposed Project would largely reconfigure existing streets on Treasure Island, as illustrated on page 11 in **Figure 5**³. The planned street design for Treasure Island provides a layout to accommodate higher-density development sites, a Transit Hub, and open space. There are four main levels in the hierarchy of streets planned for Treasure Island (**Figure 5** illustrates the hierarchy of each street on the Islands).

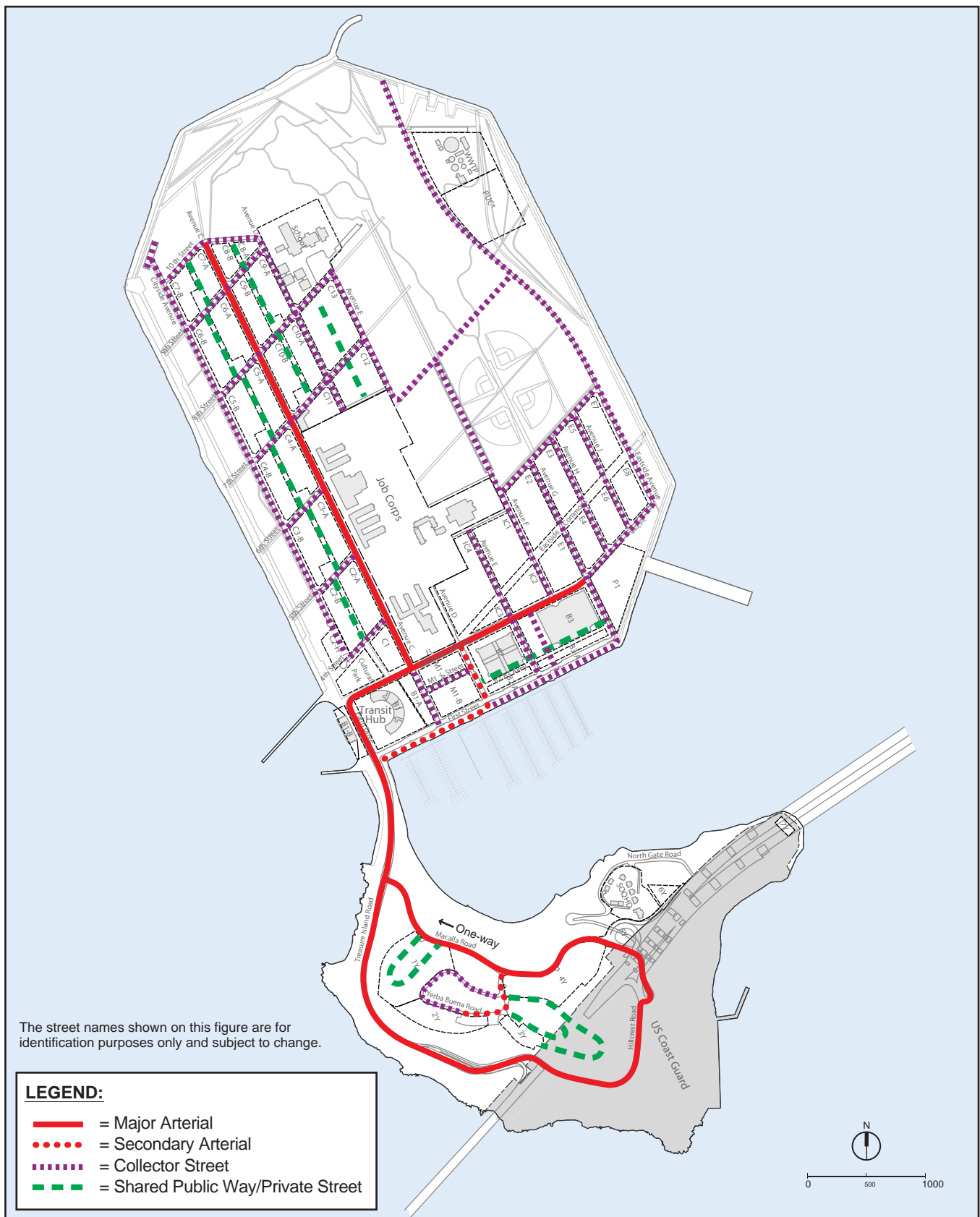
Major Arterials – California Avenue and Avenue C are the main east/west and north/south streets, respectively, on Treasure Island. Major arterials will generally include one 12-foot wide traffic lane in each direction (11-foot lanes when buses travel in only one direction), 8-foot parking bays, and 5-foot Class II bike lanes in each direction. Additional lanes may be added to Major Arterial streets as needed for dedicated left and right turn lanes. Landscaping and sidewalks will be provided on both sides of the street, although their widths will vary. Major arterials would provide primary access to the SFOBB. Their function is consistent with the same-titled street type designation in the Transportation Element of the *San Francisco General Plan*.

Secondary Arterials – Secondary Arterials are roadways with similar characteristics to Major Arterials, but that do not provide primary access to the SFOBB. There are two Secondary Arterials on Treasure Island: 1st Street, between Avenue of the Palms and Avenue D, and Avenue D, between 1st Street and California Avenue. Generally, they include an 11-foot wide traffic lane and a 7-foot wide parking bay. Parking bays will be 8-feet wide when a 5-foot Class II bike lane is provided. To minimize bus conflicts, a 6-foot wide flex lane will be added between parking bays and the travel lane where parking occurs adjacent to the bus routes in the area near the Transit Hub. Similar to Major Arterials, there will be landscaping and sidewalks on both sides of the street. Their function is consistent with the same-titled street type designation in the Transportation Element of the *San Francisco General Plan*.

Collector Streets – These roadways facilitate movement through and around the urban core, developed neighborhoods, and open space. They include a 10-foot wide traffic lane and a 7-foot wide parking bay in each direction. Where a Class II bike lane is present, the parking bay would be 8-feet wide. Collector Streets will also have sidewalks and landscaping on both sides. Their function is consistent with the same-titled street type designation in the Transportation Element of the *San Francisco General Plan*.

Shared Public Ways – These pedestrian- and bicycle-priority public rights-of-way are proposed primarily within the Cityside neighborhood with one shared public way in the Island Core neighborhood (as illustrated on **Figure 2** on page 6). These streets prioritize pedestrian and bicycle use of the entire right of way, while allowing occasional slow-moving vehicles to access local land uses and parking to provide necessary services. They may be designed with special paving, a variety of amenities, landscaping and seating, as well as pockets of on-street parking. Their function is consistent with the same-titled street type designation in the Transportation Element of the *San Francisco General Plan*.

3. The street names shown on Figure 5 are for identification purposes only and subject to change.



Source: Perkins + Will, May 4, 2009; Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROPOSED TREASURE ISLAND AND YERBA BUENA ISLAND STREET SYSTEM

1.2.4.2 Yerba Buena Island

Unlike the street system on Treasure Island, which would largely be reconstructed, the roadway system on Yerba Buena Island would largely remain in its current configuration, with the exception of improved emergency vehicle access, bicycle and pedestrian circulation improvements, and modifications to serve the revised SFOBB ramp configurations described above, and to allow the additions of bicycle and pedestrian facilities along the existing right of way.

The general vehicular circulation proposed on Yerba Buena Island would convert Macalla Road to one-way operations, such that vehicles could only travel on Macalla Road from the SFOBB ramps to its terminus at the intersection with Treasure Island Road. The other major streets on Yerba Buena Island, which include Treasure Island Road, Hillcrest Road, South Gate Road, and a small section of Macalla Road east of the new westbound ramps, would continue to provide two-way operations. As noted earlier, with reconstruction of the westbound ramps as proposed as part of a separate project, the westbound on-ramp to the SFOBB on the west side of the Islands would allow transit vehicles only.

Similar to the case on Treasure Island, streets on Yerba Buena Island would also have four street classifications, but they would be defined slightly differently than those on Treasure Island, and are described separately below:

Major Arterials – Major arterials on Yerba Buena Island would generally provide access between Treasure Island and the SFOBB, and include Treasure Island Road, South Gate Road, Hillcrest Road, and Macalla Road. Treasure Island Road, South Gate Road, and Hillcrest Road would include 12-foot traffic lanes in each direction (11-feet when separated by a median or dedicated turn lane), and a 5-foot wide Class II bike lane.

On Treasure Island Road, the bicycle lane would be provided in the south and east-bound directions only (i.e., from Treasure Island towards the SFOBB only). A short section on Treasure Island Road near the existing SFOBB westbound on-ramp would have a 14-foot wide travel lane and a Class III bicycle route. There would be sidewalks provided on Treasure Island Road between Treasure Island and Macalla Road. No sidewalks will be provided on the section of Treasure Island Road between Macalla Road and the SFOBB.

Macalla Road will be reconfigured to allow one-way vehicular traffic only, from the SFOBB northwesterly towards Treasure Island Road. This street will provide one 11-foot wide traffic lane, a five-foot Class II bicycle lane on the right-hand side, and a six-foot wide contra-flow bike lane on the left-hand side. A five-foot wide sidewalk will also be provided on the left-hand side.

Secondary Arterials – The main access road into the central development and open space area would be designated as a Secondary Arterial street. The Secondary Arterial would provide a 15-foot wide travel lane in each direction (a 30-foot curb to curb roadway) and a five-foot wide sidewalk on the north side of the street. The wide travel lanes would be designed to accommodate potential future transit and emergency vehicle access.

Collector Streets – The Collector Street on Yerba Buena Island will be a one-way roadway, forming a loop traveling clockwise. It will include a 20-foot wide travel lane with five-foot sidewalks on both sides of the street.

Private Streets – The primary access to homes within the main western and eastern residential districts on Yerba Buena Island will be private streets. The private streets would include 11-foot travel lanes in each direction. The streets have been designed to accommodate emergency vehicle access, with turnaround areas and wider curb return radii at intersections.

1.2.5 Proposed Transit Improvements

The *Treasure Island Transportation Plan* was prepared as an exhibit to the 2006 Development Plan and Term Sheet (2006 Term Sheet) that was endorsed by the TIDA Board and San Francisco Board of Supervisors. The 2006 Transportation Plan includes a number of substantial improvements both to transit infrastructure and service. However, some funding for the transit service would come from local, state, and federal grants, which have not been fully programmed yet. Thus, the transportation impact analysis was conducted for both the Proposed Project with only that portion for which full funding has been identified (also described in this report as the Base Transit Scenario) and the Proposed Project with the addition of the full set of transit improvements proposed by the project's Transportation Plan and for which full funding is likely, but not certain (described in this report as the Expanded Transit Scenario). The overall transit circulation proposed to and from the Islands, including access to the SFOBB, is illustrated on page 14 in **Figure 6** and is common to both the Base Transit and the Expanded Transit Scenarios. The transit improvements contemplated under the Proposed Project and under the Expanded Transit Scenario are described below.

1.2.5.1 Proposed Project with Base Transit Service

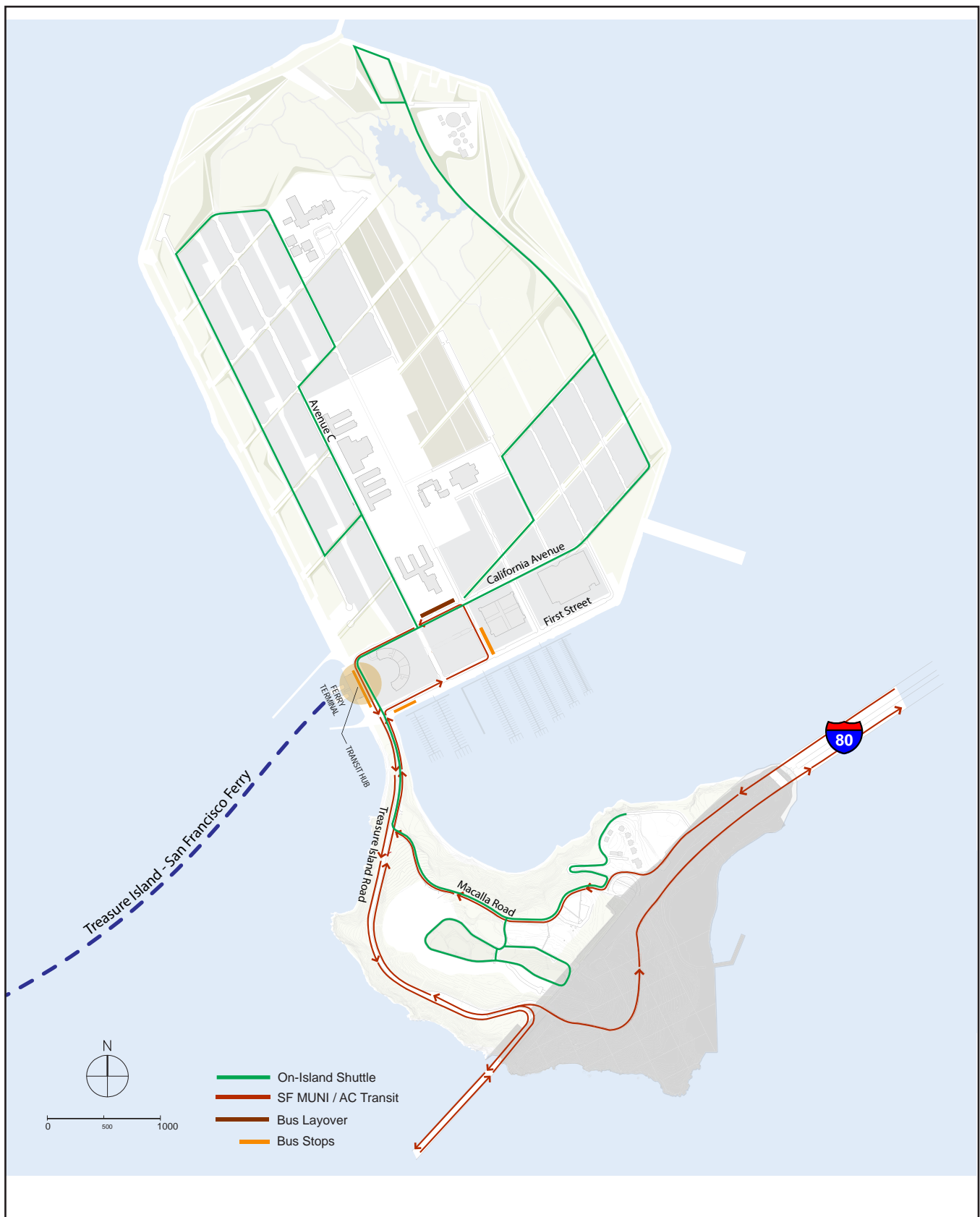
The following are the proposed transit service improvements to enhance access and circulation for Island residents and visitors for which a source of full funding has been identified;

1. New ferry service from a new inter-modal bus and ferry terminal ("Transit Hub") located on the western shore of Treasure Island. Ferries would operate with 50-minute headways to and from Downtown San Francisco between 5:00 AM and 9:00 PM (corresponding to a single ferry operating between Treasure Island and one of the existing docks in San Francisco);
2. Muni Route 108-Treasure Island would operate at its current 15-minute headway, but would no longer circulate around most of Treasure Island. Instead, it would circulate only around the Transit Hub and a portion of the Island Core neighborhood. The 108-Treasure Island would continue to operate 24-hours per day, including overnight owl service;
3. New bus transit service operating between the Islands and Downtown Oakland (operated by AC Transit) at approximately 10-minute headways during peak hours and less frequent service during off-peak hours; generally, bus service to Oakland would be provided between approximately 5:00 AM and 10:00 PM.
4. A fleet of alternative fuel shuttle-buses that circulate throughout the Islands, with timed transfers at the Transit Hub offering free rides to residents and visitors of the Islands.

In addition to the service enhancements described above, the Proposed Project would provide a number of physical infrastructure improvements designed to prioritize transit movements, including bus stops and layover areas, a new Transit Hub, and, as described in Section 1.2.3 on page 7, conversion of the existing westbound on-ramp to the SFOBB on the western side of Yerba Buena Island to transit-only.⁴

Buses traveling between the Islands and San Francisco would access the SFOBB via the transit-only westbound on-ramp and exit the SFOBB from the existing eastbound off-ramp on the western side of the Island. Buses would travel on Treasure Island Road between Treasure Island and the SFOBB ramps.

4. The conversion of the existing westbound on-ramp to the SFOBB on the western side of Yerba Buena Island to transit-only would occur with implementation of the SFCTA/Caltrans project (described on page 8). If the SFCTA/Caltrans project is not implemented, this ramp would be accessible by all vehicles.



Source: Perkins+Will

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROPOSED TRANSIT CIRCULATION

In the event that the new westbound on- and off-ramp are not approved by the SFCTA and constructed by Caltrans, as described in Section 1.2.3 on page 7, westbound buses would be required to enter mixed-flow traffic on the existing westbound on-ramp on the west side of Yerba Buena Island.

Buses traveling between the Islands and the East Bay would use the new eastbound on-ramp on the east side of Yerba Buena Island to be constructed as part of the ESSSP. To access this on-ramp, buses leaving the Islands would travel along Treasure Island Road and Hillcrest Road to access the eastbound on-ramp. Buses traveling from the East Bay to the Islands would use either the existing westbound off-ramp on the east side of Yerba Buena Island or the proposed reconstructed westbound off-ramp, depending on whether that project is approved and constructed. To access the Islands from the East Bay, buses would exit the SFOBB and travel on Macalla Road to its intersection with Treasure Island Road.

Bus circulation within Treasure Island would be along a one-way, two-block loop in the counter-clockwise direction. AC Transit and Muni buses would travel east on 1st Street, where they would make their first stop. Buses would continue east on 1st Street, then north on Avenue D, where they would make a second stop. After this stop, buses would turn west onto California Avenue, where they would finish their run and layover until beginning their return trip. The return trip back to the SFOBB would involve continuing west on California Avenue and then south on Treasure Island Road, with a stop at the new ferry quay and Transit Hub in front of Building One, between California Avenue and 1st Street. From the Transit Hub, buses would continue across the causeway onto Yerba Buena Island via Treasure Island Road and continue toward the SFOBB. The proposed 108-Treasure Island route would increase the distance some Job Corp commuters and visitors would need to walk to access a Muni bus stop because the 108-Treasure Island would no longer circulate to the interior of Treasure Island; however, the Job Corps commuters and visitors would be able to use the on-island shuttle, as described below.

As noted, in addition to Muni and AC Transit buses, the Proposed Project would include a new, free on-island shuttle system with three routes: two serving the neighborhoods on Treasure Island, and a third serving Yerba Buena Island. Each of the three shuttle routes would provide continuous service from early morning to late evening. The free services would stop at the Transit Hub on Treasure Island, facilitating transfers to ferry and outbound Transbay bus service. In addition to the Transit Hub stop, the shuttles would stop at the two other stops where express bus routes from Downtown San Francisco and Oakland drop off, allowing for convenient connections. The shuttles would operate on a pulse schedule, with departures and arrivals matching the ferry service, the Muni Route 108-Treasure Island, and AC Transit service at the Transit Hub. On-island trips between shuttles would thus be optimized.

1.2.5.2 Expanded Transit Scenario

The 2006 Transportation Plan also identifies an enhanced level of transit service for which a source of funding has been identified but cannot be committed with certainty. A second scenario is evaluated in this report that includes the Proposed Project with the addition of all transit service enhancements proposed in the 2006 Transportation Plan. The expanded transit service would include all of the elements of the Base Transit Scenario plus:

- More frequent ferry service at 15-minute headways during peak periods (corresponding to three ferries operating between Treasure Island and improved docks in San Francisco, dedicated for use by the Treasure Island ferry);
- More frequent bus service on the Muni 108-Treasure Island route, with frequency increased to 7-minute headways in the AM peak period and 5-minute headways in the PM peak period to and from the San Francisco Transbay Terminal. Overnight Owl service would continue, but at lower frequencies than during the peak periods;

- New bus line with service to another location in San Francisco (assumed to be Civic Center for purposes of this analysis) with 12-minute headways during the AM and PM peak periods. Service would be provided between approximately 5:00 AM and 10:00 PM;

The transit infrastructure (ferry quay, Transit Hub, new bus stops and layover areas, and a transit-only on-ramp to the westbound SFOBB) would remain the same as the Proposed Project.

1.2.6 Pedestrian Circulation Improvements

The pedestrian circulation network has been designed to encourage walking within the plan area. Pedestrian facilities would facilitate travel from and to transit facilities, shopping, schools and recreational uses on the Islands. All streets on Treasure Island would include sidewalks as described in the Proposed Street Network in Section 1.2.4 on page 10. Generally, sidewalks would be six feet wide plus four to five feet of landscaping separating the sidewalk from adjacent roadways. However, sidewalk widths would vary depending on the available right of way. Due to topography constraints, sidewalks on Yerba Buena Island would be limited to only one side of the street in many cases, and some streets where there are no pedestrian destinations sidewalks are not proposed. However, several pedestrian trails will be provided through the open spaces and development areas on Yerba Buena Island. The proposed pedestrian circulation plan for Yerba Buena Island is presented in **Figure 7** on page 18. No figure is provided for Treasure Island since all streets would have sidewalks.

1.2.7 Bicycle Circulation Improvements

Bicycle facilities consist of bicycle lanes, trails, and paths. Typically, bicycle facilities are grouped into three categories:

- *Class I* facilities consist of off-road bicycle paths and are generally shared with pedestrians. Class I facilities may be adjacent to an existing roadway, or may be entirely independent of existing vehicular facilities.
- *Class II* facilities consist of striped bicycle lanes on roadways. These facilities reserve a minimum of four feet of space along each side of the roadway for bicycle traffic.
- *Class III* facilities consist of signed bicycle routes. Class III facilities do not have striped, reserved right of way for bicycles, but are signed and ideally designed to accommodate and encourage bicycle traffic.

Figure 8 on page 19 illustrates the proposed bicycle circulation network for Treasure Island. On Treasure Island, the Proposed Project would provide a Class I shared bicycle and pedestrian path around the perimeter of the Island and through portions of the open space areas. In addition, the project would include a Class I bicycle-only facility around the perimeter of the residential development. Class II bicycle lanes would be striped on the Major Arterial Roadways (Avenue C and California Avenue), and on 1st Street in the westbound direction only. Other streets on Treasure Island would be designed to be bicycle-friendly by encouraging slow auto speeds and through development of a grid street network to provide direct routes and disperse traffic; however, no exclusive bicycle right of way would be provided and bicycles would share space on those streets with autos.

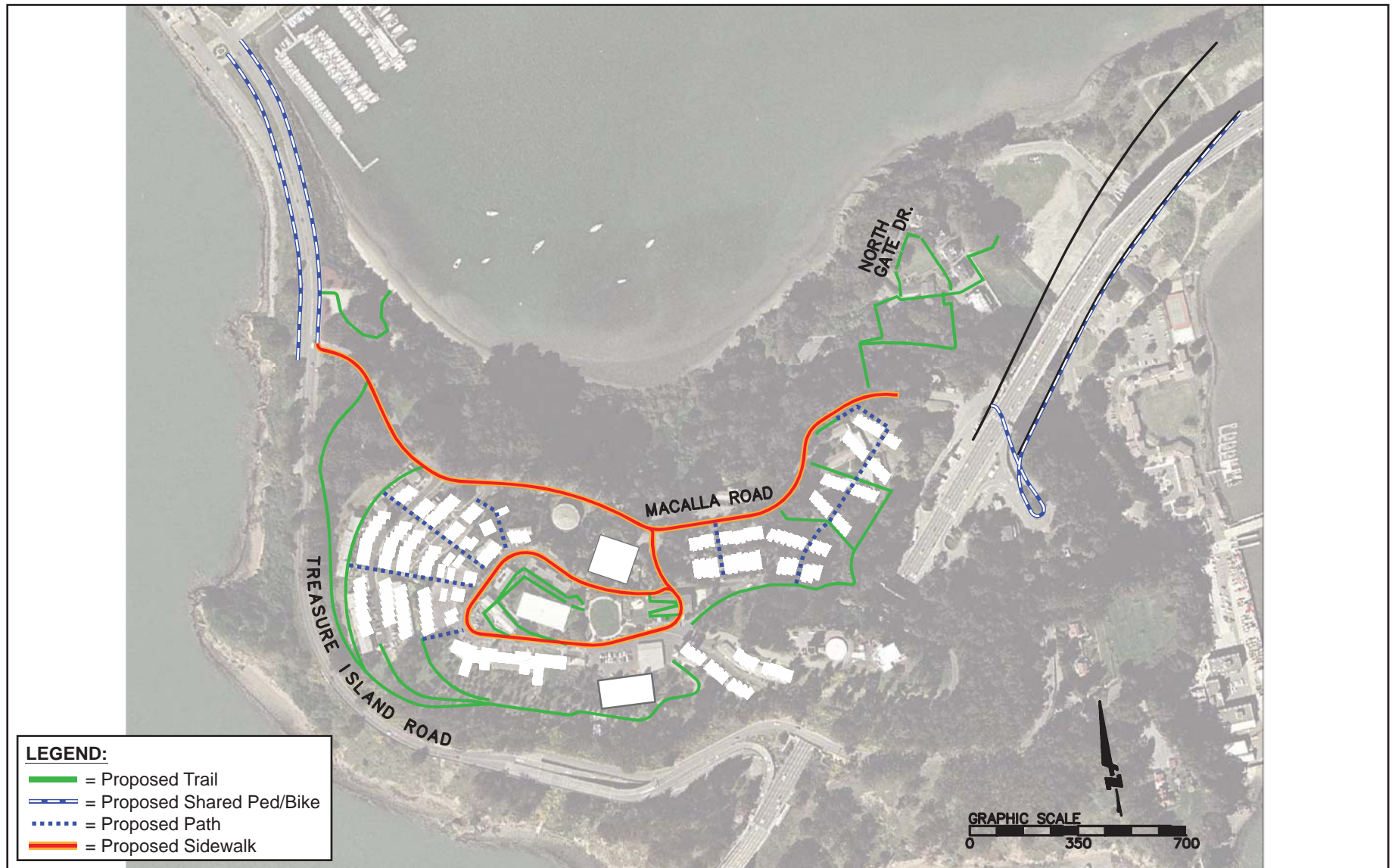
Figure 9 on page 20 illustrates the proposed bicycle circulation network for Yerba Buena Island. Generally, the bicycle circulation on Yerba Buena Island would consist of a one-way counterclockwise Class II bicycle lane loop around Treasure Island Road, Hillcrest Road, and Macalla Road, with connections to the planned bicycle/pedestrian path on the new SFOBB eastern span. One exception to the continuous Class II facility loop is on a short section of Treasure Island Road, where the westbound on-ramp to the SFOBB diverges from Treasure Island Road, which is on an elevated structure. On this section, the Proposed Project calls for a Class III facility, with special colored pavement and frequent in-

street stencils and signage to alert bicycles, autos, and buses that they must share the roadway at this location.⁵

In addition, a contra-flow Class II bicycle lane would be provided on Macalla Road. This would provide a shorter, yet steeper, alternative route from Treasure Island to the SFOBB. Other streets on Yerba Buena Island would allow shared bicycle/auto use, but no exclusive bicycle right of way would be provided.

Although Caltrans and the Bay Area Toll Authority are considering alternatives for a shared use Class I bike facility on the west span of the SFOBB, that project is currently in its early planning stages and has not been assumed to be in place for purposes of this analysis. However, a connection between the Islands and the East Bay is currently under construction on the new eastern span of the SFOBB and has been assumed to be in place. Neither of these projects are part of the Proposed Project; however, the Proposed Project would not preclude the implementation of either.

5. Colored pavement treatments would be installed to increase bicycle visibility and safety; however, colored pavement would require SF MTA approval pending amendments to the California Manual on Uniform Traffic Control Devices (MUTCD). The City of San Francisco Bicycle Plan (2009) includes the use of colored bicycle lanes and the Federal Highway Administration ("FHWA") recently approved a study proposed by the SFMTA of solid and dashed green pavement for bicycles. If the use of colored pavement material is approved by the FHWA and the California Traffic Control Device Committee ("CTCDC"), San Francisco

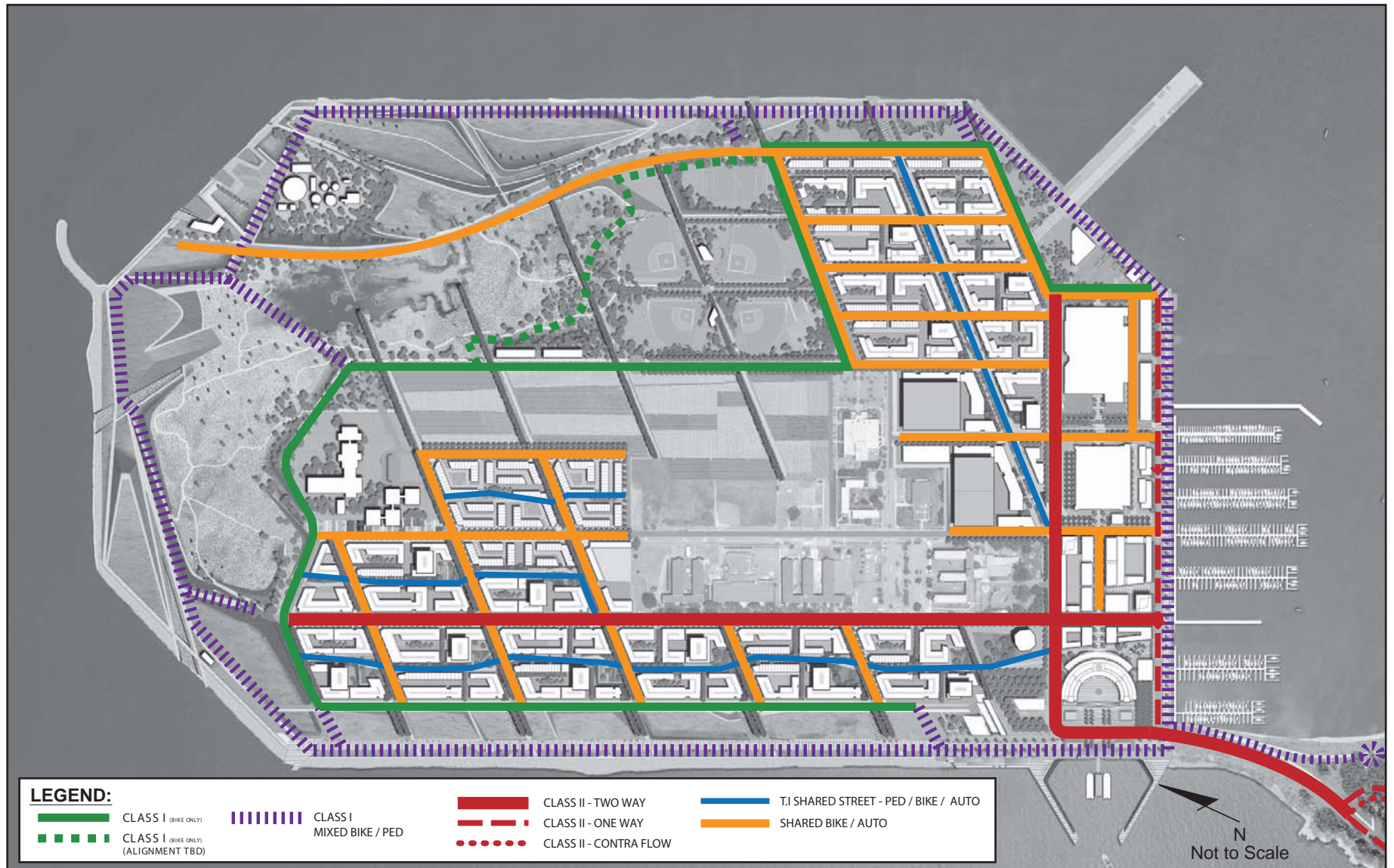


Source: Treasure Island Community Development LLC, 2009

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YERBA BUENA ISLAND PEDESTRIAN CIRCULATION PLAN

FIGURE 7

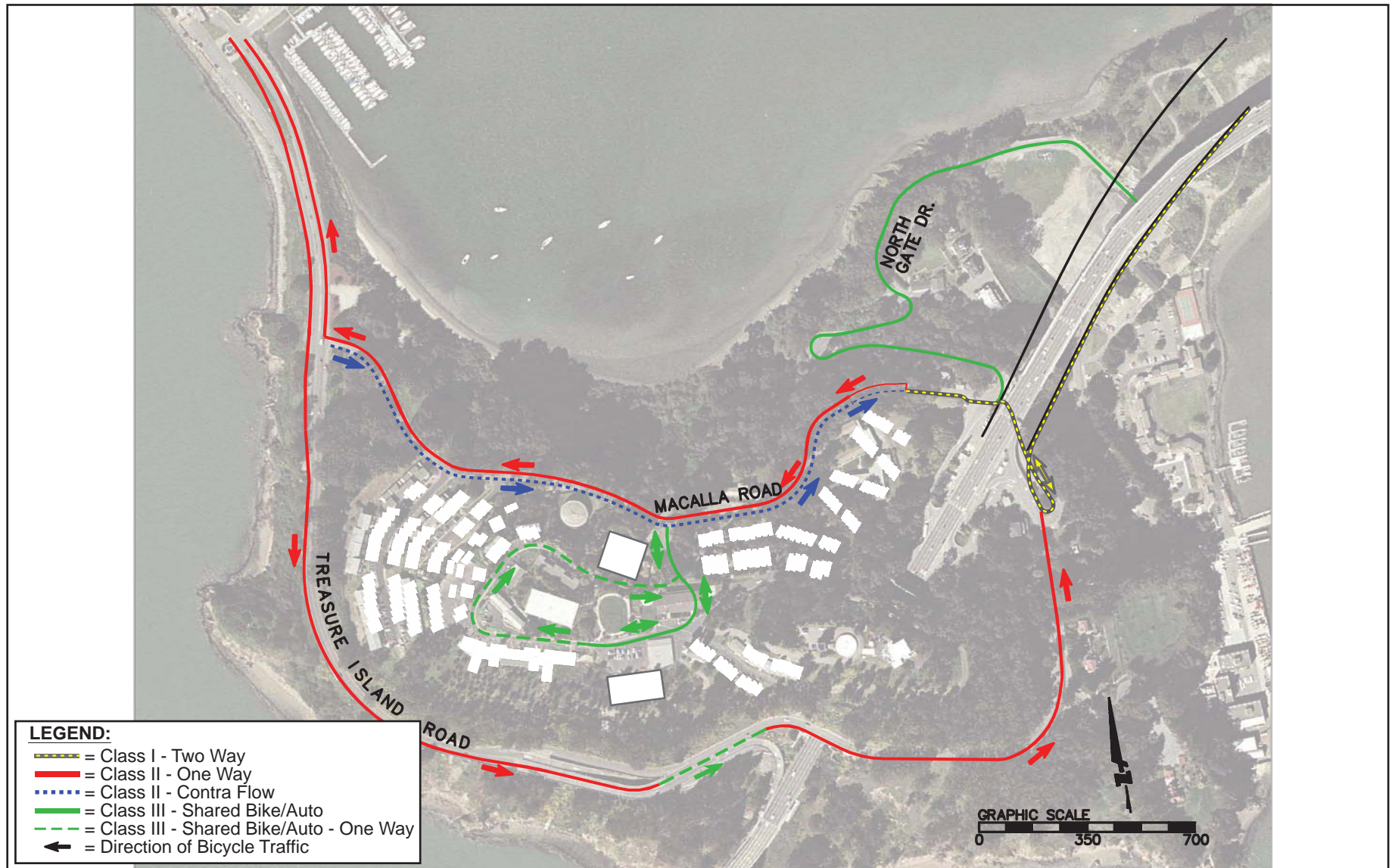


Source: Treasure Island Community Development LLC, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

TREASURE ISLAND BICYCLE CIRCULATION PLAN

FIGURE 8



Source: Treasure Island Community Development LLC, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

YERBA BUENA ISLAND BICYCLE CIRCULATION PLAN

FIGURE 9

1.2.8 Parking Supply

Off-street parking would be provided within Treasure Island and Yerba Buena Island to accommodate residents, visitors, and employees. The parking supply would be specified in the *D4D* standards for the Redevelopment Plan. Additionally, short-term metered on-street parking would be provided. The parking supply for the Proposed Project is summarized in **Table 2**.

For residential uses, the Proposed Project would include a parking supply of one parking space per residential dwelling unit. Spaces would be “unbundled” from the unit such that residents would have the option of whether or not to purchase or lease a parking space. Parking for non-residential uses would generally be provided in off-street parking garages, on-street parking, and surface parking lots. Parking for non-residential uses would be shared between uses (i.e., parking would not be reserved for specific uses) to provide the maximum flexibility of the proposed parking supply and minimize the amount of parking required.

TABLE 2 – PROPOSED PARKING SUPPLY BY LAND USE				
Land Use	Size	Proposed Off-Street Parking Supply	Total	Type (Typical)
Residential	8,000 d.u.	1 space/d.u. ²	8,000	Structured/ below-grade
Hotel (TI)	450 Rooms	0.8 spaces/room ³	360	Structured
Hotel (Yerba Buena Island)	50 Rooms	0.8 spaces/room ³	40	Surface Lot
Retail	207,000 square feet	2/1,000 square feet ⁴	414	Structured
Open Space (Athletic Fields)	40 acres	5.1/acre ⁵	204	Surface
Open Space (Other)	260 acres	1/acre ⁵	260	Surface
Marina	400 slips	0.59/slip ⁵	236	Structured
Flex	202,000 square feet ¹	2/1,000 square feet ⁶	404	Structured
Office	100,000 square feet	2/1,000 square feet ⁶	200	Structured
Police/Fire	30,000 square feet	None ⁷	N/A	TBD
School	105,000 square feet	None ⁷	N/A	TBD
Community Center	48,500 square feet	Street parking where available	N/A ⁸	On-street
Cultural Park/Museum	75,000 square feet	Street parking where available	N/A ⁸	On-street
General On-Street Parking	N/A	N/A	1,035	On-street
Total			11,153	
Notes: 1. Includes 22 ksf food production/industrial/manufacturing, 150 ksf entertainment, and 30 ksf community/office uses. 2. Consistent with <i>San Francisco Planning Code</i> for comparable neighborhoods in San Francisco. 3. Hotel rate is for hotels in Neighborhood Commercial District, <i>San Francisco Planning Code</i> . 4. Lower than required in <i>San Francisco Planning Code</i> , which requires 4 spaces per 1,000 square feet, except for the first 20,000 square feet, which only require 2 spaces per 1,000. 5. Consistent with <i>Parking Generation</i> , Third Edition, Institute of Transportation Engineers. 6. Consistent with <i>San Francisco Planning Code</i> rate for Office uses 7. Parking for police/fire and school facilities expected to be provided separately within the respective sites. Neither parking demand nor supply for these uses is included in this analysis. 8. These uses would share from the available pool of 1,035 on-street parking listed under the general on-street parking. Source: TICD, 2009				

1.2.9 Loading

In addition to general visitor, resident, and employee parking, the Proposed Project would include on-street and off-street facilities for commercial deliveries and loading/unloading associated with moving trucks. The supply of loading facilities would be specified in the *D4D* standards for the Redevelopment Plan. Some on-street parking spaces would be designated for loading and short-term parking to facilitate passenger loading and unloading near buildings. The *D4D* standards for loading/unloading facilities which may include a combination of on- and off-street spaces are summarized in **Table 3**.

TABLE 3 – PROPOSED LOADING RATIOS	
Size	Spaces Required
Retail	
0 – 10,000 square feet	0 spaces
10,001 – 60,000 square feet	1 space
60,001 – 100,000 square feet	2 spaces
Over 100,000 square feet	3 plus 1 for each additional 80,000 square feet
Commercial and Residential	
0 – 100,000 square feet	0 spaces
100,001 – 200,000 square feet	1 space
200,001 – 500,000 square feet	2 spaces
Over 500,000 square feet	3 plus 1 for each additional 400,000 square feet
Source: TICD, 2009	

1.2.10 Construction

Construction and build out of the Proposed Project would be phased, and is expected to occur over approximately 15 to 20 years; however, the actual timing of construction would depend on market conditions and other factors. Project construction is expected to involve four major phases. The first phase would include infrastructure and portions of the geotechnical stabilization. The subsequent phases would include development of the proposed new land uses and associated infrastructure extensions, as needed. Demolition of existing uses would occur as needed to facilitate construction of new development.

The construction schedule would be coordinated with other land owners on the Island (Department of Labor and the US Coast Guard) and the construction of the SFOBB ESSSP (Caltrans) to minimize conflicts with the existing traffic onto and off of the Island. Construction staging would occur primarily on the Island, though truck traffic would be required to access the Island via the SFOBB.

Construction materials and equipment used on the Islands would be transported by truck and/or barge throughout the construction of the project. **Table 4** summarizes the truck and barge traffic that the project sponsor expects to be generated during construction of the project. This activity would occur during non-peak hours. It is important to note that not all of these activities would be generating truck traffic simultaneously, so the total annual truck traffic is not necessarily the sum of each row. As described in Chapter 3 (Travel Demand Analysis), the number of truck trips related to project construction would be considerably less than the amount of new vehicle traffic generated by the Proposed Project upon completion of construction.

TABLE 4 – CONSTRUCTION TRAFFIC

Construction Use	Trip Frequency ¹	
	Truck Trips	Barge Trips
Equipment Transport	200 per year	20 total
Demolition	100 total	-
Construction Materials	100,000 total	1,000 total
Asphalt	2,500 total	-
Aggregate	100 per year	-
Concrete	2,000 per year	-
Utilities	2,000 total	300 total
Landscaping	500 total	200 total

Note:
 1. The number of truck and barge trips would be determined by the needs of the construction crew. The number listed for truck and barge trips in this table is the maximum number of trips for each (per year or during the entire length of construction); however, since both transport methods would be used, the total number of trips for each trip type would likely be lower than what is listed.
 Source: TICD (BKF), 2009

1.2.11 Transportation Demand Management (TDM)

In addition to improving transit options serving the Islands, the project proposes several incentives to encourage the use of transit and carpools, as well as promote walking and biking on the Islands. The TDM measures have been developed in consultation with staff from the SFMTA and the Planning Department and are documented and described in detail in the project's 2006 Transportation Plan. The 2006 Transportation Plan⁶ specifically calls for the following:

- **Treasure Island Transportation Management Agency (TITMA)** – The Treasure Island Transportation Management Act of 2008 ("AB 981") authorizes the San Francisco Board of Supervisors to designate a board or agency to serve as the transportation management agency for the Islands. The Treasure Island Transportation Management Agency ("TITMA") was created to, among other things, administer and oversee the collection of revenues from parking, transit passes and congestion pricing, and the disbursement of funds to transit operators. As part of implementing the project, TITMA would administer a variable congestion fee to residents of the Islands for accessing the SFOBB.
- **Congestion Pricing** – Fees would be charged to Island residents for auto access between the SFOBB and the Islands during periods of peak congestion. This "congestion pricing" program is designed to discourage residents from making auto trips during peak travel periods. The amounts and hours that fees would be charged would be controlled by the TITMA; however, as currently envisioned, the fees would be charged between 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM, in both directions, Monday through Friday. One of the key attributes of this program is that the TITMA would have the authority to adjust the amounts and duration of charges to dynamically respond to changing travel behaviors. The State legislature authorized the use of congestion pricing for Treasure Island/Yerba Buena Island in 2008 (Chapter 317, Stats. of 2008).

6. The Proposed Project TDM elements have been updated since the 2006 Transportation Plan, although the general nature of the TDM Plan remains the same as in the 2006 Transportation Plan.

- **Parking Program** – There would be no free parking on the Island. Parking for residents, employees, and visitors would occur in off-street facilities and on-street, short-term, metered spaces. In addition, parking would be unbundled from residential units, meaning that housing units would not be sold or leased with a dedicated parking space. A dedicated parking space would need to be purchased or leased at a separate cost and the cost of parking would not be included in the purchase or rent price for housing.
- **Travel Coordinator** – The travel coordinator would be hired by the TITMA, and would be charged with providing travel options to Island users, including assistance with finding the best customized transit options for individuals. The travel coordinator would be responsible for developing and distributing outreach and marketing materials and monitoring the performance of most island TDM measures.
- **Car Share Program** – A car share program would be implemented on the Islands, providing members access to automobiles without having to purchase a car. This would likely be an extension of one or more of the car share services currently provided throughout the rest of San Francisco. The operator of this program on the Islands has not yet been determined, nor has the exact number of car share spaces proposed for the Island. Car share vehicles would be subject to the same on-island parking fees as other vehicles, unless parked in their designated parking space. Although the details have not been finalized, it is likely that car share vehicles would not have to pay the congestion pricing fee. The *D4D* will require vertical developers to provide car share spaces based on number of dwelling units, similar to the requirements in the *San Francisco Planning Code*.
- **Transit Hub** – All bus transit serving the Islands would serve the proposed ferry terminal. This would be the single spot on the Islands where all transit lines connect, including the on-island shuttles. This provides the opportunity for centralized ticket sales, schedule and route information, and other transit amenities.
- **Comprehensive Transit Pass** – A comprehensive residential “eco-pass” program would be operated by the TITMA, whereby residents and hotel guests would be required, as part of their rent, homeowner dues, or room rental rate, to purchase a transit voucher (e.g., Translink credit) that could be used on all transit systems serving the project. This reduces the “out-of-pocket” cost for transit use by residents and hotel patrons, and by providing a subsidy to transit, would encourage residents to use transit regularly. The amount of the transit voucher that would be required would vary, but is proposed to be sized similar to a Muni Fast Pass.
- **Bicycle Fleet** – A bicycle rental system would be provided for visitors and residents from a secure central “bike station” at the Transit Hub. The bike station would be attended during daylight hours, offering rentals to the public seven days per week. During unattended hours, access to the bicycle fleet would be available to Island residents with an access card. This program would be funded and administered by TITMA.
- **Carpool and Vanpools** – The Islands’ travel coordinator would provide carpool and vanpool matching services for Island residents. In addition, parking spaces for exclusive vanpool use would be provided in the Island parking facilities.
- **Ramp Metering** – Signals will be installed to limit, or “meter,” the number of vehicles that can enter the SFOBB from the Islands during peak commute periods. Ramp metering would be implemented for all on-ramps on Treasure Island to control the volume of vehicles accessing the bridge and to make entering the freeway a safer maneuver. Ramp meters could be implemented in one of two ways: either on the ramps themselves, as part of the separate YBI ramps project being studied by the SFCTA, or through signals on Island roadways approaching the SFOBB. Any ramp metering on the Treasure Island on-ramps themselves would be operated by Caltrans. Ultimately, Caltrans and the TITMA would coordinate to facilitate effective implementation of this mechanism.

- **Guaranteed Ride Home Program** – One reason people often cite for not using transit or carpools is a concern about the need to return home in case of an emergency. To alleviate this potential obstacle, all Island residents and employees who are registered as carpool or transit riders would be reimbursed for return travel by taxi in the event of an emergency when an alternative means of travel is unavailable.

1.3 REDUCED DEVELOPMENT ALTERNATIVE

In addition to the Proposed Project, this report describes the transportation impacts associated with a Reduced Development Alternative, which would involve construction of 6,000 new dwelling units. In addition, 100,000 square feet of new office space included in the Proposed Project would not be constructed under the Reduced Development Alternative. All other land uses would be the same as under the Proposed Project.

The Reduced Development Alternative would include the same infrastructure as the Proposed Project, and the developed area would be on the same footprint. It would also be subject to the same parking and loading requirements as the Proposed Project (although the total parking and loading supply would be adjusted based on the reduced amount of development compared to the Proposed Project). The Reduced Development Alternative was also analyzed for the same two transit operating scenarios (Funded and Enhanced) as the Proposed Project.

1.4 ANALYSIS SCENARIOS

Operations of the transportation system were evaluated for potentially significant transportation impacts during the weekday morning, evening, and Saturday peak hours under the following scenarios:⁷

Existing Conditions – Existing volumes obtained from counts representing peak one-hour conditions during the peak travel periods.

Existing Plus Project (Base Transit Service) Conditions – Existing peak hour trip volumes plus net new trips from the Proposed Project, which includes only the level of transit service for which funding has been identified and agreed to by the implementing agencies, as described earlier in this chapter.

Cumulative Year 2030 Plus Project (Base Transit Service) Conditions – Projected Year 2030 traffic volumes as forecasted by the SFCTA travel demand forecasting model plus trips generated by the Proposed Project, which includes only the fully-Base Transit Service.

Existing Plus Project (Expanded Transit Service) Conditions – Existing peak hour trip volumes plus trips from the Proposed Project, assuming a more robust transit service, as described earlier in this chapter.

Cumulative Year 2030 Plus Project (Expanded Transit Service) Conditions – Projected Year 2030 traffic volumes as forecasted by the SFCTA travel demand forecasting model plus traffic generated by the Proposed Project assuming the more robust transit service described above.

Reduced Development Alternative – Impacts of a reduced development alternative that would include only 6,000 residential units and would not include the 100,000 square feet of office proposed as part of the Project. Impacts of this alternative were analyzed under existing and future Year 2030 conditions, and for scenarios involving the Base Transit Service and the Expanded Transit Service as described earlier.

7. Since the proposed reconstruction of the westbound on- and off-ramps on the east side of YBI is currently under study, the analysis in this report examines impacts under conditions with and without the proposed ramp replacement.

2. PROJECT SETTING

This chapter provides a description of the existing transportation and circulation conditions within the vicinity of the Proposed Project site.

2.1 STUDY AREA

As shown in

Figure 1 and **Figure 2** (pages 3 and 6, respectively), the project area consists of two islands, Treasure Island and Yerba Buena Island, located in the middle of San Francisco Bay and encompasses approximately 400 acres of land on Treasure Island, approximately 150 acres of land on Yerba Buena Island, a natural island to the south of Treasure Island, and about 550 acres of tidal and submerged lands adjacent to the Islands. However, given the magnitude of the Proposed Project, the transportation effects of the development may be felt throughout a larger area. Therefore, the project study area includes freeway approaches to the SFOBB in the East Bay and several intersections on freeway approaches within Downtown San Francisco, as well as areas near the San Francisco Ferry Terminal.

Transportation facilities in these areas were analyzed because they are expected to see the greatest increase in use due to the project. This chapter includes a discussion of the existing operating characteristics of these transportation facilities for purposes of comparing project impacts. Specifically, the existing operating conditions of these facilities will be compared with future conditions with additional demand from the Proposed Project to evaluate project impacts. However, because the Proposed Project would redesign the existing public roadway system on Treasure Island, a comparison between existing conditions with the current configuration and future conditions with the Proposed Project (and a completely different street network) would be meaningless. Therefore, no analysis of the existing conditions of the on-island roadway system was performed.⁸

2.2 ROADWAY FACILITIES

This section describes the roadway system serving the project site using the classifications from the 'Transportation Element' of the *San Francisco General Plan*. The *General Plan* classifies roadways within the city as Freeways, Major Arterials, Transit Conflict Streets, Secondary Arterials, Recreational Streets, Collector Streets, and Local Streets. It also identifies Transit Preferential Streets, which include Primary Transit Streets (transit-oriented, non-major arterials), Primary Transit Streets (transit-important, major arterials), and Secondary Transit Streets. Transit Conflict Streets are similar to Primary Transit Streets (transit-oriented). A figure showing roadway classifications in the City, according to the Transportation Element of the *San Francisco General Plan*, is located in Appendix C.

In addition to the street classification system contained in the *General Plan*, the City of San Francisco has a *Draft Better Streets Policy* and has prepared a *Draft Better Streets Plan* (currently under consideration) that outlines standards, guidelines, and implementation strategies to govern how the City designs, builds, and maintains its street system. Although the *Draft Plan* contains several strategies to improve the streetscape environment in San Francisco, it does not directly apply to any particular streets within the City. Rather, the concepts are general and applicable to all street facilities.

8. Roadway systems within the two federally-owned parcels to remain after redevelopment, the Job Corps campus on Treasure Island and the Coast Guard on Yerba Buena Island, will not be redesigned.

2.2.1 Regional Access

Three major freeways provide access to the SFOBB from the East Bay and vehicles on these facilities most frequently experience queues at the bridge's toll plaza during the weekday AM peak period (generally from 7:00 AM to 9:00 AM). Queues associated with insufficient capacity on the SFOBB do not typically form at the toll plaza during the PM peak hour. On occasions when they do, they are typically associated with special events, incidents on the bridge, or other unique circumstances.

Interstate 80 (I-80) is a major multi-lane freeway that provides the only vehicular access to the Islands, via the SFOBB. I-80 extends to the East Bay and northeast towards Sacramento and the Sierra Nevada Mountains. To the west, I-80 terminates at the merge with US 101 in San Francisco. Along the SFOBB, I-80 consists of two decks, each with five travel lanes. The upper deck is for westbound travel and the lower deck is for eastbound travel. The eastern span of the SFOBB, between Yerba Buena Island and Emeryville/Oakland is currently being reconstructed with a new structure scheduled to open in 2013. The new span will provide five lanes in each direction with wider shoulders than the existing structure to better accommodate breakdowns and emergencies. The travel lanes will all be on a single level on the new structure and include a mixed-use pedestrian and bicycle path. The western span of the SFOBB has recently been seismically retrofitted and will remain in its current configuration (i.e., two decks with five lanes in each direction). A separate study is underway to evaluate potential alternative configurations for a proposed mixed-use pedestrian and bicycle path on the western portion of the SFOBB, but funding for its construction has not been identified and it is not assumed to be in place in this analysis.

The SFOBB travels through a short tunnel on Yerba Buena Island. On- and off-ramps are provided to Yerba Buena Island, linking to Treasure Island. In the westbound direction, one off-ramp is provided from the SFOBB to Yerba Buena Island on the east side of the tunnel. Two on-ramps are provided to westbound I-80 from Yerba Buena Island, one on each side of the tunnel. Similarly, there are two off-ramps from the eastbound SFOBB, one on each side of the tunnel. There is one eastbound on-ramp on the east side of the tunnel. **Figure 3** on page 8 illustrates the existing ramp configuration.

As described in Section 1.2.3, one of the existing ramps, the eastbound on-ramp, is currently being rebuilt as part of the SFOBB ESSSP. Improvement and/or replacement of two other ramps (the westbound on- and off-ramps located on the eastern side of Yerba Buena Island) is currently under study by the SFCTA and Caltrans. Replacement of the eastbound off-ramps was studied by the SFCTA and Caltrans and determined to be infeasible. Improvement or replacement of the westbound on- and off-ramps, if undertaken, would be a separate project from both the SFOBB eastern span replacement currently under construction and the Proposed Project. **Figure 4** on page 9 illustrates the proposed ramp configuration.⁹

At the time existing conditions data were collected for this project (May 2008), both the westbound on-ramp and the east-bound off-ramp on the east side of the tunnel were closed due to construction of the east span of the SFOBB. Although the ramps have since re-opened, the analysis in this report is based on conditions at the time data was collected (i.e., with the ramps closed).

Interstate 580 (I-580) is a 10-lane, major freeway that travels southeast from the SFOBB through the City of Oakland towards the Tri-Valley area communities of Livermore, Dublin, and Pleasanton in southeastern Alameda County. I-580 merges with I-80 just east of the bridge toll plaza. I-580 shares the same route as I-80 between Emeryville and Albany. North of Albany, I-580 continues east towards the Richmond-San Rafael Bridge, where it merges with US 101 and terminates in San Rafael.

9. Impact analysis in this transportation study takes into account conditions resulting from both the existing ramps, including the replacement of the eastbound on-ramp that is currently being rebuilt as part of the SFOBB ESSSP, and the potential improved or replaced ramps as part of the Yerba Buena Island Ramps Improvement Project.

Interstate 880 (I-880) is a six- to eight-lane, major freeway that extends south through the City of Oakland towards the East Bay and South Bay communities of Hayward, San Leandro, and Fremont in Alameda County and Milpitas and San Jose in Santa Clara County. I-880 merges with I-80 and terminates just east of the bridge toll plaza. In the South Bay, I-880 terminates at the I-280/Highway 17 interchange in San Jose.

2.2.2 City of San Francisco Streets

Howard Street is an east-west arterial in the study area. According to the *San Francisco General Plan*, Howard Street is a Major Arterial. Howard Street has been identified by the SFCTA, San Francisco's Congestion Management Agency, as part of the City's Congestion Management Plan (CMP) network, a series of freeways and Major Arterials serving a citywide function. The street has also been designated by the Metropolitan Transportation Commission (MTC) as part of the nine-county Bay Area's Metropolitan Transportation System (MTS), a network of streets and highways serving regionally-important transportation functions. Between Fremont Street and The Embarcadero, this roadway has two travel lanes in each direction, twelve-foot wide sidewalks and on-street parking on both sides of the street for most of its length. West of its intersection with Fremont Street to 11th Street, the roadway is one-way westbound, with four travel lanes, twelve-foot wide sidewalks and on-street parking. Howard Street serves adjacent commercial, civic, industrial, and residential properties. Between Beale Street and 11th Street, Howard Street has a Class II bike lane designated part of Citywide Bike Route #30. In the Downtown area, Howard Street has extensive transit facilities, with the Muni 30X-Marina Express, 41-Union, and 76-Marin Headlands bus routes running on at least one block of the roadway.

Folsom Street is an east-west arterial in the study area. According to the *San Francisco General Plan*, Folsom Street is a Major Arterial Street. Folsom is also a CMP and MTS facility. Between 11th Street and The Embarcadero, this roadway is one-way eastbound, with four travel lanes, twelve-foot wide sidewalks and on-street parking on both sides of the street for most of its length. Folsom Street serves adjacent commercial, civic, industrial, and residential properties. There are four bus routes operating on the street. The street also has a Class II bike lane between The Embarcadero and 14th Street, designated part of Citywide Bike Route #30. The Muni 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses use at least a block of Folsom Street in the Study Area.

Harrison Street is an east-west arterial in the study area. According to the *San Francisco General Plan*, Harrison Street is a Major Arterial. Harrison Street is also designated as a CMP and MTS facility. Between 3rd Street and The Embarcadero, this roadway has two eastbound travel lanes, three westbound travel lanes, twelve-foot wide sidewalks and on-street parking on both sides of the street for most of its length. West of its intersection with 3rd Street, the roadway is one-way westbound, with four travel lanes, twelve-foot wide sidewalks and on-street parking. At 4th Street, Harrison Street has access to the westbound on-ramps to I-80. The off-ramps at 5th Street release westbound I-80 traffic onto Harrison Street. The street serves adjacent commercial, civic, industrial, and residential properties. In the study area, Harrison Street has four bus routes, the Muni 8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryany, and 47-Van Ness, running on at least one block of the roadway.

Bryant Street is an east-west arterial in the study area. According to the *San Francisco General Plan*, Bryant Street is a Major Arterial. Bryant Street is also designated as a CMP and MTS facility. Between 11th Street and 2nd Street, this roadway is one-way eastbound, providing four travel lanes, twelve-foot wide sidewalks and on-street parking on both sides of the street for most of its length. At 4th Street, an off-ramp from eastbound I-80 releases traffic onto Bryant Street. The on-ramps at 5th Street permit access onto eastbound I-80. East of 2nd Street, Bryant Street provides access to HOV on-ramps onto the eastbound Bay Bridge. Bryant Street serves adjacent commercial, civic, industrial, and residential properties. There are four bus routes operating on the street. Bryant Street has four bus routes, the Muni 8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryany, and 47-Van Ness, running on at least one block of the roadway.

Fremont Street is a north-south arterial that runs between I-80 and Market Street in the study area. North of Market Street, Fremont Street becomes Front Street. According to the *San Francisco General Plan*, Fremont Street is a Major Arterial. Fremont is also designated as a CMP and MTS facility. Fremont Street begins at Harrison Street, at the terminus of the Harrison Street Off-Ramp from the SFOBB. The roadway accommodates two-way traffic between Harrison Street and Folsom Street. The roadway is one-way northbound north of Folsom Street, and provides two to three auto travel lanes. North of Mission Street, Fremont Street also has a bus-only lane for buses exiting the Transbay Terminal. The Fremont Street off-ramp from the SFOBB terminates on Fremont Street between Folsom Street and Howard Street. Sidewalks on both sides of the street average twelve feet in width, and are separated from traffic by on-street parking. The Muni 76-Marín Headlands bus line and Golden Gate transit buses use Fremont Street.

1st Street is a north-south arterial that runs between Market Street and I-80 in the study area. According to the *San Francisco General Plan*, 1st Street is a Major Arterial. 1st Street is also designated as a CMP and MTS facility. 1st Street is one-way southbound between Market Street and Howard Street, where it provides three southbound lanes for mixed-traffic and one southbound transit-only lane. (One of the mixed-flow traffic lanes is only available during peak commute periods. During off-peak periods, parking is allowed and the lane is not used for traffic). South of Howard Street, 1st Street provides four southbound travel lanes for mixed traffic. Sidewalks on both sides of the street average twelve feet in width, and are separated from traffic by on-street parking and street trees. Ending with on-ramps to the eastbound SFOBB, this roadway serves as major link between the Financial District of San Francisco and I-80. The following Muni bus lines use 1st Street: 5-Fulton, 38/38L-Geary, 71/71L-Haight/Noriega, 76 Marin Headlands.

2nd Street is a north-south street extending between Market Street to the north and King Street to the south. According to the *San Francisco General Plan*, 2nd Street is designated a Secondary Arterial roadway. North of Mission Street, 2nd Street has two southbound travel lanes and one northbound travel lane. South of Mission Street, 2nd Street has two lanes in each direction. On-street parking is provided on both sides of the street. The *San Francisco General Plan* designates 2nd Street as part of Citywide Bicycle Route #11, and the street serves as a Class III bicycle route. Sidewalks and crosswalks are provided along the corridor. The following Muni bus lines use 1st Street: 10-Townsend, 12-Folsom/Pacific.

5th Street is a north-south arterial that runs between Market Street and I-80 in the study area. According to the *San Francisco General Plan*, 5th Street is a Major Arterial. 5th Street is part of the CMP network between Market Street and Brannan Street and is part of the MTS network between Howard Street and Brannan Street. This roadway generally has two travel lanes in both directions. At its intersections with Bryant Street and Harrison Street, 5th Street has on- and off-ramp access to and from I-80 and the SFOBB. Sidewalks on both sides of the street average six feet in width, and are separated from traffic by on-street parking. 5th Street is part of Bicycle Route 19 (Class III bicycle facility). The Muni 27-Bryant and 47-Van Ness run along portions of 5th Street.

The Embarcadero is a north-south route that is located along the northeastern waterfront of San Francisco. According to the *San Francisco General Plan*, The Embarcadero is a Primary Transit Street, Major Arterial, and is designated as part of the CMP and MTS network. The Embarcadero has two lanes of traffic in each direction; however, three lanes are provided in each direction between the Ferry Building and Broadway. One of these lanes (going southbound) is a peak hour tow-away parking lane during the evening commute. The Embarcadero has Class II bicycle lanes in both directions, as part of Citywide Bicycle Route #5. SF Muni operates light rail and streetcar lines on rails located in the median of the Embarcadero. Sidewalks and on-street parking are provided along the street on both sides. The pedestrian path along the east side of the Embarcadero, Herb Caen Way, is designated as part of the San Francisco Bay Trail.

Market Street is a major east-west street that runs from just east of Clipper Street to The Embarcadero. (East of Clipper Street, Market Street becomes Portola Avenue). According to the *San Francisco General Plan*, Market Street is part of the Citywide Pedestrian Network, and is a Primary Transit Street and Transit Conflict Street. Market Street is also part of the CMP and MTS networks between Franklin Street and

Clipper Street. No on-street parking is provided on Market Street; however, several areas have loading zones that permit temporary parking for service vehicles and taxis. The *San Francisco General Plan* designates Market Street as a Class III bicycle facility as part of Citywide Bicycle Route #50, but many sections of Market Street have Class II bike lanes and/or a shared-use arrow. Muni buses, Muni Metro, the Muni F-Streetcar line, and BART also operate along or below Market Street. Wide sidewalks and crosswalks are provided along the street.

Essex Street is a north-south street extending for only one-block between Folsom Street and Harrison Street/I-80. Although it has historically provided two travel lanes in each direction, the northbound lanes have been closed for several years to serve as a construction staging area. Generally, the southbound lanes provide storage for queues of vehicles accessing the on-ramp to the SFOBB during peak periods at Harrison Street/Essex Street.

Mission Street is an east-west street in the study area, extending from the Embarcadero to Van Ness Avenue. At Van Ness Avenue, Mission Street turns to run north-south to the southern City limits and into Daly City. Within the study area, Mission Street is designated as a Transit Conflict Street. In the study area, Mission Street has one auto travel lane in each direction and one transit-only lane in each direction, with on-street parking and sidewalks on both sides of the street. Parking is prohibited during peak periods. Muni (14/14L-Mission), Samtrans, and Golden Gate Transit all operate transit service on Mission Street.

Treasure Island Road is a two-lane street extending between Treasure Island and the I-80/SFOBB on- and off-ramps on Yerba Buena Island. Treasure Island Road becomes Avenue of the Palms on Treasure Island. There are no existing pedestrian or bicycle facilities on the roadway. Treasure Island Road connects to the SFOBB westbound on-ramp and the eastbound off-ramp on the west side of Yerba Buena Island. Treasure Island Road also extends south of the SFOBB and intersects with Hillcrest Road near the Coast Guard property on Yerba Buena Island.

2.3 ANALYSIS METHODOLOGY

The impacts of the Proposed Project on the surrounding roadway facilities were analyzed using the guidelines set forth in the City of San Francisco Planning Department's *2002 Transportation Impact Analysis Guidelines for Environmental Review (SF Guidelines)*, modified to account for the unique location and character of the Proposed Project, as explained in more detail below. These guidelines provide direction for analyzing transportation conditions and in identifying the transportation impacts of a proposed project in the City of San Francisco.

The analysis of the Proposed Project was conducted for existing and future year 2030 conditions. "Existing plus Project" conditions assess the near-term impacts of the Proposed Project, while "2030 Cumulative plus Project" conditions assess the long-term impacts of the Proposed Project in combination with other development. Project impacts were assessed by comparing existing conditions with the Proposed Project to existing conditions without the Proposed Project, as well as by comparing the 2030 Cumulative plus Project to 2030 No Project conditions. Year 2030 was selected as the future analysis year because regional travel demand forecasting models used in this analysis developed by the San Francisco County Transportation Authority ("SFCTA"), the Metropolitan Transportation Commission ("MTC"), and the Alameda County Congestion Management Agency ("ACCMA") develop traffic and transit forecasts for cumulative development and growth through the year 2030. Although the build-out of the Proposed Project would occur over a period of years, the analysis assesses the impacts of the full build-out of the Proposed Project compared to both existing and future year 2030 conditions. Because the actual phasing of development will be market-driven and is unknown, it was determined that comparing the Project at full build-out against the two comparison points would best capture the full range of transportation impacts of the Proposed Project.

2.3.1 Freeway Analysis

The impacts of the Proposed Project on the SFOBB were analyzed by determining how the project would increase the existing and forecasted vehicle queues leading to the bridge approaches. Observations were made on the following roadway segments in the East Bay and San Francisco (observation study area and maximum queue lengths are illustrated on **Figures 10** and **11** on pages 31 and 34):

- I-80 Westbound from Richmond to the Toll Plaza;
- I-580 Westbound from I-980 to the Toll Plaza;
- I-880 Northbound from I-980 to the Toll Plaza;
- Bryant Street (eastbound) between 2nd Street and 6th Street;
- Harrison Street (eastbound) between 1st Street and 3rd Street;
- Harrison Street (westbound) between 1st Street and the Embarcadero;
- 1st Street (southbound) between SFOBB On-Ramp and Market Street; and
- Folsom Street (eastbound) between Essex Street and 4th Street.

2.3.1.1 Freeway Analysis Method

The SFOBB currently operates at or near vehicular capacity in the peak direction most weekdays during the morning and evening peak hours (westbound in the AM and eastbound in the PM). Queues leading to the bridge deck in the peak directions represent unmet demand (i.e., traffic that would like to be on the bridge, but is trapped in congestion leading up to the bridge). The queues forming on these roadways may be exacerbated by additional traffic from the Proposed Project; therefore, the analysis of the project's impacts to the SFOBB is described in terms of increases to peak direction queuing on approaches to the bridge.

2.3.1.2 Ramp Analysis Method

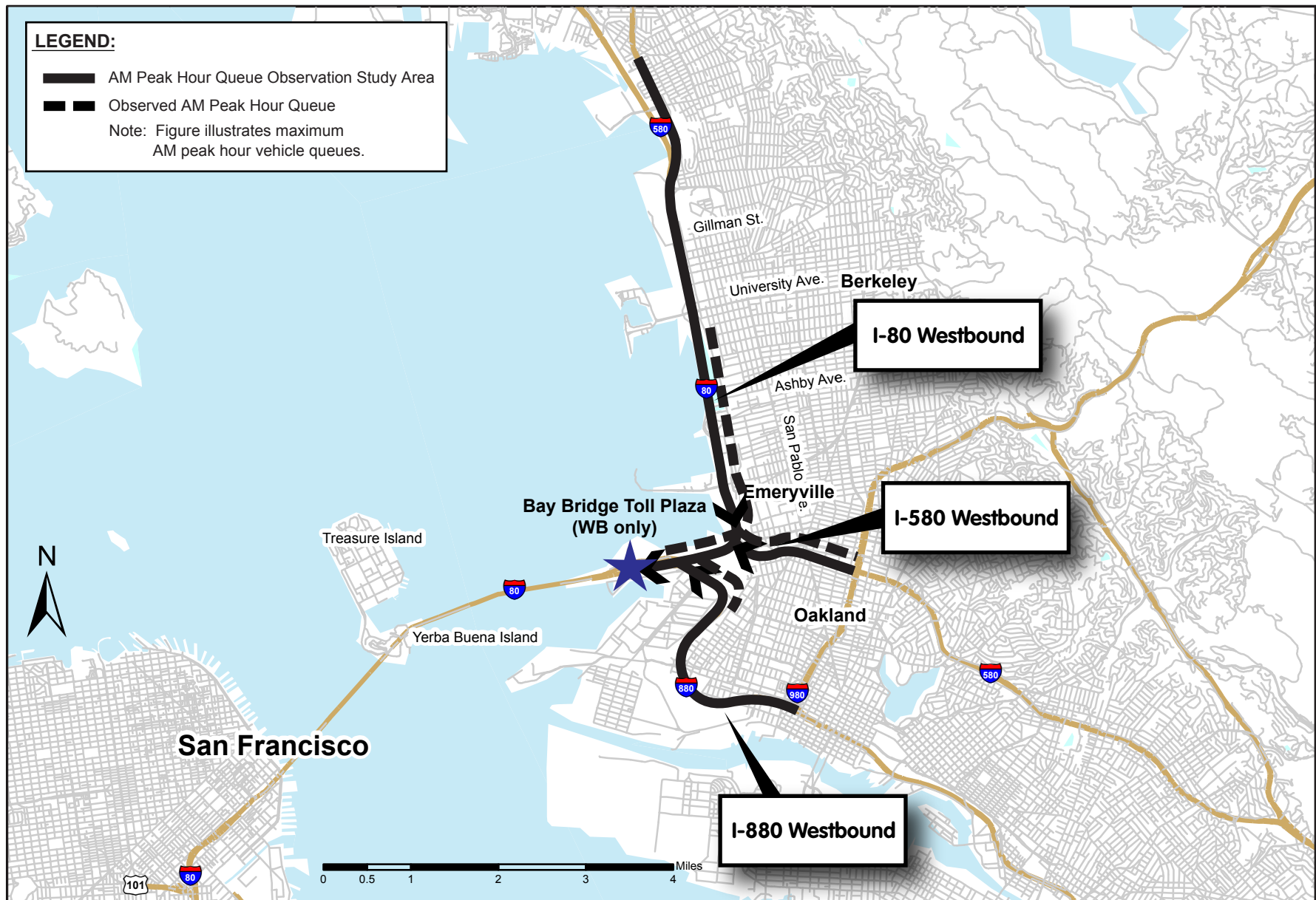
In addition to analyzing the queue lengths on the bridge approaches, the localized impacts to the SFOBB associated with project traffic entering and exiting the SFOBB at the ramps connecting Yerba Buena Island to the SFOBB were analyzed.

For purposes of ramp analysis, speed and gap data were collected at the Yerba Buena Island freeway on-ramps and off-ramps to calculate ramp merge and diverge LOS for the ramps between the Islands and the SFOBB. Unlike most freeway on-ramps, the ramps onto the SFOBB from Yerba Buena Island are stop-controlled, providing drivers with very limited acceleration distance to merge with the freeway travel lanes. Therefore, analysis of the on-ramps as if they were typical "uncontrolled" merges may not provide a complete understanding of the operations of the on-ramps. Instead, the analysis of on-ramps was performed two ways:

- Consistent with methods documented by the Transportation Research Board (TRB) in the 2000 *Highway Capacity Manual* ("HCM") for stop-controlled intersections. For intersections, LOS is based on "control delay." Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. These delay estimates are considered meaningful indicators of driver discomfort and frustration, fuel consumption, and lost travel time. **Table 5** on page 35 presents the relationship between LOS and control delay for unsignalized intersections.

- Consistent with the 2000 HCM Chapter 25 methodology for ramp merge junctions. Off-ramps from the SFOBB to Yerba Buena Island were treated as typical uncontrolled “diverge” sections and analyzed consistent with the methods described in the 2000 HCM Chapter 25. Ramp LOS analysis was conducted for typical weekday AM and PM peak hours and Saturday afternoon peak hour conditions and is described using LOS criteria similar to intersection LOS, as shown in **Table 5**.

As discussed in Section 1.2.3 (page 7) of Chapter 1, the SFCTA and Caltrans are currently preparing a Project Report and Environmental Document for the Yerba Buena Ramps Improvement Project that would replace of the existing westbound on- and off-ramps located on the eastern side of Yerba Buena Island with new ramps that replicate the functional role of current ramps. The Yerba Buena Ramps Improvement Project is needed to address seismic deficiencies, improve traffic safety, and correct design standards so that the improved westbound on- and off-ramps would operate as typical ramps. However, since that project has not been formally approved and/or finalized, the analysis of ramp junctions in this report includes a scenario with and without implementation of the Yerba Buena Ramps Improvement Project. For the scenario in which the ramps are improved, because they would operate as standard ramps, no stop-controlled analysis was completed. For the scenario in which the ramps remain in their current configuration with stop signs near the merge point, the ramps were analyzed the same as existing conditions (stop-controlled and merge/diverge sections).

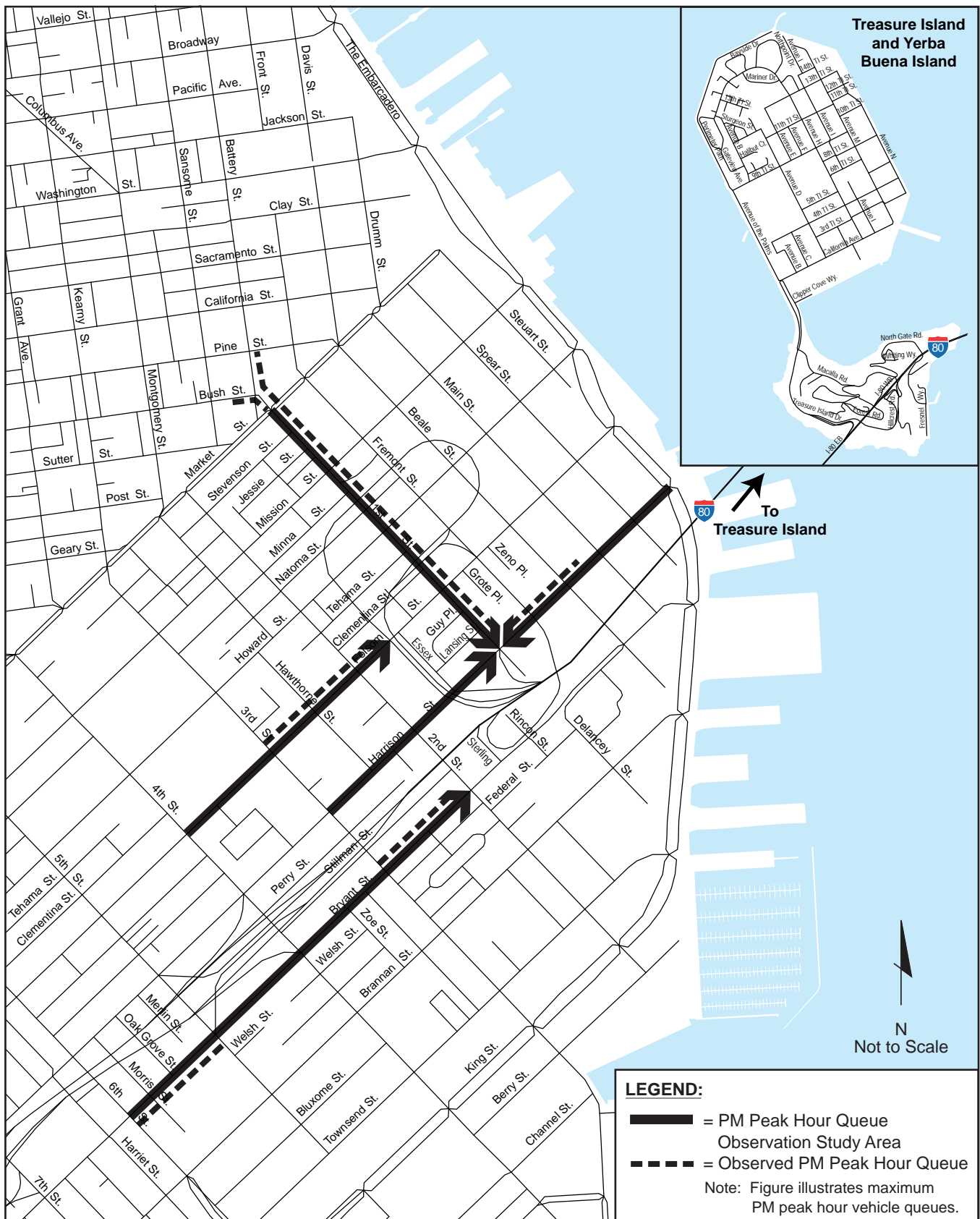


Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EAST BAY AM PEAK HOUR QUEUE OBSERVATION STUDY AREA

FIGURE 10



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

SFOBB APPROACHES - SAN FRANCISCO PM PEAK HOUR QUEUE OBSERVATION STUDY AREA

TABLE 5 – RAMP JUNCTION LEVEL OF SERVICE CRITERIA

LOS	Description	Merge/Diverge Analysis Method	Stop-Controlled Intersection Analysis Method
		Density (Passenger Cars Per Mile Per Lane)	Average Control Delay (Seconds per Vehicle)
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. Little or no delay.	< 10	≤ 10.0
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted. Short traffic delays.	> 11 to 20	10.1 to 15.0
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Average traffic delays.	> 20 to 28	15.1 to 25.0
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort. Long traffic delays.	> 28 to 35	25.1 to 35.0
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing. Very long, noticeable traffic delays.	> 35	35.1 to 50.0
F	Represents a breakdown in flow. Extreme delay with volume exceeding capacity.	Demand exceeds capacity	> 50.0

Source: *Highway Capacity Manual (HCM)*, Transportation Research Board, 2000.

2.3.2 Intersection Analysis

This transportation analysis examines the following intersections in the City of San Francisco:

1. Fremont Street/Howard Street
2. Fremont Street/Folsom Street/I-80 Westbound Off-Ramp
3. Fremont Street/Harrison Street/I-80 Westbound Off-Ramp
4. 1st Street/Market Street
5. 1st Street/Mission Street
6. 1st Street/Howard Street
7. 1st Street/Folsom Street
8. 1st Street/Harrison Street/I-80 Eastbound On-Ramp
9. Essex Street/Folsom Street
10. Essex Street/Harrison Street/I-80 Eastbound On-Ramp
11. 2nd Street/Folsom Street
12. 2nd Street/Bryant Street
13. Embarcadero/Harrison Street
14. Bryant Street/Sterling Street
15. Bryant Street/5th Street/I-80 Eastbound On-Ramp
16. Harrison Street/5th Street/I-80 Westbound Off-Ramp

The above intersections were selected for analysis because they are typically congested during peak periods due to traffic traveling to and from the SFOBB and downtown San Francisco, and are therefore, most likely to experience increases in peak hour traffic associated with the Proposed Project. Their operational characteristics were analyzed for the typical weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak hours as well as Saturday midday peak hour (1:00 PM to 3:00 PM). The analysis was conducted for the peak hour within each of these two-hour periods. The peak periods are consistent with most transportation analyses conducted in San Francisco and were selected because they represent the times during typical days that routinely experience the highest traffic volumes. A map showing the locations of the study intersections is provided on **Figure 12** on page 37.

In addition to the 16 intersections listed above, the intersection of Avenue of the Palms/1st Street on Treasure Island was analyzed under project conditions because it serves as the gateway to the project on the Island, serving all project traffic (except trips destined for Yerba Buena Island). Avenue of the Palms/1st Street does not exist under existing conditions. Volumes for Avenue of the Palms/California Avenue were collected because the intersection serves as the existing gateway intersection to and from Treasure Island.

The intersection analysis did not include intersections in the East Bay because, unlike downtown San Francisco, there is no central place or roadway where a majority of trips would converge. Studying individual intersections would not reflect the way that trips from the Project would disperse throughout the East Bay via the three major freeways (i.e., I-80, I-580, and I-880) and major cities, such as Oakland, Berkeley, Richmond, San Leandro, and Fremont.



2.3.2.1 Intersection Analysis Method

The operation of study intersections was analyzed using the concept of LOS, similar to that discussed under the Freeway Analysis section.

2.3.2.1.1 Signalized Intersections

The analysis of the study intersections was conducted using a method documented by the Transportation Research Board (TRB) in the 2000 *Highway Capacity Manual* (HCM). For intersections, LOS is based on “control delay.” Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. These delay estimates are considered meaningful indicators of driver discomfort and frustration, fuel consumption, and lost travel time. **Table 6** presents the relationship between LOS and control delay for signalized intersections.

TABLE 6 – SIGNALIZED INTERSECTION LOS CRITERIA		
LOS	Average Control Delay (seconds/vehicle)	Description
A	≤ 10.0	Operations with very slight delay, with no approach phase fully utilized.
B	10.1 – 20.0	Operations with slight delay and an occasional approach phase are fully utilized.
C	20.1 - 35.0	Operations with average delay. Individual cycle failures begin to appear.
D	35.1 – 55.0	Operations with tolerable delay. Many vehicles stop and individual cycle failures are noticeable.
E	55.1 - 80.0	Operations with high delay, up to several signal cycles. Long queues form upstream of intersection.
F	> 80.0	Operation with excessive and unacceptable delays. Volumes vary widely depending on downstream queue conditions.

Source: *Highway Capacity Manual (HCM)*, Transportation Research Board, 2000.

For this analysis, the Synchro 6.0 software analysis tool was used to assess intersection operations. This program has the ability to apply the HCM methodology in the context of turning movement volumes, lane geometries, and traffic control, including signal timing information such as cycle lengths, coordination, and phasing.

2.3.2.1.2 Uncontrolled Intersections

Two of the study intersections included in the analysis (Folsom Street/Essex Street and Bryant Street/Sterling Street) are uncontrolled (i.e., no traffic signal or stop sign). At Folsom Street/Essex Street, traffic on eastbound Folsom Street destined for the eastbound SFOBB on-ramps at Harrison Street turns right from eastbound Folsom to southbound Essex Street. Similarly, Bryant Street/Sterling Street is uncontrolled and allows eastbound left turns and westbound right-turns to access the HOV-only on-ramp to the eastbound SFOBB at Sterling. Because of their unique configuration, delay and level of service cannot be reported. However, these intersections are included in the cumulative discussion and the amount of traffic the project contributes to these intersections is presented as they experience frequent peak period congestion, particularly in the weekday PM peak hour.

2.3.3 Transit Analysis

The impact of additional transit ridership generated by the Proposed Project was assessed by comparing the projected ridership to the available transit capacity. Transit “Capacity Utilization” refers to transit riders as a percentage of the capacity of a transit line, or group of lines combined and analyzed as screenlines across which the transit lines travel. The transit capacity utilization analysis was conducted for two conditions:

- At the point of greatest demand (i.e., the maximum load point) for the existing and proposed transit lines serving the Islands. (e.g., Muni Route 108-Treasure Island, AC Transit service to the East Bay, ferry service between Treasure Island and downtown San Francisco); and,
- At the four standard downtown San Francisco screenlines used to assess impacts on transit service between downtown and the rest of the City. The downtown screenline analysis is conducted at the maximum load point for most transit lines traveling into and out of downtown San Francisco.

The number of existing AM and PM peak hour riders was obtained from Muni monitoring data. Future year 2030 Cumulative No Project conditions transit ridership was forecasted using the SFCTA San Francisco Chained Activity Model Process (“SF-CHAMP”) travel demand model, as prepared for the Transit Center District Plan.¹⁰ The service capacity of each line was estimated by multiplying the passenger capacity of each transit vehicle by the number of actual trips that occurred when the ridership data was collected. For service provided by Muni, the capacity includes seated passengers and an appreciable number of standing passengers per vehicle (the number of standing passengers is between 30 and 80 percent of the seated passengers depending upon the specific transit vehicle configuration). The maximum loads, including both seated and standing passengers, vary by vehicle type and are 45 passengers for a 30-foot bus, 63 passengers for a 40-foot bus, 94 passengers for a 60-foot bus, and 119 passengers for a light-rail vehicle. The Proposed Project intends to operate the 180 Treasure Island service using 60-foot articulated buses; however, the current funding plan is for Muni to operate the Treasure Island service with 40-foot buses. Therefore, under the Base Transit Scenario, the capacity utilization was calculated using capacity of 40-foot buses and the capacity of 60-foot buses was used to in the calculations for the Expanded Transit Scenario.

The percent utilization of capacity was then calculated by comparing the ridership demand to the capacity provided. Muni has established a capacity utilization standard of 85 percent. Analysis of new transit service anticipated to be provided as part of the Proposed Project was conducted by comparing the estimated demand to the proposed capacity (based on proposed vehicle type and service levels). For service provided by AC Transit and Water Emergency Transit Authority (“WETA”), the analysis assumes a capacity utilization standard of 100 percent for the new ferry and AC Transit services, consistent with WETA and AC Transit standards, respectively.

Downtown screenlines examine the overall utilization of Muni transit capacity into and out of downtown San Francisco from the Northeast, Northwest, Southeast, and Southwest of San Francisco. Because transit travel into downtown San Francisco in the AM and out of downtown in the PM tends to be the most congested transit flow in the City, the transit analysis also includes an assessment of the degree to which the Proposed Project would create demand for transit service across four screenlines surrounding downtown San Francisco in the peak directions.

In addition to an evaluation of transit ridership and capacity, the Proposed Project’s impacts on transit were also measured in terms of increases to transit travel times on routes likely to experience Proposed

10. Technical Memorandum – Transit Center District Plan – Transit Network Analysis, February 2, 2009. AECOM

Project-related increases in traffic congestion. The analysis identified intersection approaches where Proposed Project-generated vehicle trips would substantially increase transit delay.

2.3.4 Bicycle/Pedestrians Analysis

The analysis includes a qualitative assessment of proposed pedestrian and bicycle conditions on the Islands. Analysis of the existing conditions on the Islands was not performed because the Proposed Project would redesign the existing bicycle and pedestrian system on both Islands. The existing bicycle and pedestrian facilities located at the Ferry Building in San Francisco are evaluated since ferry transit service is expected to serve the project, adding pedestrians and bicycles to the circulation system near the Ferry Building in San Francisco.

Bicycle conditions are described as they relate to the project site, including bicycle routes, safety and right of way issues, conflicts with traffic, and grade changes. Existing weekday AM and PM peak hour pedestrian volumes were collected at the five crosswalks near the Ferry Building (across both directions of The Embarcadero), including Washington Street, Ferry Building (North), Market Street, Don Chee Way, and Mission Street. In addition, Saturday peak hour pedestrian volumes were collected at Market Street and Don Chee Way since those crosswalks in particular experience high pedestrian volumes on weekends. The crosswalk study locations are shown in **Figure 13** on page 41. Based on projected project-related increases to ferry ridership, the potential impact of these additional ferry passengers on the capacity of existing marked crossings on The Embarcadero was evaluated.

Chapters 11 and 18 of the 2000 HCM provide a framework for analyzing pedestrian facilities, based on facility type. Two measures of pedestrian level of service include pedestrian delay and pedestrian density. Pedestrian delay is a similar measurement to automobile delay and reflects the amount of time that pedestrians must wait for a “Walk” signal plus the amount of time for the pedestrian queue to discharge. It is measured in average seconds of delay per pedestrian. When pedestrians experience more than a 30 second delay, they become more likely to cross the flow of traffic without waiting for a signal.

Pedestrian density can be indicative of crowding and can indicate whether additional sidewalk space or walk time is needed to accommodate crossings. Pedestrian density is measured at crosswalk waiting areas (typically corners) by dividing the number of pedestrians likely to arrive and queue during a “Don’t Walk” phase by the area of waiting area available, and determining the maximum pedestrian density. **Table 7** (see page 40) shows the LOS criteria for pedestrians, based on the HCM methodology.

TABLE 7 – PEDESTRIAN LOS CRITERIA AT SIGNALIZED INTERSECTIONS

LOS	Pedestrian Delay (seconds/pedestrian)	Likelihood of Non-Compliance due to Delay	Density (ft ² /pedestrian)
A	≤ 10	Low	> 13
B	10.1 – 20	Low to Moderate	> 10 – 13
C	20.1 - 30	Moderate	> 6 – 9.9
D	30.1 – 40	Moderate to High	> 3 – 5.9
E	40.1 - 60	High	> 2 – 2.9
F	> 80	Very High	< 2

Source: *Highway Capacity Manual (HCM)*, Transportation Research Board, 2000.



Source: Fehr & Peers, 2009

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PEDESTRIAN/CROSSWALK STUDY LOCATIONS

FIGURE 13

2.3.5 Parking Analysis

Conditions on the Islands are expected to change substantially with the Proposed Project. Detailed quantification or analysis of existing on-street parking supply and occupancy on the Islands would not be relevant to discussion of project impacts because the existing streets on Treasure Island and existing residential parking on Yerba Buena Island are proposed to be reconfigured. Therefore, a quantitative analysis of existing parking conditions was not conducted.

For future conditions, the peak parking demand for each of the proposed uses on the Island was calculated based on the methodology contained in the *SF Guidelines* and compared to the supply that would be permitted per the D4D. Some of the parking is expected to be available to all land uses and land uses do not experience peak parking demand simultaneously; therefore, a shared parking analysis was conducted. The shared parking analysis was conducted by dividing the development into zones and comparing the temporal changes in demand for each use in the zone over the course of a typical day. The zones used in the parking analysis are consistent with the neighborhoods identified in **Figure 2** on page 6.

Temporal changes in demand were estimated using methods described in *Shared Parking*, 2nd Edition (Urban Land Institute, 2005). The time during which each zone is expected to experience its peak parking demand, and the associated peak parking demand, is then reported and compared with the proposed parking supply and the appropriate parking requirements.

2.3.6 Loading Analysis

Loading analysis for the Proposed Project was conducted by comparing the loading supply that would be required per the D4D to the projected demand that would be generated by the proposed land uses. The loading analysis was conducted for the Proposed Project as a whole and for specific building uses, specifically retail, industrial and commercial spaces. Peak loading demands were determined using methods consistent with the *SF Guidelines*.

2.3.7 Construction Analysis

Potential short-term construction impacts were addressed using the construction phasing plan for the Proposed Project. The construction impact evaluation addressed the staging and duration of construction activity, truck routings, barge activity, estimated daily truck and vessel volumes, street and/or sidewalk closures and impacts on SFOBB traffic.

2.4 DATA COLLECTION

A large volume of data was collected due to the complex and congested nature of the existing transportation system around the project site and to ensure an accurate evaluation of existing conditions of the transportation system. The data collected for this analysis are included in **Appendix B**.

2.4.1 Freeway Data

Hourly freeway traffic volumes were obtained from the California Freeway Performance Measurement System (PeMS), a joint venture between the University of California and Caltrans. The PeMS database provided traffic volumes for the Bay Bridge and on freeway approaches to the Bay Bridge Toll Plaza for typical weekday and weekend conditions.

Machine counts were also conducted for seven consecutive days at each on and off ramp connecting the SFOBB and Yerba Buena Island to determine existing vehicular traffic generation levels and existing ramp volumes. Traffic on the SFOBB at the Yerba Buena Island on- and off-ramps during the morning

and evening peak periods was observed on three consecutive weekdays and one Saturday peak period. Average and 85th percentile travel speeds of traffic on the bridge and the gaps in traffic at on-ramp locations in terms of vehicle headways were measured. This data was used to calibrate the analysis models described in the methodology section.

In congested locations, traffic counts only record the number of vehicles that actually travel through a given location, and not necessarily the traffic demand. Additional measures were taken to determine the unserved traffic demand. Peak period queuing was observed at key congested locations to determine the extent of unserved traffic demand (i.e., traffic that is attempting to travel through the transportation system but that is trapped in congestion and does not appear in traffic counts). These observations were conducted on the same days for which traffic counts were obtained on three consecutive weekday peak periods Tuesday, Wednesday, and Thursday, May 6-8, 2008. Specifically, observations of queues were conducted at the Bay Bridge toll plaza from 7:00 to 9:00 AM and 4:00 to 6:00 PM, and on a single Saturday during the 1:00 to 3:00 PM peak period.

During the same days, PM peak period (4:00 PM to 6:00 PM) queuing was also observed on major surface streets in San Francisco that serve as routes to the Bay Bridge, including 1st Street, Folsom Street, Harrison Street, and Bryant Street. Queue lengths were recorded in 10-minute intervals in terms of linear feet from the bridge entrance to identify the variation in queue length over the weekday peak periods and to determine the magnitude of unserved traffic demand. The amount of unserved traffic in queues was added to the traffic counts to estimate the true travel demand for each study facility.¹¹

2.4.2 Intersection Data

In addition to the freeway and ramp volumes, Fehr & Peers collected weekday AM, PM, and Saturday peak period traffic counts at the 16 study intersections in Downtown San Francisco during the May 2008 data collection period. Traffic volumes can vary on a daily basis, particularly in congested areas such as Downtown San Francisco and the SFOBB. To confirm the accuracy of turning movement counts to adequately describe traffic in the area, 24-hour machine counts were also conducted on key roadways leading to and from the Bay Bridge for a seven-day period that include the day(s) that intersection turning movement counts were collected. These 24-hour machine counts were taken at the following locations:

- 1st Street, between Folsom and Harrison Streets
- Fremont Street, between the I-80 Off-Ramp and Howard Street
- Essex Street, between Folsom Street and Harrison Street
- Folsom Street, between 2nd Street and Essex Street
- Folsom Street, between Essex and 1st Street
- Bryant Street, between 2nd Street and the I-80 Eastbound HOV On-Ramp
- Embarcadero, between Harrison Street and Folsom Street

The variability in the daily and peak period traffic volumes on these roadways was assessed to determine whether intersection turning movement counts were conducted on a “typical” day. Peak hour traffic volumes did not exhibit large day-to-day variations; however, to account for queuing that occurs on the roadways leading to the SFOBB, the average amount of traffic in queues was added to the existing traffic counts to estimate the true travel demand for each study intersection, similar to the freeway mainline volumes.

11. The total amount of unserved demand is equal to the total number of vehicles in queue minus the capacity of the facility (i.e., the number of cars that could otherwise occupy the roadway space if the facility was operating at, but not over, capacity).

2.4.3 Pedestrian Data

Pedestrian volumes were collected at all marked crosswalks across The Embarcadero between Washington Street and Mission Street during typical weekday AM and PM periods. Saturday peak hourly volumes were also collected at two of the study crosswalks: Market Street and Don Chee Way.

2.5 EXISTING FREEWAY OPERATIONS & QUEUEING

The SFOBB is a major transportation connection in the Bay Area, providing the most direct route from San Francisco to many points east, including Oakland in the East Bay. Among the eight Bay Area toll bridges, it is the most heavily-used serving approximately 250,000 vehicles per day. There are five (5) lanes in each the eastbound and westbound directions.

The SFOBB currently operates at or near vehicular capacity in the peak direction most weekdays during the morning and evening peak periods. Queues are often observed on the approaches to the bridge from the East Bay during the AM peak period and from San Francisco in the weekday PM peak period. This occurs when the demand for travel onto the bridge in the peak direction (westbound in the morning and eastbound in the evening) is greater than the capacity of the bridge. Queues on the westbound approach are formed due to metering at the toll plaza. Queues on surface streets in San Francisco are formed due to limited capacity of on-ramps to the eastbound SFOBB. Although Saturday conditions can vary substantially depending on weather, season, and special events, this analysis is based on typical conditions in which bridge capacity is adequate to serve peak demands on Saturday.

To understand the magnitude of excess demand, queue lengths were measured on both East Bay and Downtown San Francisco approaches on three consecutive weekdays, May 6-8, 2008. The Saturday peak period was observed; however, no substantial queues were observed during peak period. The following weekday queues were measured.

AM East Bay approaches – Video recording equipment attached to a helicopter was used to record where the queues formed in the AM peak period (7:00 – 9:00 AM) on the observation days for the three primary East Bay approaches: Westbound I-80, Westbound I-580, and Northbound I-880. The queue location was recorded every 15 minutes for each approach as a linear distance measured from the toll plaza.

PM East Bay approaches – An auto-based GPS system was used to observe the PM peak period (4:00 – 6:00 PM) for the three primary East Bay approaches to the SFOBB. These floating-car surveys were used in the PM (instead of the aerial surveys conducted in the AM peak hour) because there is typically less congestion in the PM and a sufficient number of runs could be performed to obtain meaningful data. This was not the case in the AM, in which case a helicopter was used to allow observation of the much larger queues simultaneously. For the PM floating car surveys, three observers drove in the traffic stream and recorded their speed and position using GPS devices. The speed and location data were used to identify the extent of queuing on each of the three major approaches. The approach was considered to have a queue if vehicle speeds dropped below 40 miles per hour.

PM San Francisco approaches – Fehr & Peers conducted field observations of queue lengths for several downtown streets leading to on-ramps of the Bay Bridge. The following streets were observed: 1st Street, Harrison Street, Folsom Street, and Bryant Street. These streets are where queues routinely form in the PM peak hour due to vehicles trying to get on the Bay Bridge. There is no substantial queuing on the San Francisco approaches to the Bay Bridge in the AM peak hour, so no queue observations were conducted during this period.

The results of the queue observations are summarized in **Table 8**, below. From the table, it is clear that queue lengths can vary substantially from day to day. To account for this, the average of the three days

was used in the analysis. **Figures 10** and **11** on page 31 and page 34 illustrates these average observed queues.

TABLE 8 – WEEKDAY PEAK PERIOD QUEUE ON SFOBB APPROACHES									
	Approach	Maximum Observed Queues (miles)							
		Tuesday May 6, 2008		Wednesday May 7, 2008		Thursday May 8, 2008		Average	
		AM	PM	AM	PM	AM	PM	AM	PM
East Bay Approach	I-80 WB	5.45	0.90 ¹	1.69	2.38 ¹	0.85	3.20 ¹	2.66	2.16 ¹
	I-580 WB	2.57	0.00	1.15	0.28 ¹	0.78	0.00	1.50	0.09 ¹
	I-880 WB	1.44	0.00	0.38	0.00	0.40	0.00	0.74	0.00
San Francisco Approach³	Harrison WB @ 1 st	N/O ³	0.00	N/O ³	0.34	N/O ³	0.14 ²	N/O ³	0.16
	Bryant EB @ 2 nd	N/O ³	0.06	N/O ³	0.04	N/O ³	0.40 ²	N/O ³	0.17
	Folsom EB / Essex Street SB	N/O ³	0.00	N/O ³	0.48	N/O ³	0.48 ²	N/O ³	0.32
	1 st SB @ Howard ⁴	N/O ³	0.29	N/O ³	0.27	N/O ³	0.49 ²	N/O ³	0.35
	Bryant EB @ 5 th	N/O ³	0.06	N/O ³	0.06	N/O ³	0.30 ²	N/O ³	0.14
Notes: 1. Most queues observed on westbound approaches in the PM peak period were due to weaving in the I-80/I-580/I-880 interchange and not necessarily due to bridge over-saturation or the service volume of the toll plaza. 2. There was a collision on the eastbound direction of the Bay Bridge on Thursday, May 8, which affected queuing onto the bridge. However, because incidents on the bridge occur with some regularity, data from this day was included in the calculation of the average. 3. No observers were present for the AM peak period because queues do not routinely form on city streets approaching the bridge in the AM peak hour. 4. Vehicle queues on 1 st Street were observed between Howard Street and Market Street. During the PM peak hour, vehicle queues typically extend from the 1 st Street/Harrison Street On-Ramp of the SFOBB to Howard Street and typically fluctuate in length between Howard Street and Market Street. Source: Fehr & Peers, 2008									

From the queue observations the number of vehicles in the queue for each approach to the SFOBB was estimated. **Table 9** shows the average number of queued vehicles based on the average maximum observed vehicle queue for each access location and the number of these queued vehicles that are considered unserved demand.

TABLE 9 – EXISTING UNSERVED DEMAND

Approach		No. of Lanes ¹	Average Observed Queue (miles)		Queued Volume ² (vehicles)		Demand at Capacity ³ (vehicles)		Unserved Demand ⁶ (vehicles)	
			AM	PM ⁴	AM	PM ⁴	AM	PM ⁴	AM	PM ⁴
East Bay Approach	I-80 WB	3	2.66	2.16	1,197	972	360	292	837	N/A
	I-580 WB	3	1.50	0.09	675	41	203	12	472	N/A
	I-880 WB	3	0.74	0.00	333	0	100	0	233	N/A
San Francisco Approach	Harrison WB @ 1 st	2	N/O ⁵	0.16	N/O ⁵	84	N/O ⁵	14	N/O ⁵	70
	Bryant EB @ 2 nd	2	N/O ⁵	0.17	N/O ⁵	90	N/O ⁵	15	N/O ⁵	75
	Folsom EB @ Essex	2	N/O ⁵	0.32	N/O ⁵	169	N/O ⁵	29	N/O ⁵	140
	1 st SB @ Howard	2	N/O ⁵	0.35	N/O ⁵	185	N/O ⁵	32	N/O ⁵	153
	Bryant EB @ 5 th	3	N/O ⁵	0.14	N/O ⁵	111	N/O ⁵	19	N/O ⁵	92

Notes:

1. The number of lanes shown represents the number of lanes of queued traffic serving the Bay Bridge from each facility, as measured at the toll plaza.
2. Assumes queued vehicle density of 150 vehicles per lane per mile for freeway and 264 vehicles per lane per mile for city streets based on aerial photo observations.
3. Represents freeway segment density at capacity of 45 vehicles per mile per lane according to Exhibit A22-5 of Chapter 22 *Freeway Facilities* of the 2000 Highway Capacity Manual. For surface streets, density at capacity is likely somewhat higher, since travel speeds may be lower. However, since intersections form a large gap in queues, overall density at capacity for surface streets was assumed to be similar to that of freeways.
4. Most queues observed on the westbound approaches during the PM peak hour were due to weaving areas between I-80/I-880/I-580 and not necessarily due to bridge over-saturation or the service volume of the toll plaza.
5. No observations conducted because queues not typically present.

Source: Fehr & Peers, 2009

Table 10 displays the average traffic volumes observed during the peak periods on the same days the queue observations were conducted. Since Saturday peak hour volumes are below the capacity of the bridge (i.e., less than 9,000 vehicles), there was no observed unserved demand.

TABLE 10 – EXISTING BAY BRIDGE PEAK HOUR TRAFFIC DEMAND

	Average Volume Served (Counts)			Unserved Demand ¹			Total Existing Travel Demand			Capacity ²
	AM	PM	Sat ³	AM	PM	Sat ³	AM	PM	Sat ³	
I-80WB/I-580WB before SFOBB	4,700	5,000	N/O ⁴	1,300	0 ⁵	N/O ⁴	6,000	5,000	N/O ⁴	4,700
I-880 NB onto SFOBB	3,150	2,950	N/O ⁴	250	0	N/O ⁴	3,400	2,950	N/O ⁴	3,150
I-80 WB HOV Bypass	1,050	N/O ⁴	N/O ⁴	0	0	N/O ⁴	1,050	N/O ⁴	N/O ⁴	1,150 ⁶
Total WB SFOBB Volume	8,900	7,950	7,550	1,550	0	0	10,450	7,950	7,550	9,000
Total EB SFOBB Volume	7,150	9,000	7,850	0	550	0	7,150	9,550	7,850	9,000

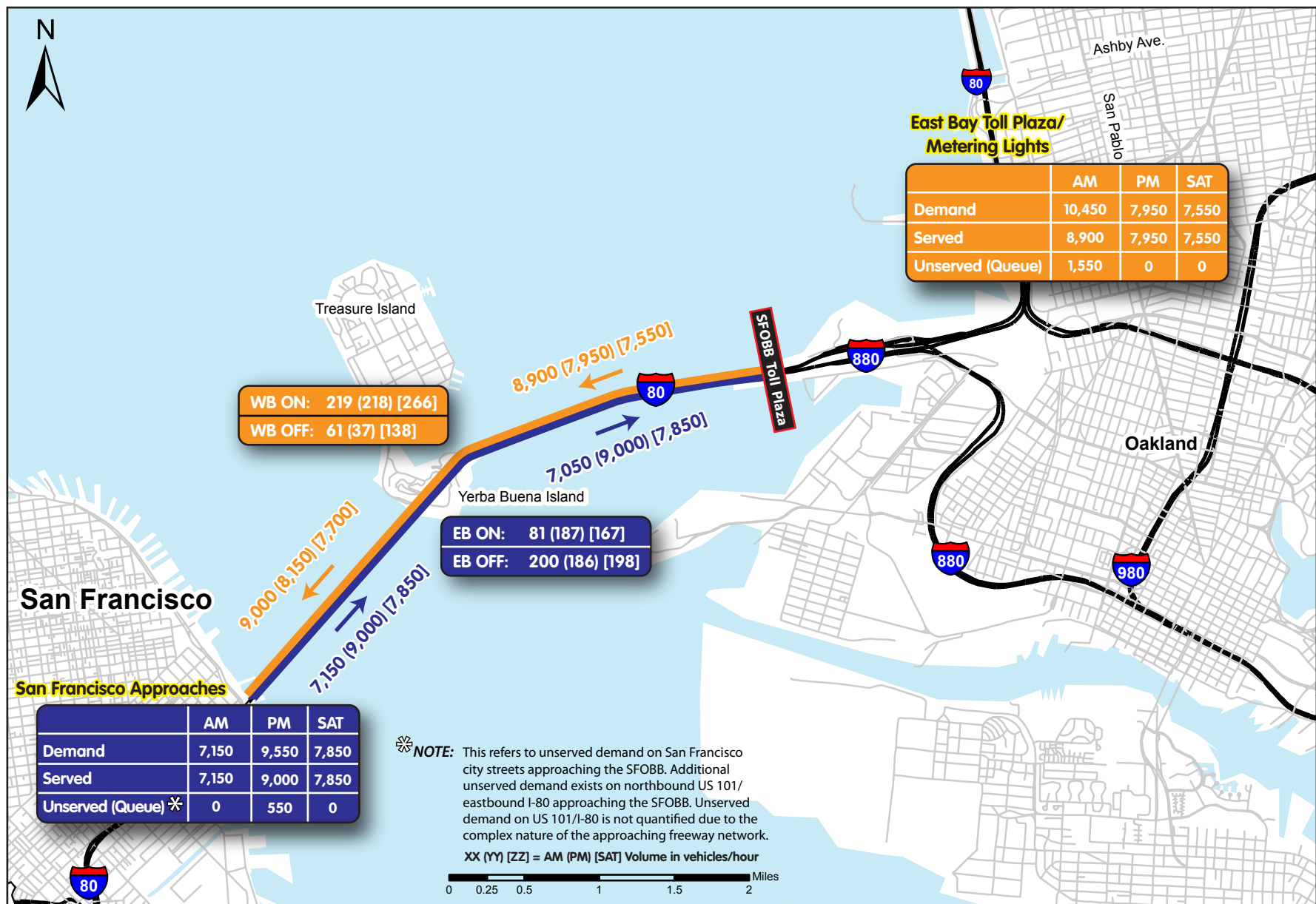
Notes:

1. Unserved demand taken from Table 9, rounded to nearest 50 vehicles.
2. Based on average flow measured when queue exists.
3. PeMS Database (www.pems.eecs.berkeley.edu) for May 6-8, 2008 (100% of data observed). Saturday volumes represent an average of all Saturdays in May 2008. Accessed December 2008.
4. Not observed.
5. Although queues were observed on westbound I-80 during the PM peak hour, they are not factored into bridge unserved demand since they were observed near the Berkeley/Emeryville weaving area and the bridge was operating within its capacity. Therefore, the queues observed in the PM peak for westbound I-80 were not due to bridge oversaturation.
6. Capacity of HOV lane based on observed usage during periods when the bridge operates at capacity.

Source: PeMS Database (www.pems.eecs.berkeley.edu), Accessed December 2008. Fehr & Peers, 2008.

Measurements of traffic flow on the SFOBB during the weekday peak period indicate a capacity of 9,000 vehicles per hour per direction. This corresponds to around 1,800 vehicles per lane per hour, which is less than the ideal saturation flow rate of 2,200 vehicles per lane per hour defined by the 2000 *HCM*. The average flow, however, is reasonable given minimal shoulder width, grades, and a mix of heavy vehicles, such as buses and trucks that reduce capacity from 2,200 vehicles per hour per lane that can be achieved on facilities under ideal conditions (wide shoulders, level grade, no trucks and buses, etc.).

As noted earlier, the number of vehicles counted on the SFOBB does not necessarily represent all travel demand. The presence of queues approaching the SFOBB indicates that the demand exceeds the capacity of the SFOBB during certain times of day. The observed volume on the SFOBB represents the bridge's capacity and the number of vehicles in queues approaching the facility represents the excess demand (i.e., the amount of demand that exceeds the capacity of the facility). The full existing demand is estimated by adding unserved demand to the counted traffic volumes. In the AM peak hour, the existing travel demand is 10,450 vehicles per hour in the peak westbound direction. In the PM peak hour, the existing demand is slightly less, at approximately 9,550 vehicles per hour in the peak eastbound direction. Demand in the off-peak directions in the AM and PM peak hours is currently less than the SFOBB capacity, and therefore all demand is represented in counts on the SFOBB. Existing freeway mainline volumes, as well as the amount of unserved demand on all approaches to the SFOBB, are depicted on **Figure 14**, page 48.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING FREEWAY CONDITIONS

FIGURE 14

2.6 EXISTING YERBA BUENA RAMP OPERATIONS

Although there are six on- and off-ramps connecting the SFOBB to Yerba Buena Island, only four ramps were open at the time this study was conducted. The westbound on-ramp and eastbound off-ramp on the east side of the tunnel were closed as part of the SFOBB ESSSP. Thus, only the four ramps that were open at the time of data collection are analyzed in this report. Existing freeway mainline and on- and off-ramp volumes on Yerba Buena Island are depicted on **Figure 14** on page 48.

The method to calculate merge and diverge LOS is based on information developed in the *Highway Capacity Manual* for both ramp merge and diverge sections, as well as for stop-controlled intersections. Ramp LOS analysis was conducted for typical AM, PM and Saturday conditions. The analysis for this task is included in **Appendix G** and summarized in **Figure 11** below.

TABLE 11 – YERBA BUENA ISLAND/SFOBB RAMPS ANALYSIS

Ramp (location on Yerba Buena Island)	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
	Merge/ Diverge Section Method	Stop- Controlled Intersection Method	Merge/ Diverge Section Method	Stop- Controlled Intersection Method	Merge/ Diverge Section Method	Stop- Controlled Intersection Method
	Density ¹ (LOS)	Delay (LOS)	Density ¹ (LOS)	Delay (LOS)	Density ¹ (LOS)	Delay (LOS)
Eastbound On-Ramp (East)	22.3 (C)	74.2 (F)	27.8 (C)	> 80 (F)	24.5 (C)	> 80 (F)
Eastbound Off-Ramp (West)	30.1 (D)		36.2 (E)		32.3 (D)	
Eastbound Off-Ramp (East)	Ramp closed during data collection					
Westbound On-Ramp (West)	27.9 (C)	> 80 (F)	25.1 (C)	> 80 (F)	24.6 (C)	> 80 (F)
Westbound On-ramp (East)	Ramp closed during data collection					
Westbound Off-Ramp (East)	32.8 (D)		29.4 (D)		28.5 (D)	
Notes:						
1. Density measured in passenger cars per mile per lane.						
2. Eastbound Off-ramp (East) and Westbound On-ramp (East) were closed due to bridge construction at the time existing conditions data was collected.						
Source: Fehr & Peers, 2009						

As shown in **Table 11**, the merge and diverge areas of the freeway generally operate at acceptable levels of service, except for the eastbound off-ramp on the west side of Yerba Buena Island in the PM peak hour. On the on-ramps themselves, however, vehicles experience substantial amounts of delay while waiting for gaps in traffic on the bridge, as determined using the stop-controlled intersection method. Given the design of the ramps, these types of operations are not surprising. The ramps have very short acceleration lanes, poor sight distance, and tight curve radii, which, when combined with heavy mainline traffic volumes, cause drivers to pause longer before entering the freeway.

2.7 EXISTING INTERSECTION LEVELS OF SERVICE

Weekday morning (7:00 to 9:00 AM) peak hour and evening (4:00 to 6:00 PM) peak hour intersection turning movement counts were collected for the 16 study intersections and analyzed for existing conditions. Turning movement counts were also collected during the afternoon peak period (1:00 to 3:00 PM) on a typical Saturday. Counts used in this report were collected during typical weekday and weekend conditions in May 2008. (Intersection turning movement counts are included in **Appendix B** of this report).

Figure 15 on page 51 displays the existing traffic control and lane configurations at each study intersection. **Figure 16** on page 52 shows the existing AM, PM and Saturday peak hour traffic volumes and critical movements. The volumes shown in **Figure 16** (see page 52) have been adjusted upwards to account for the unserved travel demand at the study facilities, as described previously.

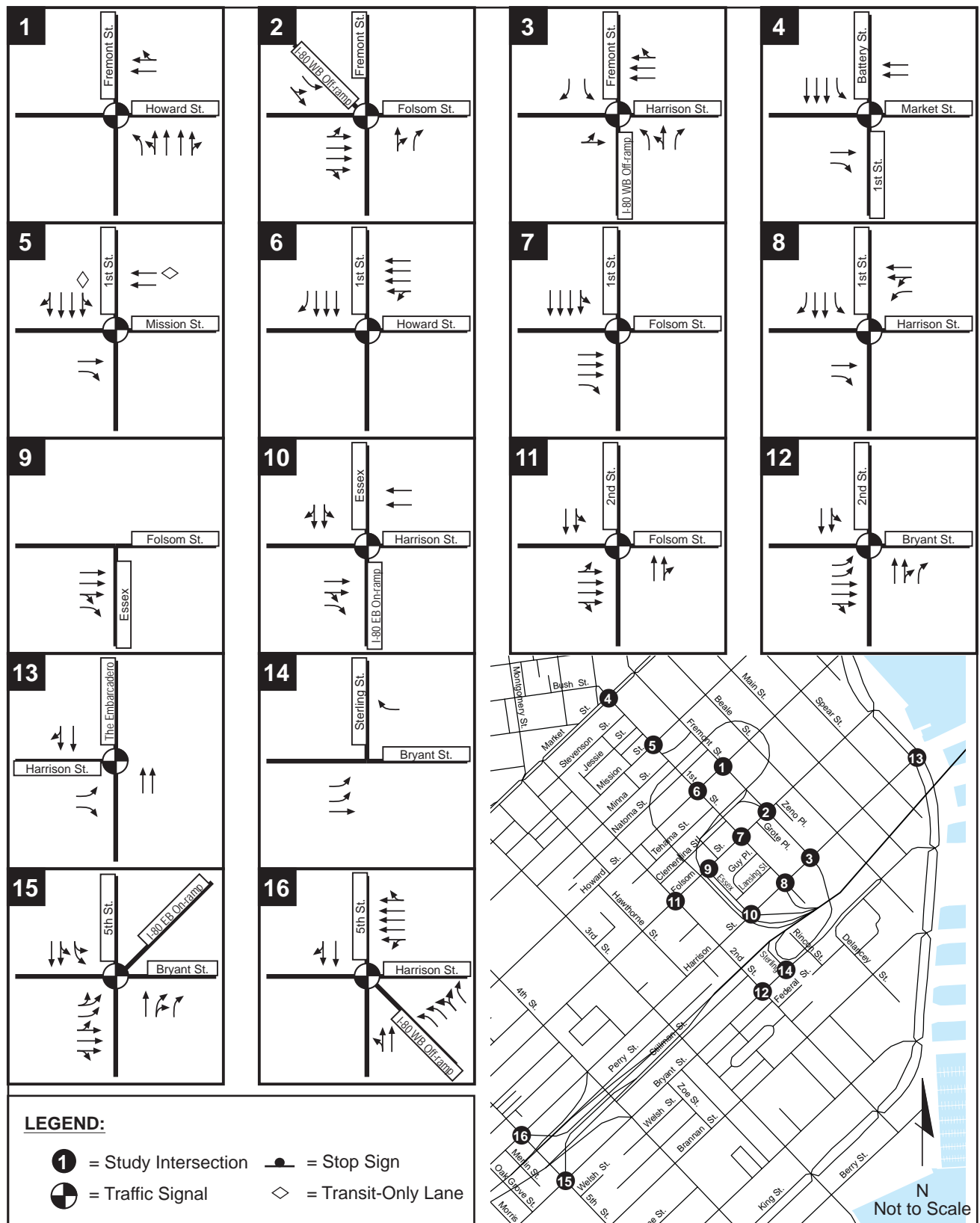
Levels of service were calculated at each study intersection for the existing weekday AM, PM and Saturday peak hours (see **Appendix E** for detailed LOS calculations). **Table 12** (see page 53) shows the resulting LOS and corresponding delay (measured in average seconds of delay per vehicle) and volume to capacity ratio (V/C) at each signalized study intersection.

Two study intersections, Folsom Street/Essex Street and Bryant Street/Sterling Street, are uncontrolled. Observations indicate that these two intersections operate relatively well during the AM and Saturday peak periods. On days when congestion leading onto the SFOBB is severe, queues from bridge on-ramps spill back into these intersections. At Folsom Street/Essex Street, this congestion primarily affects the two southern eastbound lanes on Folsom Street that facilitate turns onto southbound Essex Street. At Bryant Street/Sterling Street, this congestion primarily affects the two eastbound lanes on Bryant Street that turn onto the SFOBB on-ramp; the “through” travel lane on eastbound Bryant Street operates relatively free of congestion. The single lane on the westbound approach to this intersection on Bryant Street turns directly onto the on-ramp and is frequently congested during the PM peak hour.

Many of the signalized study intersections operate at LOS D or better, which is considered acceptable, with the following exceptions:

- 1st Street/Market Street operates at LOS E in the PM peak hour;
- 1st Street/Mission Street operates at LOS E in the PM peak hour;
- 1st Street/Howard Street operates at LOS E in the PM peak hour;
- 1st Street/Folsom Street operates at LOS E in the PM peak hour;
- 1st Street/Harrison Street/I-80 Eastbound On-Ramp operates at LOS F in the PM peak hour;
- Essex Street/Harrison Street/I-80 Eastbound On-Ramp operates at LOS F in the PM peak hour;
- 2nd Street/Folsom Street operates at LOS E in the PM peak hour;
- The Embarcadero/Harrison Street operates at LOS E in the AM peak hour; and
- Bryant Street/5th Street/I-80 Eastbound On-Ramp operates at LOS F in the PM peak hour.

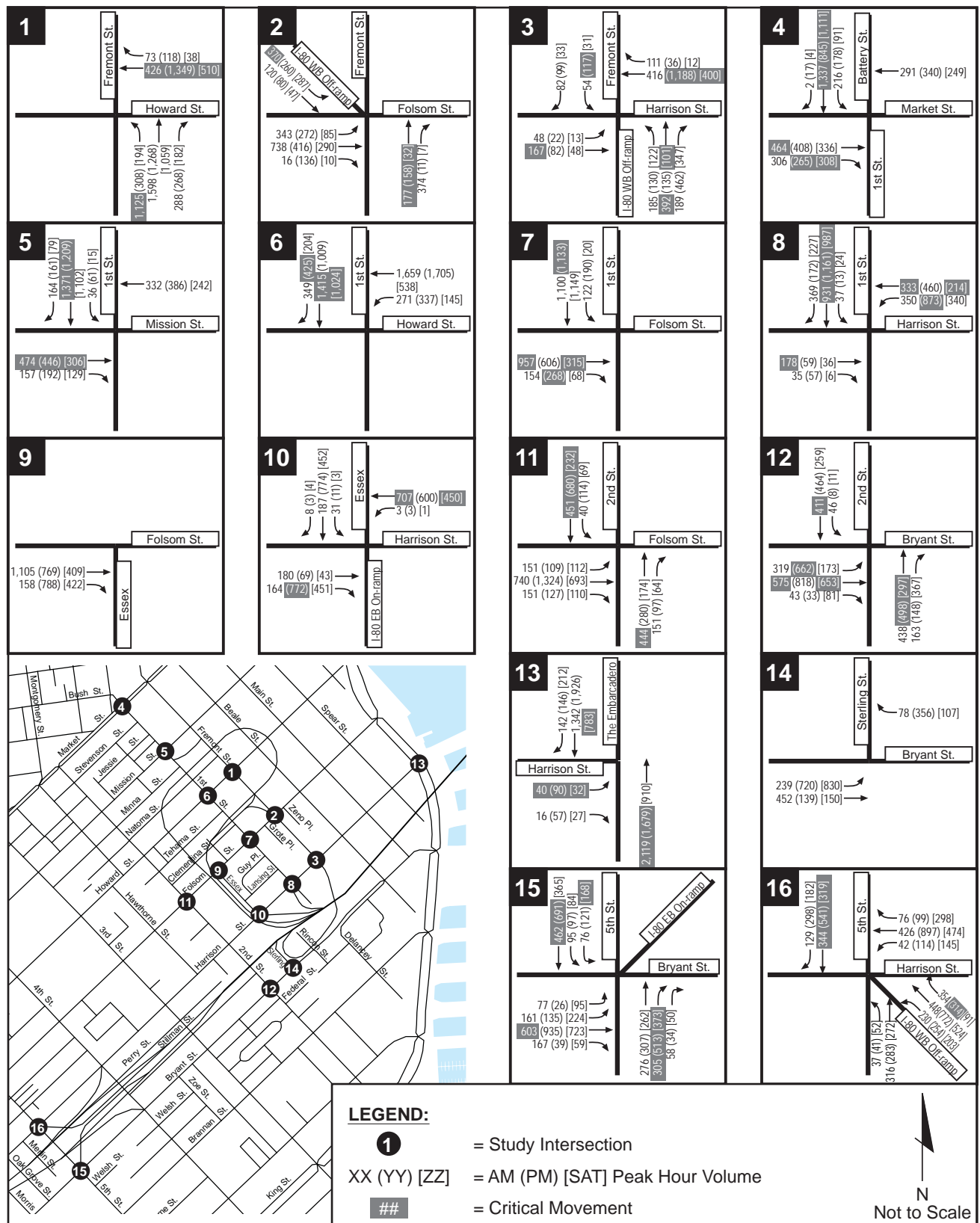
Generally, conditions in Downtown San Francisco are more congested in the PM peak hour than the AM peak hour. In the mornings, access to Downtown San Francisco is constrained by the limited capacity of the SFOBB to deliver traffic into the City. In the evening, the opposite occurs, when traffic attempting to leave Downtown is constrained by the limited capacity of the SFOBB ramps onto the bridge, causing queues to form Downtown on surface streets leading to the bridge. Further, congestion in Downtown San Francisco can vary depending on a number of factors, including incidents on the bridge, special events, and seasonal variations in traffic. Thus, LOS may deviate from what is reported in **Table 12** (page 53), based on daily variations in travel conditions.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING LANE GEOMETRIES AND TRAFFIC CONTROLS



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING CONDITIONS PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES

TABLE 12 – EXISTING INTERSECTION LEVELS OF SERVICE

Intersection ^{1,3}	Traffic Control	Peak Hour	LOS	Delay ²	V/C
1. Fremont Street and Howard Street	Signalized	AM PM Saturday	B D B	17.8 44.1 13.2	0.78 0.96 0.51
2. Fremont Street/Folsom Street/I-80 Westbound Off-Ramp	Signalized	AM PM Saturday	C C C	28.9 23.9 20.4	0.68 0.41 0.17
3. Fremont Street and Harrison Street	Signalized	AM PM Saturday	B C B	10.9 25.1 10.4	0.36 0.80 0.20
4. 1 st Street and Market Street	Signalized	AM PM Saturday	C E B	33.4 72.8 18.5	0.70 0.82 0.58
5. 1 st Street and Mission Street	Signalized	AM PM Saturday	B E B	14.8 67.8 16.3	0.77 0.88 0.55
6. 1 st Street and Howard Street	Signalized	AM PM Saturday	B E C	14.6 73.7 22.2	0.79 1.12 0.42
7. 1 st Street and Folsom Street	Signalized	AM PM Saturday	B E B	12.1 70.6 17.3	0.52 1.14 0.33
8. 1 st Street/Harrison Street/I-80 Eastbound On-Ramp	Signalized	AM PM Saturday	C F B	29.0 >80 10.7	0.63 1.29 0.55
10. Essex Street/Harrison Street/I-80 Eastbound On-Ramp	Signalized	AM PM Saturday	A F B	7.4 >80 15.1	0.37 1.22 0.36
11. 2 nd Street and Folsom Street	Signalized	AM PM Saturday	B E B	13.4 59.4 14.8	0.50 0.93 0.34
12. 2 nd Street and Bryant Street	Signalized	AM PM Saturday	B C B	11.1 32.4 11.5	0.37 0.90 0.38
13. Embarcadero Street and Harrison Street	Signalized	AM PM Saturday	E D B	68.6 38.5 12.0	0.81 0.85 0.39
15. Bryant Street/5 th Street/I-80 Eastbound On-Ramp	Signalized	AM PM Saturday	C F D	22.0 >80 53.2	0.56 1.65 0.70
16. Harrison Street/5 th Street/I-80 Westbound Off-Ramp	Signalized	AM PM Saturday	C D C	25.1 51.0 25.9	0.51 0.89 0.56

TABLE 12 – EXISTING INTERSECTION LEVELS OF SERVICE

Intersection ^{1,3}	Traffic Control	Peak Hour	LOS	Delay ²	V/C
Notes: Bold indicates an unacceptable level of service (LOS). i.e., LOS E or LOS F 1. Intersections 9 and 14 not included in table because they are uncontrolled. LOS analysis is intended for controlled intersections only. Qualitative discussion of Intersections 9 and 14 included in text. 2. Total intersection weighed average control delay expressed in seconds per vehicle for signalized intersections using methods described in the 2000 Highway Control Manual and calculated using the Synchro 6.0 software package. 3. Volumes collected in May 2008. Source: Fehr & Peers, 2009.					

2.7.1 Game Day Operations

Traffic operations at a number of intersections in the South of Market area are affected by traffic associated with special events and during baseball season when the San Francisco Giants have home games at AT&T Park (on King Street, between 2nd and 3rd Streets). Transportation impacts associated with game day conditions are most severe prior to games and after the conclusion of games. The greatest impact occurs after weekday afternoon sellout events, during the 3:30 to 4:40 PM period when traffic, transit and pedestrian flows exiting the ballpark (and game-day street closures near the park) coincide with the evening commute traffic already on the transportation network. As a result, on days when San Francisco Giants play home games at AT&T Park, existing service levels at study intersections and the SFOBB, particularly those between the ballpark and the SFOBB, are likely to be worse than reported.

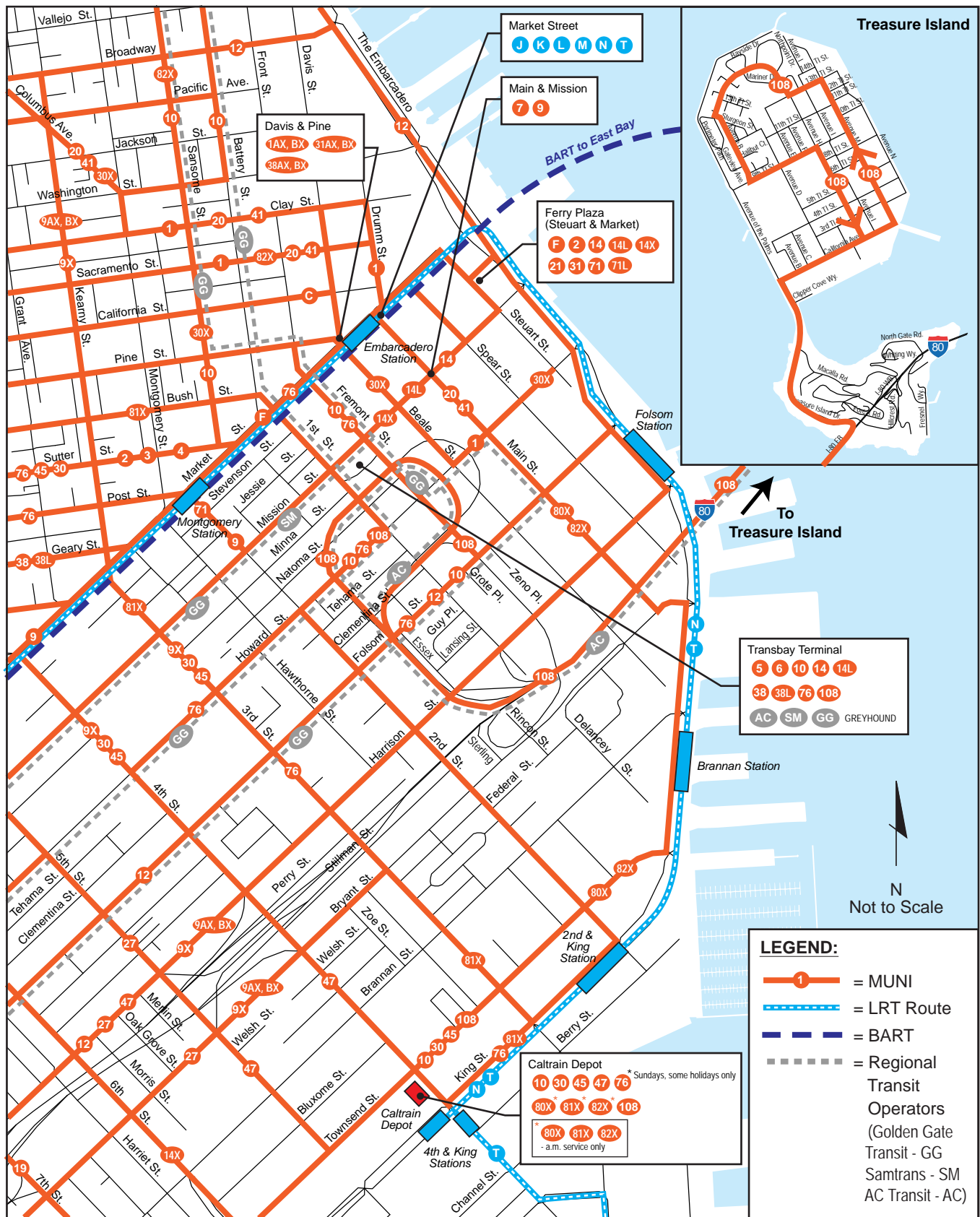
During a typical baseball season there are 81 regular-season home games, including 13 weekday games, 42 weekday evening/night games and 26 weekend games. The San Francisco Giants also play a small number of pre-season games at AT&T Park, and in successful years, host home post-season games. Although these conditions occur with some frequency during the late spring through early fall, they do not represent typical conditions in the area and are only qualitatively discussed here.

2.8 TRANSIT NETWORK

Currently, one transit line serves the Islands from Downtown San Francisco; the Muni Route 108-Treasure Island provides service directly to the Islands from the Transbay Terminal. From the Transbay Terminal, passengers can access other local public transportation services. Muni operates 80 transit routes throughout San Francisco with stops within 2 blocks of 90 percent of all residences in the city. The agency is responsible for operating buses, light rail lines, cable cars, and the historic street cars in the City of San Francisco. In addition to the 108-Treasure Island, Muni lines 5-Fulton, 6-Parnassus, 10-Townsend, 14-Mission, 38-Geary, 38L-Geary Limited, and 76-Marin Headlands have stops at the Transbay Terminal, facilitating direct connections to the 108-Treasure Island. Transbay Terminal passengers can also access regional transit providers including BART, Golden Gate Transit, AC Transit, and SamTrans.

Transportation analyses in San Francisco generally use a ¼ mile radius as a reasonable walking distance for transit access. This section discusses the single Muni Bus Route that has direct service to and from the Islands. **Figure 17** on page 56 shows the public transit network in Downtown San Francisco and Treasure Island.

Route 108-Treasure Island – This route provides 24-hour service from the Transbay Terminal to the Islands via the SFOBB. On Treasure Island, the route operates on a loop on M Avenue, 13th Street, H Avenue and California Avenue. The 108-Treasure Island has been extended to the 4th & King Caltrain Terminal via 2nd Street, King Street, 4th Street and Townsend Street between 2:00 PM and 10:00 PM. Due to low ridership, SFMTA is planning to eliminate this extension and the route will instead travel exclusively between the Transbay Terminal and Treasure Island. Scheduled service frequency is every 15 minutes during the morning, afternoon and evening weekday peak periods and every 20 minutes during the weekend peak period; however, the actual run time for the route varies depending on congestion on the SFOBB. During the peak periods, the route has a run time of approximately 10 minutes from Treasure Island inbound towards the Transbay Terminal and a run time of approximately 8 minutes outbound from the Transbay Terminal to Treasure Island. The route spends approximately 15 minutes circulating on the Islands. The route is currently operating between 20 and 70 percent capacity during the peak hours. The existing capacity and ridership of this route is described in **Table 13** (see page 57). Existing transit ridership across four screenlines surrounding downtown is presented in **Table 14** (see page 58).



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PUBLIC TRANSIT NETWORK

TABLE 13 – EXISTING TRANSIT OPERATIONS				
Route	Service Frequency (min) and Capacity Utilization			
	Frequency (minutes)	Capacity (Passengers per hour)	Ridership	Utilization
AM Peak Hour				
Muni 108–Treasure Island EB	15	252	51	20%
Muni 108–Treasure Island WB	15	252	145	58%
PM Peak Hour				
Muni 108–Treasure Island EB	15	252	121	48%
Muni 108–Treasure Island WB	15	252	153	61%
Saturday Peak Hour				
Muni 108–Treasure Island EB	20	189	86	46%
Muni 108–Treasure Island WB	20	189	133	70%
Note: 1. Ridership data provided by Muni for planning purposes only. Source: Muni TEP, 2007. Saturday Volumes from Muni APC data set, 2008.				

As illustrated on **Table 14**, peak direction transit service in the AM and PM peak hours between Downtown and other parts of San Francisco is generally within reasonable utilization percentages. Although specific lines and routes may be overcrowded, when evaluated as a whole, the transit system is currently capable of accommodating its overall peak demand.

TABLE 14 – EXISTING MUNI TRANSIT SCREENLINES

	Ridership	Capacity	% Utilization
AM Peak Hour (Inbound)			
Northeast	1,882	3,781	50%
Northwest	7,434	11,437	65%
Southwest	4,248	6,301	67%
Southeast	6,627	8,699	76%
Total	20,191	30,218	67%
PM Peak Hour (Outbound)			
Northeast	1,886	3,599	33%
Northwest	6,621	10,123	65%
Southwest	4,668	7,028	66%
Southeast	7,434	9,623	77%
Total	20,609	30,373	68%
Notes:			
1. AM analysis is for transit service inbound toward Downtown and PM analysis is for transit service outbound from Downtown.			
Source: <i>Transit Center District Plan – Transit Network Analysis</i> , AECOM, 2009.			

2.8.1 Regional Transit

At the Transbay Terminal, 108-Treasure Island riders can connect to several regional transit routes operating inside, adjacent to, or within a short walk of the Transbay Terminal, as described below.

Alameda-Contra Costa County Transit District (AC Transit)

AC Transit operates bus service in western Alameda and Contra Costa Counties, as well as routes to the City of San Francisco and San Mateo County. AC Transit operates 27 “transbay” bus routes between the East Bay and the Transbay Terminal, many of which operate only during commute periods.

Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit)

Golden Gate Transit operates bus and ferry service within Marin, Sonoma and San Francisco counties. Golden Gate Transit bus routes 4, 8, 18, 24, 26, 27, 44, 54, 72, 73, 76, 10, 70, 80, and 101 operate on surface streets, with stops adjacent to the Transbay Terminal offering service to Marin and Sonoma Counties. Golden Gate Transit also operates ferry service between Larkspur and Sausalito Ferry Terminals in Marin County and the San Francisco Ferry Building.

San Mateo County Transit District (SamTrans)

SamTrans operates bus and rail service in San Mateo County, with select routes providing transit service outside of the County. SamTrans Routes DX, FX, KX, MX, NX, PX, RX, 292, and 397 serve Downtown San Francisco providing connections to San Mateo County destinations.

BART

Although no direct connections from the Transbay Terminal are available to BART, the Bay Area's regional rapid transit system, connections can be made at nearby facilities. Passengers can transfer between the Transbay Terminal and BART by walking one block north from Mission Street to the Embarcadero Station on Market Street. Passengers can use BART to reach Pittsburg/Bay Point, Richmond, Fremont, Dublin, Millbrae, SFO, and points in between.

Caltrain

To reach Caltrain, the commuter rail service along the San Francisco Peninsula, with service between 4th Street/King Street in San Francisco and San Jose's Diridon Station, passengers have a number of options. Currently, passengers can continue on the 108-Treasure Island bus, which continues to the Caltrain Station at 4th Street/King Street after stopping at the Transbay Terminal. However, as noted earlier, the 108-Treasure Island service between the Transbay Terminal and the Caltrain Station is expected to be discontinued in the near future. At that point, the simplest connection will involve walking to the Embarcadero station and either taking BART to Millbrae, where passengers can transfer directly to Caltrain, or board the 10 Townsend bus line or N-Judah or T-Third Street light rail lines, which provide service to the 4th Street/King Street Caltrain station.

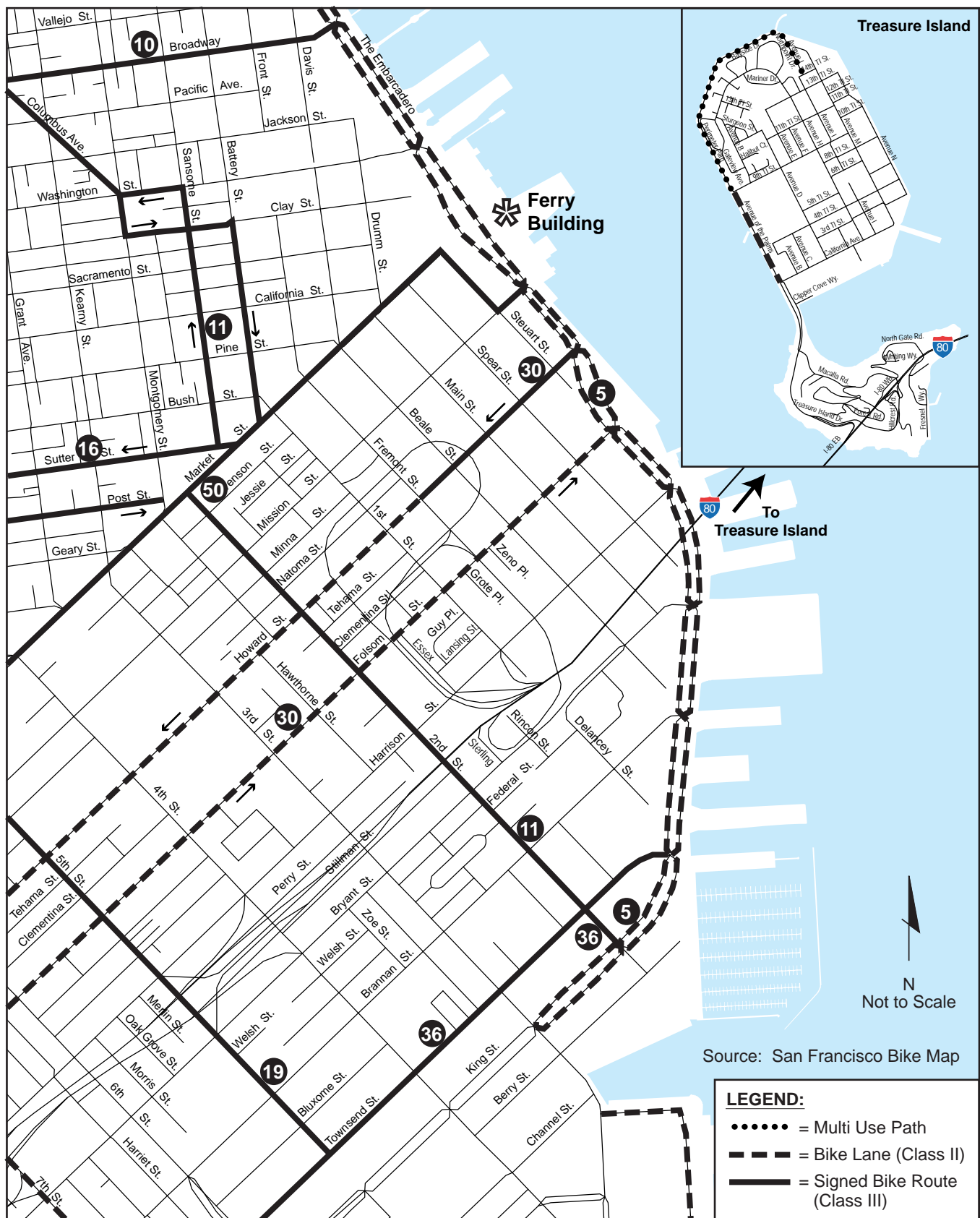
San Francisco Bay Area Water Emergency Transportation Authority (WETA)

WETA is responsible for implementing the Ferry Implementation and Operations Plan (the "IOP") for the Bay Area, with a focus on building and operating a comprehensive public water transit system of ferries, feeder buses and terminals to increase regional mobility in the Bay Area. There is no ferry service currently serving Treasure Island. However the IOP proposes new ferry service between the San Francisco Ferry Building and Treasure Island. Existing ferry berths are located at the Ferry Building in San Francisco and include routes between San Francisco and Oakland, Alameda, and Vallejo; ferry service provided by other operators includes service between San Francisco and Sausalito, Larkspur and Tiburon, as described above.

2.9 BICYCLE FACILITIES

The Citywide Bicycle Routes near the project site, in Downtown San Francisco, and the South of Market area, as designated by the Official San Francisco Bike Route System map are shown on **Figure 18** on page 60. Currently on Treasure Island, there is a short bike lane striped on Avenue of the Palms and a pathway around the western side of the island. No bicycle facilities exist on the SFOBB.

Bicycles are allowed on BART trains, except during peak commute hours (generally between 6:00 and 9:00 AM, and between 4:00 and 6:30 PM), or at any time on crowded cars. Caltrain allows a limited number of bikes on all trains, and Muni buses, including the 108 Treasure Island, are outfitted with racks to also carry a limited number of bikes (typically two bikes per bus). Caltrans operates a transbay bicycle shuttle during morning and evening commute periods to transport bicyclists (and their bicycles) between the East Bay and San Francisco. The new eastern span of the SFOBB is expected to provide a bicycle and pedestrian path between Emeryville/Oakland and the Islands. The Bay Area Toll Authority ("BATA") has recently completed a feasibility study examining the potential for a new bicycle/pedestrian path on the western span of the SFOBB. BATA has subsequently initiated a follow-up study to examine design alternatives. If this project is constructed, there would be a continuous bicycle and pedestrian facility from Emeryville/Oakland to San Francisco, with connections to the Islands.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING BICYCLE ROUTES AND LANES (SAN FRANCISCO)

2.10 PEDESTRIAN FACILITIES

This section describes the pedestrian environment surrounding the Ferry Building in San Francisco. If the project generates substantial ferry ridership between the Islands and the San Francisco Ferry Building, it is important to understand the nature of the pedestrian facilities on either end of that service providing access to the ferry. Existing pedestrian facilities on the Islands are not discussed, since the project will substantially alter the existing street network on the Island.

The San Francisco Ferry Building currently serves ferries arriving and departing from Sausalito, Tiburon, Larkspur, Oakland, Alameda, and Vallejo approximately every half hour (except for the Sausalito ferry, which departs approximately every 60 to 90 minutes). In addition to ferry activity, the Ferry Building is used as an indoor marketplace, houses several offices and restaurants, and provides sidewalk space for a twice weekly farmers' market. With these uses, and its proximity to Downtown San Francisco, the surrounding area experiences high levels of pedestrian activity.

The Embarcadero separates the Ferry Building from the rest of downtown San Francisco. After the 1989 Loma Prieta earthquake, the Embarcadero waterfront was redesigned after the former Embarcadero freeway structure was damaged. In lieu of reconstructing the freeway decks, the City of San Francisco and Caltrans designed the new roadway as a six-lane, at-grade facility with a light rail line in the center of the median. The design improved connectivity between Downtown and the South of Market area of San Francisco with the Port of San Francisco properties along the waterfront. In addition to the Ferry Building, several other areas along the waterfront were redeveloped as office or restaurant properties. A wide sidewalk and mixed-use path is provided along the Bay (east) side of The Embarcadero and around the Ferry Building. The path is generally 25-feet wide, but does vary. Near the Ferry Building, the path widens to between 30 and 45 feet.

Due to the recent reconstruction of the Embarcadero, most of the pedestrian facilities in the area surrounding the Ferry Building are consistent and generally ADA-compliant. Major pedestrian routes across the Embarcadero occur between Market Street and the Ferry Building, as well as both of the adjacent intersections along Embarcadero at Washington Street and at Mission Street. In front of the Ferry Building, there are three crossing points – a central main (80') crosswalk directly between the Ferry Building and Market Street, and two smaller crosswalks on either end of Justin Hermann Plaza (see **Figure 13**, page 41). These crossings are controlled by traffic signals that stop traffic on Embarcadero to give pedestrians time to cross the roadway. The intersections of The Embarcadero at Washington Street and Mission Street both have crosswalks across all three legs.

The City of San Francisco provided pedestrian count volumes for crosswalks along The Embarcadero. At Embarcadero and Market Street, pedestrian counts conducted during the weekday AM and PM peak hours recorded approximately 1,964 and 3,452 pedestrians, respectively.

Chapter 18 of the 2000 *Highway Capacity Manual* includes a methodology for calculating pedestrian level of service at a signalized crossing by assuming that the amount of delay a pedestrian experiences at a crossing is directly related to the level of service. As a pedestrian begins to experience more than 30 seconds of delay, s/he is likely to take more risks when crossing a roadway.

Based on this methodology, the crosswalks at the Ferry Building operate at good levels of service during all peak hours. On a qualitative level, the crossings are also well-designed and easy to use. The waiting areas on either side of Embarcadero are wide and can accommodate a substantial number of waiting pedestrians.

In addition to delay, pedestrian density is another way to measure the performance of pedestrian facilities. Pedestrian density is calculated by dividing the number of pedestrians likely to arrive and queue during a "Don't Walk" signal phase by the size of the waiting area. Based on observations during the peak hours, platoons of pedestrians form routinely while waiting for a signal to cross the Embarcadero.

Although enough pedestrians are present to cause slight delays for those that walk faster than others, there is sufficient space in the crosswalk for faster pedestrians to navigate around others. According to the 2000 *HCM*, this type of activity is characteristic of level of service D or E conditions. **Table 15** summarizes pedestrian density at the crosswalks near the Ferry Building. As shown in **Table 15**, most crosswalks operate with relatively little delay or congestion; however, the crosswalk directly in front of the Ferry Building becomes congested, (i.e., LOS D Conditions) during peak periods.

TABLE 15 – EXISTING PEDESTRIAN LEVELS OF SERVICE CROSSING THE EMBARCADERO									
Crosswalk	Existing Hourly Pedestrian Volume²			Existing Pedestrian Density (sq ft/pedestrian)					
	AM	PM	Sat³	AM		PM		Sat³	
				Density	LOS	Density	LOS	Density	LOS
Washington Street ¹	120	261		33.3	A	15.3	A		
Ferry Bldg (North)	400	378		8.0	C	8.5	C		
Market Street	1,964	3,452	3,718	8.2	C	4.6	D	4.3	D
Don Chee	133	184	380	21.1	A	15.2	A	7.4	C
Mission Street ¹	333	345		12.0	B	11.6	B		
Notes: 1. Since the intersections of the Embarcadero with Washington Street and Mission Street each have two crosswalks, the north and south legs of each intersection were averaged. 2. Pedestrian counts provided by the City of San Francisco, taken from the Regional Signal Timing Program study conducted by Katz, Okitsu & Associates in 2006 and 2007. 3. Saturday data available for the Market Street and Don Chee crosswalks only. The Ferry Building hosts a farmers market on Saturdays, which affects the peak period pedestrian volumes. Although the Ferry Building also hosts mid-week farmers markets, those are typically during the mid day periods, and do not affect weekday AM and PM peak hour pedestrian volumes. Source: Fehr & Peers, 2009.									

2.11 EMERGENCY ACCESS

This section describes the existing emergency services on the islands, as well as the emergency access routes. The Islands are currently served by both the San Francisco Police Department and Fire Department. The Fire Department operates Fire Station 48 on Avenue D on Treasure Island. The SFOBB is the only existing emergency access route to and from the Islands and San Francisco or the East Bay, and the primary on-island emergency routes include roadways leading to the Bridge. When the SFOBB is congested during the peak periods, emergency vehicles maneuver around vehicles and into other traffic lanes, similar to other congested roadways in San Francisco, and the California Vehicle Code requires drivers to make way for emergency vehicles.

3. TRAVEL DEMAND ANALYSIS

The travel demand, in terms of person trips by mode and vehicle trips associated with the land use proposed as part of the Proposed Project, is described in this chapter. To meet the needs of project-generated transportation demand, the 2006 Transportation Plan proposes substantial improvements to existing transit infrastructure and service to the Islands, including high-frequency ferry service, increased frequency for the 108-Treasure Island bus route to San Francisco, a new Muni bus route to the Civic Center, and new bus service to Downtown Oakland. Generally, the funding for this increased transit service is intended to come from revenues generated by the project (tax revenues, congestion pricing fees, parking fees, etc.) and local, state, and federal grants. However, full funding for this service plan relies on sources which have not yet been formally agreed to (e.g., grants, dedication of project-generated tax revenues). Conversely, funding for some portions of the service costs (e.g., some project-generated revenues) will be available, and can be considered as funding sources for portions of the transit service plan. The level of the transit service for which full funding has been identified and for which the appropriate agency has indicated willingness to implement the service is included as part of the Proposed Project and analyzed in this report as the “Base Transit” scenario. The additional transit service for which a fully committed funding source has not been identified is analyzed as a separate “Expanded Transit” scenario. A more detailed discussion of the two scenarios and their respective travel demand forecasts is provided later in this chapter.

Because of the unique location, mix of land uses, and transportation demand management (“TDM”) measures of the Proposed Project, the overall process used to forecast the travel demands of the Proposed Project is a multi-step process. The steps are outlined below and discussed in more detail in this chapter.

1. The total amount of person-trips generated by the Proposed Project was estimated using vehicle trip generation rates described in the Institute of Transportation Engineers’ (“ITE”) *Trip Generation* manual (and other sources, as necessary) and average vehicle occupancy survey data from the *SF Guidelines* and national surveys.¹²
2. Adjustments were made based on research conducted by Fehr & Peers and others to account for the unique nature of the project, including the mix of uses, the density, and the high quality of pedestrian and bicycle amenities proposed.¹³
3. The percentage of total trips expected to use transit based on the high level of transit service proposed by the project was forecasted based on survey data from San Francisco for similar locations.
4. The general origins and destinations of person-trips leaving the island were forecasted based on regional travel demand forecasting models and engineering judgment.
5. The person trips by auto, ferry, and bus forecasted to leave the island were assigned to specific routes, based on the mode choice identified in Step 3 and the trip distribution identified in Step 4.
6. The effects of implementing congestion pricing for residents entering and departing the Islands by auto were predicted based on recent studies regarding the sensitivity of drivers to factors such as time delay and cost increases, with the decrease in auto trips re-assigned to transit.¹⁴

12. Trip generation estimates for land uses in the project description that are not contained in the ITE *Trip Generation* manual were estimated using survey data taken at facilities for the proposed land use. Appendix F1 contains a list of sources of trip generation estimates for each land use analyzed in this TIS.

13. See Appendix F2.

14. The transit costs for residents were adjusted to account for the transit passes.

7. The effects of additional delay associated with implementing ramp metering at on-ramps to the SFOBB was predicted using similar methods to the congestion pricing analysis, with the decrease in auto trips re-assigned to transit.
8. Further adjustments to the forecasted transit trips were made to account for the fact that not all transit service proposed by the project is fully funded and cannot be assumed in the analysis. The lower amount of transit service would reduce transit ridership.

The result of Steps 1-8 above is a projected person-trip generation, by land use and by mode, for the weekday AM and PM and Saturday peak hours.

The Proposed Project's travel demand forecasts were initially developed using the proposed higher-capacity transit service scenario ("Expanded Transit"), since that represents a similar situation to locations in San Francisco from which data regarding typical transit ridership was obtained. The travel demand forecasts for the lower-capacity "Base Transit" scenario are based on adjustments to the forecasts for the higher-capacity Expanded Transit Service. Therefore, the "Expanded Transit" scenario travel demand estimates are presented first, followed by the travel demand estimates for the reduced-scale "Base Transit" scenario. Project impacts, as discussed in Chapter 4, are based on the more conservative "Base Transit" scenario.

3.1 PROPOSED PROJECT WITH EXPANDED TRANSIT

This section presents the travel demand estimates for the Proposed Project with the addition of the Expanded Transit Scenario proposed in the 2006 Transportation Plan (as described in Chapter 2, Section 1.2.5 on page 13). Analysis of the Proposed Project that includes only those transit service elements for which full funding has been identified follows this discussion.

3.1.1 Trip Generation (Proposed Project, Expanded Transit)

Estimating the net new project trip generation involves forecasting the number of trips anticipated by build-out of the Proposed Project, less trips associated with the existing uses on-site that would be replaced by the project. Because of the unique nature of the proposed development on the Islands, both in terms of its features designed to promote transit, bicycle, and pedestrian travel and the relative difficulty of auto access to the site via the SFOBB, traditional methods of forecasting the project's trip generation are not adequate. Instead, the proposed trip generation forecasts were developed in consultation with the Planning Department using methods developed by Fehr & Peers and others that account not just of the amount of development, but also for the following specific design variables (known as the 4D's):

- **Development scale** – the amount of trips generated increases as the amount of development increases;
- **Density of the project** – the higher the Proposed Project's density, the less vehicular traffic generated per unit of development;
- **Diversity of uses** – an appropriate mix of uses can lead to internalization of trips and trip-linking within a project; and
- **Design of project** – a walkable, pedestrian- and bicycle-oriented circulation system can help to reduce automobile dependence within a project site.

These factors were applied to the Proposed Project, as described in Chapter 1. A summary of the methodology, the rationale for its use, and the resulting traffic generation forecasts follows. A detailed discussion is provided in **Appendix M1**.

3.1.1.1 Trip Generation Methodology

The methods commonly used for forecasting trip generation of projects in San Francisco are based on person-trip generation rates, trip distribution information, and mode split data described in the *SF Guidelines*. These data are based on a number of detailed travel behavior surveys conducted within San Francisco. The data in the *SF Guidelines* are generally accepted as more appropriate than conventional methods for use on smaller projects in the complex environs of San Francisco because of the relatively unique mix of uses, density, availability of transit, and cost of parking commonly found in San Francisco. However, the methods described in the *SF Guidelines* cannot be directly applied at the Islands because of its unique location and because the Proposed Project is expected to fundamentally change the character of the island, limiting the usefulness of any information about existing uses at the island.

Similarly, standard vehicle-traffic generation rates, such as those provided by ITE *Trip Generation*, 7th Edition, 2003, would not be suitable for the Islands, unless appropriate adjustments were made to account for the project size, mix, and availability of transit. Therefore, a state-of-the-practice trip generation forecasting method, originally developed by Fehr & Peers and others for the US Environmental Protection Agency (“EPA”) that has been endorsed for use in project-specific and planning-level analyses by a number of jurisdictions, including the Caltrans, was used in this analysis. This method is currently being used for other projects in San Francisco (Candlestick Point/Hunters Point Shipyard EIR), Napa County (Napa Pipe Redevelopment EIR), and Brisbane (Brisbane Baylands Redevelopment EIR), among others. This method is commonly referred to as the “4D” method, and generally accounts for trip generation sensitivity to development scale, project density, diversity of uses, and project design.

A detailed description of how these factors can be used to adjust standard traffic generation rates was provided in a letter to the City of San Francisco Planning Department dated August 4, 2008 (see **Appendix M1**). That letter did not discuss in detail the application of the 4D method to the Proposed Project, but rather described the details of the methodology. In summary, the general concept behind the 4D method is that projects that deviate from a base case (in this case, ITE methods) with respect to the four bulleted variables above, exhibit different traffic generation patterns. Elasticities have been derived from travel behavior surveys from the Bay Area to help estimate how traffic generation changes as a function of changes in the 4D’s. Those elasticities are used to adjust the base case trip generation to account for the Proposed Project’s density, diversity, and pedestrian/bicycle friendliness (i.e., design) compared to typical suburban developments. The product is a percentage reduction in vehicular traffic generation from the base case (i.e., ITE *Trip Generation*).

Ultimately, application of the 4D method has been demonstrated to forecast trip generation more accurately and precisely than the methods provided in the ITE *Trip Generation* manual, which are only sensitive to development scale. A detailed discussion related to the application of the 4D trip generation methods for the Proposed Project is included in a letter to the City of San Francisco dated December 8, 2008 (see **Appendix M2**)¹⁵. The results of the analysis are summarized below.

3.1.1.2 Defining the Base Case

The first step in estimating trip generation is to define the base case. In this case, the ITE *Trip Generation* methodology was selected as the base case. The project’s base case person-trip generation was estimated using the ITE *Trip Generation* rates (assuming average vehicle occupancy of 1.6 persons per auto, per the 1995 *National Personal Transportation Survey*). This is the trip generation the project would experience were it located in a typical suburban setting and development pattern. The following

15. The December 8, 2008 letter is based on a slightly different project description. The same methods described in that letter applied to the current Proposed Project are described in this report.

adjustments were made to the base case trip generation forecasts to ensure that the project's traffic impact analysis is performed for a worst-case scenario.

First, the surveys used to develop the *SF Guidelines* methodology indicate that retail uses in San Francisco generate approximately 70 percent more weekday peak hour person-trips than the retail uses that make up the ITE trip generation rates for retail uses. This is likely due to the higher overall level of activity in an urban area like San Francisco and the generally higher land costs, which encourage more efficient use of space. Thus, retail in San Francisco generates more activity per square foot. The Proposed Project would include a mix of neighborhood-serving and regional retail. The neighborhood-serving retail (e.g., grocery store, coffee shop, dry cleaners, etc.) would primarily attract users from within the Islands, and would not likely generate as much activity as similar uses within mainland San Francisco. The more regionally-focused retail proposed for the Islands may behave more like a typical San Francisco retail use. Therefore, the base case trip generation rates for regional retail were increased by 70 percent to match the *SF Guidelines* rates, and the neighborhood-serving retail rates were not adjusted. The net effect is an approximately 40 percent increase to trip generation rates over the base ITE rates for all retail uses proposed on the Islands.

Further, based on the *Transfer and Reuse of Naval Station Treasure Island Final EIR* (San Francisco Planning Department, June 2006, State Clearinghouse #1996092073), and data used in other analyses in San Francisco, retail person-trip generation rates are approximately eight percent higher on weekends than on weekdays in San Francisco. Therefore, the base case Saturday trip generation rates for retail uses were increased an additional eight percent.

In addition, some of the land uses proposed by the project are not adequately described in the ITE *Trip Generation* manual for situations in San Francisco. For those uses, namely the athletic fields and the cultural center/museum, other methods and sources were used, as described below (see **Appendix B** for a summary of these sources).

3.1.1.2.1 Athletic Fields

Although ITE *Trip Generation* includes trip generation estimates for sports facilities, such as soccer fields; the rates in ITE do not necessarily reflect the high demand for these types of outdoor facilities in San Francisco. Unlike typical suburban areas, space for athletic fields in San Francisco is at a premium and existing facilities typically experience much higher usage than their suburban counterparts.

As noted in Chapter 1, during weekday AM and PM peak hours, the athletic fields will be open for use with reservations only, but no scheduled events will occur (the proposal calls for scheduled events to occur no earlier than 6:30 PM on weeknights). This is similar to the operation of athletic fields at other large parks and recreation areas. The portion of total open space dedicated to formal sports fields (40 acres out of 300 acres, or 15 percent) is similar to other large open spaces areas. Therefore, activities that would occur before the scheduled events (maintenance, practice, etc.) are within the typical usage of ball fields at other large parks and therefore, included in the trip generation rates for the standard open space.

Scheduled events on weeknights would not begin until 6:30 PM (30 minutes after the end of the PM peak hour). This assumption has been substantiated by data collected by the Office of Economic and Workforce Development with respect to the operational characteristics of four similar facilities in the Bay Area. However, to ensure a conservative analysis, this study assumes some additional traffic associated with organized games that may occur during the PM peak hour. Below is a summary of assumptions developed for similar facilities throughout the Bay Area, by facility type, for their peak hours of use.

Soccer

- 16 players per team (includes coaches and managers)
- 32 players per field, 1 spectator per player
- One game ends and one game begins at each field during its peak hour of usage
- Peak hour person-trip rate per field: 128 total person-trips (64 inbound (arriving at the fields), 64 outbound (leaving the fields))

Baseball/Softball

- 16 players per team (includes coaches and managers)
- 32 players per field, 1 spectator per player
- One game ends and one game begins at each field during its peak hour of usage
- Peak hour person-trip rate per field: 128 total person-trips (64 inbound, 64 outbound)

Volleyball Courts

- 14 players per team (includes coaches and managers)
- 28 players per field, 1 spectator per player
- One game ends and one game begins at each court during its peak hour of usage
- Peak hour person-trip rate per court: 112 total person-trips (56 inbound, 56 outbound)

Batting Cages

- 1 player and 1 spectator/coach per cage
- One user arrives and leaves each cage during its peak hour of usage
- Peak hour person-trip rate per cage: 4 person-trips per cage (2 inbound, 2 outbound)

Table 16 presents the peak hour person-trip generation of each facility type, based on the number of facilities assumed in the analysis.¹⁶

TABLE 16 – TRIP GENERATION BY SPORTS FACILITY TYPE (DURING PEAK HOUR OF USAGE)					
Facility	Trips per Facility	Number of Facilities	Person-Trips		
			Inbound	Outbound	Total
Soccer Fields	128	6	384	384	768
Baseball Fields	128	4	256	256	512
Batting Cages	4	8	16	16	32
Softball Fields	128	6	384	384	768
Volleyball Courts	112	6	336	336	672
Total			1,376	1,376	2,752
Source: Fehr & Peers, 2009					

According to the San Francisco Department Recreation and Park Department's website (www.parks.sfgov.org), which describes the San Francisco Recreation League schedules, there are certain months of the year during which all of these sports are played, so as a worst-case scenario, it is feasible that during busy months, all facility types could be in use simultaneously.

As noted earlier, it is not likely that these facilities will have much impact during weekday PM peak hours. However, to be conservative, the analysis assumes that 50 percent of all facilities would have a game that begins at such time as players arrive within the peak hour. This would result in the assumption that the facilities would generate 688 inbound person-trips and no outbound person trips during the weekday PM peak hour. Average vehicle occupancy of two persons per vehicle was assumed for athletic field trips.

For Saturday peak hour conditions, while it may be reasonable that all fields are in use simultaneously, it is not likely that each field would turn over within the peak hour. In order for that to happen, each game would have to last less than one hour, or each game on each field would have to have scheduled start times at approximately the same time, which is unlikely. The Saturday peak hour trip generation forecasts assume that all fields are in use simultaneously, but that only 50 percent of the fields turn over during the peak hour of analysis.

16. The number of each type of field has not been determined; however, the assumptions outlined in Table 14 represent a reasonable estimate of potential allocation of athletic field space.

3.1.1.2.2 Cultural Park

Although the precise description of the cultural park has not been defined, this analysis assumes a 75,000 square foot museum would be constructed on Treasure Island. There are no museum trip generation rates in the *SF Guidelines* or *ITE Trip Generation*. Therefore, this analysis uses museum trip generation rates developed by the New York City Department of City Planning for purposes of assessing the impacts of expanding the New York Museum of Modern Art (New York MoMA) in 2000.¹⁷ That study found that the Museum had the following trip generation characteristics:

- Daily Person Trip Generation Rates:
 - 27.4 person-trips/1,000 square feet (Weekday)
 - 20.6 person-trips/1,000 square feet (Weekend)¹⁸
- Percent of Daily Trips Occurring in Peak Hour:
 - 0.0 % (Weekday AM Peak Hour)
 - 14.4 % (Weekday PM Peak Hour)
 - 16.8 % (Weekend Peak Hour)
- Inbound/Outbound Split:
 - 0%/0% (Weekday AM Peak Hour)
 - 52%/48% (Weekday PM Peak Hour)
 - 36%/64% (Weekend Peak Hour)
- Auto Occupancy: 2.34

Although the New York MoMA likely generates more trips on a per square foot basis than any museum that may be constructed at Treasure Island, the museum overall generates a relatively small number of peak hour trips compared to the overall project, and therefore, the use of conservatively-high trip generation rates does not have a substantial effect on the outcome of the person-trip generation forecasts. Unique mode share, auto occupancy, and internalization factors were applied to the base person-trip generation rates to reflect the unique features of the Islands.

With these adjustments to the athletic field and cultural uses, the number of peak hour person-trips the Proposed Project would generate was calculated for the weekday daily, and AM and PM peak hours and for, the Saturday peak hour. This represents the base case. A summary table of this interim step is provided in **Appendix D**.

17. A number of sources were consulted, including both local and national surveys to identify the most appropriate rate. Local sources reviewed included the deYoung Museum and the Exploratorium. The future Treasure Island museum is likely to have less overall activity than both New York MoMA and the two San Francisco examples because it will be smaller and likely less of a major tourist destination. Based on discussions with the project sponsor regarding likely uses, conversations with the Planning Department, and engineering judgment, the New York MoMA rates were used because, although they are lower than the two local data sources, they still likely represent a conservatively high analysis but are closer to what is expected at Treasure Island.

18. The Sunday trip generation rate identified in the New York City study was applied to the Saturday conditions for this study, as they both likely represent similar conditions.

3.1.1.3 Application of 4D Adjustments

Once the base case is defined, the next step in the 4D process is to define the application area (i.e., the catchment area for trip internalization and reduction). For purposes of this analysis, it was assumed the proposed development would be contained within a single catchment area. This means that trips from anywhere within the development to anywhere else in the development could be internalized and that all uses are within a reasonable walking or cycling distance of other uses.

The third step in the 4D process is to determine the characteristics of the Proposed Project, as they relate to the 4D variables described above. This process was done by comparing the project with typical suburban development patterns. The Proposed Project's percentage differences from typical suburban developments were applied against elasticities developed from travel behavior surveys conducted by the Contra Costa Transportation Authority (CCTA). The resulting output from the 4D analysis tool is provided in **Appendix M1**.

As noted earlier, one of the factors affecting traffic generation in the 4D method is the diversity of uses. A mix of uses within a single development can reduce vehicle traffic generation in a number of ways, such as accommodating shopping trips, dining out, and allowing walking or cycling to work within a mixed-use development. However, there is some question as to whether the residents expected to live at the Islands would be a good match for the jobs expected, which are likely to be primarily retail and service jobs.

To determine the effect that the jobs-housing mix has on the final trip reduction predicted by the 4D method, a sensitivity test was conducted. Reducing the elasticity for home-based work trips associated with the jobs/household mix to zero affects the overall trip reduction in both the AM and PM peak hour analyses by seven percentage points. To ensure that the project's traffic impact analysis is performed for a worst-case scenario, the trip generation analysis was based on the scenario in which the jobs/housing mix has no effect on home-based work trips (i.e., the analysis assumes that nobody who lives on the island would also work on the island).

The internalization percentages were calculated first for the Reduced Development Alternative discussed later in this report, which includes 6,000 dwelling units instead of 8,000 and does not include 100,000 square feet of office space. The resulting analysis showed that the Reduced Development Alternative would experience an external trip generation reduction of 38 percent in the AM peak hour and 41 percent in the PM peak hour, compared to the base case (typical suburban development), due to trip internalization and trip linking. The same internalization percentages developed for the Reduced Development Alternative were applied to the Proposed Project.¹⁹ However, the portion of proposed retail space that was assumed to be local-serving (and therefore not subject to the 70 percent increase above ITE rates described earlier), was assumed to increase in proportion to the residential development. Thus, although the amount of retail space proposed is identical, the number of external (i.e., from off-island) retail trips per square foot was forecasted to be lower under the Proposed Project than under the Reduced Development Alternative.

The internalization forecasts described above were based on information specific to typical weekday travel patterns and traveler responses. To determine how the situation may change on a typical Saturday peak hour, travel surveys contained in the Bay Area Travel Survey ("BATS2000")²⁰ were reviewed for

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19. If the 4D model were applied to the Proposed Project (8,000 dwelling units), higher internalization percentages would be predicted than those predicted for the Reduced Development Alternative (6,000 dwelling units). The increase in internal trips projected for the Proposed Project compared to the Reduced Development Alternative would more than offset the increased vehicle traffic generation associated with the additional 2,000 dwelling units in the Proposed Project compared to the Reduced Development Alternative. Thus, there is some evidence that the Proposed Project may actually generate fewer external trips than the Reduced Development Alternative.
20. BATS 2000 was a study conducted by the MTC to evaluate typical travel characteristics in the Bay Area, based on a number of other variables including proximity to transit.

three other San Francisco neighborhoods of similar size to the proposed development. Specifically, the Marina, the Inner Sunset, and South of Market were evaluated. While none of these neighborhoods matches the proposed development perfectly, they do form a cross section of neighborhood types from which meaningful data can be extracted. From this data, the percentage of trips typically internal to neighborhood census tracts on a weekend day versus a typical weekday can be determined.

As shown in **Table 17** neighborhood trip internalization tends to increase slightly on the weekends in residential neighborhoods (i.e., jobs/housing mix less than 1.0) but decreases on weekends in SoMa, which has significantly more jobs than residential units.

TABLE 17 – SAN FRANCISCO NEIGHBORHOOD TRIP-MAKING PATTERNS					
Neighborhood¹	Jobs/Housing Mix	Weekday		Weekend	
		Internal	External	Internal	External
Marina ²	0.51	33%	67%	36%	64%
Inner Sunset ³	0.36	34%	66%	46%	54%
SoMa ⁴	8.34	18%	82%	12%	88%
Treasure Island ⁵	0.26	41%	59%		
Notes: 1. Each neighborhood contains between 6,600-8,300 dwelling units and 12,600-14,300 residents, similar to the Proposed Project. 2. Generally south of Lombard and west of Fillmore – Census Tracts 126, 127, & 128. 3. Excludes UCSF Parnassus – Census Tracts 302.01, 302.02, & 303.01. 4. South of Mission Street – Census Tracts 178, 179.01, & 180. 5. Estimated Jobs-to-Housing ratio. PM peak hour trip internalization rates. Source: BATS2000; Fehr & Peers, 2009					

There are several reasons why residential neighborhoods in San Francisco might have higher trip internalization on the weekends than during weekdays. Both the Inner Sunset and Marina have strong neighborhood commercial corridors, as well as relatively easy access to recreation areas. The neighborhoods also have good access to transit and regional roadway facilities that make it easier for residents to make external trips from these neighborhoods. The jobs/housing mix on the Islands is expected to be much more similar to the Inner Sunset and Marina than Soma; therefore, the Proposed Project is likely to have trip characteristics similar to these neighborhoods in San Francisco, at least with respect to travel behavior on weekends versus weekdays.

Of the neighborhoods examined, the Marina experienced the smallest change to internalization between weekday and Saturday conditions. The Marina's internalization rate increases by three percentage points, or nine percent of total trips, on Saturday. This ratio was applied to the project PM peak hour trip reduction factor of 41 percent. This suggests a 45 percent internalization rate for Saturday peak hour trips for the Islands. Therefore, the resulting percentage reduction to external trip generation is:

- 38% reduction of weekday AM peak hour trips;
- 41% reduction of weekday PM peak hour trips; and
- 45% reduction of Saturday peak hour trips.

As a point of comparison, **Table 17** also shows that weekday neighborhood trip internalization rates in two similar San Francisco neighborhoods are slightly lower than what was estimated for the Islands. This is not surprising given the Islands' more geographically isolated location and mix of uses, which are likely to result in higher internalization. **Table 18** presents the project's person-trip generation by land use for

each peak hour, and the result of applying the 4D reductions. The result is the net person-trip generation external to the Islands.

TABLE 18 – NET PERSON-TRIP GENERATION BY LAND USE

Land Use	Size	Person-Trip Generation		
		AM Peak Hour	PM Peak Hour	Saturday Peak Hour
Residential	8,000 d.u.	5,008	5,938	5,750
Hotel (TI)	450 Rooms	890	427	523
Hotel (Yerba Buena Island)	50 Rooms	27	35	101
Retail	207,000 square feet	995	3,029	3,272
Open Space (Athletic Fields)	40 acres	0	688	1,376
Open Space (Other)	260 acres	115	222	933
Marina	400 slips ¹	38	88	126
Flex	202,000 square feet ²	113	696	761
Office	100,000 square feet	285	278	58
Police/Fire	30,000 square feet	285	61	61
School	105,000 square feet	789	528	0
Community Center	48,500 square feet	126	130	101
Cultural Park/Museum	75,000 square feet	0	302	260
<i>Subtotal</i>		<i>8,671</i>	<i>12,422</i>	<i>13,321</i>
<i>Internal/Linked Trip Reduction</i>		<i>3,296 (38%)</i>	<i>4,850 (39%)³</i>	<i>5,743 (43%)³</i>
Total Net External Person-Trip Generation		5,375	7,572	7,578
Notes:				
1. The marina use has already been approved and is not part of the Proposed Project (although the construction of landside services associated with the Marina are included). The trip generation associated with the marina is presented for informational purposes because it will be used to assess cumulative conditions.				
2. Includes the non-retail portion of the adaptive reuse: 22 ksf food production/industrial/manufacturing, 150 ksf entertainment, and 30 ksf community/office uses.				
3. Although a 41% reduction was taken for most of the project in the PM peak hour, the cultural park was removed from the calculation, and only a 10% reduction for internal trips was assumed for that use. The result is an effective 39% reduction. Similarly, for the Saturday peak hour, including the cultural center/museum resulted in an effective 43% reduction.				
Source: Fehr & Peers, 2009				

3.1.2 Mode Split/Transit Usage (Proposed Project, Expanded Transit)

As envisioned in the 2006 Transportation Plan, the Proposed Project would provide a high level of transit service during peak hours, including.²¹

- New ferry service to San Francisco every 15 minutes;
- New bus service to Downtown Oakland every 10 minutes;
- Modification of the existing bus service to the Transbay Terminal in San Francisco (Muni Route 108-Treasure Island) to increase peak hour frequency from every 15 minutes to every 7 minutes in the AM peak hour and 5 minutes in the PM peak hour. The vehicle type would be switched from the current standard 40-foot coach to a 60-foot articulated bus. Further, the 108-Treasure Island would not circulate around the entirety of Treasure Island as is the case today; rather, the 108-Treasure Island would circulate around the southwest corner, as depicted on **Figure 6**, page 14; and
- New bus service to another location in San Francisco every 12 minutes (for purposes of this analysis, location assumed to be the San Francisco Civic Center area). To be conservative, this study assumes this new route would operate as a standard 40-foot coach.

Assuming a bus capacity of 63 passengers for a Muni standard 40-foot coach, a capacity of 94 passengers on a 60-foot articulated bus, a capacity of 54 passengers for AC Transit service to Oakland, and a ferry capacity of 699 passengers, the total transit peak hour capacity in a single direction (on or off of the island) would be 4,241 passengers in the AM peak hour, including 2,796 passengers on ferries and 1,445 passengers on buses, and would be 4,563 passengers in the PM peak hour, including 2,796 passengers on ferries and 1,767 passengers on buses. For the purpose of this analysis, Saturday peak hour capacity was assumed to be the same as the PM peak hour (4,563 transit passengers) under the Expanded Transit Scenario.

Transit usage associated with development on the Islands is estimated based on data presented in the BATS2000 study. That report describes a number of characteristics, including residential proximity to transit service that influence transit ridership in the Bay Area.

Weekday Peak Hours: According to the BATS2000 study, 34 percent of work trips and 17 percent of all non-work trips made by San Francisco residents living within ½ mile of a rail or ferry terminal during weekday peak hours are via transit.²² Further, the study notes that of work-related transit trips made by San Francisco residents living within ½ mile of a rail or ferry terminal, approximately 50 percent are made by ferry/rail and the remaining 50 percent are made by bus. Non-work trips are more likely to be made by bus, with 65 percent of transit trips made by bus and 35 percent made by rail/ferry. The transit mode shares for weekday work and non-work trips from the BATS2000 study were applied to the Proposed Project to estimate bus and ferry ridership.

Saturday Peak Hour: Unsurprisingly, there is much more robust data regarding weekday AM and PM peak hour transit ridership in San Francisco and the greater San Francisco Bay Area than is available

21. The frequencies used in this study for the proposed transit service have changed since the 2006 *Transportation Plan*, although the general nature of the service is consistent.

22. These observed percentages are of all trips, including walk and bicycle trips which are analogous to the internal trips described earlier for Treasure Island. Thus, although the transit mode shares taken as a percentage of only external trips are higher than 34 and 17 percent for work and non-work trips, respectively, application of these percentages to all trips generated by the Treasure Island project is consistent with the findings of the BATS Study. If taken as a percentage of external trips only, transit is expected to represent approximately 37 percent of all person-trips generated by the Proposed Project.

regarding weekend peak periods. Still, some data is available. According to the BATS2000 study, the overall transit mode share in San Francisco for Saturday work trips drops by 18 percent. For Saturday non-work trips, the transit mode share decreases by 24 percent. An 18 percent and 24 percent reduction was applied to the previously-described transit mode shares for weekday peak hour work and non-work trips, respectively, to estimate Saturday peak hour transit mode shares. The same split was assumed between bus and ferry on Saturday peak hour as the weekday peak hour. The reductions in transit mode share for Saturday conditions were met with corresponding increases in auto mode share.

Given the disincentives to driving and incentives for transit use proposed by the project, it is reasonable to expect the Proposed Project to have a slightly higher transit mode share than the average San Francisco development described in the BATS2000 data. However, to be conservative, and because data on the effectiveness of such disincentives is limited, the Proposed Project was treated as a typical San Francisco project (i.e., no additional transit ridership was assumed associated with the disincentives to driving, with the exception of congestion pricing and ramp metering delays, which is described later in this chapter).

The portion of work vs. non-work trips associated with each land use was estimated from rates included in the *SF Guidelines* (for weekday peak hour trips) and the *Transfer and Reuse of Naval Station Treasure Island Final EIR* (for Saturday peak hour trips; San Francisco Planning Department, June 2006, State Clearinghouse #1996092073). The transit mode share percentages were applied to the base case person trip generation forecasts based on the total number of person-trips generated (including both internal and external trips) and the relative portions of work and non-work trips. Since the transit percentages from BATS2000 were percentages of all trips (including internal walk and bike trips) using transit, the application of the transit mode share percentage to the total number of person-trips generated by the project is appropriate.

The resulting person-trip generation by mode for the Expanded Transit Scenario is summarized in **Table 19**, below. These forecasts do not account for the effects of congestion pricing and/or the effects of ramp metering delays, which are described later.

TABLE 19 – PERSON-TRIP GENERATION BY MODE (EXPANDED TRANSIT SCENARIO)					
Peak Hour	Person-Trip Generation¹				Vehicle-Trips²
	Ferry	Bus	Auto	Other³	
AM Peak Hour	930	1,181	3,265	3,296	1,632
PM Peak Hour	1,210	1,625	4,724	4,850	2,326
Saturday Peak Hour	718	1,179	5,523	5,743	2,737
Notes: 1. This analysis assumes no external pedestrian or bicycle trips onto or off of the Islands. With construction of the new eastern span bicycle/pedestrian path, it is possible that some bicycle trips may occur. However, this number is expected to be very minor and not likely to affect the overall conclusions of this study. Further, the potential new bicycle facility on the western span is still in the conceptual discussion phases, and is not assumed to be in place in this analysis. 2. Vehicle-trips include passenger vehicles and vans. These estimates do not yet account for ramp metering and/or congestion pricing. Assumes most vehicle trips have auto occupancy of 2.0 persons per vehicle (per <i>SF Guidelines</i> for trips to/from the East Bay). Trips associated with cultural use assumed to be at 2.3 persons per vehicle (per trip surveys from the NY MoMA expansion). 3. Includes internal bicycle and pedestrian trips, and a likely, relatively small number of internal auto trips (e.g., between Yerba Buena Island and Treasure Island). Source: Fehr & Peers 2009					

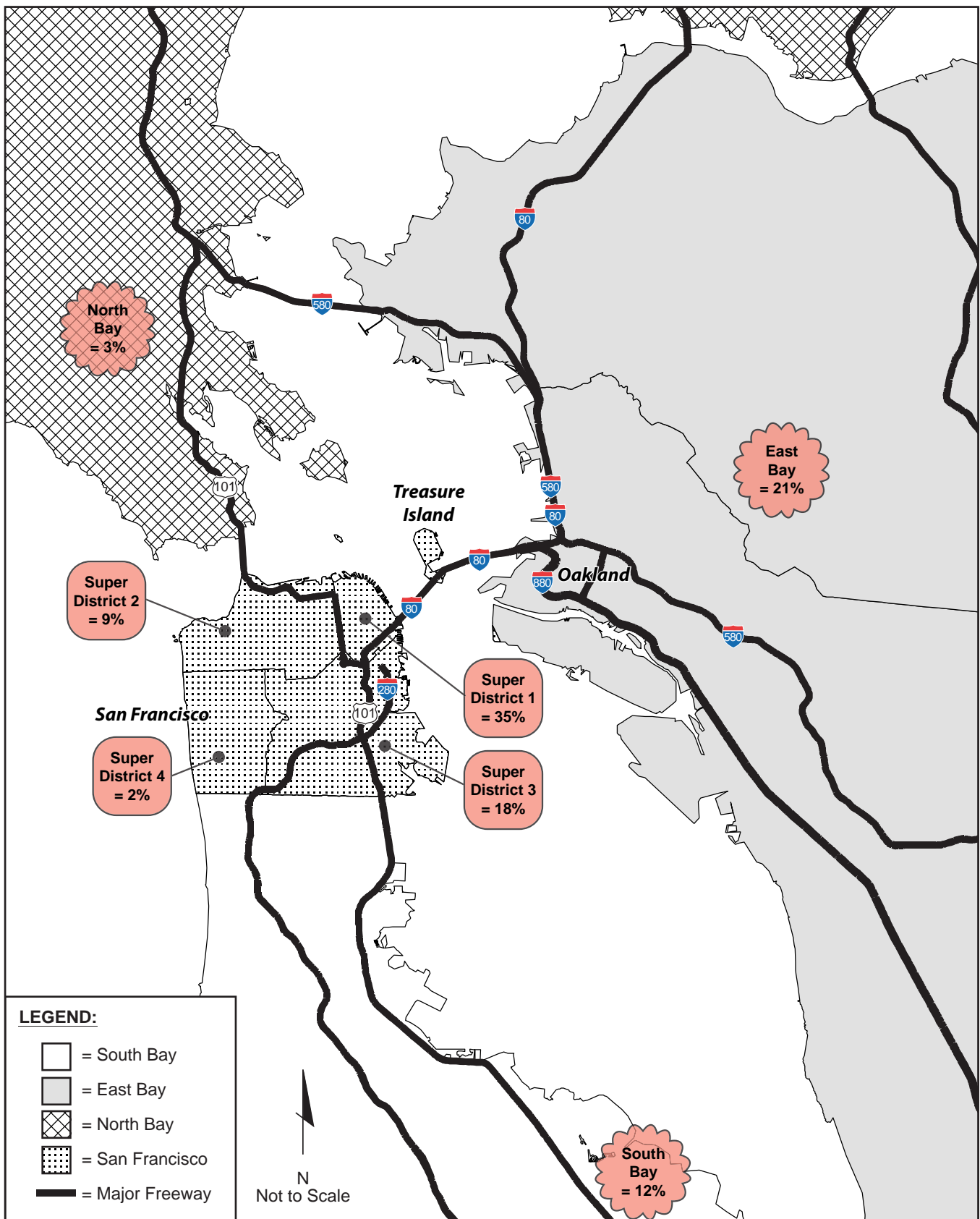
3.1.3 Trip Distribution (Proposed Project, Expanded Transit)

The next component of this analysis is an estimation of the geographic distribution of project-generated trips. The Proposed Project trip distribution was tested using three different travel demand forecasting models: the San Francisco Chained Activity Modeling Process (“CHAMP”) model, maintained by the SFCTA; the Alameda County Congestion Management Agency (“ACCMA”) model; and the Metropolitan Transportation Commission (“MTC”) 2035 Baycast model.

The SF CHAMP model, which has a concentration of detail within San Francisco, tends to predict a higher amount of traffic from the Islands would be destined for San Francisco than the ACCMA model. Similarly, the ACCMA model, which has a higher amount of detail in the East Bay, tends to predict a higher amount of project-generated traffic would have origins and destinations in the East Bay. Because having a higher amount of detail in a particular geographic region of a model can lead to over-prediction of traffic in that area, it is likely that the SF CHAMP and the ACCMA models each over-predict traffic within their specific focal regions.

Table 20, below, provides a summary of geographic distribution of external project trips, based on an average of the trip distributions predicted by the three models. The average trip distribution between the SF CHAMP, ACCMA, and MTC models corrects for over-prediction of trips to either San Francisco or the East Bay. The percentages shown are the aggregated trip distribution percentages for all trip types (work and non-work) and modes (transit and auto). **Figure 19** on page 76 illustrates this information. The percent of traffic distributed to each Superdistrict within San Francisco was based on the SF CHAMP model, since that model would more accurately distribute traffic within the City.

TABLE 20 – PROJECT TRIP DISTRIBUTION PATTERNS								
	Place of Trip Origin/Destination							
	San Francisco					East Bay	North Bay	South Bay
	Total	SD1	SD2	SD3	SD4			
Average Model Trip Distribution	64%	35%	9%	18%	2%	21%	3%	12%
Note: The geographic distribution shown in the table is for external project trips. Source: Fehr & Peers, SFCTA, ACCMA, and MTC, 2009								



Source: Fehr & Peers, 2009.

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EXTERNAL TRIP DISTRIBUTION

3.1.4 Vehicle Trip Assignment (Proposed Project, Expanded Transit)

The external vehicle trips generated by the project were assigned to the roadway system based on the directions of approach and departure discussed above. However, two additional factors are expected to affect the final peak hour mode share and resulting trip assignment – ramp metering and congestion pricing. As discussed earlier, a newly-created transportation management agency, TITMA, would administer a variable congestion fee to residents of the Islands for accessing the SFOBB. In addition, as part of the proposed Yerba Buena Island ramps improvement project, Caltrans would install operational ramp metering lights²³. Both ramp metering and congestion pricing on the Yerba Buena Island ramps would reduce the attractiveness of driving to and from the Islands. This section describes the methodology and assumptions used to forecast modal shifts associated with implementing congestion pricing and ramp metering on the Islands.

3.1.4.1 Congestion Pricing (Proposed Project, Expanded Transit)

The Project proposes to impart a variable congestion fee only on residents of the Islands. Visitor trips to the island would be exempt, but charges for visitor parking would serve as a possible further disincentive to travel to the Islands by private automobile. The congestion pricing analysis assumes that the fee would apply to residential vehicle trips to and from the Island during the weekday commute hours of 6:00 to 9:00 AM and from 4:00 to 7:00 PM. It further assumes that the fee would be the same in both directions of travel (i.e., entering and leaving the Island, and for eastbound and westbound travel on the SFOBB). It is possible that a similar or a different fee would be charged during off-peak hours; however, the analysis in this report focuses on the peak hours since those represent the periods with the highest traffic volumes, and therefore, the greatest potential for project-related traffic impacts.

The analysis further assumes that vehicles with three or more persons (HOV 3+) would not be charged the fee. This is similar to the way in which HOVs with three or more persons are currently treated at the Bay Bridge toll plaza and is consistent with the State legislation that authorizes the TITMA to impose and administer congestion pricing. Since all Islands residents would be requested to register their vehicles in order to secure a parking space, the TITMA would be able to identify which vehicles entering and exiting the bridge are associated with island residents. Although the exact enforcement mechanisms have not yet been determined, possible options include outfitting residents' vehicles with Radio Frequency Identification (RFID) devices or using photo license plate recognition systems.²⁴

It is critical to note that the congestion pricing scheme has been designed by the project sponsor to remain flexible with respect to time of day, amount charged, and directionality, among other factors, such that it can dynamically respond to changes in travel patterns over time. Similar facilities exist on corridors in San Diego (I-15) and Minneapolis (I-394), and around the entire downtown cordon in London. The effects on travel behavior of a \$3.00, \$5.00 and \$9.00 congestion charge (levied each way) were analyzed; however, the assumptions used in this analysis represent a likely initial operating scheme of a \$5.00 charge each way. For additional information on the sensitivity tests for the other fees, see **Appendix D3**.

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- 23. If the ramp reconstruction is not completed, this analysis assumes that some type of traffic signal metering control would be installed by TITMA to provide a similar metering effect limiting the number of vehicles that can leave the Islands and access the SFOBB.
 - 24. Such technologies are currently in use in other cities such as in Stockholm, Sweden, and have been found to be an effective means of collecting fees.

3.1.4.1.1 Travel Demand and Travel Cost

The trip distribution for Proposed Project trips was identified between the Islands and seven geographic zones, as shown in **Table 20** (page 75). For purposes of the congestion pricing analysis, the seven zones were subdivided into 19 smaller geographic zones and the Islands. These smaller zones generally coincide with zones developed for the regional travel demand forecasting model, the MTC Baycast model. The resulting person trips by auto between each of the 19 zones and the Islands were assigned to Single Occupant Vehicle (SOV), High-Occupancy Vehicle with 2 Occupants (HOV2), and High-Occupancy Vehicle with 3 or More Occupants (HOV3+) vehicle types based on the relative portion of person-trips via each “mode” projected by the SF CHAMP model. The result of this effort was trip tables for person-trips between the Islands and each of the 19 zones, broken down by work- and non-work trips, trips made by residents and non-residents of the Islands, and by mode, including transit modes and auto mode (SOV, HOV2, or HOV3+). These trip tables reflect conditions prior to implementation of congestion pricing or ramp metering.

Travelers’ mode choice is influenced by a number of factors, including travel times, convenience, out-of-pocket costs, comfort, and other characteristics. A person’s perception of these factors relative to various modal choices is different, depending on the specific origin and destination of the trip. In the context of this analysis, there are two primary types of costs: Direct Costs, or monetary costs, and Indirect Costs, which are other disincentives to travel by a particular mode.

Direct Costs – Each trip between the 19 zones and the Islands has direct costs associated with using one of the modes of travel. Bus riders and ferry riders pay a fare to use the service. The ferry fare between Treasure Island and San Francisco is expected to be \$3.50 per one-way trip. This fare is generally lower than existing nearby ferry routes, but the Treasure Island route is shorter and this level of fare was projected by the project sponsor to be adequate given other transit revenue sources such as congestion fees and parking revenues. The bus fares would vary by origin and destination (i.e., by transit provider). Transit fares between each of the 19 zones and Treasure Island were calculated using the 511.org website to identify the quickest transit route and the associated fares. Where new service would be provided by the project (new bus service to Civic Center and the East Bay and new ferry service to San Francisco), travel times were estimated based on auto travel times between the points (for buses) and engineering judgment. The point within each of the 19 zones used to determine transit travel times and fares was chosen to be generally near centrally located activity centers (e.g., commercial districts, etc.) within each zone. Transit fares were considered the only direct costs associated with transit.²⁵

Vehicle trips incur a wide range of costs, including gasoline and vehicle maintenance. Further, some trips pay parking costs and tolls for the Bay Bridge or the Golden Gate Bridge. Average parking costs by zone were obtained from the SF CHAMP model, and were included in this analysis only for auto trips between the Islands and San Francisco, Oakland, and Berkeley. Parking costs in other areas were considered negligible. The parking costs included in the analysis were split between the “origin trip” and the “destination trip.” For HOV trips, these costs were divided between the number of persons in the vehicle.

25. Because each of the households within Treasure Island would purchase a monthly prepaid transit voucher (approximately equal to the cost and function of an SF Muni monthly Fast Pass), the analysis estimated the portion of a resident’s monthly transit costs that would be covered by the prepaid voucher. Assuming an approximately \$50 subsidy, which was slightly above the cost of a Fast Pass when the analysis was conducted and assuming 2 transit riders per household, the monthly prepaid amount comes to approximately \$25/person. Given approximately 21 work days each month and assuming some weekend trips, the net prepaid amount per person would be approximately \$1/day. The transit costs for each origin-destination pair were reduced by \$1 to account for this. The actual benefit of the prepaid voucher to any individual person will depend on a number of variables, including the number of people per household, the distance of the trip, transit provider used, and others. However, the assumed average of \$1/day in prepaid transit costs for people that do use the island’s transit service is a reasonable approximation of the effect the \$50 monthly prepaid voucher per household would have on influencing traveler response to congestion pricing and ramp metering delays.

In general, the parking costs that were applied account for typical rates charged by parking operators, average duration of stay, and the percentage of drivers who pay for parking.

Based on empirical studies of drivers' perceptions of gasoline and vehicle maintenance costs, a travel cost of \$0.1943 per mile was used to account for vehicle maintenance costs²⁶ and a gasoline cost of \$3.20 per gallon. This cost was multiplied by the number of miles between the zones and the Islands. For example, the SOV travel cost between southern San Mateo County and the Islands averaged to 32.2 miles so the direct travel cost per person was estimated to be \$6.26 (32.2 x \$0.1943). For HOV 2, the cost per person-trip made by auto was split in half (\$3.13).

Indirect Costs – The primary indirect travel cost included in this analysis is travel time.²⁷ Door-to-door auto and transit travel times between each of the districts and the Islands were estimated for the AM and PM peak hours using the 511.org website. For example, the travel time from the Islands to San Francisco's Financial District is 22 minutes by auto, 37 minutes by bus and estimated at 30 minutes by ferry during the AM peak hour. Each of the modes has multiple components to travel time. Auto trips include the drive time, parking time and walk time. Bus trips include walk time, time waiting at the bus stop, time spent on the bus and sometimes time spent transferring bus routes. The ferry travel times include on-board time, walk time, and time waiting for the ferry.

To compare the effects of both direct (monetary) and indirect (non-monetary) travel costs on mode choice, the indirect costs (travel times) between each of the 19 zones and the Islands were converted into a dollar value using empirically-derived perceived values of time. The SF CHAMP model contains a full set of value of time matrices that provided the starting point for this analysis. A literature review of recent pricing studies²⁸ revealed that travelers value time differently depending upon the types of incentives and disincentives to travel and the modal options presented to them. For example, if the trip time is fixed, then the value of time is largely a function of household income and related variables.

Based on the SF CHAMP model and the literature review results, a value of time of \$30 per hour for work trips and \$20 per hour for non-work trips was derived. This means that non-work trips are more likely to change travel patterns due to congestion pricing because their travel time results in a lower cost and, therefore, the congestion price is a higher percentage of the total trip cost. These non-work vehicle trips are more likely to shift to HOV 3+, bus, or ferry than work vehicle trips.

The result of applying these values of time to the indirect costs of each mode was generalized travel costs (in terms of dollars) for each mode between each origin/destination and the Islands.

3.1.4.1.2 Elasticity

Another variable in congestion pricing analysis is elasticity. Price elasticity of demand is defined as the measure of responsiveness in the quantity demanded for a commodity as a result of change in price of the same commodity. In this case, the analysis involved calculating the percentage increase in travel cost for autos for an origin-destination pair when a congestion pricing fee is introduced. The increase in auto cost results in an estimated percent decrease in travel demand by auto. The Islands represent a unique scenario in that vehicle trips coming to or leaving the Islands during the AM and PM peak hours have no alternative routes. Therefore, any reduction in auto travel demand would translate into corresponding

26. American Automobile Association, *AAA Estimates of Operating and Ownership Costs*, 2008.

27. Although there are a number of other indirect travel costs that may influence travel behavior, such as relative comfort and convenience, they were assumed to be accounted for in the initial mode choice calculations, and were omitted from this analysis.

28. Sources included: MTC Model Documentation; *Bay Bridges Toll Sensitivity Analysis (Year 2005)*, MTC Memo from Chuck Purvis, March 26, 2002; *Travel Demand Models for the San Francisco Bay Area (Baycast 90)*, MTC, June 1997; and *Puget Sound Regional Council Regional Travel Demand Forecasting Model, Version 1.0a*, March 2008.

increases in demand for other modes. Thus, the decrease in auto person trips associated with the congestion fee was met with a corresponding increase to transit ridership. For simplicity and to provide a conservative peak hour analysis, it was assumed that trips would not shift between time periods in response to the fees.

Although data related to the specific effects of congestion pricing in the U.S. is limited, recent studies that have calculated the observed change in travel demand related to a percentage change in price (e.g., change in transit fare, parking cost, toll, etc) have indicated an elasticity value of -0.2 would be most appropriate for the analysis. For example, the total cost for an SOV trip to San Francisco could be equivalent to \$20.00 based on travel time, travel costs (gas, vehicle maintenance, etc.), and parking costs. A congestion price of \$5.00 would increase the total cost by 25%. This increase of 25% would be multiplied by the elasticity value of -0.2 for a 5% reduction in SOV demand.²⁹

The other methodology decision involved determining what components of cost to use as the base from which to pivot with the elasticity measures. In order to produce a complete picture of traveler costs, the base included out-of-pocket costs (e.g., vehicle operating cost, tolls, parking costs, and transit fares) and the value of time experienced by travelers. In many situations, the value of time exceeded the out-of-pocket costs, especially for longer trips. As the base cost increases, the percentage change in cost when adding the congestion price is lower; therefore, the change in modal shifts is lower. Initially, it could be speculated that the analysis overstates the base cost by including the value of time, since the elasticity values were largely derived from simple datasets involving changes in transit fares and changes in toll-road rates. If that were true, then the analysis would be understating the vehicle shift due to the congestion pricing.

In order to test this hypothesis, two situations were examined: (1) remove the value of time component from the base cost, and (2) remove value of time and vehicle operating cost from the base cost. As expected, when some cost components are removed from the base, the congestion pricing produces higher percentage reductions in vehicle trips. The largest effects of these changes in assumptions were felt for the origin-destination pairs that are furthest away from the Islands, because the value of time for those trips plays a larger role. However, the demand volumes for these zonal interchanges are very small, so the net effects on the Islands' trips are small. As a result, all traveler costs were retained as part of the analysis to ensure that the resulting vehicle trip estimates were reasonably conservative.

The reduction in auto travel demand was translated into corresponding increases in demand for other modes based on the initial percentage distribution for HOV 3+, bus and ferry person trips obtained from the travel demand model and BATS2000 survey data. It is possible that instead of shifting from peak hour auto trips to peak hour transit trips, travelers may shift from peak hour auto trips to off-peak auto trips (a phenomenon commonly known as peak period spreading). However, analyzing a scenario in which all trips remain in the peak hour and assuming that trips shift from auto to transit ensures a worst-case analysis of the transit system is conducted and that the transit system is robust enough to handle potential demands.

29. The elasticity approach used what is termed a 'shrinkage ratio' method. The shrinkage ratio compares the change in demand (i.e., vehicle trips) to a change in price (i.e., traveler cost). The study also examined the use of a 'log arc elasticity' method, which was used in several other empirical pricing studies, and found that the two elasticity measures produced similar results for the small origin-destination samples tested (a close-in San Francisco district, an Oakland district, and a farther-out San Mateo District). As such, the shrinkage ratio method was determined adequate for this analysis. Elasticity sources included: *Bay Bridges Toll Sensitivity Analysis (Year 2005)*, MTC Memo from Chuck Purvis, March 26, 2002; *TCRP Report 95, Traveler Response to Transportation System Changes*, TRB, Chapters 12-14, 2003-2004; *Bus Fare Elasticities Dargay and Hanly, Report to the Department of Environment, Transport, and the Regions*, United Kingdom, 2005; *Online TDM Encyclopedia, Transportation Elasticities*, Victoria Transportation Policy Institute, June 2, 2008; *BTE Transport Elasticities Database Online* (www.dynamic.dotrs.gov.au/bte/tedb/index.cfm).

3.1.4.1.3 Effects of Congestion Pricing

The methodology described above was applied to the initial vehicle trip generation estimates for the proposed development. While the TITMA will have the flexibility to adjust the congestion charge, this travel demand analysis assumes that the congestion fee would be \$5.00 for each residential SOV or HOV2 entering or leaving the SFOBB during AM and PM peak hours.

As shown in **Appendix D**, under the Expanded Transit Scenario, the Proposed Project is expected to generate 914 residential vehicle trips in the AM peak hour (including 196 trips inbound to the Islands and 718 outbound trips from the Islands) and 994 peak hour trips in the PM peak hour (including 635 inbound and 360 outbound trips). The 914 AM peak hour resident vehicle trips will comprise 56 percent of the total of 1,632 vehicle trips traveling to and from the Island during the AM peak hour. The 995 residential trips in the PM peak hour comprise 43 percent of the 2,326 total PM peak hour vehicle trips to and from the Island. **Table 21** shows the reduction in peak hour resident vehicle trips to and from the Islands with a \$5.00 congestion fee during the weekday AM and PM peak hours.

As shown, the effects of congestion pricing at reducing overall peak hour trip generation are fairly modest, and consistent with other studies of roadway pricing in the Bay Area. A five dollar weekday peak period congestion fee would be expected to result in a reduction of 40 vehicle trips during the AM peak hour and 37 vehicle trips during the PM peak hour. It should be noted that although this represents a reasonable starting point, the TITMA has the authority and may elect to change the price charged and/or alter the plan to charge all Island trips, not just residential trips. However, the assumptions used in this analysis are reasonable projections of initial operating conditions.

TABLE 21 – EFFECTS OF A \$5.00 CONGESTION FEE (EXPANDED TRANSIT SCENARIO) ON RESIDENTIAL VEHICLE TRIPS						
Peak Hour	Inbound Trips		Outbound Trips		Total	
	% Diff.	Vehicle Trip Reduction	% Diff.	Vehicle Trip Reduction	% Diff.	Vehicle Trip Reduction
AM Peak Hour	-5.1%	-10	-4.2%	-30	-4.4%	-40
PM Peak Hour	-3.7%	-23	-3.8%	-14	-3.7%	-37
Notes: <ul style="list-style-type: none"> Only Island residents traveling in SOV or HOV 2 subject to congestion pricing. A congestion fee was not assumed during the weekend. Source: Fehr & Peers, 2009						

3.1.4.2 Ramp Metering (Proposed Project, Expanded Transit)

As described in Chapter 1, Section 1.2.3, the SFCTA and Caltrans are currently preparing a Project Report and Environmental Document for the Yerba Buena Ramps Improvement Project that would replace the existing westbound on- and off-ramps located on the eastern side of Yerba Buena Island with new ramps that replicate the functional role of current ramps. All on-ramps, including the new westbound on-ramp, if approved and constructed, would provide ramp metering, which would restrict the volume of traffic that could enter the westbound SFOBB from the Islands.

Introduction of ramp metering may affect the Islands' travel demand because it would increase the travel time (and effective cost) for vehicles leaving the Islands. While it is anticipated that only the residents of the Islands would pay the congestion fee, all SOV and HOV 2 trips would be required to wait for a ramp meter to enter the Bay Bridge during peak travel times. This analysis assumes HOV 3+ trips would be able to bypass the ramp meters, at least for the reconstructed westbound on-ramp.

3.1.4.2.1 Ramp Metering Analysis Methodology

Typically, ramp metering rates in the Bay Area range up to 900 vehicles per hour per lane. This analysis assumes a ramp metering rate of 550 vehicles per hour, based on initial discussions between Caltrans staff, the SFCTA, and the team of consultants working on the analysis and design of the ramps as part of a separate project. Although Caltrans retains the authority to modify ramp metering rates as appropriate, this is a reasonable forecast of a likely operating scenario. A microsimulation model was developed, using the VISSIM software, to estimate the average delay for vehicles entering the eastbound and westbound on-ramps, based on the forecasted travel demand and a ramp metering rate of 550 vehicles per hour. The VISSIM analysis indicated an average delay of less than four minutes per vehicle entering the SFOBB from the Islands in the AM and PM peak hours.

To calculate whether there would be a noticeable change in travel mode associated with meter delay, the same methodology was used as the congestion pricing analysis to forecast shifts from SOV and HOV 2 trips to HOV 3+, bus and ferry. The ramp meter delay was converted to a cost using the same value of time principles previously described. The value of time for a work trip used was \$30.00 per hour and the value of time for non-work trips was \$20.00 per hour, and the same elasticity value of -0.2 was used to calculate the shift from SOV and HOV 2 trips to alternative modes.

A decrease in trips leaving the Islands would also mean a decrease in trips returning to the Islands. For example, during the AM peak hour, if an SOV trip changes to a bus trip due to the ramp meter delay, when that person returns to the Island in the PM peak hour it would still be via bus and would result in one less vehicle trip inbound to the island, even though inbound traffic is not subject to the ramp metering. To estimate this effect, the “cost” of the ramp meter delay was divided between the trips leaving the Islands and the trips returning to the Islands. For work trips, 60 percent of the delay cost was assigned to the outbound trips and 40 percent to the return trips in the opposite peak hour. Non-work trips are generally of shorter duration and only a few trips would occur during both of the peak hours. Therefore, 90 percent of the delay cost was assigned to the outbound (metered) trip and only 10 percent to the return trip in the opposite peak hour. Using these conservative assumptions, the decrease in vehicle trips traveling to and from the Islands was calculated for AM and PM peak hours.

3.1.4.2.2 Effect of Ramp Metering

Using similar methods to the congestion pricing analysis, the effects of delay caused by ramp meters was evaluated. The analysis showed that under the Expanded Transit Scenario, queues associated with ramp metering would be relatively small. The added delay associated with the ramp metering queues was small in comparison with total trip travel times. Specifically, the implementation of ramp metering would result in a less than 0.5 percent reduction in vehicle trips predicted in the AM and PM peak hours. This small change is considered negligible and therefore, the analysis does not account for any mode shift associated with ramp metering. The detailed calculations are included in **Appendix D3**. A detailed description of the congestion pricing and ramp metering analysis was provided in a letter to the City of San Francisco Planning Department, dated April 28, 2009, and is included as **Appendix D3**³⁰.

30. The letter attached in Appendix N contains the ramp metering analysis that was conducted for the original project proposal, which is now referred to as the Reduced Development Alternative. Although the project description that was analyzed in the letter has changed slightly, the methodology to determine the effects of ramp metering and congestion pricing on trip making patterns to and from the Islands has been applied to the revised project descriptions for both the Proposed Project and the Reduced Development Alternative.

3.1.5 Net Trip Generation³¹ (Proposed Project, Expanded Transit)

The Proposed Project would remove some existing uses on the Islands; therefore, the trips associated with these uses were subtracted from the Proposed Project trips to determine the net-new trips traveling to and from the Islands. **Table 22** summarizes the net increase in person trips by mode generated by the Proposed Project, accounting for some existing uses to be removed, (including 905 housing units and the majority of 2.5 million square feet of existing buildings on Treasure Island and 105 housing units and 10 non-residential structures on Yerba Buena Island). **Table 23** summarizes the net-new vehicle trip generation by inbound and outbound trips and accounts for congestion pricing effects.

TABLE 22 – PROPOSED PROJECT PERSON-TRIP GENERATION BY MODE (EXPANDED TRANSIT SCENARIO)					
Peak hour	Person-Trip Generation ¹				Vehicle-Trips ²
	External			Internal	
	Ferry	Bus	Auto	Other ³	
AM Peak Hour					
Proposed Project	930	1,181	3,265	3,296	1,632
Less Existing Uses to be Removed ⁴	0	-142	-582	0	-364
Less Congestion Pricing Reduction	+28	+36	-64	0	-40
Net New Trips	<u>958 (21%)⁵</u>	<u>1,075 (23%)⁵</u>	<u>2,619 (56%)⁵</u>	<u>3,296</u>	<u>1,228</u>
PM Peak Hour					
Proposed Project	1,210	1,625	4,724	4,850	2,326
Less Existing Uses to be Removed ⁴	0	-92	-490	0	-306
Less Congestion Pricing Reduction	+25	+34	-59	0	-37
Net New Trips	<u>1,235 (18%)⁵</u>	<u>1,567 (22%)⁵</u>	<u>4,175 (60%)⁵</u>	<u>4,850</u>	<u>1,983</u>
Saturday Peak Hour					
Proposed Project	718	1,179	5,523	5,743	2,737
Less Existing Uses to be Removed ⁴	0	-101	-480	0	-300
Less Congestion Pricing Reduction	0	0	0	0	0
Net New Trips	<u>718 (10%)⁵</u>	<u>1,078 (16%)⁵</u>	<u>5,043 (74%)⁵</u>	<u>5,743</u>	<u>2,437</u>
Notes:					
1. This analysis assumes no external pedestrian or bicycle trips onto or off of the Islands. Although, with construction of the new eastern span bicycle/pedestrian path, it is possible that some bicycle trips may occur. However, this number is expected to be very minor and not likely to affect the overall conclusions of this study. Further, the potential new bicycle facility on the western span is still in the conceptual discussion phases, and is not assumed to be in place in this analysis.					
2. Vehicle-trips include passenger vehicles and vans.					
3. Includes internal bicycle and pedestrian trips, and a likely, relatively small number of internal auto trips (e.g., between Yerba Buena Island and Treasure Island).					
4. Based on counts of peak hour vehicle traffic on the Islands (included in Appendix B) and assumes that the existing trip generation of the Job Corps center would remain the same.					
5. Percentages shown are of total external trips.					
Source: Fehr & Peers 2009					

31. The information in this section accounts for reduction in trips due to removal of some of the existing uses as well as implementation of a \$5 congestion fee.

TABLE 23 – PROPOSED PROJECT NET NEW VEHICLE TRIP GENERATION (EXPANDED TRANSIT SCENARIO)

Use	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Project Vehicle Trip Generation ¹	650	982	1,632	1,361	965	2,326	1,450	1,286	2,737
Congestion Pricing Reduction ²	-10	-30	-40	-23	-14	-37	0	0	0
Existing Uses to be Removed ³	-144	-220	-364	-151	-155	-306	-148	-152	-300
Net New Vehicle Trips	496	732	1,228	1,187	796	1,983	1,302	1,134	2,437

Notes:

1. Based on vehicle trip generation summarized in Table 22, less shifts in traffic associated with congestion pricing, as summarized in Table 21.
2. Assuming a \$5.00 weekday peak hour congestion pricing fee, as summarized in Table 21.
3. Based on counts of peak hour vehicle traffic on the Islands (included in Appendix B) and assumes that the existing trip generation of the Job Corps center would remain the same.

Source: Fehr & Peers, 2009

3.1.6 Parking Demand (Proposed Project, Expanded Transit)

The method used for estimating parking demand for projects in San Francisco is based on person-trip generation rates and mode split data described in the *SF Guidelines*. However, as with the trip generation forecasts, the methods described in the *SF Guidelines* cannot be directly applied at the Islands because of its unique location and the unique TDM measures proposed by the project. In particular, the development is being planned in such a way that intends to minimize the number of vehicle trips as well as maximize the number of trips made to and from the island on transit. As was presented in previous sections, the design, density, and mix of uses proposed would reduce vehicle traffic generation by approximately 40 percent, and transit use would be over 35 percent during the weekday peak hours. In addition, the project proposes that parking for many of the uses that do not experience peak demands simultaneously could be shared, so that the number of parking spaces on the Islands is not over-supplied.

Since all of the land uses do not experience their peak parking demands simultaneously, it is not necessary to provide a parking supply equivalent to the sum of the individual peak demands for each use to accommodate the combined peak demand. The combined peak demand is developed with a shared parking analysis.

The first step to developing parking demand estimates was to determine the peak parking demand for each land use. Peak parking demands for each use were developed by applying the parking demand methodology contained within Appendix H of the *SF Guidelines*. The methodology in the *SF Guidelines* can be applied to commercial and residential projects throughout the City, and is based on the project's total work and non-work auto-based person trips for both long-term and short-term parking.

The peak parking demand for each land use within each of the neighborhoods depicted on **Figure 2** (page 6) was calculated based on the *SF Guidelines* methodology. For non-residential uses although the *SF Guidelines* provide generalized employment densities for different land uses (for use in calculating long-term employee parking for commercial uses), Economic & Planning Systems, Inc. has developed employment forecasts specific to the uses in the Proposed Project. Therefore, these project-specific estimates of employment density were used in the parking analysis.

Appendix J presents the estimated breakdown of project land uses by neighborhood, the peak parking demand for each land use type within each neighborhood, and the detailed calculation of the parking demand using *SF Guidelines* methodology.

Once the peak parking demands for each use are understood, the effects of shared parking can be evaluated. Shared parking analyses estimate the parking required to accommodate a mix of land uses. *Shared Parking*, published by the Urban Land Institute (“ULI”), provides the industry standard method of estimating the supply-reducing effects of shared parking. It provides the temporal distribution of parking demands (as a percentage of their peak demand) for various land uses for each hour of a typical day. The hourly parking demands for each land use were estimated by multiplying by the corresponding percentages listed in the ULI *Shared Parking* manual to the peak demand forecasts. The hourly demands of each use are summed together and the highest overall parking demand are identified as the combined peak demand.

Table 24 presents the peak parking demand for each neighborhood on the Islands based on the results of the shared parking analysis described above. The peak demands for residential parking are presented separately since those spaces will not be shared by other uses. The non-residential parking would be shared. Each neighborhood would experience its peak hour of parking demand at a different time. **Table 24** also presents the peak parking demand for Treasure Island as a whole and for both Islands combined.

Note that since each neighborhood experiences its peak parking demand at a separate time, the peak parking demand for Treasure Island as a whole and for both Islands combined is not equal to the sum of the peak parking demands for each component neighborhood. For example, the Cityside neighborhood may experience its peak overnight when residential parking is nearly fully-occupied. The Island Core neighborhood may experience its peak in early evening when the retail activity is highest. The total peak parking demand for the two neighborhoods combined is not equal to the sum of the two peaks, since they occur at different times. When the Cityside neighborhood is at its peak, the Island Core neighborhood may have a parking surplus. This is the same general concept behind shared parking, however applied at a larger scale. Generally, though, it is preferable to examine parking demands on a neighborhood scale, rather than a larger scale such as all of Treasure Island or for both Islands combined, in order to better capture the localized effects of parking demand. Information related to Treasure Island as a whole is provided for informational purposes only.

TABLE 24 – SHARED PARKING ANALYSIS (EXPANDED TRANSIT SCENARIO)			
District	Peak Residential Parking Demand⁴	Peak Non-Residential Shared Parking Demand	Total Peak Parking Demand¹
Cityside	4,134	80	4,214
Eastside	2,032	42	2,074
Island Core	3,727	1,376	5,113
Open Space	0	346	346
Total Treasure Island²	9,893	1,844	11,747
Yerba Buena Island	259	55	314
Total Proposed Project³	10,152	2,428	12,061
Notes: 1. Shared parking analysis based on peak parking demands calculated using <i>SF Guidelines</i> Parking Demand methodology and ULI <i>Shared Parking</i> methodology for temporal distribution of parking demand by land uses. 2. Excludes Yerba Buena Island. Peak demand for all of Treasure Island is not the same as the total peak parking demand for each neighborhood because the neighborhoods experience their peak demands at different times of the day. 3. Excludes parking demand associated with the Job Corps and Coast Guard. 4. The peak residential parking demand is presented separately because those spaces would not be shared by other uses. Source: Fehr & Peers, 2010			

3.1.7 Loading Demand (Proposed Project, Expanded Transit)

The *SF Guidelines* methodology for estimating commercial vehicle and freight loading/loading demand was used to calculate the demand associated with each analysis scenario. Daily truck trips generated per 1,000 square feet were calculated based on the rates contained in the *SF Guidelines*, then converted to hourly demand based on a 9-hour day and a 25-minute average stay. Average hourly demand was converted to a peak hour demand by applying a peaking factor, as specified in the *SF Guidelines*. **Table 25** presents the number of trucks that would be generated by the project land uses on a daily basis, and the demand for loading dock spaces during the peak hour of loading activities. The loading demand calculations are also presented in **Appendix K**.

TABLE 25 – PROJECT-GENERATED LOADING DEMAND				
Land Use	Size	Daily Loading Demand Rates ⁵	Daily Truck Generation	Peak Hour Loading Dock Space Demand ⁶
Office	130,000 square feet ¹	0.21	27	2
Retail	320,000 square feet ²	0.22	70	5
Restaurant	37,000 square feet	3.60	133	8
Hotel	450,000 square feet (500 rooms)	0.09	41	2
Institutional	138,500 square feet ³	0.10	14	1
Manufacturing	22,000 square feet ⁴	0.51	11	1
Residential	9,577,150 square feet (8,000 dwelling units)	0.03	287	17
Total			583 Trucks	36 Spaces
Notes: 1. Includes 100,000 square feet of new office plus 30,000 square feet of community uses/offices planned in adaptive reuse of Building 1. 2. Includes all non-restaurant retail (170,000 square feet) and 150,000 square feet of entertainment uses proposed for adaptive reuse of Building 3 3. Includes 13,500 square feet of community facilities, 35,000 square feet for Pier 1 Community Center, 15,000 square foot sailing center, and 75,000 square foot museum. Similar to parking analysis, loading demand for elementary school and police/fire facility will be provided separately within their facilities. Neither demand nor supply for elementary school and police/fire facility is included in this analysis. 4. Includes 22,000 square feet of food production space proposed in adaptive reuse of Building 2. 5. Per thousand square feet. 6. Typical peak hour of truck loading space demand occurs between 10 AM to 1 PM. Peak hour generation assumes deliveries occur between 8 AM and 5 PM, average park time of 25 minutes per vehicle, and that the peak hour deliveries occur at a 25 percent higher rate than other hours. Source: <i>SF Guidelines</i> , 2002 and Fehr & Peers 2009.				

3.2 PROPOSED PROJECT WITH BASE TRANSIT

The previous section set forth analysis methodologies and presented the results of the Proposed Project with the Expanded Transit Scenario. This section analyzes the Proposed Project with only those elements of transit service for which full funding has been identified and assumes that none of the unfunded transit improvements are implemented. The Proposed Project only includes the funded elements of the transit service; therefore, it is also referred to as the “Base Transit Scenario.” The Base Transit Scenario would include the following service:

- Ferry service every 50 minutes (corresponding to a single ferry operating at one of the existing docks in San Francisco);
- Bus service to the Downtown Oakland would be the same as in the Expanded Transit Scenario, with service every 10 minutes;
- Muni Route 108-Treasure Island would operate at its current 15-minute headway, but would no longer circulate around most of Treasure Island. Instead, it would circulate only along the two-block loop described in Chapter 1;
- No new transit route between the Islands and San Francisco Civic Center would be provided; and
- On-island fleet shuttle service would be the same as under the Expanded Transit Scenario, with timed transfers at the Transit Hub.

3.2.1 Trip Generation (Proposed Project, Base Transit)

The number of person-trips expected to be generated by the Proposed Project is assumed to be the same, regardless of the level of transit service provided. The trip generation methodology can be found earlier in this chapter on pages 62 to 70. As shown in **Table 18** on page 72, the Proposed Project is expected to generate 5,375 net external trips during the weekday AM peak hour, 7,423 net external trips during the weekday PM peak hour, and 7,562 net external trips during the Saturday peak hour.

3.2.2 Mode Split/Transit Usage (Proposed Project, Base Transit)

Although the person-trip generation remains constant, the percentage of those person-trips that occur by transit is likely to be lower under conditions with lower transit service. As described on page 70, under the Expanded Transit Scenario, the Proposed Project would have a total peak transit capacity of 4,241 passengers per hour in the AM peak hour and 4,563 passengers per hour in the PM peak hour. The transit service that is fully funded would have a capacity of 1,415 passengers per hour during the AM and PM peak periods and a capacity of 1,352 passengers during the Saturday peak period, a reduction from the Enhanced Scenario of 67 percent in the AM peak hour; 69 percent in the PM peak hour, and 70 percent in the Saturday peak hour.

Specifically, the Base Transit Scenario would reduce one-way ferry capacity by 70 percent, from 2,796 to 839 passengers per hour in both the AM and PM peak hours. Bus capacity would be reduced by 60 percent in the AM peak hour, from 1,445 to 576 passengers per hour for a total AM peak hour transit capacity of 1,415 passengers per hour. In the PM peak hour, bus capacity would be reduced by 67 percent, from 1,767 to 576 passengers per hour, for a total PM peak hour transit capacity of 1,415 passengers per hour.

Recent studies summarized by the Victoria Transport Policy Institute (VTPI) have shown a range of transit ridership elasticities with respect to service level of between 0.5 and 0.7.³² Using the 0.5 elasticity, a 70 percent reduction in the supply of ferry transit and a 60 percent reduction in the supply of bus transit provided to the Islands in the AM peak hour is expected to yield 35 and 30 percent reductions to ferry and bus ridership, respectively. Therefore, for the Base Transit Scenario, the ferry ridership is reduced by 35 percent and the bus ridership is reduced by 30 percent compared to the AM peak hour ridership projections for the Expanded Transit Scenario. Similarly, in the PM peak hour, a 70 percent reduction in the supply of ferry transit and a 67 percent reduction in the supply of bus transit provided to the Islands is expected to yield a 35 percent reduction to ferry ridership and a 34 percent reduction in bus ridership compared to the PM peak hour ridership projections for the Expanded Transit Scenario. During peak hours, the reduction in transit ridership associated with the Base Transit scenario is assumed to switch to automobile mode.

3.2.3 Trip Distribution (Proposed Project, Base Transit)

The geographic distribution of project-generated trips would be the same under the Base Transit Scenario as under the Expanded Transit Scenario. The trip distribution for both scenarios is described in **Table 20** on page 75 and illustrated on **Figure 19** (page 76).

3.2.4 Vehicle Trip Assignment (Proposed Project, Base Transit)

Similar to the Expanded Transit Scenario, the external vehicle trips generated by the project were assigned to the roadway system based on the directions of approach and departure discussed in the Trip Distribution section. The analysis of traffic impacts for the Base Transit Scenario also examined conditions with and without the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island.

The initial forecast of vehicle trip assignment does not include the effects of congestion pricing or ramp metering. Those effects are discussed in the next section.

3.2.4.1 Congestion Pricing (Proposed Project, Base Transit)

The methodology used to assess the effects of congestion pricing was described earlier in this chapter, section 3.1.4 on page 73. This methodology was applied to the initial vehicle traffic generation estimates for the Base Transit Scenario. While the TITMA will have the flexibility to adjust the congestion charge, similar to the Expanded Transit scenario, the analysis of the Base Transit Scenario assumes the same \$5.00 congestion fee would be applied to each residential vehicle entering or leaving the SFOBB during AM and PM peak hours. The resulting percentage shifts were nearly identical to those identified in **Table 21** for the Expanded Transit Scenario. Specifically, under the Base Transit Scenario, implementation of congestion pricing in the manner described earlier would result in a reduction of just over four percent of AM peak hour vehicle trips and just fewer than four percent for PM peak hour vehicle trips.

3.2.4.2 Ramp Metering (Proposed Project, Base Transit)

Similar to the Expanded Transit Scenario, the effects of ramp metering at reducing peak hour automobile traffic generation were determined to be negligible for the Base Transit Scenario.

32. <http://www.vtpi.org/tranelas.pdf>

3.2.5 Travel Demand Summary (Proposed Project, Base Transit)

Table 26, below, summarizes the resulting person-trip generation for the Proposed Project under the Base Transit Scenario by mode. **Table 27** summarizes the vehicular traffic generation of the Proposed Project under the Base Transit Scenario, accounting for some existing uses to be removed.

TABLE 26 – PROPOSED PROJECT PERSON-TRIP GENERATION BY MODE (BASE TRANSIT SCENARIO)					
Peak Hour	Person-Trip Generation ¹				Vehicle-Trips ²
	External			Internal	
	Ferry	Bus	Auto	Other ³	
AM Peak Hour					
Proposed Project	605	721	4,051	3,296	2,026
Less Existing Uses to be Removed ⁴	0	-142	-582	0	-364
Less Congestion Pricing Reduction	+34	+44	-78	0	-49
<u>Net New Trips</u>	<u>641 (14%)⁵</u>	<u>621 (13%)⁵</u>	<u>3,391 (73%)⁵</u>	<u>3,296</u>	<u>1,613</u>
PM Peak Hour					
Proposed Project	787	952	5,683	4,850	2,811
Less Existing Uses to be Removed ⁴	0	-92	-490	0	-306
Less Congestion Pricing Reduction	+30	+39	-69	0	-43
<u>Net New Trips</u>	<u>817 (12%)⁵</u>	<u>898 (13%)⁵</u>	<u>5,124 (75%)⁵</u>	<u>4,850</u>	<u>2,462</u>
Saturday Peak Hour					
Proposed Project	473	696	6,393	5,743	3,161
Less Existing Uses to be Removed ⁴	0	-101	-480	0	-300
Less Congestion Pricing Reduction	0	0	0	0	0
<u>Net New Trips</u>	<u>473 (7%)⁵</u>	<u>595 (9%)⁵</u>	<u>5,913 (84%)⁵</u>	<u>5,743</u>	<u>2,861</u>
Notes:					
1. This analysis assumes no external pedestrian or bicycle trips onto or off of the Islands. Although, with construction of the new eastern span bicycle/pedestrian path, it is possible that some bicycle trips may occur. However, this number is expected to be very minor and not likely to affect the overall conclusions of this study. Further, the potential new bicycle facility on the western span is still in the conceptual discussion phases, and is not assumed to be in place in this analysis.					
2. Vehicle-trips include passenger vehicles and vans.					
3. Includes internal bicycle and pedestrian trips, and a likely, relatively small number of internal auto trips (e.g., between Yerba Buena Island and Treasure Island).					
4. Based on counts of peak hour vehicle traffic on the Islands (included in Appendix B) and assumes that the existing trip generation of the Job Corps center would remain the same.					
5. Percentages shown are of total external trips.					
Source: Fehr & Peers 2009					

TABLE 27 – PROPOSED PROJECT NET NEW VEHICLE TRIP GENERATION (BASE TRANSIT SCENARIO)

Use	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Project Vehicle Trip Generation ¹	801	1,225	2,026	1,648	1,163	2,811	1,668	1,493	3,161
Congestion Pricing Reduction ²	-12	-37	-49	-30	-17	-47	0	0	0
Existing Uses to be Removed ³	-144	-220	-364	-151	-155	-306	-148	-152	-300
Net New Vehicle Trips	645	968	1,613	1,467	991	2,458	1,520	1,341	2,861

Notes:

1. Based on vehicle trip generation summarized in **Table 26**, less shifts in traffic associated with congestion pricing. Trips shifted as a result of congestion pricing were estimated using on the percentages presented in **Table 21**.
2. Assuming a \$5.00 weekday peak hour congestion pricing fee.
3. Based on counts of peak hour vehicle traffic on the Islands (included in **Appendix B**) and assumes that the existing trip generation of the Job Corps center would remain the same.

Source: Fehr & Peers, 2009

3.2.6 Parking Demand (Proposed Project, Base Transit)

The parking demand methodology described in Section 3.1.6 on page 84 was applied to the Proposed Project under the Base Transit Scenario. See **Appendix J** for the full calculation of the parking demand using *SF Guidelines* and the ULI *Shared Parking* methodology. A peak parking hour was determined for each neighborhood, for all of Treasure Island, and for the two islands together. The results of this analysis are summarized in **Table 28**. Generally, parking demands for each neighborhood would be similar to the Expanded Transit Scenario, except for the Island Core neighborhood, which would have a peak demand approximately 200 spaces higher with the Base Transit Scenario, compared to the Expanded Transit Scenario.

TABLE 28 – SHARED PARKING ANALYSIS (BASE TRANSIT SCENARIO)

District	Peak Residential Parking Demand	Peak Shared Non-Residential Parking Demand	Total Peak Parking Demand ¹
Cityside	4,134	92	4,226
Eastside	2,032	48	2,080
Island Core	3,737	1,546	5,283
Open Space	0	395	395
Total Treasure Island²	9,903	2,081	11,984
Yerba Buena Island	259	57	316
Total Proposed Project³	10,162	2,138	12,300

Notes:

1. Shared parking analysis based on peak parking demands calculated using *SF Guidelines* Parking Demand methodology and ULI *Shared Parking* methodology for temporal distribution of parking demand by land uses.
2. Excludes Yerba Buena Island. Peak demand for all of Treasure Island is not the same as the total peak parking demand for each neighborhood because the neighborhoods experience their peak demands at different times of the day.
3. Excludes parking demand associated with the Job Corps and Coast Guard.

Source: Fehr & Peers, 2010

3.2.7 Loading Demand (Proposed Project, Base Transit)

Since loading requirements are independent of the amount of transit service provided, the loading requirements for the Proposed Project are identical under the Base Transit Scenario and the Expanded Transit Scenario, as shown in **Table 25** on page 86.

3.3 REDUCED DEVELOPMENT ALTERNATIVE WITH EXPANDED TRANSIT

The remainder of this chapter describes the travel demand forecasts associated with a Reduced Development Alternative, which includes 6,000 dwelling units and does not include 100,000 square feet of new office included in the Proposed Project. This section describes the travel demand of the Reduced Development Alternative assuming the Expanded Transit Scenario.

3.3.1 Trip Generation (Reduced Development Alternative, Expanded Transit)

The person-trip generation, by mode for the Reduced Development Alternative was calculated using the same methodology described earlier for the Proposed Project. The percent reduction to external trip generation is the same under the Reduced Development Alternative as under the Proposed Project, specifically:

- 38% of weekday AM peak hour trips
- 41% of weekday PM peak hour trips
- 45% of Saturday peak hour trips

There is one primary difference between the analysis of the Reduced Development Alternative and that of the Proposed Project. Although the amount of retail space proposed under the two alternatives is the same, the portion of retail that is forecasted to be “neighborhood-serving” (e.g., coffee shops, banks, hardware stores, dry cleaners, etc.) under the Reduced Development Alternative is less than under the Proposed Project. This is because, under the Reduced Development Alternative, there would be fewer residents to support neighborhood-serving retail, and as a result, the programmed space would be occupied by more regional-serving retail. As noted in Section 3.1.1.2 on page 63, the regional-serving retail was assigned a higher person-trip generation rate than the neighborhood-serving retail. As a result of having a higher portion of regional-serving retail, the retail trip generation would be higher under the Reduced Development Alternative than under the Proposed Project even though the total amount of retail would be identical.

Table 29 presents the resulting net-new person-trips associated with the Reduced Development Alternative.

TABLE 29 – NET PERSON-TRIP GENERATION BY LAND USE (REDUCED DEVELOPMENT ALTERNATIVE)

Land Use	Size	Person-Trip Generation		
		AM Peak Hour	PM Peak Hour	Saturday Peak Hour
Residential	6,000 d.u.	3,750	4,443	4,309
Hotel (TI)	450 Rooms	890	427	523
Hotel (Yerba Buena Island)	50 Rooms	27	35	101
Retail	207,000 square feet	1,062	3,219	3,477
Open Space (Athletic Fields)	40 acres	0	688	1,376
Open Space (Other)	260 acres	115	222	933
Marina	400 slips ¹	38	88	126
Flex	202,000 square feet ²	142	795	768
Police/Fire	30,000 square feet	285	61	61
School	105,000 square feet	789	528	0
Community Center	48,500 square feet	126	130	101
Cultural Park/Museum	75,000 square feet	0	302	260
<i>Subtotal</i>		<i>7,226</i>	<i>10,938</i>	<i>12,035</i>
<i>Internal/Linked Trip Reduction</i>		<i>2,745 (38%)</i>	<i>4,240 (39%)³</i>	<i>5,164 (43%)³</i>
Total Net External Person-Trip Generation		4,481	6,698	6,871

Notes:

1. The marina use has already been approved and is not part of the Proposed Project (although the construction of landside services associated with the Marina are included in the Proposed Project). The trip generation associated with the Marina is presented for informational purposes because it will be used to assess cumulative conditions.
2. Includes the non-retail portion of the adaptive reuse: 22 ksf food production/industrial/manufacturing, 150 ksf entertainment, and 30 ksf community/office uses.
3. Although a 41% reduction was taken for most of the project in the PM peak hour, the cultural park was removed from the calculation, and only a 10% reduction for internal trips was assumed for that use. The result is an effective 39% reduction. Similarly, for the Saturday peak hour, including the cultural center/museum resulted in an effective 43% reduction.

Source: Fehr & Peers, 2009

3.3.2 Mode Split/Transit Usage (Reduced Development Alternative, Expanded Transit)

The portion of project-generated person-trips that would take transit under the Reduced Development Alternative with Expanded Transit was calculated using the same assumptions as described on page 62 to 70 for the Proposed Project with Expanded Transit. Specifically, the analysis forecasts that during weekday peak hours with the Expanded Transit Service, 34 percent of work trips and 17 percent of all non-work trips would occur by transit. Of the work-trips made by transit, approximately 50 percent would be made by ferry and 50 percent would be made by bus. Non-work trips are more likely to be made by bus, with 65 percent of trips occurring by bus and 35 percent by ferry. Transit mode share is lower on Saturday peak hours.

3.3.3 Trip Distribution (Reduced Development Alternative, Expanded Transit)

The geographic distribution of project-generated trips would be the same under the Reduced Development Alternative as for the Proposed Project. The trip distribution for all scenarios is described in **Table 20** on page 75 and illustrated on **Figure 19** (page 76).

3.3.4 Vehicle Trip Assignment (Reduced Development Alternative, Expanded Transit)

Similar to the Proposed Project, the external vehicle trips generated by the Reduced Development Alternative were assigned to the roadway system based on the directions of approach and departure discussed in the Trip Distribution section. The analysis of traffic impacts for the Reduced Development Alternative also examined conditions with and without the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island.

The initial forecast of vehicle trip assignment does not include the effects of congestion pricing or ramp metering. Those effects are discussed in the next section.

3.3.4.1 Congestion Pricing (Reduced Development Alternative, Expanded Transit)

The methodology used to assess the effects of congestion pricing at reducing peak hour automobile trip generation was described earlier in this chapter, Section 3.1.4 on page 77. This methodology was applied to the initial vehicle traffic generation estimates for the Base Transit Scenario. While the TITMA will have the flexibility to adjust the congestion charge, similar to the Expanded Transit scenario, the analysis of the Base Transit Scenario assumes the same \$5.00 congestion fee would be applied to each residential vehicle entering or leaving the SFOBB during AM and PM peak hours. The resulting percentage shifts were nearly identical to those identified in **Table 21** for the Proposed Project with the Expanded Transit Scenario. Specifically, under the Expanded Transit Scenario, implementation of congestion pricing in the manner described earlier would result in a reduction of just over four percent of AM peak hour vehicle trips and just under four percent for PM peak hour vehicle trips.

3.3.4.2 Ramp Metering (Reduced Development Alternative, Expanded Transit)

Similar to the Proposed Project, the effects of ramp metering at reducing peak hour automobile traffic generation were determined to be negligible for the Reduced Development Alternative with Expanded Transit.

3.3.5 Travel Demand Summary (Reduced Development Alternative, Expanded Transit)

Table 30, below, summarizes the resulting person-trip generation for the Reduced Development Alternative under the Expanded Transit Scenario. **Table 31** summarizes the vehicle traffic generation of the Reduced Development Alternative under the Expanded Transit Scenario, accounting for the existing uses to be removed.

**TABLE 30 – PERSON-TRIP GENERATION BY MODE
 (REDUCED DEVELOPMENT ALTERNATIVE, EXPANDED TRANSIT SCENARIO)**

Peak Hour	Person-Trip Generation ¹				Vehicle-Trips ²
	External			Internal	
	Ferry	Bus	Auto	Other ³	
AM Peak Hour					
Proposed Project	761	977	2,742	2,745	1,371
Less Existing Uses to be Removed ⁴	0	-142	-582	0	-364
Less Congestion Pricing Reduction	+22	+28	-50	0	-31
<u>Net New Trips</u>	<u>783 (21%)⁵</u>	<u>863 (23%)⁵</u>	<u>2,110 (56%)⁵</u>	<u>2,745</u>	<u>976</u>
PM Peak Hour					
Proposed Project	1,031	1,412	4,240	4,240	2,084
Less Existing Uses to be Removed ⁴	0	-92	-490	0	-306
Less Congestion Pricing Reduction	+19	+26	-45	0	-28
<u>Net New Trips</u>	<u>1,050 (17%)⁵</u>	<u>1,346 (22%)⁵</u>	<u>3,705 (61%)⁵</u>	<u>4,240</u>	<u>1,750</u>
Saturday Peak Hour					
Proposed Project	646	1,060	5,005	5,164	2,477
Less Existing Uses to be Removed ⁴	0	-101	-480	0	-300
Less Congestion Pricing Reduction	0	0	0	0	0
<u>Net New Trips</u>	<u>646 (11%)⁵</u>	<u>959 (16%)⁵</u>	<u>4,525 (73%)⁵</u>	<u>5,164</u>	<u>2,177</u>
Notes:					
1. This analysis assumes no external pedestrian or bicycle trips onto or off of the Islands. Although, with construction of the new eastern span bicycle/pedestrian path, it is possible that some bicycle trips may occur. However, this number is expected to be very minor and not likely to affect the overall conclusions of this study. Further, the potential new bicycle facility on the western span is still in the conceptual discussion phases, and is not assumed to be in place in this analysis.					
2. Vehicle-trips include passenger vehicles and vans.					
3. Includes internal bicycle and pedestrian trips, and a likely, relatively small number of internal auto trips (e.g., between Yerba Buena Island and Treasure Island).					
4. Based on counts of peak hour vehicle traffic on the Islands (included in Appendix B) and assumes that the existing trip generation of the Job Corps center would remain the same.					
5. Percentages shown are of total external trips.					
Source: Fehr & Peers 2009					

**TABLE 31 – NET NEW VEHICLE TRIP GENERATION
 (REDUCED DEVELOPMENT ALTERNATIVE, EXPANDED TRANSIT SCENARIO)**

Use	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Project Vehicle Trip Generation ¹	569	802	1,371	1,215	869	2,084	1,307	1,170	2,477
Congestion Pricing Reduction ²	-8	-23	-31	-18	-10	-28	0	0	0
Existing Uses to be Removed ³	-144	-220	-364	-151	-155	-306	-148	-152	-300
Net New Vehicle Trips	417	559	976	1,046	704	1,750	1,159	1,018	2,177

Notes:

1. Based on vehicle trip generation summarized in Table 22, less shifts in traffic associated with congestion pricing. Trips shifted as a result of congestion pricing were estimated using on the percentages presented in Table 21.
2. Assuming a \$5.00 weekday peak hour congestion pricing fee, as summarized in Table 21.
3. Based on counts of peak hour vehicle traffic on the Islands (included in **Appendix B**) and assumes that the existing trip generation of the Job Corps center would remain the same.

Source: Fehr & Peers, 2009

3.3.6 Parking Demand (Reduced Development Alternative, Expanded Transit)

The same parking demand methodology used for the Proposed Project was applied to the Reduced Development Alternative. See **Appendix J** for the full calculation of the parking demand using *SF Guidelines* and the ULI *Shared Parking* methodology, as described on Section 3.1.6 on page 84. A peak parking hour was determined for each neighborhood, for all of Treasure Island, and for the two islands together. The results of this analysis are summarized in **Table 32**.

**TABLE 32 – SHARED PARKING ANALYSIS
 (REDUCED DEVELOPMENT ALTERNATIVE, EXPANDED TRANSIT SCENARIO)**

District	Peak Residential Parking Demand	Peak Shared Non-Residential Parking Demand	Total Peak Parking Demand ¹
Cityside	3,052	84	3,136
Eastside	1,975	44	2,019
Island Core	2,328	1,278	3,606
Open Space	0	346	346
Total Treasure Island²	7,355	1,752	9,107
Yerba Buena Island	259	55	314
Total Proposed Project³	7,614	1,807	9,421

Notes:

1. Shared parking analysis based on peak parking demands calculated using *SF Guidelines* Parking Demand methodology and ULI *Shared Parking* methodology for temporal distribution of parking demand by land uses.
2. Peak demand for all of Treasure Island is not the same as the total peak parking demand for each neighborhood because the neighborhoods experience their peak demands at different times of the day.
3. Excludes parking demand associated with the Job Corps and Coast Guard.

Source: Fehr & Peers, 2009

3.3.7 Loading Demand

The Reduced Development Alternative would generate a peak hourly demand for 31 commercial vehicle and freight loading/unloading spaces according to the *SF Guidelines'* freight delivery and service demand methodology. Based on this methodology, total daily loading space demand would be approximately 493 vehicles. **Table 33** depicts the calculation of project-generated demand for loading spaces based on the *SF Guidelines* methodology for the Reduced Development Alternative.

TABLE 33 – LOADING DEMAND – REDUCED DEVELOPMENT ALTERNATIVE				
Land Use	Size	Daily Loading Demand Rates ⁵	Daily Truck Generation	Peak Hour Loading Dock Space Demand ⁶
Office	30,000 square feet ¹	0.21	6	1
Retail	320,000 square feet ²	0.22	70	5
Restaurant	37,000 square feet	3.60	133	8
Hotel	450,000 square feet (500 rooms)	0.09	41	2
Institutional	138,500 square feet ³	0.10	14	1
Manufacturing	22,000 square feet ⁴	0.51	11	1
Residential	7,273,400 square feet (6,000 dwelling units)	0.03	218	13
Total			493 Trucks	31 Spaces
Notes: 1. Includes 30,000 square feet of community uses/offices planned in adaptive reuse of Building 1. 2. Includes all non-restaurant retail (170,000 square feet) and 150,000 square feet of entertainment uses proposed for adaptive reuse of Building 3. 3. Includes 13,500 square feet of community facilities, 35,000 square feet for Pier 1 Community Center, 15,000 square foot sailing center, and 75,000 square foot museum. Similar to parking analysis, loading demand for elementary school and police/fire facility will be provided separately within their facilities. Neither demand nor supply for elementary school and police/fire facility is included in this analysis. 4. Includes 22,000 square feet of food production space proposed in adaptive reuse of Building 2. 5. Per thousand square feet 6. Typical peak hour of truck loading space demand occurs between 10 AM to 1 PM. Peak hour generation assumes deliveries occur between 8 AM and 5 PM, average park time of 25 minutes per vehicle, and that the peak hour deliveries occur at a 25 percent higher rate than other hours. Source: <i>SF Guidelines</i> , 2002 and Fehr & Peers, 2009.				

3.4 REDUCED DEVELOPMENT ALTERNATIVE WITH BASE TRANSIT

Just as the Proposed Project was analyzed under conditions with both the Enhanced and Base Transit Service, the Reduced Development Alternative was also analyzed under both transit scenarios. This section describes the travel demand analysis for the Reduced Development Alternative under the Base Transit Scenario.

3.4.1 Trip Generation (Reduced Development Alternative, Base Transit)

The number of person-trips expected to be generated by the Reduced Development Alternative is assumed to be the same, regardless of the level of transit service provided. The trip generation methodology can be found earlier in this chapter, beginning on page 65. As shown in shown in **Table 29**

on page 90, the Proposed Project is expected to generate 4,480 net external trips during the weekday AM peak hour, 6,696 net external trips during the weekday PM peak hour, and 6,856 net external trips during the Saturday peak hour.

3.4.2 Mode Split/Transit Usage (Reduced Development Alternative, Base Transit)

The portion of project-generated person-trips that would take transit under the Reduced Development Alternative with Base Transit was calculated using the same assumptions as described in Section 3.2.2 for the Proposed Project with Base Transit. Specifically, based on the reduced amount of transit service, ferry ridership would be 35 percent lower in the AM and PM peak hours than under the Expanded Transit Scenario. Bus ridership would be 30 percent lower in the AM peak hour and 34 percent lower in the PM peak hour under the Base Transit Scenario than under the Expanded Transit Scenario. During peak hours, the reduction in transit ridership associated with the Base Transit Scenario is assumed to switch to the automobile mode.

3.4.3 Trip Distribution (Reduced Development Alternative, Base Transit)

The geographic distribution of project-generated trips would be the same under the Reduced Development Alternative as for the Proposed Project. The trip distribution for all scenarios is described in **Table 20** on page 72 and illustrated on **Figure 19** (page 73).

3.4.4 Vehicle Trip Assignment (Reduced Development Alternative, Base Transit)

Similar to the Expanded Transit Scenario, the external vehicle trips generated by the Reduced Development Alternative with Base Transit only were assigned to the roadway system based on the directions of approach and departure discussed in the Trip Distribution section. The analysis of traffic impacts for the Reduced Development Alternative with Base Transit only also examined conditions with and without the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island.

The initial forecast of vehicle trip assignment does not include the effects of congestion pricing or ramp metering. Those effects are discussed in the next section.

3.4.4.1 Congestion Pricing (Reduced Development Alternative, Base Transit)

The methodology used to assess the effects of congestion pricing at reducing peak hour automobile trip generation was described earlier in this Chapter, on pages 62 to 70. This methodology was applied to the initial vehicle traffic generation estimates for the Reduced Development Alternative with Base Transit. While the TITMA will have the flexibility to adjust the congestion charge, similar to the Proposed Project, the analysis of the Reduced Development Alternative with Base Transit assumes the same \$5.00 congestion fee would be applied to each residential vehicle entering or leaving the SFOBB during AM and PM peak hours. The resulting percentage shifts were nearly identical to those identified in **Table 21** for the Proposed Project with Expanded Transit. Specifically, under the Reduced Development Alternative with Base Transit, implementation of congestion pricing in the manner described earlier would result in a reduction of just over four percent of AM peak hour resident vehicle trips and just fewer than four percent of PM peak hour resident vehicle trips.

3.4.4.2 Ramp Metering (Reduced Development Alternative, Base Transit)

Similar to the Proposed Project, the effects of ramp metering at reducing peak hour automobile traffic generation were determined to be negligible for the Reduced Development Alternative with Base Transit only.

3.4.5 Travel Demand Summary (Reduced Development Alternative, Base Transit)

Table 34, below, summarizes the resulting person-trip generation for the Reduced Development Alternative under the Base Transit Scenario. **Table 35** summarizes the vehicle traffic generation of the Reduced Development Alternative under the Base Transit Scenario, accounting for the existing uses to be removed.

TABLE 34 – PERSON-TRIP GENERATION BY MODE (REDUCED DEVELOPMENT ALTERNATIVE, BASE TRANSIT SCENARIO)					
Peak Hour	Person-Trip Generation ¹				Vehicle-Trips ²
	External			Internal	
	Ferry	Bus	Auto	Other ³	
AM Peak Hour					
Proposed Project	495	596	3,389	2,745	1,695
Less Existing Uses to be Removed ⁴	0	-142	-582	0	-364
Less Congestion Pricing Reduction	+27	+32	-59	0	-37
Net New Trips	522 (14%) ⁵	486 (13%) ⁵	2,748 (73%) ⁵	2,745	1,294
PM Peak Hour					
Proposed Project	671	827	5,198	4,240	2,559
Less Existing Uses to be Removed ⁴	0	-92	-490	0	-306
Less Congestion Pricing Reduction	+25	+31	-56	0	-35
Net New Trips	696 (11%) ⁵	766 (13%) ⁵	4,652 (76%) ⁵	4,240	2,218
Saturday Peak Hour					
Proposed Project	426	628	5,801	5,164	2,865
Less Existing Uses to be Removed ⁴	0	-101	-480	0	-300
Less Congestion Pricing Reduction	0	0	0	0	0
Net New Trips	426 (7%) ⁵	527(8%) ⁵	5,321 (85%) ⁵	5,164	2,565
Notes:					
1. This analysis assumes no external pedestrian or bicycle trips onto or off of the Islands. Although, with construction of the new eastern span bicycle/pedestrian path, it is possible that some bicycle trips may occur. However, this number is expected to be very minor and not likely to affect the overall conclusions of this study. Further, the potential new bicycle facility on the western span is still in the conceptual discussion phases, and is not assumed to be in place in this analysis.					
2. Vehicle-trips include passenger vehicles and vans.					
3. Includes internal bicycle and pedestrian trips, and a likely, relatively small number of internal auto trips (e.g., between Yerba Buena Island and Treasure Island).					
4. Based on counts of peak hour vehicle traffic on the Islands (included in Appendix B) and assumes that the existing trip generation of the Job Corps center would remain the same.					
5. Percentages shown are of total external trips.					
Source: Fehr & Peers 2009					

**TABLE 35 – NET NEW VEHICLE TRIP GENERATION
 (REDUCED DEVELOPMENT ALTERNATIVE, BASE TRANSIT SCENARIO)**

Use	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Project Vehicle Trip Generation ¹	698	996	1,695	1,491	1,068	2,559	1,505	1,360	2,865
Congestion Pricing Reduction ²	-9	-28	-37	-22	-13	-35	0	0	0
Existing Uses to be Removed ³	-144	-220	-364	-151	-155	-306	-148	-152	-300
Net New Vehicle Trips	545	748	1,294	1,318	900	2,218	1,357	1,208	2,565

Notes:

1. Based on vehicle trip generation summarized in **Table 22**, less shifts in traffic associated with congestion pricing. Trips shifted as a result of congestion pricing were estimated using on the percentages presented in **Table 21**.
2. Assuming a \$5.00 weekday peak hour congestion pricing fee, as summarized in Table 21.
3. Based on counts of peak hour vehicle traffic on the Islands (included in **Appendix B**) and assumes that the existing trip generation of the Job Corps center would remain the same.

Source: Fehr & Peers, 2009

3.4.6 Parking Demand (Reduced Development Alternative, Base Transit)

The same parking demand methodology used for the Proposed Project was applied to the Reduced Development Alternative. See **Appendix J** for the full calculation of the parking demand using *SF Guidelines* and the ULI *Shared Parking* methodology, as described on Section 3.1.6 on page 84. A peak parking hour was determined for each neighborhood, for all of Treasure Island, and for the two islands together. The results of this analysis are summarized in **Table 36**.

**TABLE 36 – SHARED PARKING ANALYSIS
 (REDUCED DEVELOPMENT ALTERNATIVE, BASE TRANSIT SCENARIO)**

District	Peak Residential Parking Demand	Peak Shared Non-Residential Parking Demand	Total Peak Parking Demand ¹
Cityside	3,052	98	3,150
Eastside	1,975	51	2,026
Island Core	2,338	1,455	3,793
Open Space	0	395	395
Total Treasure Island²	7,365	1,999	9,364
Yerba Buena	259	57	316
Total Proposed Project³	7,624	2,056	9,680

Notes:

1. Shared parking analysis based on peak parking demands calculated using *SF Guidelines* Parking Demand methodology and ULI *Shared Parking* methodology for temporal distribution of parking demand by land uses.
2. Excludes Yerba Buena Island. Peak demand for all of Treasure Island is not the same as the total peak parking demand for each neighborhood because the neighborhoods experience their peak demands at different times of the day.
3. Excludes parking demand associated with the Job Corps and Coast Guard.

Source: Fehr & Peers, 2010

3.4.7 Loading Demand

Since loading requirements are independent of the amount of transit service provided, the daily truck generation and the peak loading space requirements for the Reduced Development Alternative under the Base Transit Scenario are identical to those for the Expanded Transit Scenario, as shown in **Table 33** (page 96).

3.5 TRAVEL DEMAND SUMMARY

For comparison purposes, **Table 37** presents the person-trip generation, by mode, for each of the analysis scenarios, including the Proposed Project and the Reduced Development Alternative, each for the Enhanced and Base Transit Scenarios.

TABLE 37 – PEAK HOUR TRAVEL DEMAND SUMMARY					
Peak Hour	Person-Trip Generation ¹				Vehicle-Trips ²
	External			Internal	
	Ferry	Bus	Auto	Other ³	
AM Peak Hour					
Proposed Project – Base Transit	641	621	3,391	3,296	1,613
Proposed Project – Expanded Transit	958	1,075	2,619	3,296	1,228
Reduced Development – Base Transit	522	486	2,748	2,745	1,294
Reduced Development – Expanded Transit	783	863	2,110	2,745	976
PM Peak Hour					
Proposed Project – Base Transit	818	898	5,124	4,850	2,462
Proposed Project – Expanded Transit	1,235	1,567	4,175	4,850	1,983
Reduced Development – Base Transit	696	766	4,652	4,240	2,218
Reduced Development – Expanded Transit	1,050	1,346	3,705	4,240	1,750
Saturday Peak Hour					
Proposed Project – Base Transit	473	595	5,913	5,743	2,861
Proposed Project – Expanded Transit	718	1,078	5,043	5,743	2,437
Reduced Development – Base Transit	426	527	5,321	5,164	2,565
Reduced Development – Expanded Transit	646	959	4,525	5,164	2,177
Notes:					
1. This analysis assumes no external pedestrian or bicycle trips onto or off of the Islands. Although, with construction of the new eastern span bicycle/pedestrian path, it is possible that some bicycle trips may occur. However, this number is expected to be very minor and not likely to affect the overall conclusions of this study. Further, the potential new bicycle facility on the western span is still in the conceptual discussion phases, and is not assumed to be in place in this analysis.					
2. Vehicle-trips include passenger vehicles and vans.					
3. Includes internal bicycle and pedestrian trips.					
Source: Fehr & Peers, 2009					

4. TRANSPORTATION IMPACT ANALYSIS

This chapter discusses the potential transportation impacts associated with the Proposed Project and the expected changes to transportation conditions within the study area. Although the 2006 Transportation Plan proposes substantial improvements to existing transit service to the Islands, as discussed in the preceding chapter, only a portion of this additional transit service has been fully funded. The discussion of impacts in this chapter is presented in a slightly different order than in Chapter 3. The impact analysis of the Proposed Project is first analyzed under the Base Transit Scenario and then analyzed with the Expanded Transit Scenario. The impact analysis for the Reduced Development Alternative is presented in a similar fashion, with the impacts under the Base Transit Scenario discussed first followed by the Expanded Transit Scenario.

The impact analysis evaluates the Proposed Project's traffic, transit, parking, pedestrian, bicycling, loading, and construction impacts resulting from the following conditions:

- Existing plus Proposed Project (analyzed with and without new ramps)³³
- Year 2030 Cumulative Plus Proposed Project (analyzed with and without new ramps)

As described in Chapter 3, the Expanded Transit Scenario would increase transit use and reduce the number of external vehicle trips to and from the Islands. Although it has not yet been fully funded, the Expanded Transit Scenario would reduce traffic generated by the project; therefore, implementation of the Expanded Transit Service has been identified as mitigation for the Proposed Project with Base Transit Service.

4.1 SIGNIFICANCE CRITERIA

The City of San Francisco has adopted a set of significance thresholds to be used during environmental review to determine whether a Proposed Project causes project-specific and/or cumulative impacts on each component of the surrounding transportation network.

4.1.1 Traffic

In San Francisco, the threshold for a significant adverse impact on traffic has been established as deterioration in the level of service (LOS) at a signalized intersection from LOS D or better to LOS E or LOS F, or from LOS E to LOS F. The operational impacts on unsignalized intersections are considered potentially significant if project-related traffic causes the level of service at the worst approach to deteriorate from LOS D or better to LOS E or LOS F (or from LOS E to LOS F) and Caltrans peak hour traffic volumes signal warrants would be met. Potentially significant impacts to unsignalized intersections would also occur if a project would cause Caltrans peak hour traffic volume signal warrants to be met when the worst approach is already at LOS E or LOS F.

For an intersection that operates at LOS E or LOS F under existing conditions, there may be a significant adverse impact depending upon the magnitude of the project's contribution to the worsening of delay. In addition, a project would have a significant adverse effect if it would cause major traffic hazards, or would

33. As described on page 7, the SFCTA and Caltrans are currently conducting a study to determine the feasibility of reconstructing the westbound on- and off-ramps to the SFOBB on the east side of Yerba Buena Island. The reconstructed ramps would likely operate differently from the current configuration. However, the proposed reconstruction has not been formally approved and there is some chance that it may not occur. Therefore, the analysis is conducted both ways – for conditions with and without the proposed reconstruction.

contribute considerably to the cumulative traffic increases that cause the deterioration in LOS to unacceptable levels (i.e., to LOS E or LOS F).

The operational impacts on freeway on-ramp merge and off-ramp diverge sections are considered significant when project-related traffic causes the level of service to deteriorate from LOS D to LOS E or LOS F, or from LOS E to LOS F. In addition, a project would have a significant effect on the environment if it would contribute substantially to traffic volumes at study merge and diverge sections already operating at LOS E or F.

Further, since the project is likely to add trips to a freeway facility (the SFOBB) operating with demands already exceeding capacity, the project would be considered to have a significant impact if it would substantially increase queuing on bridge approaches, either in San Francisco or in the East Bay.

4.1.2 Transit

The project would have a significant effect on the environment if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service; or cause a substantial increase in operating costs or delays such that significant adverse impacts in transit service levels could result.

4.1.3 Pedestrians

The project would have a significant effect on the environment if it would result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.

4.1.4 Bicycles

The project would have a significant effect on the environment if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.

4.1.5 Parking

San Francisco does not consider parking supply as part of the permanent physical environment. Parking conditions are not static, as parking supply and demand varies from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel.

Parking deficits are considered to be social effects, rather than impacts on the physical environment as defined by the *California Environmental Quality Act* (“CEQA”). Under CEQA, a project’s social impacts need not be treated as significant impacts on the environment. Environmental documents should, however, address the secondary physical impacts that could be triggered by a social impact. (CEQA Guidelines § 15131(a).) The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, or noise impacts caused by congestion. In the experience of San Francisco transportation planners, however, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service in particular, would be in keeping with the City’s “Transit First” policy. The City’s Transit First Policy, established in the City’s Charter Section 8A.115 provides that “parking policies for areas well served by public transit shall be designed to encourage travel by public transportation and alternative transportation.”

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near the project site and then seek parking farther away if convenient parking is unavailable. Moreover, the secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts which may result from a shortfall in parking in the vicinity of the Proposed Project would be minor, and the traffic assignments used in the transportation analysis, as well as in the associated air quality, noise and pedestrian safety analyses, reasonably addresses potential secondary effects.

4.1.6 Loading

The project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within the proposed on-site loading facilities or within convenient on-street loading zones, or if it would create potentially hazardous traffic conditions or significant delays affecting traffic, transit, bicycles or pedestrians.

4.1.7 Construction

Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

4.1.8 Emergency Access

The project would have a significant impact on the environment if it would result in inadequate emergency access.

4.2 TRAFFIC IMPACTS

Consistent with the traffic significance criteria described above, the Proposed Project and Reduced Development Alternative were evaluated to determine whether they would cause significant traffic-related impacts. The forecasted net increases in traffic associated with the Proposed Project were added to the existing traffic volumes to obtain a forecast of Existing plus Project conditions.

4.2.1 Proposed Project With Base Transit Service

The Proposed Project's travel demand was presented in Chapter 3. The forecasts reflect the project's mix of land uses designed to maximize internalization of trips, the associated level of transit service expected, and other Transportation Demand Management ("TDM") techniques proposed by the project, including unbundled residential parking, extensive pedestrian and bicycle amenities, residential transit passes, and congestion pricing. The forecasts also reflect conditions with reconstructed westbound ramps and ramp metering. The resulting travel demand projected in Chapter 3 represents the unconstrained demand for travel within each mode. However, there are bottlenecks throughout the study area that may restrict the amount of traffic that can reach certain parts of the transportation system during peak periods. Those constraints and their effect on overall travel demand are discussed in the following sections.

4.2.1.1 Freeway and Ramp Operations (Base Transit Scenario)

As noted throughout this report, the analysis was conducted under conditions with and without the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island. Without reconstruction, the configuration of all three westbound ramps (two on the east side and one on the west side) would remain the same as existing conditions (i.e., there would be two stop-controlled westbound on-ramps). With the reconstruction of the ramps, one of the two westbound on-ramps would be converted

to transit-only, and the other ramp would be open to all traffic and ramp metering would be installed. **Figures A-1 and A-2 in Appendix D4** present the unconstrained trip assignment to individual ramps for the Proposed Project under the Base Transit Scenario assuming the existing westbound ramps and the proposed reconfigured westbound ramps, respectively.

Although the capacity of the westbound on-ramps would be different depending upon whether the ramps were reconstructed, under both configurations the volume of traffic attempting to enter the SFOBB from the Islands in the westbound direction (i.e., the unconstrained demand identified in Chapter 3) would be greater than the overall capacity of the westbound ramps during certain peak hours. Under conditions with the existing stop-controlled westbound ramps, observations have shown a capacity of approximately 375 vehicles per hour per ramp in peak hours when the SFOBB operates at or near capacity. Under conditions with the westbound ramp reconstruction project, ramp metering lights would be installed that would limit the number of vehicles entering the SFOBB from the Islands. The ramp meters were assumed to allow a peak of 550 vehicles per hour plus the volume of HOVs that would use the bypass lane.

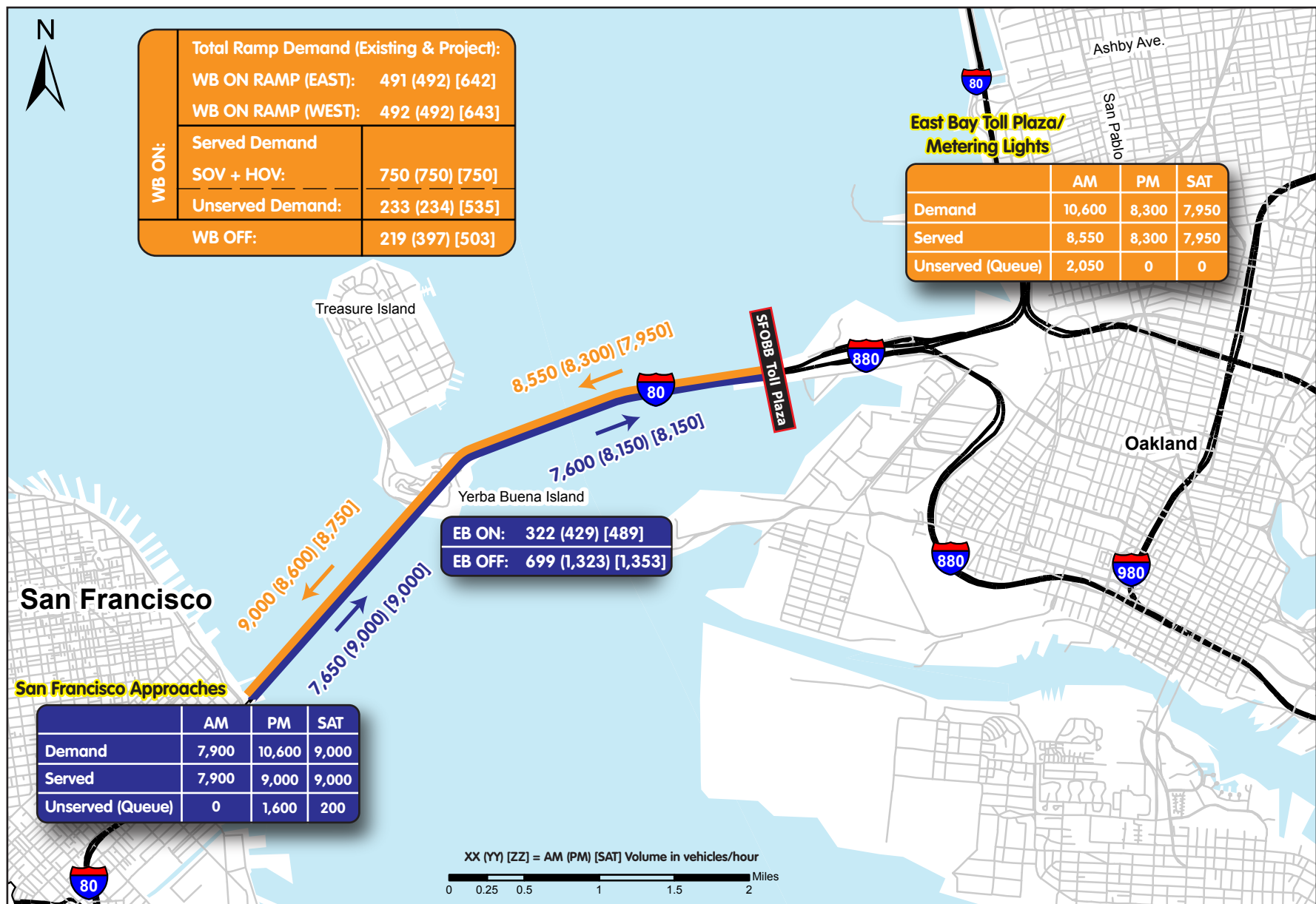
As a result of these capacity constraints, queues may form on the Islands' approaches to the SFOBB ramps and only a portion of the total westbound demand would make it into the SFOBB. Due to the on-ramp capacity constraints, the queues of traffic attempting to enter the westbound SFOBB on-ramp may block traffic destined for the eastbound SFOBB on-ramp. Therefore, the ultimate queues realized on the Islands would consist of both westbound and eastbound traffic. To forecast the magnitude of queues forming on the Islands under various conditions, the VISSIM microsimulation software was used. The effects of queues on Island roadways are discussed later in this chapter.

Figure 20 on page 105 shows the amount of traffic assigned to each freeway segment under the existing westbound ramp configuration, constrained by the capacity of the stop signs on the westbound ramps. **Figure 21** on page 106 shows the same information for conditions with reconstructed westbound ramps, constrained by the capacity of the ramp meters. The resulting volumes were used to assess freeway impacts in terms of ramp merge and diverge section operations as well as contributions to queuing on freeway mainline segments and approaches.

4.2.1.1.1 Ramp Queuing (Base Transit Scenario)

Due to the complex interaction of vehicle streams that approach the SFOBB from the Islands, the VISSIM microsimulation software was used to evaluate vehicle queuing that results from eastbound, westbound, SOV, HOV2, and HOV3+ vehicles all sharing a common approach to the SFOBB (Treasure Island Road). The maximum queues for each scenario, measured from the intersection of South Gate Drive and Macalla Road, are presented in **Table 38** (page 108). **Table 38** also depicts average vehicular delay associated with the queuing for traffic approaching the SFOBB. (The delay is discussed in a subsequent section.) **Figure 22** on page 107 illustrates the extent of queuing associated with the Proposed Project under the Base Transit Scenario for conditions with and without reconstruction of the westbound ramps.

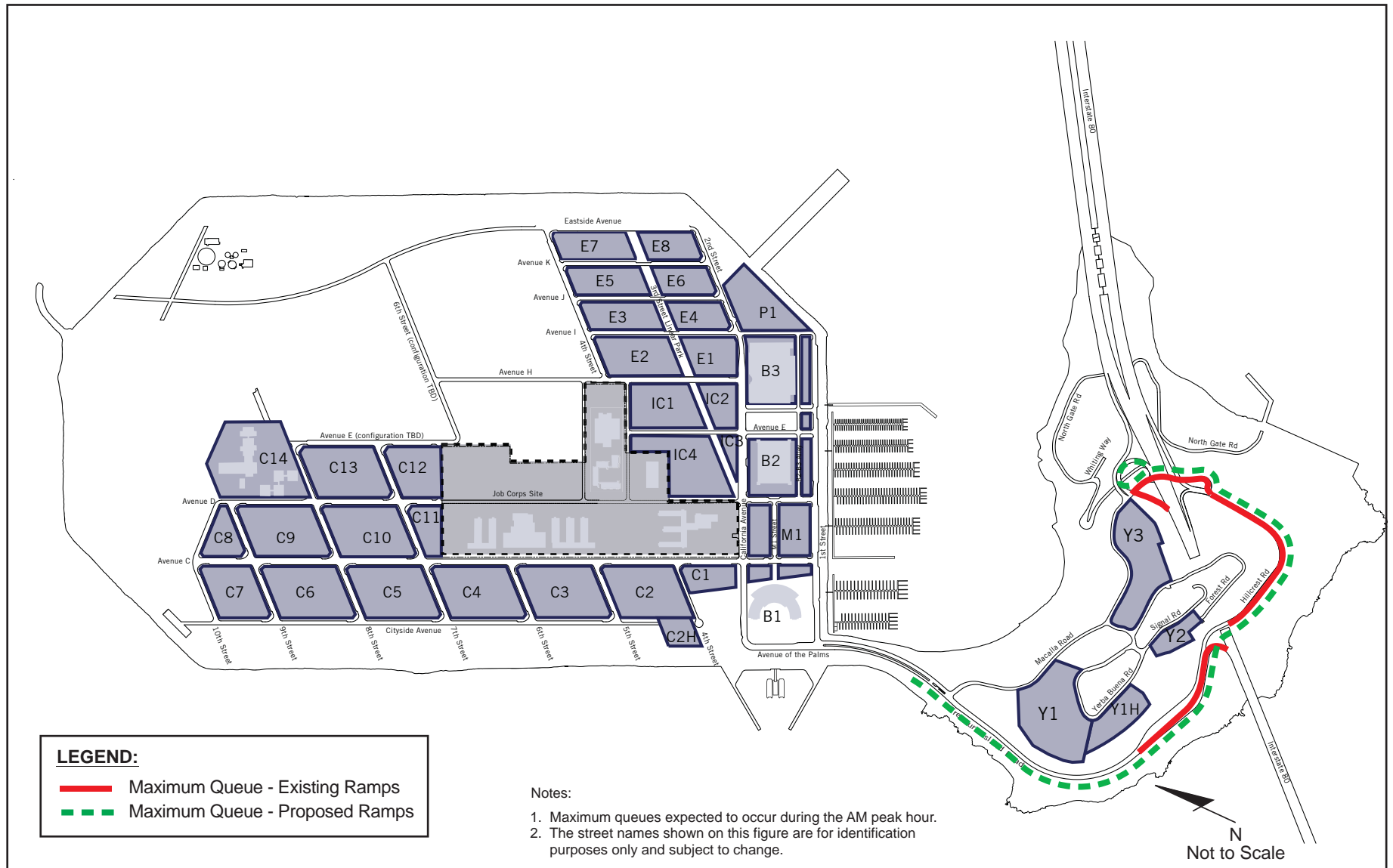
As depicted in **Table 38** and illustrated on **Figure 22**, under the Base Transit Scenario, the Proposed Project may result in extensive queues on Treasure Island Road that may interfere with traffic circulation. (The queues may also affect transit circulation, which is discussed later in this chapter.) Without reconstruction of the westbound on-ramp to the SFOBB (and the associated HOV3+ bypass), queues would extend back approximately ½-mile from each of the two westbound on-ramps. With reconstruction of the westbound ramps (and the associated consolidation of all traffic to a single westbound on-ramp), queues would reach over one mile, on Treasure Island Road just past the intersection with Macalla Road. However, queues would not extend onto Treasure Island.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS
EXISTING PLUS PROJECT (BASE TRANSIT SCENARIO)
SFOBB TRAVEL DEMAND AND VEHICLE QUEUES
 <<NO NEW WESTBOUND ON-RAMPS>>

FIGURE 20



**TABLE 38 – MAXIMUM ON-RAMP QUEUING (MILES) AND AVERAGE DELAYS (MINUTES:SECONDS)
 – EXISTING PLUS PROJECT CONDITIONS**

Peak Hour	Proposed Project (Base Transit Scenario)		Proposed Project (Expanded Transit Scenario)		Reduced Development Alternative (Base Transit Scenario)		Reduced Development Alternative (Expanded Transit Scenario)	
	Existing Ramps	Proposed Ramps	Existing Ramps	Proposed Ramps	Existing Ramps	Proposed Ramps	Existing Ramps	Proposed Ramps
AM Peak Hour	0.45 (2:06)	1.23 (5:12)	0.07 (0:30)	0.81 (3:24)	0.47 (2:00)	0.64 (2:54)	0.00 (0:00)	0.00 (0:00)
PM Peak Hour	0.45 (2:06)	1.10 (4:54)	0.07 (0:48)	0.54 (2:36)	0.35 (2:00)	0.45 (2:42)	0.00 (0:00)	0.57 (2:36)
Saturday Peak Hour ²	0.68 (2:54)	0.00 (0:00)	0.37 (2:24)	0.00 (0:00)	0.61 (2:30)	0.00 (0:00)	0.46 (2:12)	0.00 (0:00)

Notes:

1. Includes planned reconstruction of the eastbound ramps on the east side of Yerba Buena Island as part of the SFOBB ESSSP
2. Ramp metering not assumed to be in operation during the Saturday peak hour. The analysis assumes that under conditions with the reconstructed westbound ramps, the reconstructed on-ramp would provide adequate capacity to serve all demand during the Saturday peak hour.
3. Delays greater than 35 seconds per vehicle (i.e., LOS E or F conditions, as defined by the HCM unsignalized intersection methodology summarized on **Table 6**) shown in **bold**.

Source: Fehr & Peers, 2009

4.2.1.1.2 Ramp Merge/Diverge (Base Transit Scenario)

The operational characteristics of the Yerba Buena Island ramps were analyzed to determine project impacts. **Table 39**, **Table 40**, and **Table 41** summarize the ramp merge and diverge levels of service for the AM, PM, and Saturday peak hours, respectively.³⁴ For conditions without reconstruction of the westbound ramps, the tables also present the stop-controlled intersection levels of service for the AM, PM, and Saturday peak hours. The tables also present average vehicular delay associated with the various traffic control devices metering traffic onto the SFOBB. However, this section discusses only the merge/diverge analysis; discussion of vehicular delays and LOS is discussed in the next section.

Based on the merge/diverge analysis, the Proposed Project would contribute traffic to the eastbound off-ramp diverge section on the west side of Yerba Buena Island, which was observed to operate at LOS E in the PM peak hour under existing conditions. Project traffic would comprise a majority of the traffic using the off-ramp during the PM peak hour and the project's contribution would therefore, be considered substantial. The Proposed Project would also cause this same off-ramp diverge section to deteriorate from LOS D to LOS E in the Saturday peak hour. This means that during the weekday PM and Saturday peak hours, the roadway area on the SFOBB approaching the off-ramp would be operating near its capacity with virtually no usable gaps in the traffic stream and little room to maneuver, with notable congestion and/or queuing extending onto the SFOBB.

34. Under conditions with the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the westbound on-ramp on the west side of the Island would be converted to transit-only. Under these conditions, no analysis of the bus-only westbound on-ramp was performed because volumes would be very low. Under conditions without the reconstruction of the westbound ramps, both a side-street stop analysis and a ramp merge analysis were conducted.

TABLE 39 – RAMP JUNCTION ANALYSIS (AM PEAK HOUR)

Ramp	Existing		Existing Plus Project (Base Transit Scenario)		Existing Plus Project (Expanded Transit Scenario)		Existing Plus Reduced Development Alternative (Base Transit Scenario)		Existing Plus Reduced Development Alternative (Expanded Transit Scenario)	
	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²
Ramp Junction LOS without Reconstructed Westbound Ramps										
Eastbound On-Ramp	22.3/C	74.2/F	24.1/C		23.7/C		23.7/C		23.4/C	
Eastbound Off-Ramp (West)	30.1/D		33.4/D		32.6/D		32.7/D		32.2/D	
Eastbound Off-Ramp (East) ³			26.6/C		26.2/C		26.3/C		26.3/C	
Westbound On-Ramp (West)	27.9/C	>80/F	26.4/C	>80/F	26.4/C	>80/F	26.4/C	>80/F	26.1/C	>80/F
Westbound On-Ramp (East) ³			27.3/C	>80/F	27.3/C	>80/F	27.3/C	>80/F	26.9/C	>80/F
Westbound Off-Ramp	32.8/D		32.5/D		32.1/D		32.4/D		32.2/D	
Ramp Junction LOS on Reconstructed Westbound Ramps										
Westbound On-Ramp (East) ⁴			24.0/C		23.8/C		23.8/C		23.6/C	
Westbound Off-Ramp			26.0/C		25.7/C		25.8/C		25.7/C	

Notes:

1. Density measured in passenger cars per mile per lane.
2. Under conditions where the westbound ramps on the east side of Yerba Buena Island are not reconstructed, existing stop-control will remain in place on both westbound on-ramps. Under these conditions, similar to the analysis of existing conditions, both the HCM merge analysis and the HCM stop-controlled intersection analysis were performed.
3. The eastbound off-ramp (east side) and Westbound on-ramp (east) were closed due to construction at the time the existing conditions data were collected, but have since been reopened.
4. Under conditions with reconstruction of the westbound ramps (east), the westbound on-ramp (west) is planned to be transit-only. Thus, under conditions with reconstruction of the westbound ramps (east), ramp junction analysis was only performed for the westbound on-ramp (east) because volumes would be very small on the westbound on-ramp (west).

Source: Fehr & Peers, 2009

TABLE 40 – RAMP JUNCTION ANALYSIS (PM PEAK HOUR)

Ramp	Existing		Existing Plus Project (Base Transit Scenario)		Existing Plus Project (Expanded Transit Scenario)		Existing Plus Reduced Development Alternative (Base Transit Scenario)		Existing Plus Reduced Development Alternative (Expanded Transit Scenario)	
	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²
Ramp Junction LOS without Reconstructed Westbound Ramps										
Eastbound On-Ramp	27.8/C	>80/F	26.3/C		25.9/C		26.1/C		25.8/C	
Eastbound Off-Ramp (West)	36.2/E		39.3/E		39.3/E		39.6/E		38.9/E	
Eastbound Off-Ramp (East) ³			30.4/D		30.4/D		30.5/D		30.2/D	
Westbound On-Ramp (West)	25.1/C	>80/F	25.0/C	>80/F	25.0/C	>80/F	25.0/C	>80/F	25.0/C	>80/F
Westbound On-Ramp (East) ³			26.4/C	>80/F	26.4/C	>80/F	26.4/C	>80/F	26.4/C	>80/F
Westbound Off-Ramp	29.4/D		32.6/D		32.1/D		32.4/D		31.7/D	
Ramp Junction LOS on Reconstructed Westbound Ramps										
Westbound On-Ramp (East) ⁴			25.2/C		25.1/C		25.1/C		25.0/C	
Westbound Off-Ramp			26.1/C		25.6/C		25.8/C		25.3/C	

Notes:

1. Density measured in passenger cars per mile per lane.
2. Under conditions where the westbound ramps on the east side of Yerba Buena Island are not reconstructed, existing stop-control will remain in place on both westbound on-ramps. Under these conditions, similar to the analysis of existing conditions, both the HCM merge analysis and the HCM stop-controlled intersection analysis were performed.
3. The eastbound off-ramp (east side) and Westbound on-ramp (east) were closed due to construction at the time the existing conditions data were collected, but have since been reopened.
4. Under conditions with reconstruction of the westbound ramps (east), the westbound on-ramp (west) is planned to be transit-only. Thus, under conditions with reconstruction of the westbound ramps (east), ramp junction analysis was only performed for the westbound on-ramp (east) because volumes would be very small on the westbound on-ramp (west).

Source: Fehr & Peers, 2009

TABLE 41 – RAMP JUNCTION ANALYSIS (SATURDAY PEAK HOUR)

Ramp	Existing		Existing Plus Project (Base Transit Scenario)		Existing Plus Project (Expanded Transit Scenario)		Existing Plus Reduced Development Alternative (Base Transit Scenario)		Existing Plus Reduced Development Alternative (Expanded Transit Scenario)	
	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²
Ramp Junction LOS without Reconstructed Westbound Ramps										
Eastbound On-Ramp	24.5/C	>80/F	26.5/C		26.1/C		25.7C		25.9/C	
Eastbound Off-Ramp (West)	32.3/D		39.7/E		39.4/E		39.4/E		38.6/E	
Eastbound Off-Ramp (East) ³			30.8/D		29.9/D		31.2/D		29.7/D	
Westbound On-Ramp (West)	24.6/C	>80/F	23.8/C	>80/F	23.8/C	>80/F	23.8/C	>80/F	23.8/C	>80/F
Westbound On-Ramp (East) ³			25.1/C	>80/F	25.1/C	>80/F	25.1/C	>80/F	25.1/C	>80/F
Westbound Off-Ramp	28.5/D		31.8/D		31.5/D		31.2/D		31.2/D	
Ramp Junction LOS on Reconstructed Westbound Ramps										
Westbound On-Ramp (East) ⁴			29.6/D		28.4/D		28.7/D		27.8/C	
Westbound Off-Ramp			25.4/C		25.1/C		25.1/C		24.8/C	

Notes:

1. Density measured in passenger cars per mile per lane.
2. Under conditions where the westbound ramps on the east side of Yerba Buena Island are not reconstructed, existing stop-control will remain in place on both westbound on-ramps. Under these conditions, similar to the analysis of existing conditions, both the HCM merge analysis and the HCM stop-controlled intersection analysis were performed.
3. The eastbound off-ramp (east side) and Westbound on-ramp (east) were closed due to construction at the time the existing conditions data were collected, but have since been reopened.
4. Under conditions with reconstruction of the westbound ramps (east), the westbound on-ramp (west) is planned to be transit-only. Thus, under conditions with reconstruction of the westbound ramps (east), ramp junction analysis was only performed for the westbound on-ramp (east) because volumes would be very small on the westbound on-ramp (west).

Source: Fehr & Peers, 2009

All other merge and diverge sections would operate at acceptable LOS D or better, with or without reconstruction of the westbound ramps on the east side of Yerba Buena Island. The Project's impact to congestion on the SFOBB approaching the eastbound off-ramp diverge section on the west side of Yerba Buena Island is considered significant in the weekday PM and Saturday peak hours.

The primary cause for deficient operations at this off-ramp is the short deceleration distance followed by a tight curve. This design causes exiting vehicles to begin deceleration on the bridge mainline. To improve the operations of this diverge section, the off-ramp would need to be reconstructed to provide more deceleration distance and a less-severe curve. Reconstruction of this ramp would require major construction on the SFOBB, Yerba Buena Island, and the Treasure Island Road causeway. These improvements were evaluated in the Project Study Report for the ramps replacement project conducted by Caltrans and the SFCTA in December 2007 and were found to be infeasible.

Mitigation Measure 1 – Implement the Expanded Transit Scenario

As a means to reduce vehicular travel to and from the Islands, additional transit capacity shall be provided. The project sponsors shall work with WETA and SFMTA to develop and implement the Proposed Project's transit operating plan. Elements of the plan include but are not limited to:

- Additional ferry service to reduce peak period headways from 50-minutes to increase frequencies to as much as 15-minute headways during the AM and PM peak periods
- Increased frequency on the Muni Route 108-Treasure Island service to reduce peak period headways from 15 minutes to as low as 7-minute headways in the AM peak period and as low as 5 minutes in the PM peak period.
- New bus service to another location in San Francisco (e.g., to the San Francisco Civic Center area) with frequencies as low as every 12-minutes during the AM and PM peak periods. Service shall be provided between approximately 5 AM and 10 PM.

Changes to the proposed East Bay bus service are not suggested as part of this Mitigation Measure. Although specific headways are suggested as part of this Mitigation Measure, SFMTA and WETA would maintain the authority to modify service levels and routes as part of their ongoing system-wide operations management.

The additional transit capacity (in terms of increased frequencies) and transit accessibility (due to a new route) to San Francisco has been designed to reduce transit travel times and to make transit use a more attractive travel mode. The Expanded Transit service would increase the transit mode share (including bus and ferry) from 27 to 44 percent during the AM peak hour, and from 25 to 40 percent during the PM peak hour. Correspondingly, the number of peak hour vehicle trips would decrease from 1,613 vehicles to 1,228 vehicles during the AM peak hour, and from 2,462 vehicles to 1,983 vehicles during the PM peak hour. During the Saturday peak hour, the transit mode share would increase from 16 percent to 26 percent, and the number of peak hour vehicles would decrease from 2,861 vehicles to 2,437 vehicles per hour.

Implementation of the Expanded Transit Scenario would reduce auto trip generation such that the project's impacts to the eastbound off-ramp diverge section would be reduced. However, as illustrated in **Tables 36 and 37** (pages 99 and 100) for the weekday PM and Saturday peak hours, respectively, this would have only a slight benefit to congestion around the off-ramp diverge section and the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

4.2.1.1.3 Ramp Delays (Base Transit Scenario)

The preceding two sections have illustrated the way in which the ramp configurations may constrain the amount of traffic that can enter the SFOBB from the Islands, the physical extents of queues caused by this constraint, and the effects of project-generated traffic on freeway merge and diverge sections on the SFOBB. This section describes the vehicular traffic delay associated with congestion leading up to the SFOBB. These delays were described in **Tables 38 and 39**.³⁵ This delay affects not only project-generated traffic, but also existing uses on the Islands that would remain under conditions with the Proposed Project, including the Coast Guard. As shown in **Figure 22** on page 107, queues and associated delay on the Islands may affect the Coast Guard operations around Yerba Buena Island and their access to the SFOBB.³⁶ These delays are discussed in this section.

Traffic volumes destined for the westbound SFOBB will exceed the capacity of the westbound on-ramps to the SFOBB, resulting in queues. These queues will increase vehicular travel times and cause traffic delay. Although delays associated with ramp metering are not typically analyzed for purposes of identifying impacts, this analysis includes an analysis of ramp delays. There are two reasons why this analysis was performed for the unique case of the Proposed Project. First, because the existing configuration of the ramps includes stop signs at the ramp merge points, a side-street stop controlled analysis was conducted to better understand the operation of these unique ramps. To compare this stop controlled operation under the current ramp configuration with the proposed ramp reconfiguration that would include ramp meters, an analysis of the delay associated with ramp meters was necessary. The second reason why this analysis was performed for this project is that unlike most development projects, the ramps onto the SFOBB form the only egress from the Islands and there are no alternate vehicular travel routes. Because of this unique condition, this type of analysis is important to understanding the vehicular travel time implications of the Proposed Project and various ramp configurations.

Based on the stop-controlled analysis, which was conducted only for conditions in which the westbound ramps on the east side of Yerba Buena Island are not reconstructed and in which case the two westbound on-ramps would remain stop-controlled, the Proposed Project would contribute substantial traffic to both westbound ramps³⁷. As shown in **Table 39**, **Table 40**, and **Table 41**, both westbound ramps would operate at LOS F in the AM, PM, and Saturday peak hours. Delays would be considered a significant impact to both westbound on-ramps ramps in the AM, PM, and Saturday peak hours under conditions in which those ramps remain stop-controlled. If the existing configuration were to remain, it is unlikely that the existing stop signs would be removed or that other physical improvements would be made to the on-ramps.

Mitigation Measure 1 – Implementation of Mitigation Measure 1 (the Expanded Transit Scenario) would reduce auto trip generation such that the project's impacts to ramp delays at the two stop controlled westbound on-ramps would be reduced. However, as illustrated in **Tables 39, 40 and 41** for the weekday AM and PM and Saturday peak hours, respectively, autos would still experience delay consistent with LOS F and the project's impacts to delay approaching the on-ramps would remain **significant and unavoidable**.

If the separate project to reconstruct the westbound ramps on the east side of Yerba Buena Island were constructed and the west side westbound on-ramp was converted to transit-only, stop control devices

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35. Table 38 and Tables 39 through 41 both present estimates of average vehicle delay at the ramps. The two estimates are generally consistent, but were arrived at using different methodologies. Table 38 used VSSIM simulation software, whereas Table 39 uses traditional methods for estimating single-movement intersection delays. The VSSIM simulation takes into account the interaction between traffic streams that is more unique to this situation.
36. Although project-generated traffic would increase the level of congestion on YBI from what Coast Guard personnel currently experience, Coast Guard vehicles would be accessing the SFOBB from North Gate Road, which is located adjacent to the existing and proposed on- and off-ramps to the SFOBB. Therefore, most Coast Guard traffic would avoid most of the potential vehicle queues at the on-ramps.
37. The project-generated traffic would constitute over half of the total traffic using the on-ramps.

would be eliminated and all westbound traffic (except transit vehicles destined for San Francisco) would be consolidated to the westbound on-ramp on the east side of Yerba Buena Island. This improvement, consequently, would simply relocate the source of vehicular delay from stop signs at the two ramp merges to a ramp meter upstream of the single remaining merge on the east side of Yerba Buena Island. The delay associated with the ramp meter is shown in **Table 38** on page 108. Although the delays are technically caused by a ramp meter signal, the LOS criteria for unsignalized intersections were applied because the ramp meter signal functions more similarly to a stop sign than a traditional traffic signal.

Vehicular traffic delay under conditions with the reconstructed westbound ramps would be just over five minutes in the AM peak hour and just under five minutes in the PM peak hour. This would be a significant impact. Traffic would experience minimal delays in the Saturday peak hour since ramp meters were assumed not to be in operation during that time. Caltrans has indicated that the ramp reconstruction project will require ramp meters and it is unlikely that they would be eliminated from that project.

Mitigation Measure 1 – Implementation of Mitigation Measure 1 (the Expanded Transit Scenario) would reduce auto trip generation such that the project's impacts to ramp delays at the ramp meter at the reconstructed westbound on-ramp would be reduced by nearly one-half. However, as illustrated in **Table 38**, autos would still experience delay consistent with LOS F and the project's impacts to delay approaching the on-ramps would remain **significant and unavoidable**.

4.2.1.1.4 Mainline Operations: Queuing on Approaches (Base Transit Scenario)

In addition to ramp operations, the operations of the SFOBB mainline segments were considered. Volumes on the SFOBB and approaches under conditions with the Proposed Project were shown in **Figure 20** on page 105. As shown, the SFOBB currently experiences more demand than its capacity in the westbound direction in the AM peak hour and the eastbound direction in the PM peak hour. With the addition of project traffic, the weekday over-capacity conditions are expected to be exacerbated.

This analysis assumes that with the addition of project traffic (constrained by either ramp meters or stop control at on-ramps to the SFOBB at capacity conditions), some vehicles that would otherwise be on the SFOBB would be displaced, increasing queues at the toll plaza in the East Bay or at the San Francisco approaches. For example, if the SFOBB operates at capacity in the westbound direction during the AM peak hour today, and a project on the Islands adds 50 vehicles to the westbound on-ramp on Yerba Buena Island, those trips would displace 50 vehicles that would otherwise be able to travel westbound on the SFOBB. A similar phenomenon would occur in the PM peak hour, with project-related traffic lengthening queues on the eastbound approaches to the SFOBB, including surface streets in Downtown San Francisco, by the number of vehicles the project adds to those streets.

It should be noted that although Caltrans generally aims to work cooperatively with local jurisdictions regarding ramp metering, Caltrans retains the ultimate control of both the proposed ramp meters on Yerba Buena Island and the SFOBB toll plaza metering lights. It is possible that, in consultation with TITMA, Caltrans would reduce the metering rate for the on-ramps and allow more traffic to enter the SFOBB from the East Bay. This would reduce the project's impacts to queuing at the East Bay toll plaza, but would increase queues on the Islands. The analysis presented in this report describes the worst case for bridge and queuing conditions in the East Bay.

The Proposed Project would displace traffic on the SFOBB and increase queues on the westbound approach in the AM peak hour by approximately 471 vehicles. The project's increase to queues approaching the SFOBB from the East Bay in the AM peak hour would be significant.

Mitigation Measure 1 – Implementation of Mitigation Measure 1 (the Expanded Transit Scenario) would reduce auto trip generation using the travel demand management strategies described in Chapter 1, such that the project's impacts to queues approaching the SFOBB from the East Bay would be reduced. However, as described later in this report the project would continue to

increase queues on the East Bay bridge approaches during the AM peak hour, which would be a **significant and unavoidable** impact.

Queues approaching the eastbound SFOBB from surface streets in San Francisco in the PM peak hour would increase by approximately 523 vehicles, although this unserved demand would be dispersed among multiple surface streets in San Francisco approaching the bridge. Still, the project's increase to queues approaching the SFOBB from Downtown San Francisco in the PM peak hour would also be significant.

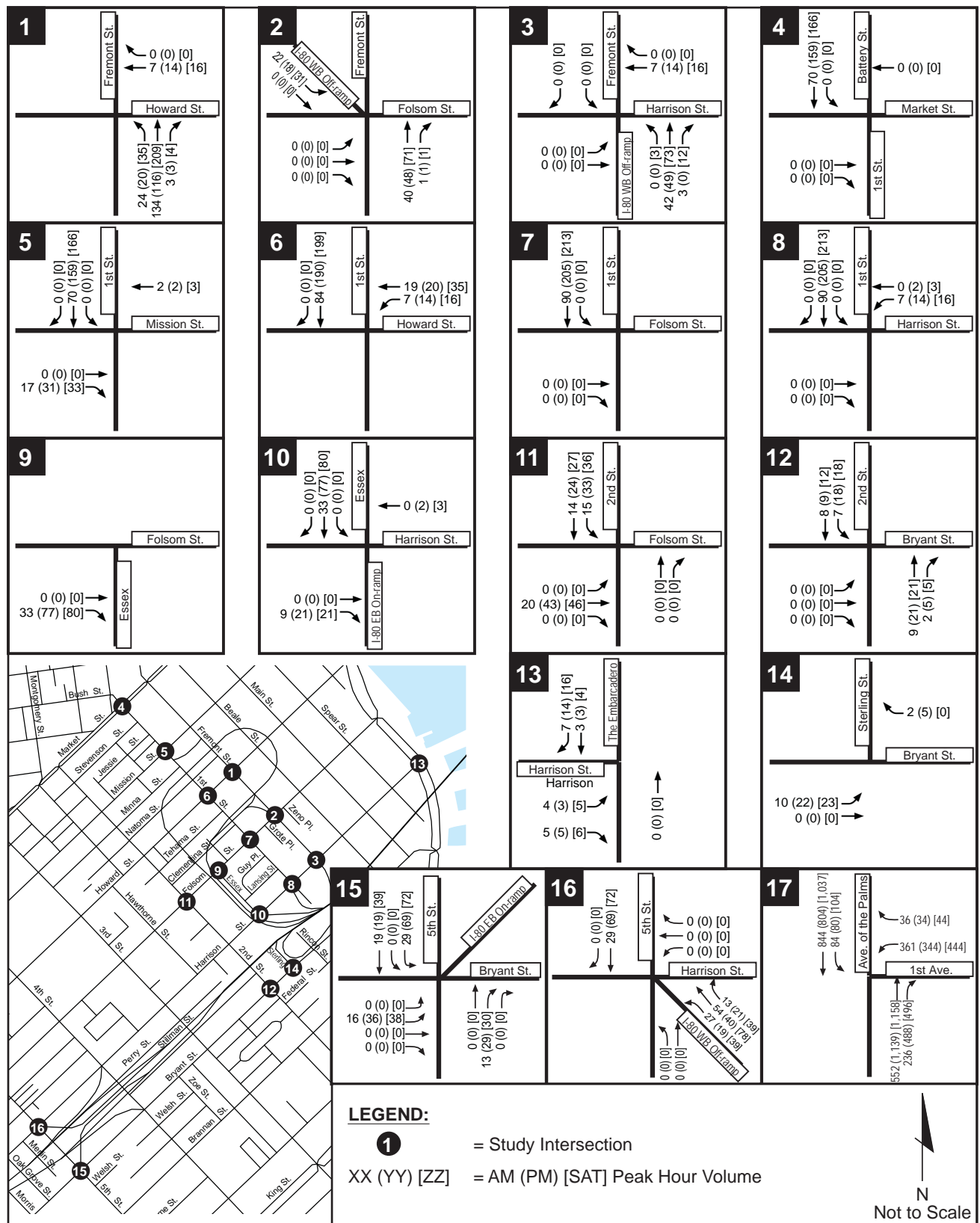
Mitigation Measure 1 – Implementation of Mitigation Measure 1 (the Expanded Transit Scenario) would reduce auto trip generation using the travel demand management strategies described in Chapter 1, such that the project's impacts to queues approaching the SFOBB from Downtown San Francisco would be reduced. However, as described later in this report, the project would continue to increase queues on the bridge approaches from Downtown San Francisco during the PM peak hour, which would be a **significant and unavoidable** impact.

Except near ramp merge and diverge sections, operations on the SFOBB would operate similar to existing conditions (i.e., at capacity in peak directions during peak hours) since additional travel demand would be constrained by the toll plaza in the East Bay and eastbound approaches in San Francisco. Therefore, the project's impacts to the SFOBB mainline operations are expected to be less than significant, because the bridge's approaches limit the number of vehicles that can reach the bridge. Impacts to the SFOBB near ramp merge and diverge sections were discussed above. Generally, through-traffic on the SFOBB may experience some increased congestion in the eastbound direction due to project-generated impacts approaching the westbound off-ramp on the west side of Yerba Buena Island.

Project-generated increases to congestion in the westbound direction are not expected to generate substantial increases in congestion, particularly if the westbound ramps are reconstructed since those improvements would increase sight distance and acceleration distance allowing smoother traffic merging than the existing configuration.

4.2.1.2 Intersection Operations (Base Transit Scenario)

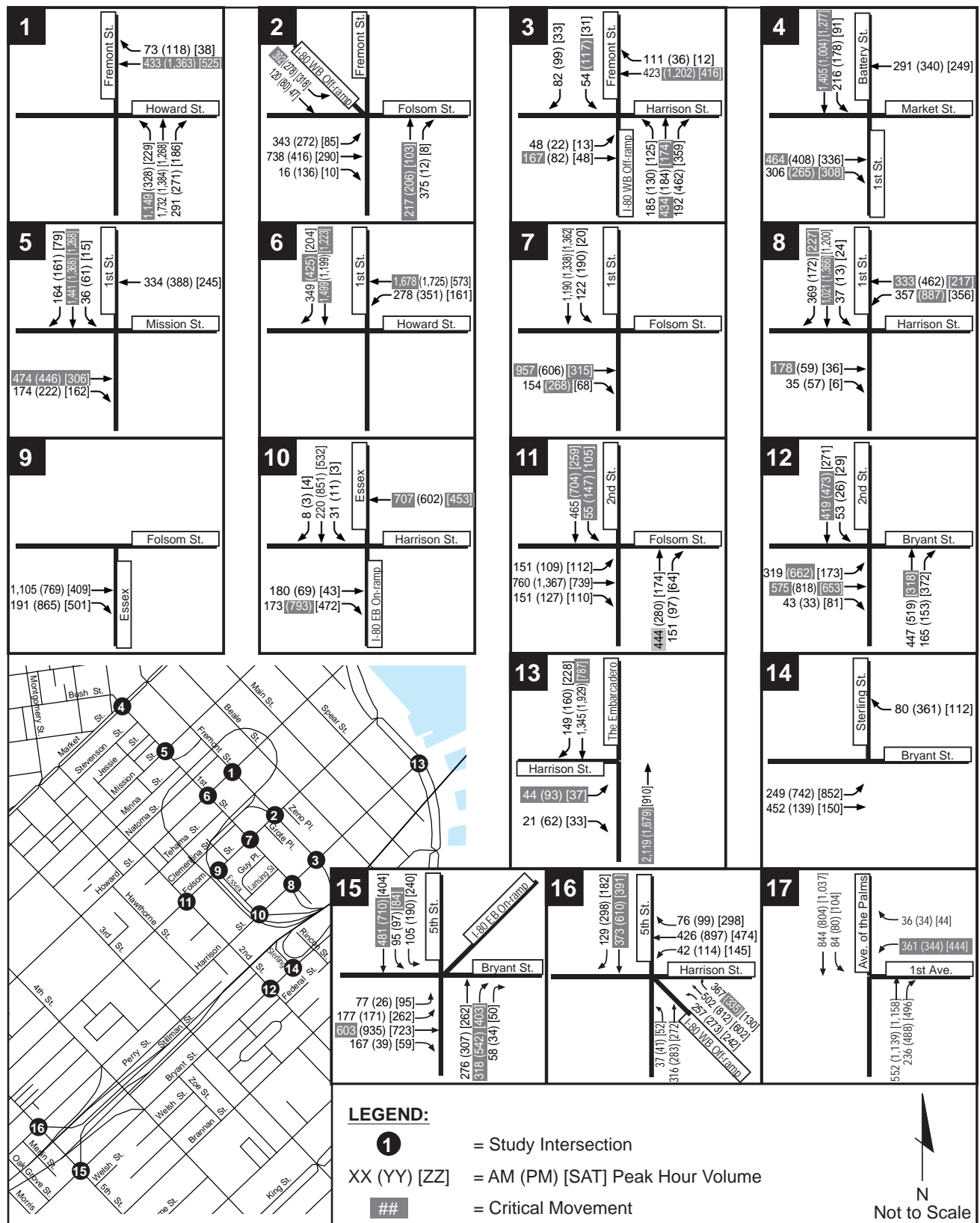
Figure 23 on page 116 shows the project-related traffic added to each turning movement at the study intersections in San Francisco. The differences in volumes at intersections in San Francisco associated with the two ramp configurations analyzed were negligible; therefore, **Figure 23** represents the traffic assignment under both configurations. **Figure 24** on page 117 presents the Existing Plus Project conditions intersection turning movement volumes at study intersections.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROJECT TRIP ASSIGNMENT (BASE TRANSIT SCENARIO)



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION VOLUMES (BASE TRANSIT SCENARIO)

Table 42 (page 119) presents intersection operating conditions for Existing plus Project Conditions for all four scenarios evaluated in this study. As shown, under Existing plus Project conditions with the Base Transit Scenario, 10 study intersections would operate at unacceptable LOS E or F during one or more of the three peak hours analyzed. Those intersections, and the Proposed Project's contribution to those conditions, are discussed below.

1st Street/Market Street (Study Intersection #4) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Traffic signals at this intersection are timed to prioritize transit movements on Market Street. Modifications to signal timing to provide more capacity for southbound traffic would likely impact transit operations on Market Street, which would be inconsistent with the City's Transit First policy. Further, providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment provided on Market Street. As shown on **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Traffic signals at this intersection are timed to prioritize transit movements on Mission Street. As a result, modifications to signal timing to provide more capacity for southbound traffic would likely impact transit operations on Mission Street, which would be inconsistent with the City's Transit First Policy. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. As shown on **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Proposed Project would contribute traffic to this intersection that operates at LOS E under existing conditions during the PM peak hour. However, the project would not contribute any vehicles to the critical southbound right-turn movement at this intersection and the project's impacts to this intersection would be **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. As shown on **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

TABLE 42 – INTERSECTION LEVELS OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Intersection	Peak Hour	Existing			Existing + Project: Base Transit Scenario			Existing + Project: Expanded Transit Scenario			Existing + Reduced Development: Base Transit Scenario			Existing + Reduced Development: Expanded Transit Scenario		
		Delay ¹	LOS	v/c	Delay ¹	Delay	v/c	Delay ¹	LOS	v/c	Delay ¹	LOS	v/c	Delay ¹	LOS	v/c
1. Fremont/Howard	AM	17.8	B	0.78	19.2	B	0.81	18.7	B	0.80	18.8	B	0.80	18.6	B	0.80
	PM	44.1	D	0.96	46.3	D	0.99	46.0	D	0.98	46.2	D	0.99	45.7	D	0.98
	Sat	13.2	B	0.51	14.1	B	0.57	14.9	B	0.63	14.0	B	0.56	13.9	B	0.55
2. Fremont/Folsom	AM	28.9	C	0.68	30.4	C	0.71	30.1	C	0.71	30.4	C	0.71	29.9	C	0.70
	PM	23.9	C	0.41	24.5	C	0.46	24.4	C	0.45	24.5	C	0.45	24.3	C	0.45
	Sat	20.4	C	0.17	20.8	C	0.23	20.7	C	0.22	20.8	C	0.22	20.7	C	0.21
3. Fremont/I-80 EB Off-Ramp/Harrison	AM	10.9	B	0.36	11.0	B	0.39	11.0	B	0.38	11.0	B	0.38	11.0	B	0.38
	PM	25.1	C	0.80	29.5	C	0.86	29.1	C	0.85	29.3	C	0.85	28.9	C	0.85
	Sat	10.4	B	0.20	10.7	B	0.23	10.9	B	0.23	10.7	B	0.23	10.7	B	0.22
4. First/Market	AM	33.4	C	0.70	43.8	D	0.72	41.4	D	0.71	42.0	D	0.71	40.0	D	0.71
	PM	72.8	E	0.81	>80	F	0.91	>80	F	0.87	>80	F	0.88	78.9	E	0.87
	Sat	18.5	B	0.58	28.0	C	0.61	25.9	C	0.61	26.2	C	0.61	24.6	C	0.60
5. First/Mission	AM	14.8	B	0.77	15.2	B	0.79	15.1	B	0.79	15.1	B	0.79	15.0	B	0.78
	PM	67.8	E	0.88	>80	F	0.94	>80	F	0.93	>80	F	0.93	>80	F	0.92
	Sat	16.3	B	0.55	21.1	C	0.75	19.8	B	0.74	20.9	C	0.75	20.7	C	0.74
6. First/Howard	AM	14.6	B	0.79	15.4	B	0.82	15.2	B	0.82	15.3	B	0.82	15.1	B	0.81
	PM	73.7	E	1.12	74.5	E	1.13	74.6	E	1.13	75.0	E	1.13	74.1	E	1.13
	Sat	22.2	C	0.42	19.3	B	0.48	23.5	C	0.42	19.4	B	0.48	19.5	B	0.47
7. First/Folsom	AM	12.1	B	0.52	12.0	B	0.53	12.0	B	0.53	12.0	B	0.53	12.0	B	0.53
	PM	70.6	E	1.14	>80	F	1.26	>80	F	1.24	>80	F	1.25	>80	F	1.23
	Sat	17.3	B	0.33	17.6	B	0.38	22.2	C	0.58	17.7	B	0.37	17.8	B	0.37
8. First /Harrison/I-80 EB On-Ramp	AM	29.0	C	0.63	28.4	C	0.66	28.5	C	0.65	28.5	C	0.65	28.5	C	0.65
	PM	>80	E	1.29	>80	F	1.42	>80	F	1.40	>80	F	1.40	>80	F	1.39
	Sat	10.7	B	0.55	13.3	B	0.63	12.4	B	0.64	13.0	B	0.63	12.7	B	0.62

TABLE 42 – INTERSECTION LEVELS OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Intersection	Peak Hour	Existing			Existing + Project: Base Transit Scenario			Existing + Project: Expanded Transit Scenario			Existing + Reduced Development: Base Transit Scenario			Existing + Reduced Development: Expanded Transit Scenario		
		Delay ¹	LOS	v/c	Delay ¹	Delay	v/c	Delay ¹	LOS	v/c	Delay ¹	LOS	v/c	Delay ¹	LOS	v/c
9. Folsom/Essex ⁴	AM PM Sat															
10. Essex/Harrison /I-80 EB On-Ramp	AM PM Sat	7.4 >80 15.1	A F B	0.37 1.22 0.36	7.5 >80 15.6	A F B	0.39 1.31 0.39	7.5 >80 15.2	A F B	0.38 1.30 0.39	7.5 >80 15.5	A F B	0.39 1.30 0.39	7.4 >80 15.5	A F B	0.38 1.29 0.38
11. Second/Folsom	AM PM Sat	13.4 59.4 14.8	B E B	0.50 0.93 0.34	13.5 68.0 14.9	B E B	0.51 0.99 0.39	13.5 66.3 14.9	B E B	0.51 0.99 0.38	13.5 67.0 14.9	B E B	0.51 0.99 0.38	13.5 65.3 14.9	B E B	0.50 0.98 0.38
12. Second/Bryant	AM PM Sat	11.1 32.4 11.5	B C B	0.37 0.90 0.38	11.1 32.8 11.6	B C B	0.38 0.92 0.39	11.1 32.7 11.6	B C B	0.38 0.92 0.38	11.2 32.8 11.6	B C B	0.38 0.92 0.38	11.1 32.7 11.6	B C B	0.38 0.91 0.38
13. Embarcadero/Harrison	AM PM Sat	68.6 38.5 12.0	E D B	0.81 0.85 0.39	68.5 48.6 12.2	E D B	0.81 0.85 0.40	68.5 48.1 12.1	E D B	0.81 0.88 0.40	68.5 48.3 12.2	E D B	0.81 0.88 0.40	68.5 47.9 12.1	E D B	0.81 0.88 0.40
14. Bryant /Sterling ⁴	AM PM Sat															
15. Bryant /5 th /I-80 EB On-Ramp	AM PM Sat	22.0 >80 53.2	C F D	0.56 1.65 0.70	23.5 >80 61.3	C F E	0.58 1.74 0.73	23.2 >80 59.9	C F E	0.58 1.72 0.72	23.3 >80 60.5	C F E	0.58 1.73 0.73	22.9 >80 59.1	C F E	0.57 1.71 0.72
16. Harrison /5 th /I-80 WB Off-Ramp	AM PM Sat	25.1 51.0 25.9	C D C	0.51 0.89 0.56	26.7 63.5 25.2	C E C	0.54 0.93 0.62	26.3 61.8 25.0	C E C	0.53 0.93 0.61	26.5 63.0 25.1	C E C	0.54 0.93 0.61	26.2 60.8 24.8	C E C	0.53 0.93 0.61

TABLE 42 – INTERSECTION LEVELS OF SERVICE – EXISTING PLUS PROJECT CONDITIONS

Intersection	Peak Hour	Existing			Existing + Project: Base Transit Scenario			Existing + Project: Expanded Transit Scenario			Existing + Reduced Development: Base Transit Scenario			Existing + Reduced Development: Expanded Transit Scenario		
		Delay ¹	LOS	v/c	Delay ¹	Delay	v/c	Delay ¹	LOS	v/c	Delay ¹	LOS	v/c	Delay ¹	LOS	v/c
17. Avenue of the Palms/1 st Street ²	AM				18.1	B	0.85	13.4	B	0.53	13.3	B	0.69	12.1	B	0.56
	PM				40.5	D	1.03	18.6	B	0.87	25.3	C	0.94	14.2	B	0.77
	Sat				50.6	D	1.09	29.8	C	0.98	35.6	D	1.02	20.5	C	0.89

Notes:

1. Whole intersection weighted average stopped delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM. In rare cases, if the Proposed Project adds traffic to movements with lower average delay than the average delay for the entire intersection, the project could result in lower average delay per vehicle than the "no project" scenario.
2. Since the project will substantially change travel patterns onto and off of the Island, this intersection was not analyzed under Existing Conditions.
3. **Bold** indicates an unacceptable level of service (LOS). I.e., at LOS E or LOS F conditions.
4. Uncontrolled intersections.

Source: Fehr & Peers, 2009.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. As shown on **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

Folsom Street/Essex Street (Study Intersection #9) – The study intersection of Folsom Street/Essex Street (#9) is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Proposed Project would add traffic to this intersection, which operates at LOS F under existing conditions in the PM peak hour. The critical movement in the PM peak hour is the eastbound right turn movement from eastbound Harrison Street onto the I-80 Eastbound On-Ramp. The Proposed Project would contribute less than five percent (2.5 percent) to this critical movement. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

2nd Street/Folsom Street (Study Intersection #11) – The Proposed Project would add traffic to this intersection, which operates at LOS E during the PM peak hour. The critical movements in the PM peak hour are the southbound through and southbound left-turn movements. The Proposed Project would contribute substantially to the critical southbound left-turn movement (22 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered significant. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment that is encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. As shown on **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

The Embarcadero/Harrison Street (Study Intersection #13) – The Proposed Project would add traffic to this intersection, which operates at LOS E in the AM peak hour. The northbound through and the eastbound left are the critical movements at this intersection. However, the eastbound left operates at acceptable level of service. Therefore, the Proposed Project's contribution of four vehicles to this movement would not be a significant impact. The northbound through movement is a critical movement at this intersection that operates at LOS F in the AM peak hour. The Proposed Project would not contribute traffic to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

Because the Proposed Project's contribution to critical movements at this intersection during the AM and PM peak hours would be small, the project's impact is considered **less than significant**.

Bryant Street/Sterling Street (Study Intersection #14) – The study intersection of Bryant Street/Sterling Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Bryant Street/5th Street/I-80 Eastbound On-Ramp (Study Intersection #15) – The Proposed Project would add traffic to this intersection, which operates at LOS F during the PM peak hour under existing conditions. The critical movements in the PM peak hour are the southbound through and northbound right turn movements. The Proposed Project would contribute less than five percent (2.7 percent) to the critical southbound through movement. However, the Proposed Project would contribute more than five percent (5.4 percent) to the northbound right-turn movement. Therefore, the Proposed Project would result in a significant impact during the PM peak hour.

The project would also cause the intersection to deteriorate from LOS D to LOS E during the Saturday peak hour. This would also be a significant impact.

The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and to northbound traffic on 5th Street turning onto the I-80 Eastbound On-Ramp. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. As shown on **Table 42** (page 119), implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour and LOS E in the Saturday peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

5th Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #16) – The Proposed Project would cause this intersection to deteriorate from LOS D to LOS E in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and traffic exiting I-80. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths or right of way acquisition, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. As shown on **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS E in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

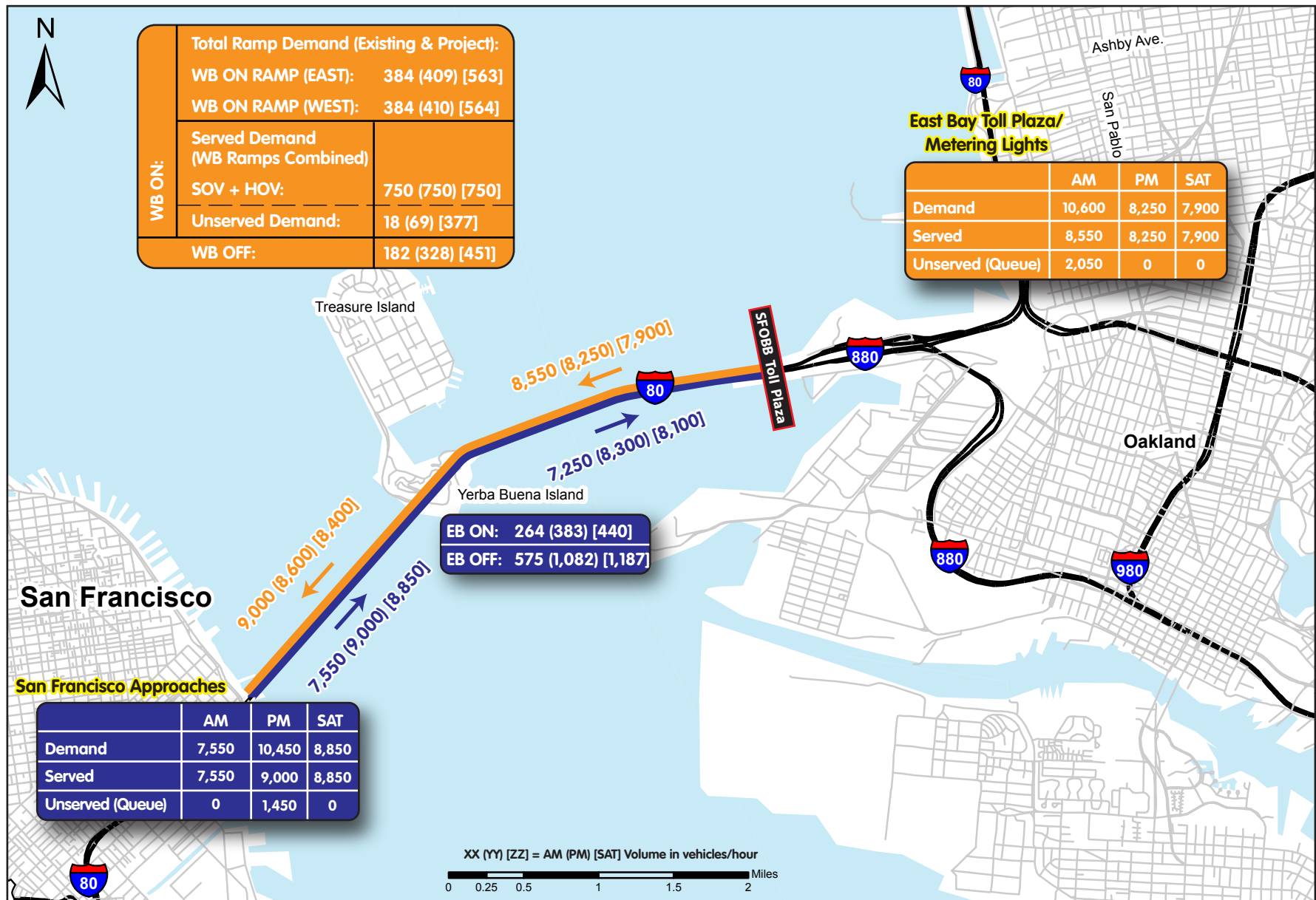
4.2.2 Proposed Project With Expanded Transit Service

This section describes the traffic-related impacts associated with the Proposed Project under the Expanded Transit Scenario.

4.2.2.1 Freeway and Ramp Operations (Expanded Transit Scenario)

Figures A-3 and A-4 in **Appendix D4** presents the unconstrained trip assignment to individual ramps for the Proposed Project under the Expanded Transit Scenario assuming the existing westbound ramps and the proposed reconfigured westbound ramps, respectively.

Figure 25 on page 125 shows the amount of traffic assigned to each freeway segment under the existing westbound ramp configuration, constrained by the capacity of the stop signs on the westbound ramps. **Figure 26** on page 126 shows the same information for conditions with reconstructed westbound ramps, constrained by the capacity of the ramp meters. The resulting volumes were used to assess freeway impacts in terms of ramp merge and diverge section operations as well as contributions to queuing on freeway mainline segments and approaches for the Proposed Project under the Expanded Transit Scenario.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS
EXISTING PLUS PROJECT (EXPANDED TRANSIT SCENARIO)
SFOBB TRAVEL DEMAND AND VEHICLE QUEUES
 <<NO NEW WESTBOUND ON-RAMPS>>

FIGURE 25

4.2.2.1.1 Ramp Queuing (Expanded Transit Service)

Due to the complex interaction of vehicle streams that approach the SFOBB from the Islands, the VISSIM microsimulation software was used to evaluate vehicle queuing on the ramp approaches that may result from the eastbound, westbound, SOV, HOV2, and HOV3+ all sharing a common approach to the SFOBB. The maximum queues for each scenario, measured from the intersection of South Gate Drive and Macalla Road, as well as the average amount of delay for queued vehicles are presented in **Table 38**, on page 108. **Table 38** also depicts average vehicular delay associated with the queuing for traffic approaching the SFOBB. (The delay is discussed in a subsequent section.) **Figure 27** (page 128) illustrates the extent of queuing associated with the Proposed Project under the Expanded Transit Scenario for conditions with and without reconstruction of the westbound ramps.

As depicted in **Table 38** and illustrated on **Figure 27**, under the Expanded Transit Scenario, queues on roadways approaching the SFOBB on-ramps would be notably shorter than under the Base Transit Scenario. This is because the Expanded Transit Service would reduce automobile traffic generation resulting in fewer vehicles attempting to enter the SFOBB during peak hours. Without reconstruction of the westbound on-ramp to the SFOBB (and the associated HOV3+ bypass), queues would extend back approximately 400 feet from each of the two westbound on-ramps during the AM and PM peak hours, and approximately 1/3 mile during the Saturday peak hour. With reconstruction of the westbound ramps (and the associated consolidation of all traffic to a single westbound on-ramp), queues would be somewhat longer, extending to a maximum of less than one mile, approximately to the transit-only westbound on-ramp.

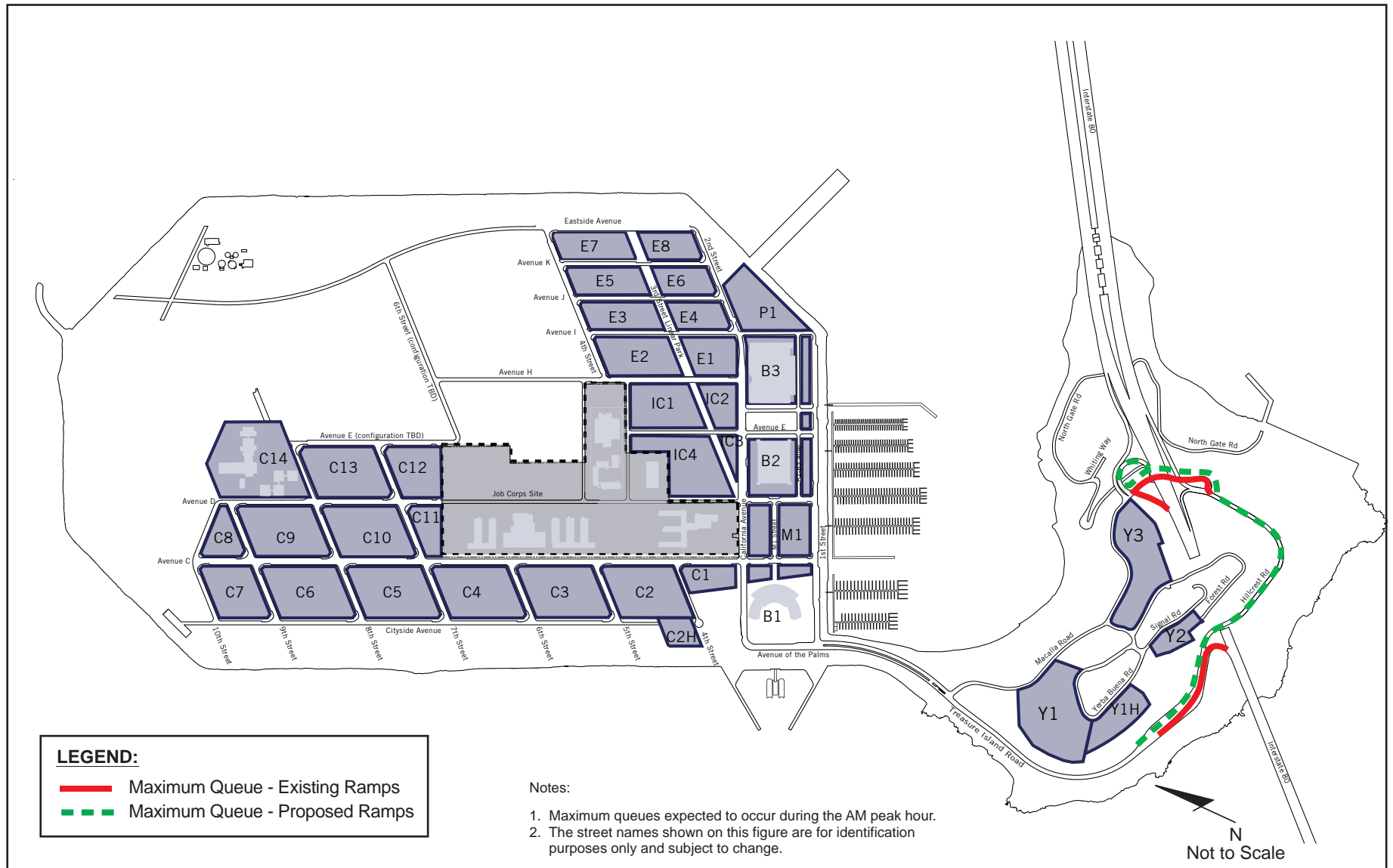
4.2.2.1.2 Ramp Merge/Diverge (Expanded Transit Service)

The operational characteristics of the Yerba Buena Island ramps were analyzed to determine project impacts. **Tables 39, 40 and 41**, on pages 109 to 111, summarize the ramp merge and diverge levels of service for the AM, PM, and Saturday peak hours, respectively.³⁸ For conditions without reconstruction of the westbound ramps, the tables also present the stop-controlled intersection levels of service for the AM, PM, and Saturday peak hours. However, this section discusses only the merge/diverge analysis; discussion of vehicular delays and LOS associated with ramp control devices (i.e., stop signs or meters) is discussed in the next section.

Based on the merge/diverge analysis, the Proposed Project would contribute traffic to the eastbound off-ramp diverge section on the west side of Yerba Buena Island, which was observed to operate at LOS E in the PM peak hour under existing conditions. Project traffic would comprise a majority of the traffic using the off-ramp during the PM peak hour and the project's contribution would therefore, be considered substantial. The Proposed Project would also cause this same off-ramp diverge section to deteriorate from LOS D to LOS E in the Saturday peak hour. This means that during the weekday PM and Saturday peak hours, the roadway area on the SFOBB approaching the off-ramp would be operating near its capacity with virtually no usable gaps in the traffic stream and little room to maneuver, with notable congestion and/or queuing extending onto the SFOBB.

All other merge and diverge sections would operate at acceptable LOS D or better, with or without reconstruction of the westbound ramps on the east side of Yerba Buena Island. The project's impact to congestion on the SFOBB approaching the eastbound off-ramp diverge section on the west side of Yerba Buena Island is considered significant in the weekday PM and Saturday peak hours.

38. Under conditions with the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the westbound on-ramp on the west side of the Island would be converted to transit-only. Under these conditions, no analysis of the bus-only westbound on-ramp was performed because volumes would be very low. Under conditions without the reconstruction of the westbound ramps, both a side-street stop analysis and a ramp merge analysis were conducted.



Source: Perkins + Will, May 4, 2009; Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

MAXIMUM ON-ISLAND QUEUE PROPOSED PROJECT (EXPANDED TRANSIT SCENARIO)

FIGURE 27

The primary cause for deficient operations at this off-ramp is the short deceleration distance followed by a tight curve. This design causes exiting vehicles to begin deceleration on the bridge mainline. To improve the operations of this diverge section, the off-ramp would need to be reconstructed to provide more deceleration distance and a less-severe curve. Reconstruction of this ramp would require major construction on the SFOBB, Yerba Buena Island, and the Treasure Island Road causeway. These improvements were evaluated in the Project Study Report for the ramps replacement project conducted by Caltrans and the SFCTA in December 2007 and were found to be infeasible. Therefore, the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

4.2.2.1.3 Ramp Delays (Expanded Transit Service)

The preceding discussion illustrated the way in which the ramp configurations may constrain the amount of traffic that can enter the SFOBB from the Islands, the physical extents of queues caused by this constraint, and the effects of project-generated traffic on freeway merge and diverge sections on the SFOBB. This section describes the vehicular traffic delay associated with congestion leading up to the SFOBB for the Proposed Project under the Expanded Transit Scenario. This delay affects not only project-generated traffic, but also existing uses on the Islands that would remain under conditions with the Proposed Project, including the Coast Guard and Job Corps³⁹. As shown in **Figure 27**, queues on the Islands and associated delay may affect the Coast Guard operations around Yerba Buena Island and their access to the SFOBB. These delays are discussed in this section.

Even under the Expanded Transit Scenario, traffic volumes destined for the westbound SFOBB will exceed the capacity of the westbound on-ramps to the SFOBB, resulting in queues. These queues will increase vehicular travel times and cause traffic delay. Although delays associated with ramp metering are not typically analyzed for purposes of identifying impacts, due to the unique nature of this project and the SFOBB, this report includes an analysis of ramp delays.

Based on the stop-controlled analysis, which was conducted only for conditions in which the westbound ramps on the east side of Yerba Buena Island are not reconstructed and in which case the two westbound on-ramps would remain stop-controlled, the Proposed Project would contribute substantial traffic to both westbound ramps.⁴⁰ As shown in **Table 39**, **Table 40** and **Table 41**, both westbound ramps would operate at LOS F in the AM, PM, and Saturday peak hours. This would be considered a significant impact to both westbound on-ramps in the AM, PM, and Saturday peak hours under conditions in which those ramps remain stop-controlled. If the existing configuration were to remain, it is unlikely that the existing stop signs would be removed or that other physical improvements would be made to the on-ramps. Therefore, the project's impacts to delay approaching the on-ramps would remain **significant and unavoidable**.

If the separate project to reconstruct the westbound ramps on the east side of Yerba Buena Island were constructed and the west side westbound on-ramp were converted to transit-only, stop control devices would be eliminated and all westbound traffic (except transit vehicles destined for San Francisco) would be consolidated to the westbound on-ramp on the east side of Yerba Buena Island. This improvement, consequently, would simply relocate the source of vehicular delay from stop signs at the two ramp merges to a ramp meter upstream of the single remaining merge on the east side of Yerba Buena Island. The delay associated with the ramp meter is shown in **Table 38**. Although the delays are technically caused by a ramp meter signal, the LOS criteria for unsignalized intersections were applied because the ramp meter signal functions more similarly to a stop sign than a traditional traffic signal.

-
39. Although Coast Guard personnel would experience increased congestion getting to and from the SFOBB from what they currently experience today, their primary access point would be from North Gate Road, which is located near the existing and proposed on- and off-ramps on the east side of Yerba Buena Island. Therefore, they would skip most of the queue unless travelling to and from Treasure Island.
40. The project-generated traffic would constitute over half of the total traffic using the on-ramps.

Vehicular traffic delay under conditions with the reconstructed westbound ramps would be approximately 3.5 minutes in the AM peak hour and 2.5 minutes in the PM peak hour. Although this delay is considerably shorter with the Expanded Transit Scenario than under the Base Transit Scenario, this vehicular delay would be a significant impact. Traffic would experience minimal delays in the Saturday peak hour since ramp meters were assumed not to be in operation during that time. Caltrans has indicated that the ramp reconstruction project will require ramp meters and it is unlikely that they would be eliminated from that project. Therefore, the project's impacts to delay approaching the reconstructed on-ramps would remain **significant and unavoidable**.

4.2.2.1.4 Mainline Operations: Queuing on Approaches (Expanded Transit Service)

In addition to ramp operations, the operations of the SFOBB mainline segments were considered. Volumes on the SFOBB and approaches under conditions with the Proposed Project under the Expanded Transit Scenario are shown in **Figures 25 and 26** (pages 125 and 126). As shown, the SFOBB experiences more demand than its capacity in the westbound direction in the AM peak hour and the eastbound direction in the PM peak hour. With the addition of project traffic, the weekday over-capacity conditions are expected to be exacerbated.

This analysis assumes that with the addition of project traffic (constrained by either ramp meters or stop control at on-ramps to the SFOBB at capacity conditions), some vehicles that would otherwise be on the SFOBB would be displaced, increasing queues at the toll plaza in the East Bay or at the San Francisco approaches. For example, if the SFOBB operates at capacity in the westbound direction during the AM peak hour today, and the Proposed Project would displace 50 vehicles that would otherwise be able to travel westbound on the SFOBB. This would increase the westbound queue at the SFOBB toll plaza by 50 vehicles. A similar phenomenon would occur in the PM peak hour, with project-related traffic lengthening queues on the eastbound approaches to the SFOBB, including surface streets in Downtown San Francisco, by the number of vehicles the project adds to those streets.

It should be noted that although Caltrans generally aims to work cooperatively with local jurisdictions regarding ramp metering, Caltrans retains the ultimate control of both the ramp meters on Yerba Buena Island and the SFOBB toll plaza metering lights. It is possible that, in consultation with TITMA, Caltrans would reduce the metering rate for the on-ramps and allow more traffic to enter the SFOBB from the East Bay. This would reduce the project's impacts to queuing at the East Bay toll plaza, but would increase queues on the Islands. The analysis presented in this report describes the worst case for bridge and queuing conditions in the East Bay.

Under the Expanded Transit Scenario, the Proposed Project would displace traffic on the SFOBB and increase queues on the westbound approach in the AM peak hour by approximately 442 vehicles. The project's increase to queues approaching the SFOBB from the East Bay in the AM peak hour would be significant. Increasing the ramp metering rate at the East Bay toll plaza may reduce queues in the East Bay somewhat, but would cause other impacts to the bridge operations by increasing congestion on the SFOBB mainline. Therefore, it is unlikely that operational improvements could improve the capacity of the SFOBB and in turn, reduce queues in the East Bay. Therefore, the project's contribution to increased queues on the East Bay bridge approaches during the AM peak hour would be a **significant and unavoidable** impact.

Queues approaching the eastbound SFOBB from surface streets in San Francisco in the PM peak hour would increase by approximately 412 vehicles under the Expanded Transit Scenario, although this unserved demand would be dispersed among multiple surface streets in San Francisco approaching the bridge. Still, the project's increase to queues approaching the SFOBB from Downtown San Francisco in the PM peak hour would also be significant. Queues approaching the SFOBB are caused by capacity constraints on the SFOBB mainline. Since increasing the capacity of the SFOBB would require additional lanes, which is not likely feasible, the project's impacts to queues approaching the SFOBB from Downtown San Francisco would be a **significant and unavoidable** impact.

Except near ramp merge and diverge sections, operations on the SFOBB would operate similar to existing conditions (i.e., at capacity in peak directions during peak hours) since additional travel demand would be constrained by the toll plaza in the East Bay and eastbound approaches in San Francisco. Therefore, the project's impacts to the SFOBB mainline operations are expected to be less than significant, because the bridge's approaches limit the number of vehicles that can reach the bridge. Impacts to the SFOBB near ramp merge and diverge sections under the Expanded Transit Scenario were discussed on page 127. Generally, through-traffic on the SFOBB may experience some increased congestion in the eastbound direction due to project-generated impacts approaching the westbound off-ramp on the west side of Yerba Buena Island. Project-generated increases to congestion in the westbound direction are not expected to generate substantial increases in congestion, particularly if the westbound ramps are reconstructed since those improvements would increase sight distance and acceleration distance allowing smoother traffic merging than the existing configuration.

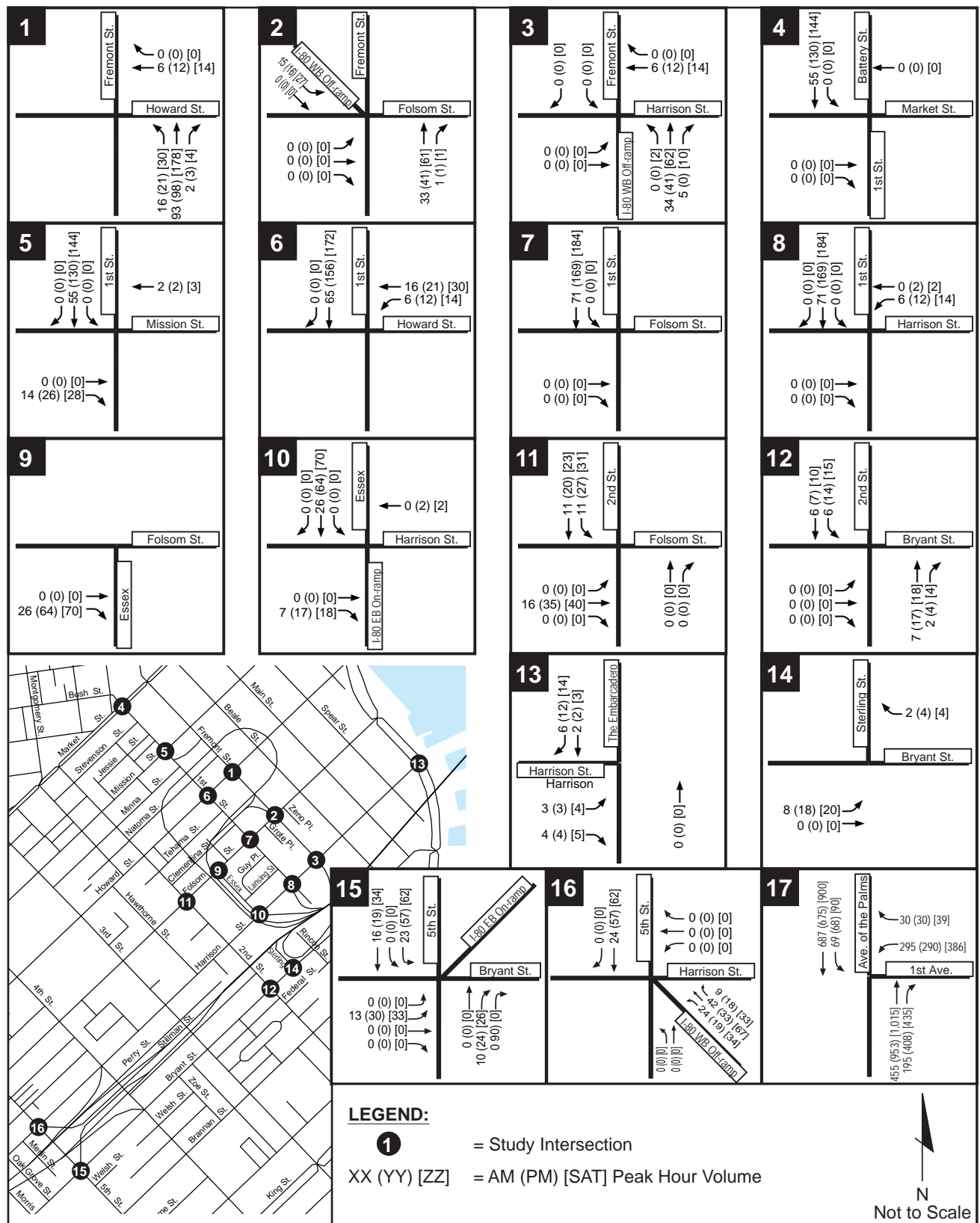
4.2.2.2 Intersection Operations (Expanded Transit Service)

Figure 28 (page 132) shows the project-related traffic added to each turning movement at the study intersections in San Francisco under the Expanded Transit Scenario. The differences in volumes at intersections in San Francisco associated with the two ramp configurations analyzed were negligible; therefore, **Figure 28** represents the traffic assignment under both configurations. **Figure 29** (page 133) presents the Existing Plus Project conditions intersection turning movement volumes under the Expanded Transit Scenario at study intersections.

The intersection of Avenue of the Palms/1st Street was included in the Plus Project scenario, since it is the first intersection on Treasure Island and would serve most of the traffic associated with the redevelopment project. This intersection was not analyzed under Existing Conditions.

Table 42, on page 119, presents intersection-operating conditions for Existing plus Project Conditions for all four scenarios evaluated in this study, including the Expanded Transit Scenario. As shown, under Existing plus Project conditions with the Expanded Transit Scenario, 10 study intersections would operate at unacceptable LOS E or F during one or more of the three peak hours analyzed. This is similar to Existing plus Project Conditions under the Base Transit Scenario. The 10 intersections operating unacceptably, and the Proposed Project's contribution to those conditions under the Expanded Transit Scenario, are discussed below.

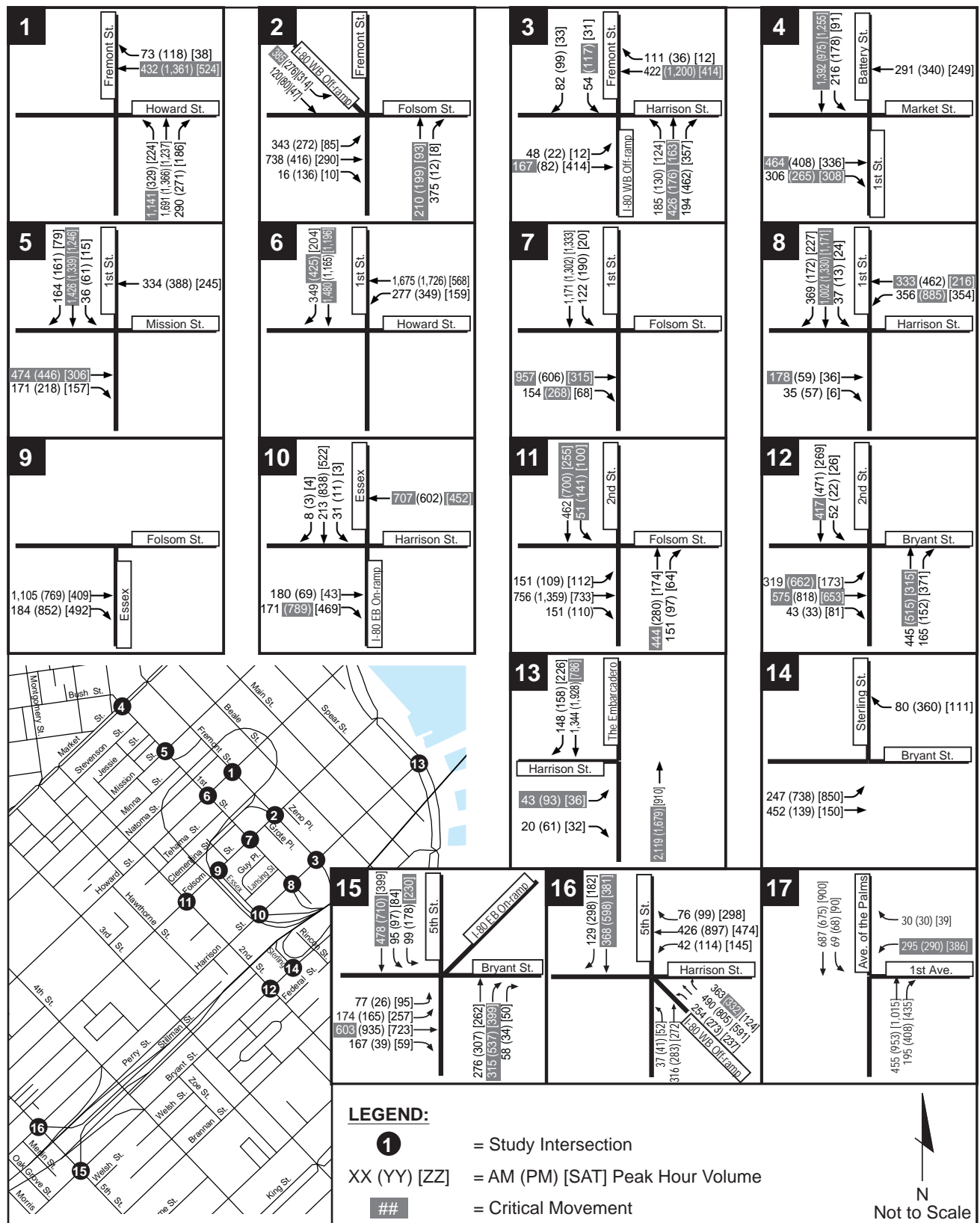
1st Street/Market Street (Study Intersection #4) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Traffic signals at this intersection are timed to prioritize transit movements on Market Street. Modifications to signal timing to provide more capacity for southbound traffic would likely impact transit operations on Market Street, which would be inconsistent with the City's Transit First policy. Further, providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment provided on Market Street. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROJECT TRIP ASSIGNMENT (EXPANDED TRANSIT SCENARIO)



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS EXISTING PLUS PROJECT (EXPANDED TRANSIT SCENARIO) PEAK HOUR INTERSECTION VOLUMES

1st Street/Mission Street (Study Intersection #5) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Proposed Project would contribute traffic to this intersection that operates at LOS E under existing conditions during the PM peak hour. However, the project would not contribute any vehicles to the critical southbound right-turn movement at this intersection and the project's impacts to this intersection would be **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

Folsom Street/Essex Street (Study Intersection #9) – The study intersection of Folsom Street/Essex Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Proposed Project would add traffic to this intersection, which operates at LOS F under existing conditions in the PM peak hour. The critical movement in the PM peak hour is the eastbound right turn movement from eastbound Harrison Street onto the I-80 Eastbound On-Ramp. The Proposed Project would contribute less than five percent (2.2 percent) to this critical movement. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

2nd Street/Folsom Street (Study Intersection #11) – The Proposed Project would add traffic to this intersection, which operates at LOS E during the PM peak hour. The critical movements in the PM peak hour are the southbound through and southbound left-turn movements. These movements operate at acceptable levels of service during all peak hours; therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

The Embarcadero/Harrison Street (Study Intersection #13) – The Proposed Project would add traffic to this intersection, which operates at LOS E in the AM peak hour. The northbound through movement and the eastbound left are the critical movements; however, the eastbound left operates at acceptable levels of service. The northbound through movement operates at LOS F in the AM peak hour. The Proposed Project would not contribute traffic to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

Because the Proposed Project would not contribute any vehicles to a critical movement that is failing during the AM peak hour, the project's impact is considered **less than significant**.

Bryant Street/Sterling Street (Study Intersection #14) – The study intersection of Bryant Street/Sterling Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Bryant Street/5th Street/I-80 Eastbound On-Ramp (Study Intersection #15) – The Proposed Project would add traffic to this intersection, which operates at LOS F in the PM peak hour under existing conditions. The critical movements in the PM peak hour are the southbound through and northbound right turn movements. The Proposed Project would contribute less than five percent (2.7 percent) to the critical southbound through movement. The Proposed Project would contribute less than five percent (4.5 percent) to the northbound right-turn movement. Therefore, the Proposed Project's contribution to critical movements at this intersection would result in a less than significant impact during the PM peak hour.

However, the project would cause the intersection to deteriorate from LOS D to LOS E during the Saturday peak hour. This would also be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and to northbound traffic on 5th Street turning onto the I-80 Eastbound On-Ramp. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection during the Saturday peak hour would remain **significant and unavoidable**.

5th Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #16) – The Proposed Project would cause this intersection to deteriorate from LOS D to LOS E in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and traffic exiting I-80. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths or right of way acquisition, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

4.2.3 Reduced Development Alternative With Base Transit Service

This section describes the traffic-related impacts associated with the Reduced Development Alternative under the Base Transit Scenario.

4.2.3.1 Freeway and Ramp Operations (Reduced Development; Base Transit Service)

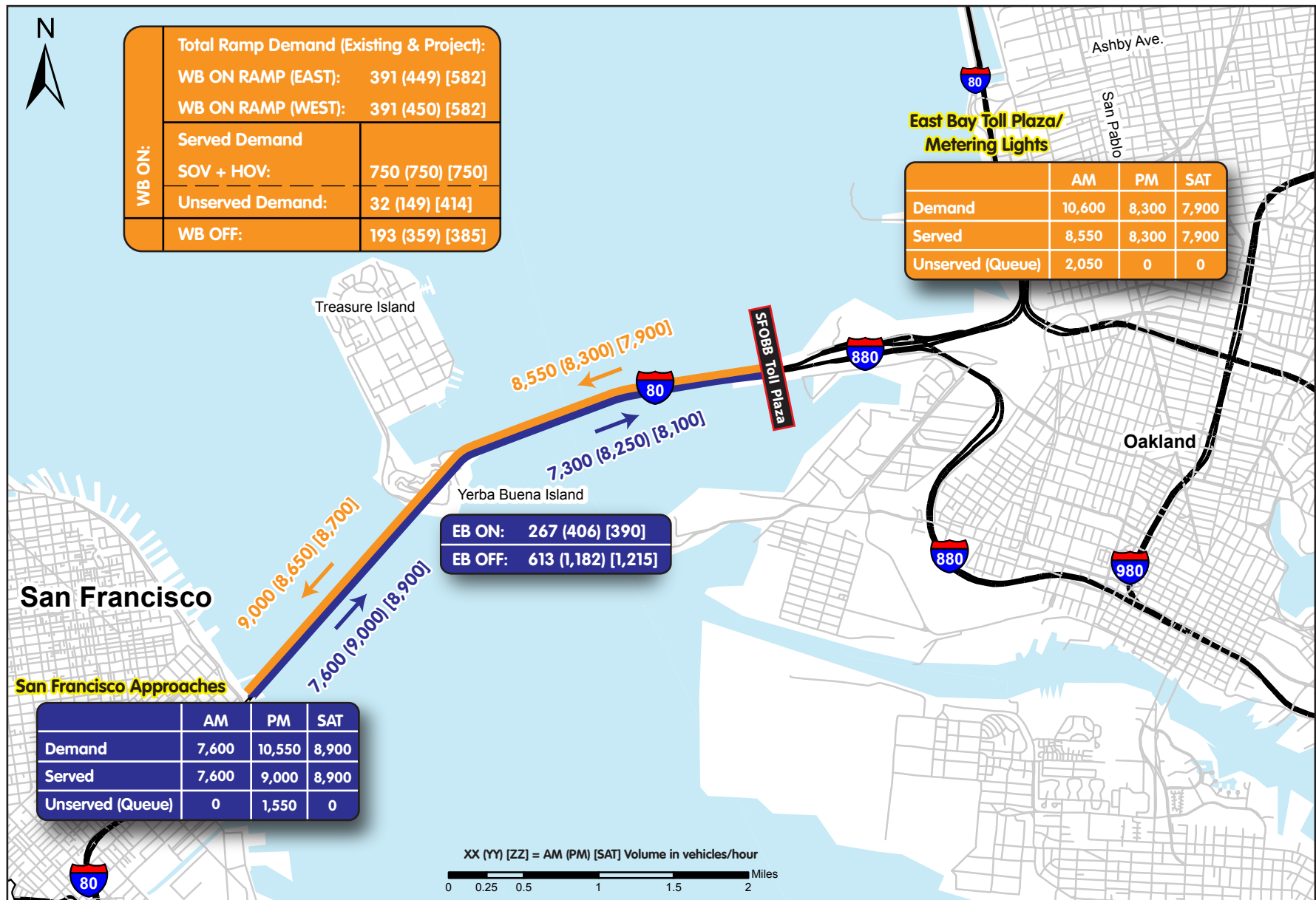
Freeway facilities were also evaluated for the Reduced Development Alternative. **Figures A-5 and A-6** in **Appendix D4** present the unconstrained trip assignment to individual ramps for the Reduced Development Alternative under the Base Transit Scenario assuming the existing westbound ramps and the proposed reconfigured westbound ramps, respectively.

Figure 30 on page 94 shows the amount of traffic assigned to each freeway segment under the existing westbound ramp configuration, constrained by the capacity of the stop signs on the westbound ramps. **Figure 31** on page 95 shows the same information for conditions with reconstructed westbound ramps, constrained by the capacity of the ramp meters. The resulting volumes were used to assess freeway impacts in terms of ramp merge and diverge section operations as well as contributions to queuing on freeway mainline segments and approaches for the Reduced Development Alternative under the Base Transit Scenario.

4.2.3.1.1 Ramp Queuing (Reduced Development; Base Transit Service)

Due to the complex interaction of vehicle streams that approach the SFOBB from the Islands, the VISSIM microsimulation software was used to evaluate vehicle queuing on the ramp approaches resulting from eastbound, westbound, SOV, HOV2, and HOV3+ all sharing a common approach to the SFOBB. The maximum queues for each scenario, measured from the intersection of South Gate Drive and Macalla Road, as well as the average amount of delay for queued vehicles are presented in **Table 38** on page 108. **Table 38** also depicts average vehicular delay associated with the queuing for traffic approaching the SFOBB. (The delay is discussed in a subsequent section.) **Figure 32** on page 139 illustrates the extent of queuing associated with the Reduced Development Alternative under the Base Transit Scenario for conditions with and without reconstruction of the westbound ramps.

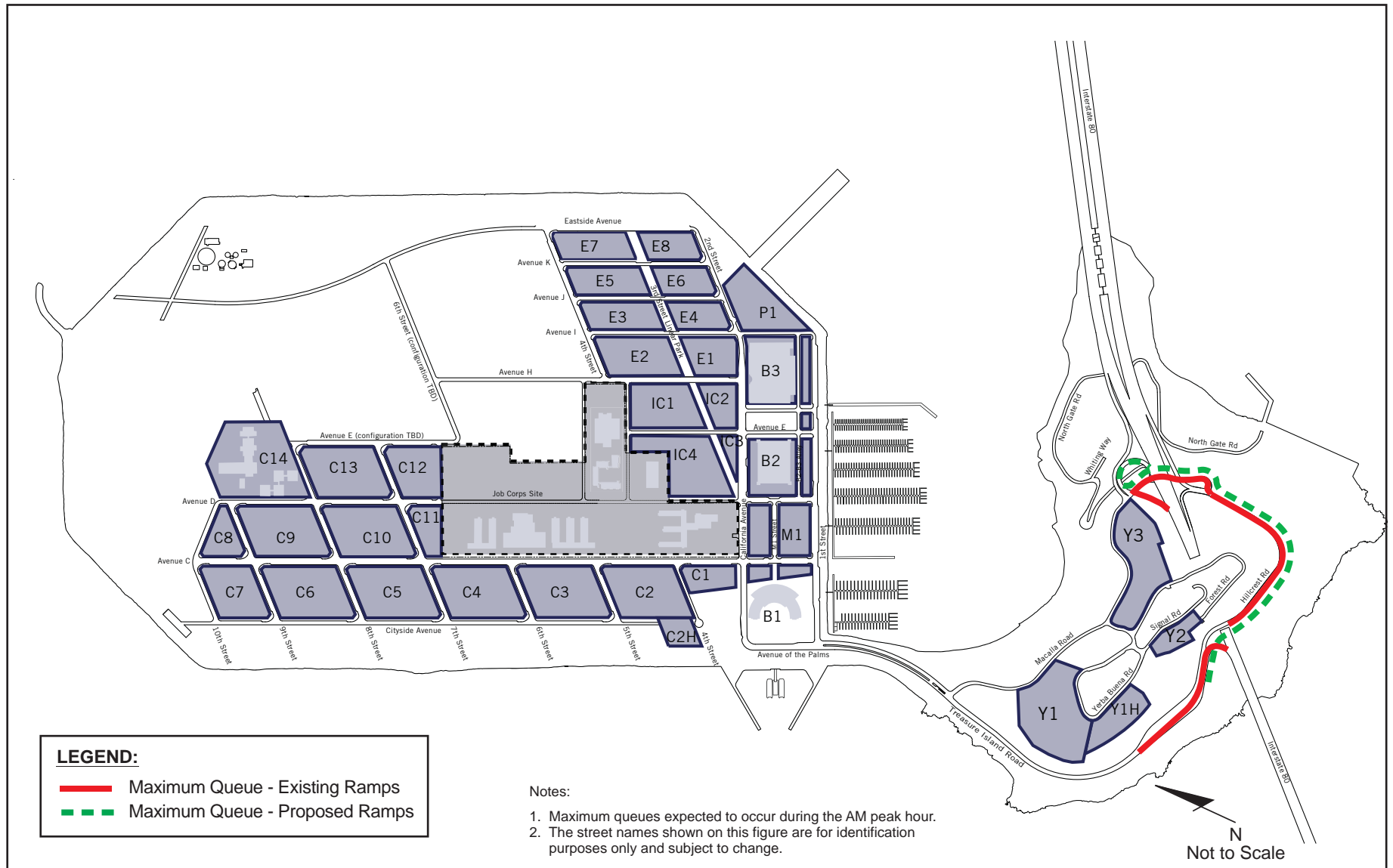
As depicted in **Table 38** and illustrated on **Figure 32**, under the Reduced Development Alternative, queues on roadways approaching the SFOBB on-ramps would be similar to or less than under the Proposed Project. Without reconstruction of the westbound on-ramp to the SFOBB (and the associated HOV3+ bypass), queues would extend back just under ½ mile from each of the two westbound on-ramps during the AM and PM peak hours, and approximately 2/3 mile during the Saturday peak hour. With reconstruction of the westbound ramps (and the associated consolidation of all traffic to a single westbound on-ramp), queues would be somewhat longer, extending to a maximum of approximately 2/3 mile, approximately to the transit-only westbound on-ramp.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS
EXISTING PLUS REDUCED DEVELOPMENT ALTERNATIVE (BASE TRANSIT PROJECT)
SFOBB TRAVEL DEMAND AND VEHICLE QUEUES
 <<NO NEW WESTBOUND ON-RAMPS>>

FIGURE 31



Source: Perkins + Will, May 4, 2009; Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

MAXIMUM ON-ISLAND QUEUE REDUCED DEVELOPMENT PROJECT (BASE TRANSIT SCENARIO)

FIGURE 32

4.2.3.1.2 Ramp Merge/Diverge (Reduced Development; Base Transit Service)

The operational characteristics of the Yerba Buena Island ramps were analyzed to determine project impacts. **Tables 39, 40 and 41**, on pages 109 to 111, summarize the ramp merge and diverge levels of service for the AM, PM, and Saturday peak hours, respectively.⁴¹ For conditions without reconstruction of the westbound ramps, the tables also present the stop-controlled intersection levels of service for the AM, PM, and Saturday peak hours. However, this section discusses only the merge/diverge analysis; discussion of vehicular delays and LOS associated with ramp control devices (i.e., stop signs or meters) is discussed in the next section.

Based on the merge/diverge analysis, the Reduced Development Alternative would contribute traffic to the eastbound off-ramp diverge section on the west side of Yerba Buena Island, which was observed to operate at LOS E in the PM peak hour under existing conditions. Project traffic would comprise a majority of the traffic using the off-ramp during the PM peak hour and the project's contribution would therefore, be considered substantial. The Reduced Development Alternative would also cause this same off-ramp diverge section to deteriorate from LOS D to LOS E in the Saturday peak hour. This means that during the weekday PM and Saturday peak hours, the roadway area on the SFOBB approaching the off-ramp would be operating near its capacity with virtually no usable gaps in the traffic stream and little room to maneuver, with notable congestion and/or queuing extending onto the SFOBB.

All other merge and diverge sections would operate at acceptable LOS D or better, with or without reconstruction of the westbound ramps on the east side of Yerba Buena Island. The project's impact to congestion on the SFOBB approaching the eastbound off-ramp diverge section on the west side of Yerba Buena Island is considered significant in the weekday PM and Saturday peak hours.

The primary cause for deficient operations at this off-ramp is the short deceleration distance followed by a tight curve. This design causes exiting vehicles to begin deceleration on the bridge mainline. To improve the operations of this diverge section, the off-ramp would need to be reconstructed to provide more deceleration distance and a less-severe curve. Reconstruction of this ramp would require major construction on the SFOBB, Yerba Buena Island, and the Treasure Island Road causeway. These improvements were evaluated in the Project Study Report for the ramps replacement project conducted by Caltrans and the SFCTA in December 2007 and were found to be infeasible.

Mitigation Measure 1 – Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to the eastbound off-ramp diverge section would be reduced. However, as illustrated in **Tables 40 and 41** (pages 110 and 111) for the weekday PM and Saturday peak hours, respectively, this would have only a slight benefit to congestion around the off-ramp diverge section and the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

4.2.3.1.3 Ramp Delays (Reduced Development; Base Transit Service)

The preceding discussion has illustrated the way in which the ramp configurations may constrain the amount of traffic that can enter the SFOBB from the Islands, the physical extents of queues caused by this constraint, and the effects of project-generated traffic on freeway merge and diverge sections on the SFOBB. This section describes the vehicular traffic delay associated with congestion leading up to the SFOBB for the Reduced Development Alternative under the Base Transit Scenario. This delay affects not only project-generated traffic, but also existing uses on the Islands that would remain under conditions

41. Under conditions with the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the westbound on-ramp on the west side of the Island would be converted to transit-only. Under these conditions, no analysis of the bus-only westbound on-ramp was performed because volumes would be very low. Under conditions without the reconstruction of the westbound ramps, both a side-street stop analysis and a ramp merge analysis were conducted.

with the Reduced Development Alternative, including the Coast Guard and Job Corps. As shown in **Figure 32** (page 135), queues on the Islands and associated delay may affect the Coast Guard operations around Yerba Buena Island and their access to the SFOBB. These delays are discussed in this section.

Even under the Reduced Development Alternative, traffic volumes destined for the westbound SFOBB will exceed the capacity of the westbound on-ramps to the SFOBB, resulting in queues. These queues will increase vehicular travel times and cause traffic delay. Although delays associated with ramp metering are not typically analyzed for purposes of identifying impacts, due to the unique nature of this project and the SFOBB, this analysis includes an analysis of ramp delays.

Based on the stop-controlled analysis, which was conducted only for conditions in which the westbound ramps on the east side of Yerba Buena Island are not reconstructed and in which case the two westbound on-ramps would remain stop-controlled, the Reduced Development Alternative would contribute substantial traffic to both westbound ramps.⁴² As shown in **Tables 39, 40 and 41** (pages 109 - 111), both westbound ramps would operate at LOS F in the AM, PM, and Saturday peak hours. This would be considered a significant impact to both westbound on-ramps in the AM, PM, and Saturday peak hours under conditions in which those ramps remain stop-controlled. If the existing configuration were to remain, it is unlikely that the existing stop signs would be removed or that other physical improvements would be made to the on-ramps.

Mitigation Measure 1 – Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to delays at the stop controlled westbound on-ramps would be reduced. However, as illustrated in **Tables 39, 40 and 41** for the weekday AM and PM and Saturday peak hours, respectively, this would have only a slight benefit to reducing delays, which would still be consistent with LOS F conditions and the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

If the separate project to reconstruct the westbound ramps on the east side of Yerba Buena Island were constructed and the west side westbound on-ramp were converted to transit-only, stop control devices would be eliminated and all westbound traffic (except transit vehicles destined for San Francisco) would be consolidated to the westbound on-ramp on the east side of Yerba Buena Island. This improvement, consequently, would simply relocate the source of vehicular delay from stop signs at the two ramp merges to a ramp meter upstream of the single remaining merge on the east side of Yerba Buena Island. The delay associated with the ramp meter is shown in **Table 38** (page 108). Although the delays are technically caused by a ramp meter signal, the LOS criteria for unsignalized intersections were applied because the ramp meter signal functions more similarly to a stop sign than a traditional traffic signal.

Vehicular traffic delay under conditions with the reconstructed westbound ramps would be just under three minutes in the AM and PM peak hours. Although this delay is considerably shorter under the Reduced Development Alternative compared to the Proposed Project, this vehicular delay would be a significant impact. Traffic would experience minimal delays in the Saturday peak hour since ramp meters were assumed not to be in operation during that time. Caltrans has indicated that the ramp reconstruction project will require ramp meters and it is unlikely that they would be eliminated from that project.

Mitigation Measure 1 – Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to delays at the stop controlled westbound on-ramps would be reduced. In the AM peak hour, volumes approaching the westbound on-ramp would be less than the capacity of the ramp and queues and delays would be eliminated. However, as illustrated in **Table 38**, this mitigation measure would have only a slight benefit to reducing delays in the PM peak hour, which would still be

42. The project-generated traffic would constitute over half of the total traffic using the on-ramps.

consistent with LOS F conditions. Therefore, the project's impacts to delays at the reconstructed westbound on-ramp in the PM peak hour would remain **significant and unavoidable**.

4.2.3.1.4 Mainline Operations: Queuing on Approaches (Reduced Development; Base Transit Service)

In addition to ramp operations, the operations of the SFOBB mainline segments were considered. Volumes on the SFOBB and approaches under conditions with the Reduced Development Alternative under the Base Transit Scenario are shown in **Figures 30** and **31**. As shown, the SFOBB currently experiences more demand than its capacity in the westbound direction in the AM peak hour and the eastbound direction in the PM peak hour. With the addition of project traffic, the weekday over-capacity conditions are expected to be exacerbated.

This analysis assumes that with the addition of project traffic (constrained by either ramp meters or stop control at on-ramps to the SFOBB at capacity conditions), some vehicles that would otherwise be on the SFOBB would be displaced, increasing queues at the toll plaza in the East Bay or at the San Francisco approaches, as described on page 114. A similar phenomenon would occur in the PM peak hour, with project-related traffic lengthening queues on the eastbound approaches to the SFOBB, including surface streets in Downtown San Francisco, by the number of vehicles the project adds to those streets.

It should be noted that although Caltrans generally aims to work cooperatively with local jurisdictions regarding ramp metering, Caltrans retains the ultimate control of both the ramp meters on Yerba Buena Island and the SFOBB toll plaza metering lights. It is possible that, in consultation with TITMA, Caltrans would reduce the metering rate for the on-ramps and allow more traffic to enter the SFOBB from the East Bay. This would reduce the project's impacts to queuing at the East Bay toll plaza, but would increase queues on the Islands. The analysis presented in this report describes the worst case for bridge and queuing conditions in the East Bay.

Under the Base Transit Scenario, the Reduced Development Alternative would displace traffic on the SFOBB and increase queues on the westbound approach in the AM peak hour by approximately 467 vehicles. The project's increase to queues approaching the SFOBB from the East Bay in the AM peak hour would be significant. Increasing the ramp metering rate at the East Bay toll plaza may reduce queues in the East Bay somewhat, but would cause other impacts to the bridge operations by increasing congestion on the SFOBB mainline. Therefore, it is unlikely that operational improvements could improve the capacity of the SFOBB and in turn, reduce queues in the East Bay.

Mitigation Measure 1 – Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative using the travel demand management strategies described in Chapter 1 such that the project's impacts to queues on SFOBB approaches in the AM peak hour would be reduced. However, as discussed in the following section, the Reduced Development Alternative would continue to contribute substantially to queuing in the East Bay. Therefore, the Reduced Development Alternative's impacts to queues approaching the SFOBB from the East Bay would remain **significant and unavoidable**.

Queues approaching the eastbound SFOBB from surface streets in San Francisco in the PM peak hour would increase by approximately 458 vehicles under the Expanded Transit Scenario, although this unserved demand would be dispersed among multiple surface streets in San Francisco approaching the bridge. Still, the project's increase to queues approaching the SFOBB from Downtown San Francisco in the PM peak hour would also be significant. Queues approaching the SFOBB are caused by capacity constraints on the SFOBB mainline. Increasing the capacity of the SFOBB would require additional lanes, which is not likely feasible.

Mitigation Measure 1 – Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative using the travel demand management strategies described in Chapter 1 such that the project's impacts to queues on SFOBB

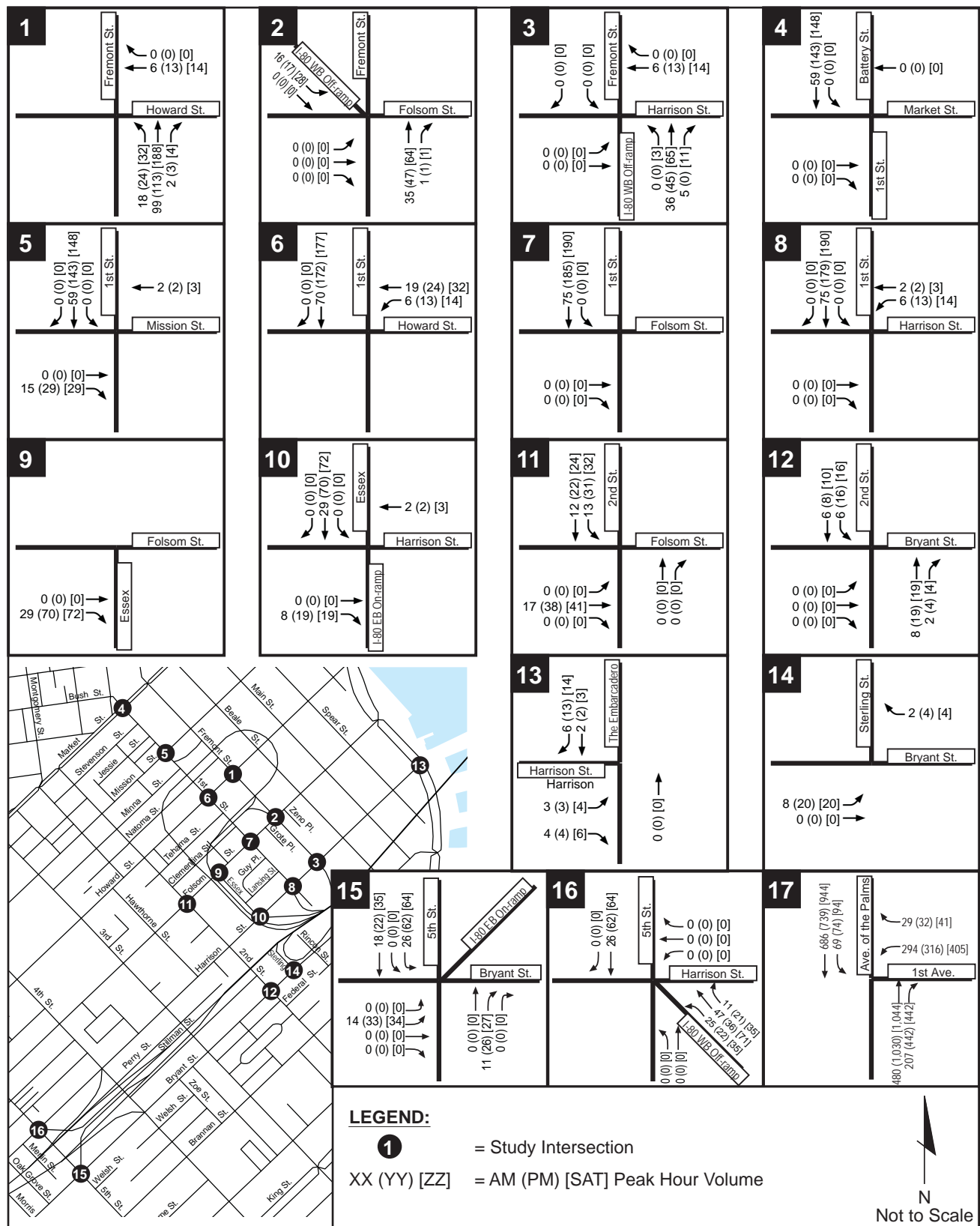
approaches in the PM peak hour would be reduced. However, as discussed in the following section, the Reduced Development Alternative would continue to contribute substantially to queuing in San Francisco approaching the SFOBB during the PM peak hour. Therefore, the Reduced Development Alternative's impacts to queues approaching the SFOBB from San Francisco would remain **significant and unavoidable**.

Except near ramp merge and diverge sections, operations on the SFOBB would operate similar to existing conditions (i.e., at capacity in peak directions during peak hours) since additional travel demand would be constrained by the toll plaza in the East Bay and eastbound approaches in San Francisco. Therefore, the project's impacts to the SFOBB mainline operations are expected to be less than significant, because the bridge's approaches limit the number of vehicles that can reach the bridge. Impacts to the SFOBB near ramp merge and diverge sections under the Expanded Transit Scenario were discussed on pages 140 and 140. Generally, through-traffic on the SFOBB may experience some increased congestion in the eastbound direction due to project-generated impacts approaching the westbound off-ramp on the west side of Yerba Buena Island. Project-generated increases to congestion in the westbound direction are not expected to generate substantial increases in congestion, particularly if the westbound ramps are reconstructed since those improvements would increase sight distance and acceleration distance allowing smoother traffic merging than the existing configuration.

4.2.3.2 Intersection Operations (Reduced Development; Base Transit Service)

Figure 33 (page 144) shows the project-related traffic added to each turning movement at the study intersections in San Francisco for the Reduced Development Alternative under the Base Transit Scenario. The differences in volumes at intersections in San Francisco associated with the two ramp configurations analyzed were negligible; therefore, **Figure 33** represents the traffic assignment under both configurations. **Figure 34** (page 145) presents the Existing Plus Reduced Development conditions intersection turning movement volumes under the Base Transit Scenario at study intersections.

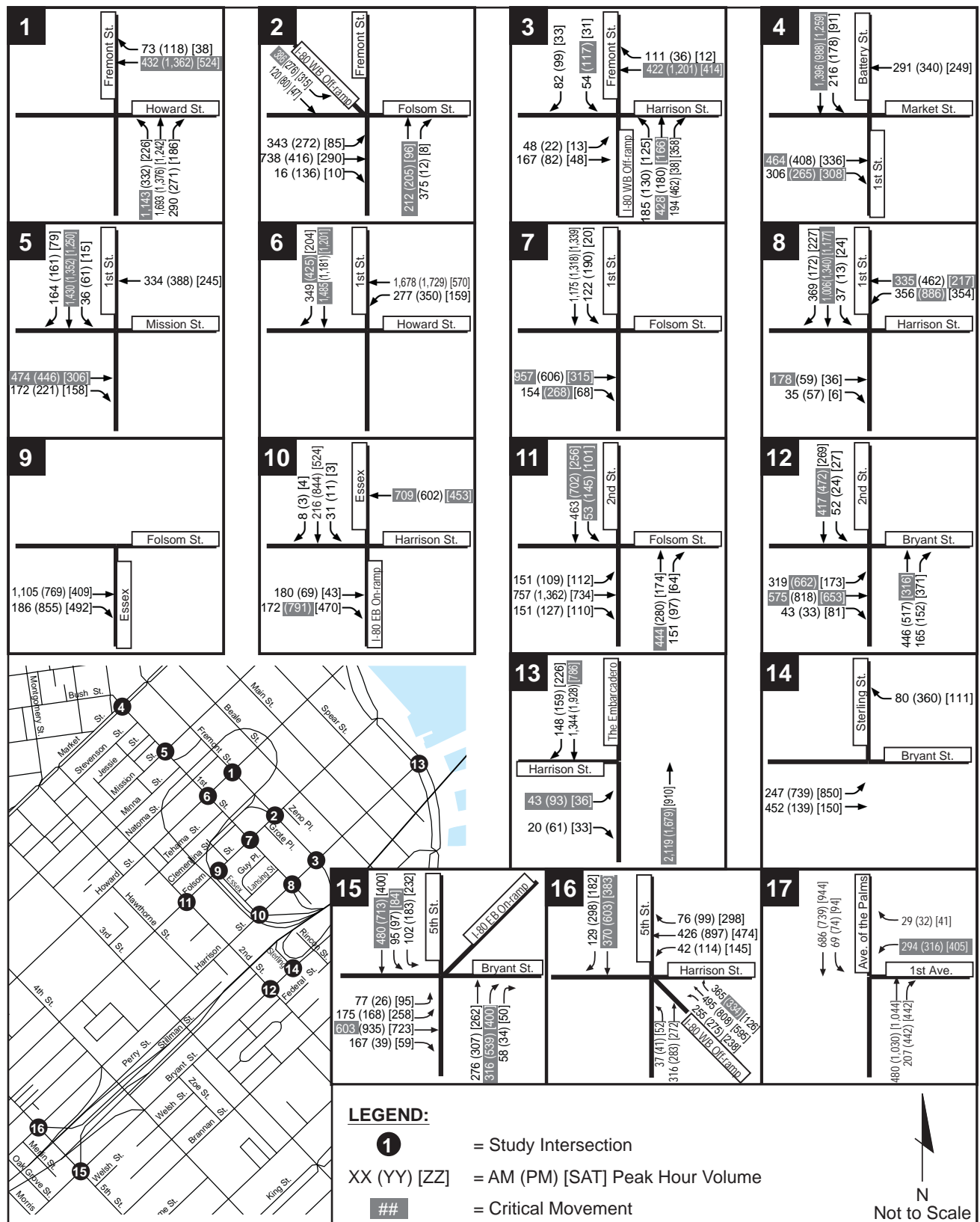
Table 42, on page 119, presents intersection operating conditions for Existing plus Project conditions for all four scenarios evaluated in this study, including the Reduced Development Alternative with Base Transit Scenario. As shown, under Existing plus Reduced Development Alternative conditions with the Base Transit Scenario, 10 study intersections would operate at unacceptable LOS E or F during one or more of the three peak hours analyzed. This is similar to Existing plus Project Conditions under the Base Transit Scenario. The 10 intersections operating unacceptably, and the Reduced Development Alternative's contribution to those conditions under the Base Transit Scenario, are discussed below.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

NET PROJECT TRIP ASSIGNMENT: REDUCED DEVELOPMENT ALTERNATIVE (BASE TRANSIT SCENARIO)



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS **EXISTING PLUS REDUCED DEVELOPMENT ALTERNATIVE** **(BASE TRANSIT SCENARIO) PEAK HOUR INTERSECTION VOLUMES**

1st Street/Market Street (Study Intersection #4) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Traffic signals at this intersection are timed to prioritize transit movements on Market Street. Modifications to signal timing to provide more capacity for southbound traffic would likely impact transit operations on Market Street, which would be inconsistent with the City's Transit First policy. Further, providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment provided on Market Street. As shown in **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. As shown in **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Reduced Development Alternative would contribute traffic to this intersection that operates at LOS E under existing conditions during the PM peak hour. However, it would not contribute any vehicles to the critical southbound right-turn movement at this intersection and the project's impacts to this intersection would be **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. As shown in **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. As shown in **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS F in the PM peak hour. Therefore, no feasible

mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

Folsom Street/Essex Street (Study Intersection #9) – The study intersection of Folsom Street/Essex Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS F under existing conditions in the PM peak hour. The critical movement in the PM peak hour is the eastbound right turn movement from eastbound Harrison Street onto the I-80 Eastbound On-Ramp. The Proposed Project would contribute less than five percent (2.4 percent) to this critical movement. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

2nd Street/Folsom Street (Study Intersection #11) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS E during the PM peak hour. The critical movements in the PM peak hour are the southbound through and southbound left-turn movements. These movements operate at acceptable levels of service during all peak hours; therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

The Embarcadero/Harrison Street (Study Intersection #13) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS E in the AM peak hour. The northbound through movement and eastbound left turn movement are the critical movements at this intersection. The eastbound left is expected to operate at acceptable levels of service; however, the northbound through movement is expected to operate at LOS F during the AM peak hour. The Reduced Development Alternative would not contribute traffic to this movement. Therefore, its contribution to poor operating conditions in the AM peak hour would be considered less than significant.

Because the Reduced Development Alternative's contribution to critical movements at this intersection during the AM peak hour would be small, its impact is considered **less than significant**.

Bryant Street/Sterling Street (Study Intersection #14) – The study intersection of Bryant Street/Sterling Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Bryant Street/5th Street/I-80 Eastbound On-Ramp (Study Intersection #15) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS F in the PM peak hour under existing conditions. The critical movements in the PM peak hour are the southbound through and northbound right turn movements. The Reduced Development Alternative would contribute less than five percent (3.1 percent) to the critical southbound through movement. The Reduced Development Alternative would contribute less than five percent (4.8 percent) to the northbound right-turn movement. Therefore, the Reduced Development Alternative's contribution to critical movements at this intersection would result in a less than significant impact during the PM peak hour.

However, the Reduced Development Alternative would cause the intersection to deteriorate from LOS D to LOS E during the Saturday peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and to northbound traffic on 5th Street turning onto the I-80 Eastbound On-Ramp. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. As shown in **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS E in the Saturday peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection during the Saturday peak hour would remain **significant and unavoidable**.

5th Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #16) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS D to LOS E in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and traffic exiting I-80. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths or right of way acquisition, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. As shown in **Table 42**, implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate at LOS E in the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

4.2.4 Reduced Development Alternative with Expanded Transit Service

This section describes the traffic-related impacts associated with the Reduced Development Alternative under the Expanded Transit Scenario.

4.2.4.1 Freeway and Ramp Operations (Reduced Development; Expanded Transit Service)

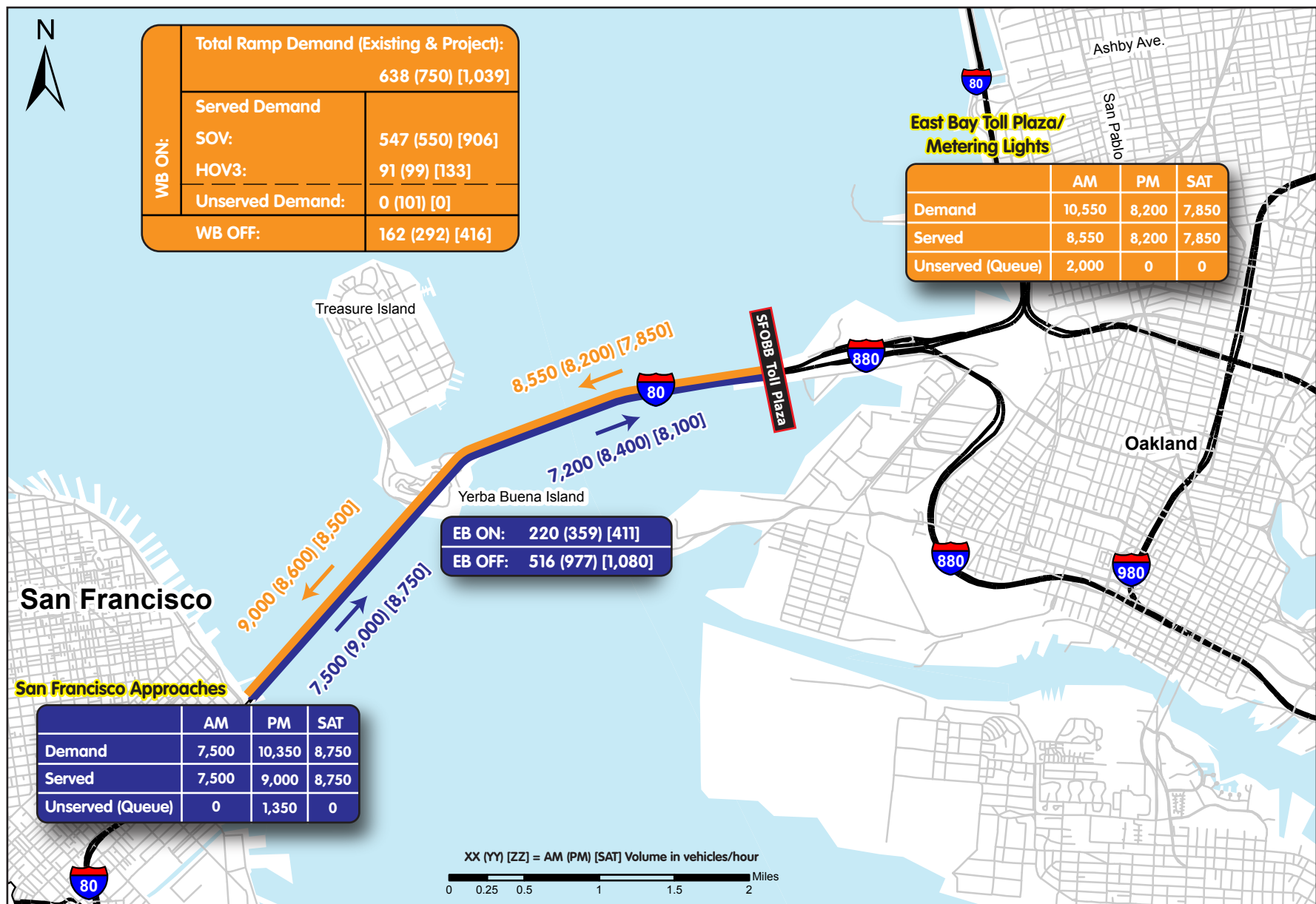
Freeway facilities were also evaluated for each of the project scenarios, including the Reduced Development Alternative with Expanded Transit Service. **Figures A-7 and A-8 in Appendix D4** present the unconstrained trip assignment to individual ramps for the Reduced Development Alternative under the Expanded Transit Scenario assuming the existing westbound ramps and the proposed reconfigured westbound ramps, respectively.

Figure 35 (page 150) shows the amount of traffic assigned to each freeway segment under the existing westbound ramp configuration, constrained by the capacity of the stop signs on the westbound ramps. **Figure 36** (page 151) shows the same information for conditions with reconstructed westbound ramps, constrained by the capacity of the ramp meters. The resulting volumes were used to assess freeway impacts in terms of ramp merge and diverge section operations as well as contributions to queuing on freeway mainline segments and approaches for the Reduced Development Alternative under the Expanded Transit Scenario.

4.2.4.1.1 Ramp Queuing (Reduced Development; Expanded Transit Service)

Due to the complex interaction of vehicle streams that approach the SFOBB from the Islands (eastbound, westbound, SOV, HOV2, and HOV3+ all share a common approach), the VISSIM microsimulation software was used to evaluate vehicle queuing on the ramp approaches. The maximum queues for each scenario, measured from the intersection of South Gate Drive and Macalla Road, as well as the average amount of delay for queued vehicles are presented in **Table 38**, on page 108. **Table 38** also depicts average vehicular delay associated with the queuing for traffic approaching the SFOBB. (The delay is discussed in a subsequent section.) **Figure 37** illustrates the extent of queuing associated with the Reduced Development Alternative under the Expanded Transit Scenario for conditions with and without reconstruction of the westbound ramps.

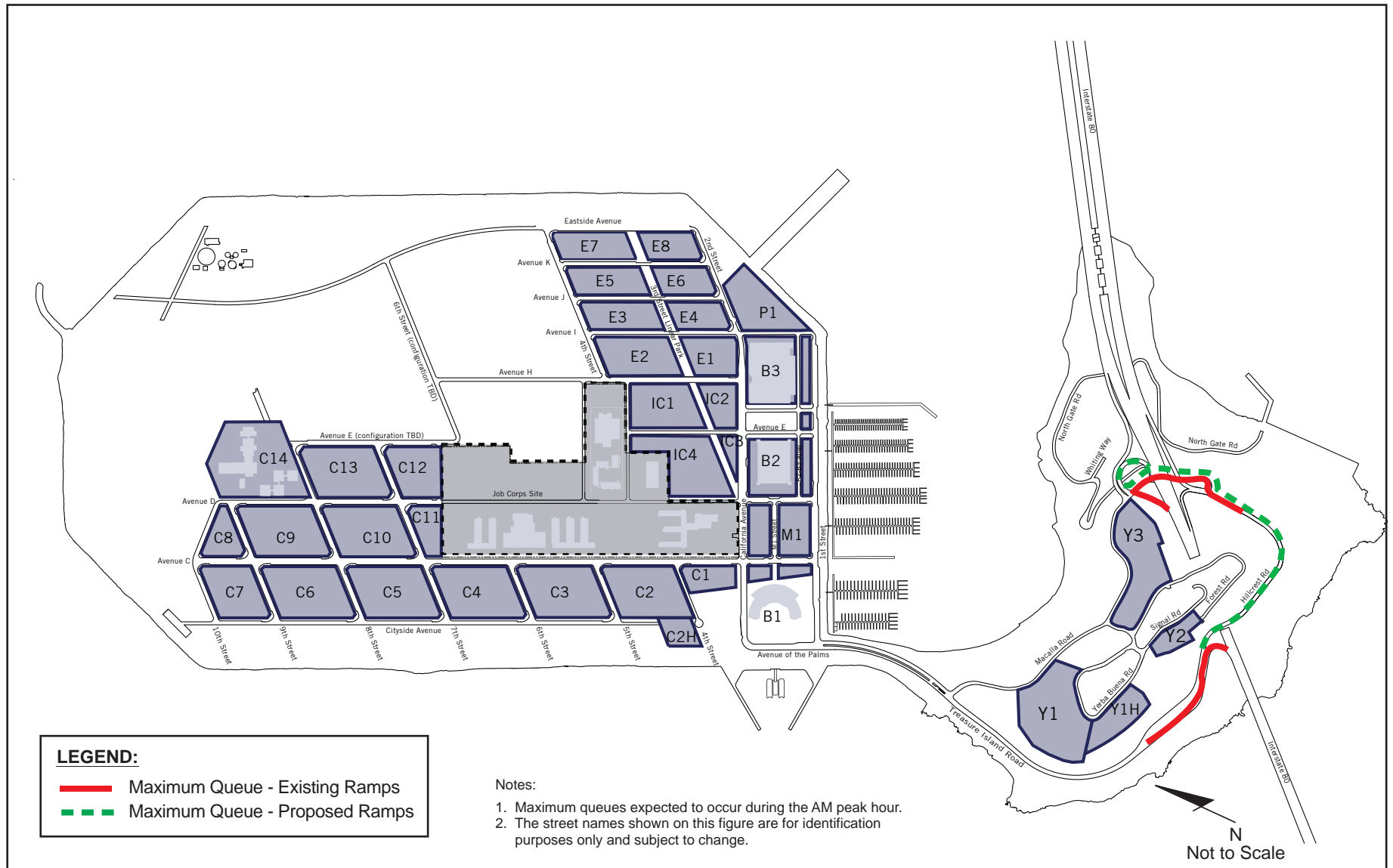
As depicted in **Table 38** and illustrated on **Figure 37**, for the Reduced Development under the Expanded Transit Scenario, queues on roadways approaching the SFOBB on-ramps would be either negligible or notably shorter than under the Base Transit Scenario. This is because the Expanded Transit Service would reduce automobile traffic generation resulting in fewer vehicles attempting to enter the SFOBB during peak hours. Without reconstruction of the westbound on-ramp to the SFOBB (and the associated HOV3+ bypass), queues would be negligible in the AM and PM peak hours and extend less than 1/2 mile in the Saturday peak hour. With reconstruction of the westbound ramps (and the associated consolidation of all traffic to a single westbound on-ramp), queues would remain negligible in the AM peak hour. In the PM peak hour, queues would be just over 1/2-mile, approximately to the transit-only westbound on-ramp. Queues would be negligible in the Saturday peak hour since ramp meters would not be activated.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

EXISTING PLUS REDUCED DEVELOPMENT ALTERNATIVE (EXPANDED TRANSIT SCENARIO) SFOBB TRAVEL DEMAND AND VEHICLE QUEUES



4.2.4.1.2 Ramp Merge/Diverge (Reduced Development; Expanded Transit Service)

The operational characteristics of the Yerba Buena Island ramps were analyzed to determine project impacts. **Tables 39, 40, and 41**, on page 109 to 111, summarize the ramp merge and diverge levels of service for the AM, PM, and Saturday peak hours, respectively.⁴³ For conditions without reconstruction of the westbound ramps, the tables also present the stop-controlled intersection levels of service for the AM, PM, and Saturday peak hours. However, this section discusses only the merge/diverge analysis; discussion of vehicular delays and LOS associated with ramp control devices (i.e., stop signs or meters) is discussed in the next section.

Based on the merge/diverge analysis, the Reduced Development Alternative would contribute traffic to the eastbound off-ramp diverge section on the west side of Yerba Buena Island, which was observed to operate at LOS E in the PM peak hour under existing conditions. Project traffic would comprise a majority of the traffic using the off-ramp during the PM peak hour and the project's contribution would therefore, be considered substantial. The Reduced Development Alternative would also cause this same off-ramp diverge section to deteriorate from LOS D to LOS E in the Saturday peak hour. This means that during the weekday PM and Saturday peak hours, the roadway area on the SFOBB approaching the off-ramp would be operating near its capacity with virtually no usable gaps in the traffic stream and little room to maneuver, with notable congestion and/or queuing extending onto the SFOBB.

All other merge and diverge sections would operate at acceptable LOS D or better, with or without reconstruction of the westbound ramps on the east side of Yerba Buena Island. The project's impact to congestion on the SFOBB approaching the eastbound off-ramp diverge section on the west side of Yerba Buena Island is considered significant in the weekday PM and Saturday peak hours.

The primary cause for deficient operations at this off-ramp is the short deceleration distance followed by a tight curve. This design causes exiting vehicles to begin deceleration on the bridge mainline. To improve the operations of this diverge section, the off-ramp would need to be reconstructed to provide more deceleration distance and a less-severe curve. Reconstruction of this ramp would require major construction on the SFOBB, Yerba Buena Island, and the Treasure Island Road causeway. These improvements were evaluated in the Project Study Report for the ramps replacement project conducted by Caltrans and the SFCTA in December 2007 and were found to be infeasible. Therefore, the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

4.2.4.1.3 Ramp Delays (Reduced Development; Expanded Transit Service)

The preceding discussion illustrated the way in which the ramp configurations may constrain the amount of traffic that can enter the SFOBB from the Islands, the physical extents of queues caused by this constraint, and the effects of project-generated traffic on freeway merge and diverge sections on the SFOBB. This section describes the vehicular traffic delay associated with congestion leading up to the SFOBB for the Reduced Development Alternative under the Expanded Transit Scenario. This delay affects not only project-generated traffic, but also existing uses on the Islands that would remain under conditions with the Reduced Development Alternative, including the Coast Guard. As shown in **Figure 37** (page 152), queues on the Islands and associated delay may affect the Coast Guard operations around Yerba Buena Island and their access to the SFOBB. These delays are discussed in this section.

Even under the Expanded Transit Scenario, traffic volumes destined for the westbound SFOBB will exceed the capacity of the westbound on-ramps to the SFOBB, resulting in queues in the Saturday peak

43. Under conditions with the proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the westbound on-ramp on the west side of the Island would be converted to transit-only. Under these conditions, no analysis of the bus-only westbound on-ramp was performed because volumes would be very low. Under conditions without the reconstruction of the westbound ramps, both a side-street stop analysis and a ramp merge analysis were conducted.

hour under conditions with the existing stop-controlled ramps and during the weekday PM peak hour under conditions with the reconstructed westbound ramps. During these periods, these queues would increase vehicular travel times and cause traffic delay. Although delays associated with ramp metering are not typically analyzed for purposes of identifying impacts, due to the unique nature of this project and the SFOBB, this report includes an analysis of ramp delays.

Based on the stop-controlled analysis, which was conducted only for conditions in which the westbound ramps on the east side of Yerba Buena Island are not reconstructed and in which case the two westbound on-ramps would remain stop-controlled, the Reduced Development Alternative would contribute substantial traffic to both westbound ramps⁴⁴. As shown in **Table 39**, **Table 40**, and **Table 41**, both westbound ramps would operate at LOS F in the AM, PM, and Saturday peak hours, even though significant queuing would not occur during the weekday AM and PM peak hours. This would be considered a significant impact to both westbound on-ramps in the AM, PM, and Saturday peak hours under conditions in which those ramps remain stop-controlled. If the existing configuration were to remain, it is unlikely that the existing stop signs would be removed or that other physical improvements would be made to the on-ramps. Therefore, the project's impacts to delay approaching the on-ramps would remain **significant and unavoidable**.

If the separate project to reconstruct the westbound ramps on the east side of Yerba Buena Island were constructed and the west side westbound on-ramp were converted to transit-only, stop control devices would be eliminated and all westbound traffic (except transit vehicles destined for San Francisco) would be consolidated to the westbound on-ramp on the east side of Yerba Buena Island. This improvement, consequently, would simply relocate the source of vehicular delay from stop signs at the two ramp merges to a ramp meter upstream of the single remaining merge on the east side of Yerba Buena Island. The delay associated with the ramp meter is shown in **Table 38** (page 108). Although the delays are technically caused by a ramp meter signal, the LOS criteria for unsignalized intersections were applied because the ramp meter signal functions more similarly to a stop sign than a traditional traffic signal.

Unlike the existing configuration, in which significant delays would occur regardless of whether queuing formed, delay associated with ramp metering would be minimal during the weekday AM peak hour and Saturday peak hour. This is because of the improved acceleration distance which allows easier merging compared to the existing stop-controlled configuration. Average vehicular traffic delay under conditions with the reconstructed westbound ramps would be approximately 2.5 minutes in the PM peak hour. Although this delay is slightly shorter with the Expanded Transit Scenario than under the Base Transit Scenario, this vehicular delay would be a significant impact. Traffic would experience minimal delays in the Saturday peak hour since ramp meters were assumed not to be in operation during that time. Caltrans has indicated that the ramp reconstruction project will require ramp meters and it is unlikely that they would be eliminated from that project. Therefore, the project's impacts to delay approaching the reconstructed on-ramps would remain **significant and unavoidable**.

4.2.4.1.4 Mainline Operations: Queuing on Approaches (Reduced Development; Expanded Transit Service)

In addition to ramp operations, the operations of the SFOBB mainline segments were considered. Volumes on the SFOBB and approaches under conditions with the Reduced Development Alternative under the Expanded Transit Scenario are shown in **Figures 35** and **36** (pages 150 and 151). As shown, the SFOBB currently experiences more demand than its capacity in the westbound direction in the AM peak hour and the eastbound direction in the PM peak hour. With the addition of project traffic, the weekday over-capacity conditions are expected to be exacerbated.

44. The project-generated traffic would constitute over half of the total traffic using the on-ramps.

This analysis assumes that with the addition of project traffic (constrained by either ramp meters or stop control at on-ramps to the SFOBB at capacity conditions), some vehicles that would otherwise be on the SFOBB would be displaced, increasing queues at the toll plaza in the East Bay or at the San Francisco approaches, as described on page 114.

It should be noted that although Caltrans generally aims to work cooperatively with local jurisdictions regarding ramp metering, Caltrans retains the ultimate control of both the ramp meters on Yerba Buena Island and the SFOBB toll plaza metering lights. It is possible that, in consultation with TITMA, Caltrans would reduce the metering rate for the on-ramps and allow more traffic to enter the SFOBB from the East Bay. This would reduce the project's impacts to queuing at the East Bay toll plaza, but would increase queues on the Islands. The analysis presented in this report describes the worst case for bridge and queuing conditions in the East Bay.

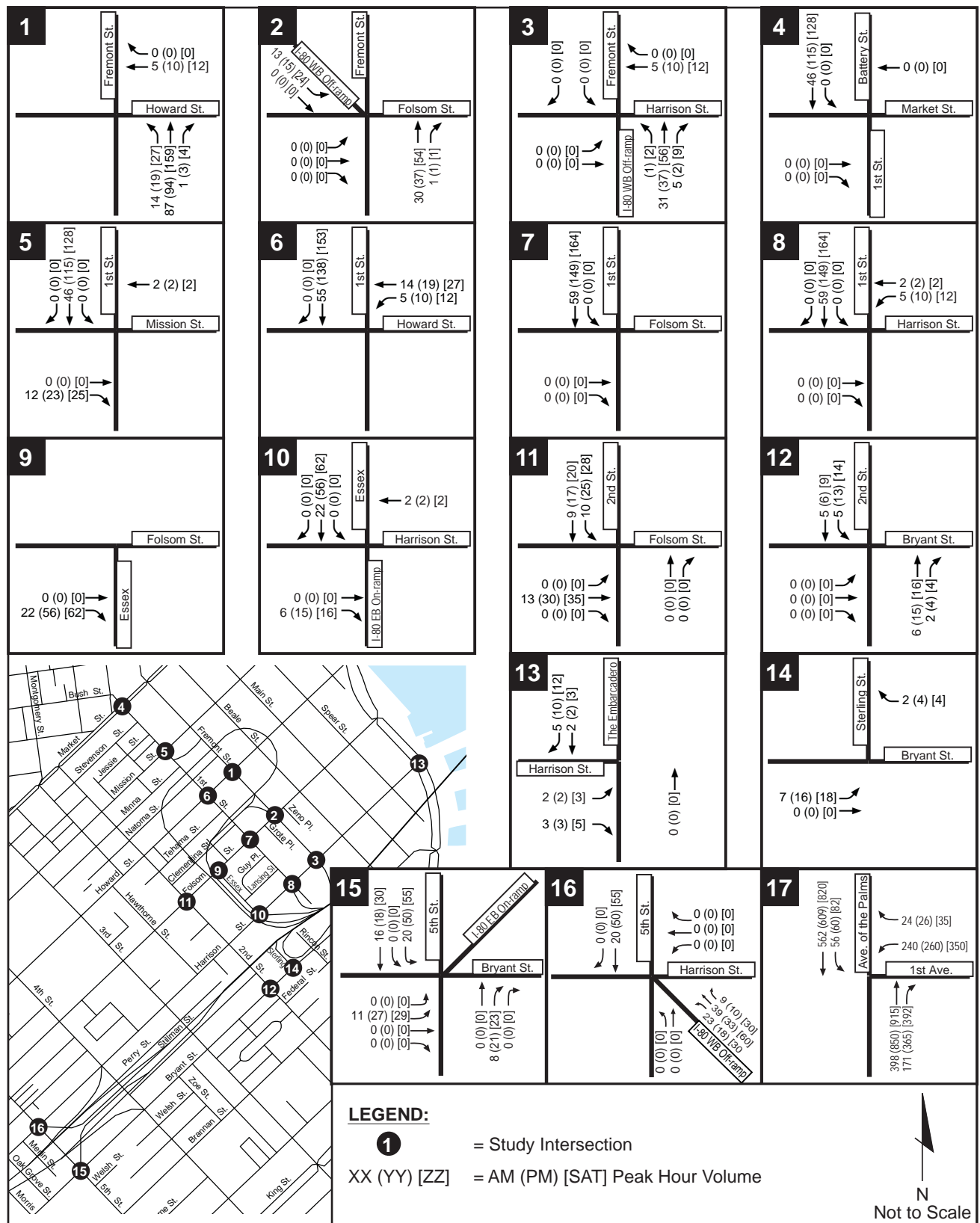
Under the Expanded Transit Scenario, the Reduced Development Alternative would displace traffic on the SFOBB and increase queues on the westbound approach in the AM peak hour by approximately 431 vehicles. The project's increase to queues approaching the SFOBB from the East Bay in the AM peak hour would be significant. Increasing the ramp metering rate at the East Bay toll plaza may reduce queues in the East Bay somewhat, but would cause other impacts to the bridge operations by increasing congestion on the SFOBB mainline. Therefore, it is unlikely that operational improvements could improve the capacity of the SFOBB and in turn, reduce queues in the East Bay. Therefore, the project's contribution to increased queues on the East Bay bridge approaches during the AM peak hour would be a **significant and unavoidable** impact.

Queues approaching the eastbound SFOBB from surface streets in San Francisco in the PM peak hour would increase by approximately 364 vehicles under the Expanded Transit Scenario, although this unserved demand would be dispersed among multiple surface streets in San Francisco approaching the bridge. Still, the project's increase to queues approaching the SFOBB from Downtown San Francisco in the PM peak hour would also be significant. Queues approaching the SFOBB are caused by capacity constraints on the SFOBB mainline. Since increasing the capacity of the SFOBB would require additional lanes, which is not likely feasible, the project's impacts to queues approaching the SFOBB from Downtown San Francisco would be a **significant and unavoidable** impact.

Except near ramp merge and diverge sections, operations on the SFOBB would operate similar to existing conditions (i.e., at capacity in peak directions during peak hours) since additional travel demand would be constrained by the toll plaza in the East Bay and eastbound approaches in San Francisco. Therefore, the project's impacts to the SFOBB mainline operations are expected to be less than significant, because the bridge's approaches limit the number of vehicles that can reach the bridge. Impacts to the SFOBB near ramp merge and diverge sections under the Expanded Transit Scenario were discussed on page 153. Generally, through-traffic on the SFOBB may experience some increased congestion in the eastbound direction due to project-generated impacts approaching the westbound off-ramp on the west side of Yerba Buena Island. Project-generated increases to congestion in the westbound direction are not expected to generate substantial increases in congestion, particularly if the westbound ramps are reconstructed since those improvements would increase sight distance and acceleration distance allowing smoother traffic merging than the existing configuration.

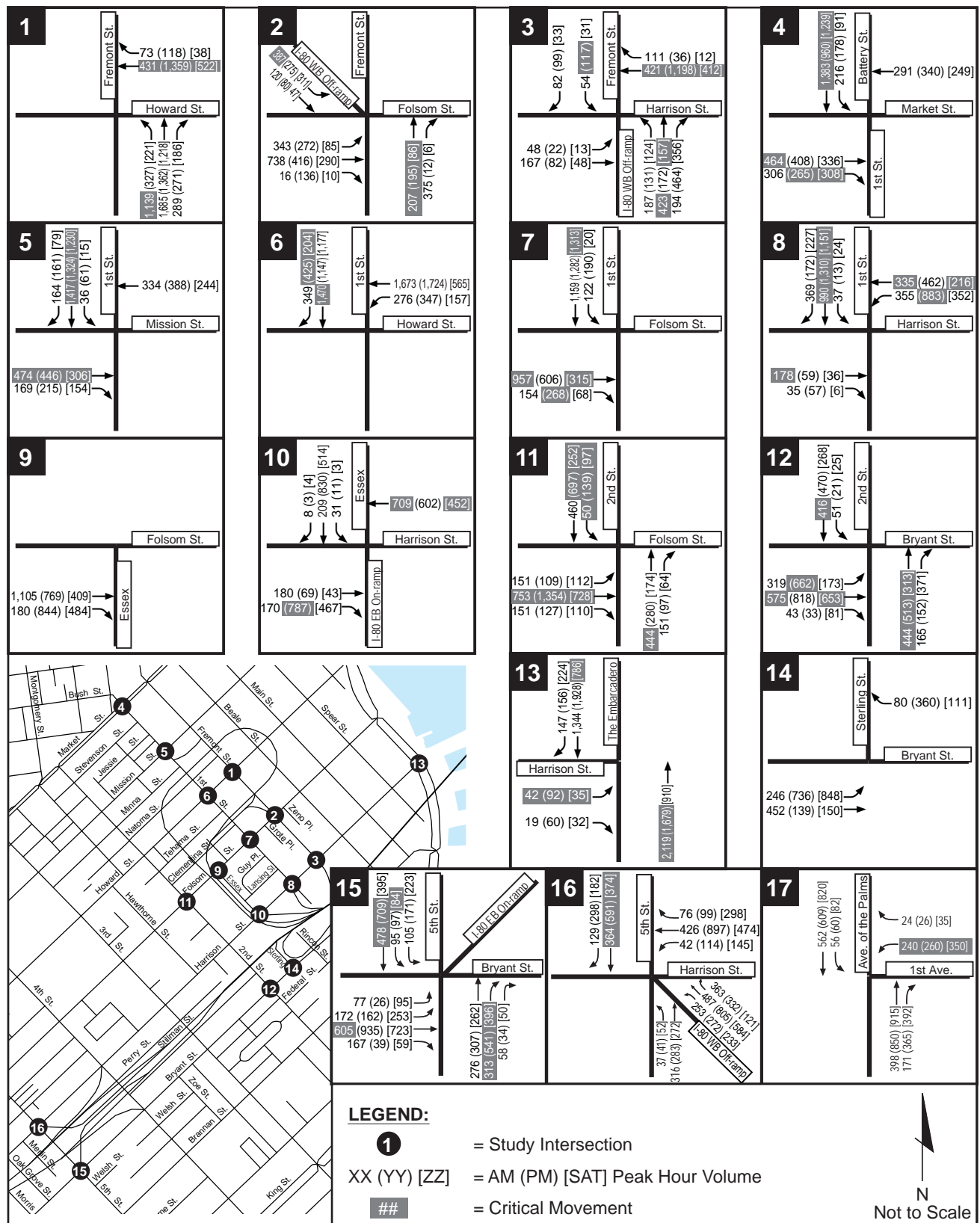
4.2.4.2 Intersection Operations (Reduced Development; Expanded Transit Service)

Figure 38 (page 156) shows the project-related traffic added to each turning movement at the study intersections in San Francisco associated with the Reduced Development Alternative under the Expanded Transit Scenario. The differences in volumes at intersections in San Francisco associated with the two ramp configurations analyzed were negligible; therefore, **Figure 38** represents the traffic assignment under both configurations. **Figure 39** (page 157) presents the Existing Plus Reduced Development Alternative conditions intersection turning movement volumes under the Expanded Transit Scenario at study intersections.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS
REDUCED DEVELOPMENT ALTERNATIVE
(EXPANDED TRANSIT SCENARIO) PROJECT TRIP ASSIGNMENT



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS
EXISTING PLUS REDUCED DEVELOPMENT ALTERNATIVE
(EXPANDED TRANSIT SCENARIO) PEAK HOUR INTERSECTION VOLUMES

Table 42, on page 119, presents intersection operating conditions for Existing plus Project conditions for all four scenarios evaluated in this study, including the Reduced Development Alternative with Expanded Transit Scenario. As shown, under Existing plus Reduced Development Alternative conditions with the Expanded Transit Scenario, 10 study intersections would operate at unacceptable LOS E or F during one or more of the three peak hours analyzed. This is similar to Existing plus Project Conditions under both transit scenarios and to the Reduced Development Alternative under the Base Transit Scenario. The 10 intersections operating unacceptably, and the Reduced Development Alternative's contribution to those conditions under the Expanded Transit Scenario, are discussed below.

1st Street/Market Street (Study Intersection #4) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Traffic signals at this intersection are timed to prioritize transit movements on Market Street. Modifications to signal timing to provide more capacity for southbound traffic would likely impact transit operations on Market Street, which would be inconsistent with the City's Transit First policy. Further, providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment provided on Market Street. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Reduced Development Alternative would contribute traffic to this intersection that operates at LOS E under existing conditions during the PM peak hour. However, the project would not contribute any vehicles to the critical southbound right-turn movement at this intersection and the project's impacts to this intersection would be **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic, which combines with existing traffic destined for the

SFOBB in the PM peak hour to deteriorate conditions to unacceptable operations. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would be **significant and unavoidable**.

Folsom Street/Essex Street (Study Intersection #9) – The study intersection of Folsom Street/Essex Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS F under existing conditions in the PM peak hour. The critical movement in the PM peak hour is the eastbound right turn movement from eastbound Harrison Street onto the I-80 Eastbound On-Ramp. The Reduced Development Alternative would contribute less than five percent (1.9 percent) to this critical movement. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

2nd Street/Folsom Street (Study Intersection #11) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS E during the PM peak hour. The critical movements in the PM peak hour are the southbound through and southbound left-turn movements. These movements operate at acceptable levels of service during all peak hours; therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

The Embarcadero/Harrison Street (Study Intersection #13) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS E in the AM peak hour. The northbound through movement and eastbound left turn movement are the critical movements at this intersection. The eastbound left turn movement would operate at acceptable levels of service; however, the northbound through movement is expected to operate at LOS F during the AM peak hour. The Reduced Development Alternative would not contribute traffic to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

Because the Reduced Development Alternative's contribution to critical movements at this intersection during the AM peak hour would be small, the project's impact is considered **less than significant**.

Bryant Street/Sterling Street (Study Intersection #14) – The study intersection of Bryant Street/Sterling Street is not currently controlled by either traffic signals or STOP signs, and both approaches to the intersections are uncontrolled. During the weekday PM peak hour, the intersection is affected by PM peak hour traffic destined to the SFOBB eastbound on-ramps at Harrison Street and Bryant Street. During the PM peak period, queues form on the approaches to the on-ramp that spill back into the intersection, resulting in queued operations within the travel lanes serving the on-ramps. Implementation of the Proposed Project would add vehicles to these existing queues, and contributions to the queued operations would be considered significant. Implementation of the Expanded Transit Scenario would improve operations at this intersection, but the intersection would continue to operate with vehicle queues during the PM peak hour. Therefore, no feasible mitigation measures have been identified to reduce

project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

Bryant Street/5th Street/I-80 Eastbound On-Ramp (Study Intersection #15) – The Reduced Development Alternative would add traffic to this intersection, which operates at LOS F in the PM peak hour under existing conditions. The critical movements in the PM peak hour are the southbound through and northbound right turn movements. The Reduced Development Alternative would contribute less than five percent (2.5 percent) to the critical southbound through movement. The Reduced Development Alternative would contribute less than five percent (3.9 percent) to the northbound right-turn movement. Therefore, the Reduced Development Alternative's contribution to critical movements at this intersection would result in a less than significant impact during the PM peak hour.

However, the project would cause the intersection to deteriorate from LOS D to LOS E during the Saturday peak hour. This would also be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and to northbound traffic on 5th Street turning onto the I-80 Eastbound On-Ramp. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection during the Saturday peak hour would remain **significant and unavoidable**.

5th Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #16) – The Reduced Development Alternative would cause this intersection to deteriorate from LOS D to LOS E in the PM peak hour. This would be a significant impact. The degradation in LOS at this intersection is primarily due to increases to the southbound through traffic and traffic exiting I-80. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths or right of way acquisition, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. Impacts at this intersection would remain **significant and unavoidable**.

4.3 TRANSIT IMPACTS

This section presents the impacts associated with the Proposed Project and Reduced Development Alternative to existing and proposed transit service. The evaluation of transit impacts examines three primary issues. First, the study includes a capacity analysis of each route serving the Islands (AC Transit bus service to the East Bay, Muni bus service to San Francisco, and ferry service to San Francisco). Second, the study performs a generalized analysis of transit service to and from Downtown San Francisco using four standard screenlines commonly included in transportation analyses in San Francisco (i.e., between Downtown San Francisco and areas to the northeast, northwest, southeast, and southwest). The screenline analysis is conducted since peak period transit service between Downtown San Francisco and outer residential areas is typically the most congested and heavily used component of the transit system in the area. The screenline analysis generally compares the total ridership between Downtown San Francisco and outer areas crossing four different screenlines with the total amount of available transit capacity crossing those screenlines. Finally, the transit impact analysis examines whether congestion caused by the project is likely to adversely affect transit operations or travel times. In this case, the analysis specifically focuses on whether congestion on the Islands may block transit circulation, and if so, whether changes to the circulation system can be incorporated to improve transit circulation. A summary of this analysis is included in Appendix H.

4.3.1 Proposed Project with Base Transit Scenario

The Base Transit Scenario assumes the following services:

- New ferry service from a new Transit Hub located on the western shore of Treasure Island. Ferries would operate with 50-minute headways to and from Downtown San Francisco between 5:00 AM and 9:00 PM (corresponding to a single ferry operating between Treasure Island and one of the existing docks in San Francisco);
- Route 108-Treasure Island would operate at its current 15-minute headway, but would no longer circulate around most of Treasure Island. Instead, it would circulate only around the Transit Hub and Island Core neighborhood. The 108-Treasure Island would continue to operate 24-hours per day, including overnight owl service;
- New bus transit service operating between the Islands and Downtown Oakland (operated by AC Transit) at approximately 10-minute headways during peak hours and less frequent service during off-peak hours; generally, bus service to Oakland would be provided between approximately 5:00 AM and 10:00 PM.
- A fleet of alternative fuel shuttle-buses that circulate throughout the Islands, with timed transfers at the Transit Hub offering free rides to residents and visitors of the Islands.

This would result in an overall transit capacity of 1,415 passengers per hour per direction. Combined, the improvements would provide an overall transit capacity of 1,415 passengers per hour per direction (eastbound/westbound), including 839 passengers per hour by ferry and 576 passengers per hour by bus (324 passengers on AC Transit and 252 passengers on Muni).

4.3.1.1 Transit Capacity Utilization (Base Transit Scenario)

Table 43 on page 162 summarizes the transit trips to and from the Islands, and compares the projected ridership with the hourly passenger capacity provided by each transit operator for all four scenarios evaluated in this study, including the Proposed Project under the Base Transit Scenario.

The Proposed Project under the Base Transit Scenario would generate 1,262 net new AM peak hour transit trips, 1,716 net new PM peak hour transit trips, and 1,068 net new Saturday peak hour transit trips. The project's net increase to transit demand was added to existing transit usage (generated by uses that would remain) to determine Existing plus Project transit demand under the Base Transit Scenario.

TABLE 43 – TRANSIT LINE CAPACITY ANALYSIS – EXISTING PLUS PROJECT CONDITIONS

Route	Existing			Existing + Project: Base Transit Scenario			Existing + Project: Expanded Transit Scenario			Existing + Reduced Development: Base Transit Scenario			Existing + Reduced Development: Expanded Transit Scenario ⁵		
	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized
AM Peak Hour															
AC Transit EB	N/A	N/A	N/A	324	107	33%	324	175	54%	324	86	27%	324	141	44%
AC Transit WB	N/A	N/A	N/A	324	67	21%	324	110	34%	324	58	18%	324	95	29%
Muni EB Bus Service from SF ¹	252	51	20%	252	261	104%	1,121	394	35%	252	228	90%	1,121	344	31%
Muni WB Bus Service to SF ¹	252	145	58%	252	384	152%	1,121	595	53%	252	311	123%	1,121	481	43%
Ferry EB	N/A	N/A	N/A	839	238	28%	2,796	359	13%	839	201	24%	2,796	305	11%
Ferry WB	N/A	N/A	N/A	839	403	48%	2,796	599	21%	839	321	38%	2,796	480	17%
PM Peak Hour															
AC Transit EB	N/A	N/A	N/A	324	96	30%	324	163	50%	324	84	26%	324	142	44%
AC Transit WB	N/A	N/A	N/A	324	134	41%	324	228	70%	324	116	36%	324	198	61%
Muni EB Bus Service from SF ¹	252	121	48%	252	515	204%	1,443	810	56%	252	453	180%	1,443	708	49%
Muni WB Bus Service to SF ¹	252	153	61%	252	431	171%	1,443	642	44%	252	390	155%	1,443	575	40%
Ferry EB	N/A	N/A	N/A	839	479	57%	2,796	719	26%	839	404	48%	2,796	609	22%
Ferry WB	N/A	N/A	N/A	839	343	41%	2,796	516	18%	839	292	35%	2,796	442	16%

TABLE 43 – TRANSIT LINE CAPACITY ANALYSIS – EXISTING PLUS PROJECT CONDITIONS

Route	Existing			Existing + Project: Base Transit Scenario			Existing + Project: Expanded Transit Scenario			Existing + Reduced Development: Base Transit Scenario			Existing + Reduced Development: Expanded Transit Scenario ⁵		
	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized	Capacity ²	Rider-ship	% Utilized
Saturday Peak Hour															
AC Transit EB	N/A	N/A	N/A	324	79	24%	324	132	41%	324	71	22%	324	119	37%
AC Transit WB	N/A	N/A	N/A	324	90	28%	324	151	47%	324	81	25%	324	136	42%
Muni EB Bus Service from SF ¹	189	86	46%	189	328	174%	1,443	525	36%	189	300	159%	1,443	476	33%
Muni WB Bus Service to SF ¹	189	133	70%	189	320	169%	1,443	489	34%	189	297	157%	1,443	449	31%
Ferry EB	N/A	N/A	N/A	839	221	26%	2,796	385	14%	839	226	27%	2,796	345	12%
Ferry WB	N/A	N/A	N/A	839	252	30%	2,796	334	12%	839	199	24%	2,796	301	11%

Notes:

- Includes Route 108-Treasure Island, and for Expanded Transit Scenario, also includes new route to be established based on demand (likely to provide service to Civic Center area).
- Assumes the following vehicle capacities:
 - Ferry – 699 passengers per vehicle
 - Muni 40-foot Bus Coach – 63 passengers per vehicle
 - Muni 60-foot Articulated Bus Coach – 94 passengers per vehicle
 - AC Transit 40-foot Bus Coach – 54 passengers per vehicle
- Bold** indicates demands exceeding capacity utilization standard (85 percent for Muni, 100 percent for ferries and AC Transit).
- Total transit trips may not equal the number of transit trips presented in Chapter 3 due to rounding.

Source: Fehr & Peers 2009

As shown in **Table 43**, the proposed project would create a demand for transit service, particularly bus transit service to Downtown San Francisco greater than that provided by the Proposed Project. The proposed project would not exceed AC Transit or WETA capacity utilization standards during any of the peak periods (both transit operators have capacity standards equal to the seated capacity of their vehicles). The Proposed Project would exceed Muni's capacity standard of 85 percent during the weekday AM and PM peak hours as well as during the Saturday peak hour. Even if the unserved bus demand shifted to ferry, the combined bus and ferry demand would be 72 percent of the combined bus and ferry capacity from the Islands to San Francisco in the AM and 91 percent of total capacity in the PM peak hour from San Francisco to the Islands. During the Saturday peak hour, combined bus and ferry demand would be 53 percent of combined bus and ferry capacity to the Island from San Francisco and would be 56 percent of capacity from the Islands to San Francisco. Since Muni bus service between the Islands and San Francisco would exceed Muni's standard of 85 percent capacity utilization in the AM and PM peak hours, the project's impact to transit capacity would be significant.

Mitigation Measure 1 – Implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project's transit demand would be accommodated within Muni's capacity threshold of 85 percent occupancy, which would reduce the impact on transit to a less than significant level. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, this impact would remain **significant and unavoidable**.

4.3.1.2 Downtown Screenline Analysis (Base Transit Scenario)

In addition to analysis of specific transit lines with service directly to the Islands, the transit impact analysis includes an assessment as to whether the Proposed Project would be likely to add substantial amounts of transit ridership to transit routes serving Downtown San Francisco during peak commute hours.

Table 44 on page 168 summarizes the impacts to the Muni downtown screenlines from the Proposed Project under the Base Transit Scenario. Although the project is expected to generate a substantial number of transit riders, as they relate to Downtown screenlines, project-generated transit riders are more likely to be traveling in off-peak directions. For example, in the AM peak hour, the peak direction of transit riders generated by the Proposed Project is into Downtown San Francisco from the Islands (which does not affect the screenlines). Those riders continuing on transit to other destinations from Downtown San Francisco will travel in the "outbound" direction, away from Downtown. This is the off-peak direction for the Downtown screenlines, when peak transit flows are in the "inbound" direction in the AM peak hour. The reverse phenomenon occurs during the PM peak hour. This also applies to both Muni and other regional providers, such as BART, ferries, Golden Gate Transit, and SamTrans.

As shown in **Table 44**, the Proposed Project's contribution to ridership in the peak direction for any of the Downtown screenlines is relatively small. The Proposed Project would not increase demand for peak direction of travel through any of the four screenlines surrounding Downtown such that they would exceed Muni's capacity standard of 85 percent utilization. Therefore, the proposed project's impacts to Muni downtown screenlines would be **less than significant**.

4.3.1.3 Regional Transit Analysis (Base Transit Scenario)

A portion of the new transit trips generated by the Proposed Project would transfer from the 108-Treasure Island and new ferry route to other regional transit operators including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes. Similar to the impact assessment presented for the Muni downtown screenlines, Proposed Project-generated transit riders transferring to other regional operators would more likely be traveling in the off-peak direction, for which there is generally available capacity.

For example, during the AM peak hour, the majority of Proposed Project-generated transit trips would be traveling off of the Islands. Those traveling to the East Bay would take the new AC Transit bus line to downtown Oakland, and then transfer to BART to continue to destinations served by BART. These BART trips would be in the off-peak direction for BART in the AM peak hour. Similarly, trips destined for points served by BART in San Francisco and the Peninsula would take either the Muni 108-Treasure Island bus or the new ferry route into downtown San Francisco. From there they would transfer to BART and travel away from downtown San Francisco, which is also the off-peak direction in the AM peak hour. The reverse would occur during the PM peak hour, when transit riders returning to the Islands would travel in the off-peak direction to access the 108-Treasure Island, the new AC Transit line, or the new ferry service. For example, transit riders returning to the Ferry Building from Peninsula destinations on BART would be traveling in the off-peak direction for BART in the PM peak hour.

Since Proposed Project-generated transit riders transferring to other routes would be dispersed over multiple operators and routes, and since these trips would occur in the off-peak direction of transit demand, the additional trips would not substantially affect the peak direction capacity utilization. Therefore, impacts to regional transit operator capacity, including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes would be less than significant, and no mitigation measures would be required.

4.3.1.4 Transit Delay Analysis (Base Transit Scenario)

As described in Section 4.2 (Traffic Impacts), traffic from the Proposed Project would contribute to significant impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Proposed Project would contribute significant contributions to impacts at six intersections in one or more peak hours, five of which serve transit vehicles.

1st Street/Market Street – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Proposed Project's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM peak hour, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Proposed Project would create a significant contribution to delay on this approach, the Proposed Project would have a significant impact to transit travel times on the 30X-Stockton Express.

1st Street/Mission Street – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Proposed Project-generated increases in cumulative intersection delay, and the Proposed Project's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Proposed Project would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and 19 Golden Gate Transit bus lines (2, 4, 8, 18, 24, 27, 38, 44, 54, 56, 58, 72, 73, 74, 76, 10, 70, 80, 101) travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the PM peak hour, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB; however, these approaches operate at acceptable levels of service. Thus, the Proposed Project's contribution to travel time impacts to the 10-Townsend at this intersection would be considered less than significant.

5th Street/Bryant Street/I-80 On-Ramp – The Proposed Project would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour and would cause this intersection to deteriorate from LOS D to LOS E during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street and the 47-Van Ness travels northbound on 5th Street.

During the PM peak hour, the northbound right and eastbound through movements and southbound approaches would operate at unacceptable levels of service, and a majority of the delay would be a result of congestion leading towards the SFOBB. The proposed project would only add traffic to the northbound and southbound approaches and the eastbound left turn movement. The 8-Bayshore lines operate in the southernmost through lane on Bryant Street and the project would not add new trips to the eastbound through movement; therefore, the Proposed Project would only have a significant impact to transit travel times on the 27-Bryant (which turns left from Bryant Street to 5th Street) and 47-Van Ness (which runs northbound on 5th Street) during the PM peak hour.

During the Saturday peak hour, the northbound approach would operate at unacceptable levels of service. The project would add new trips to this approach; therefore, the Proposed Project would have a significant impact on the 47-Van Ness during the Saturday peak hour.

5th Street/Harrison Street/I-80 Off-Ramp – The Proposed Project would cause this intersection to deteriorate from LOS D to LOS E during the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 12-Folsom/Pacific and 8-Bayshore lines run westbound on Harrison Street, and the westbound approach operates acceptably; therefore, no impact to these lines was identified. The Proposed Project's contribution to increases in delay on the northbound and southbound approaches would be substantial; therefore, the Proposed Project's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Proposed Project's contribution to increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **27-Bryant:** 5th Street/Bryant Street/I-80 On-Ramp, 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM and Saturday Peak Hours)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan (“TCDP”) transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Proposed Project. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Proposed Project’s impacts to transit delay would remain **significant and unavoidable**.

4.3.1.4 On-Island Transit Circulation (Base Transit Scenario)

The circulation of transit routes on the Islands was described in the Project Description section and illustrated in **Figure 6** on page 14. In general, the street network has been designed in close coordination with transit operators, as well as MTA’s bicycle and pedestrian group, to accommodate transit vehicle circulation and includes provisions, such as the design of curb radii and roadway widths to ensure that bus, emergency vehicles and truck maneuvers can be accommodated while minimizing conflicts with pedestrians and bicyclists.

TABLE 44 – EXISTING PLUS PROJECT MUNI TRANSIT SCREENLINES CAPACITY UTILIZATION

	Existing			Existing + Proposed Project (Base Transit Scenario)			Existing + Proposed Project (Expanded Transit Scenario)			Existing + Reduced Development Alternative (Base Transit Scenario)			Existing + Reduced Development Alternative (Expanded Transit Scenario)		
	Riders	Capacity	% Utilized	Project Trips	Total Riders	% Utilized	Project Trips	Total Riders	% Utilized	Project Trips	Total Riders	% Utilized	Project Trips	Total Riders	% Utilized
AM Peak Hour (inbound)															
Northeast	1,882	3,781	50%	17	1,899	50%	28	1,910	51%	14	1,896	50%	23	1,905	50%
Northwest	7,434	11,437	65%	44	7,478	65%	71	7,505	66%	35	7,469	65%	58	7,492	66%
Southwest	4,248	6,301	67%	89	4,337	69%	143	4,391	70%	71	4,319	69%	116	4,364	69%
Southeast	6,627	8,699	76%	10	6,637	76%	16	6,643	76%	8	6,635	76%	13	6,640	76%
Total	20,191	30,218	67%	160	20,351	67%	258	20,449	68%	128	20,319	67%	210	20,401	68%
PM Peak Hour (outbound)															
Northeast	1,186	3,599	33%	25	1,211	34%	41	1,227	34%	22	1,208	34%	35	1,221	34%
Northwest	6,621	10,123	65%	65	6,686	66%	106	6,727	66%	55	6,676	66%	91	6,712	66%
Southwest	4,668	7,028	66%	130	4,798	68%	212	4,880	69%	111	4,779	68%	181	4,849	69%
Southeast	7,434	9,623	77%	14	7,448	77%	24	7,458	78%	12	7,446	77%	20	7,454	77%
Total	19,909	30,373	66%	234	20,143	66%	383	20,292	67%	200	20,109	66%	327	20,236	67%

Source: Fehr & Peers, 2009

However, as discussed in the ramp queuing section, vehicle queues on the SFOBB ramp approaches would extend along Treasure Island Road potentially blocking bus circulation from Treasure Island toward the SFOBB, causing delays to bus service. This may result in substantial delays to transit service.

Under conditions without the separately-proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the two existing westbound on-ramps would both remain open to mixed traffic. It is likely that Muni would use the westernmost on-ramp. As illustrated on **Figure 22** and **Table 38**, (pages 107 and 108), queues from this ramp may extend as far as approximately ½-mile from the on-ramp during weekday peak hours, causing delays of approximately two minutes per vehicle. During Saturday peak hours, queues would extend just over 2/3 mile, with delays of approximately three minutes per vehicle. This would be considered a significant impact to Muni operations.

Mitigation Measure 1 – Implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project's auto traffic generation would be reduced such that queues would be reduced to much smaller levels (between 0 and 400 feet) at each on-ramp during weekday peak hours, but would remain approximately 1/3 mile during Saturday peak hours. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to Muni operations would remain **significant and unavoidable**.

Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from both westbound ramps would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations.

Mitigation Measure 1 – Implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project's auto traffic generation would be reduced such that queues would be reduced to much smaller levels (between 0 and 400 feet) at each on-ramp during weekday peak hours, but would remain approximately 1/3 mile during Saturday peak hours. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to AC Transit operations would remain **significant and unavoidable**.

Under conditions with the separately-proposed westbound ramp reconstruction project, the westbound on-ramp on the west side of Yerba Buena Island would be converted to transit-only and all traffic destined for the westbound SFOBB would be routed to the westbound on-ramp on the east side of Yerba Buena Island. In this case, queues may extend from the westbound on-ramp on the east side of Yerba Buena Island over one mile onto Treasure Island Road, just past Macalla Road. Muni buses leaving the Transit Hub would travel through this queue for approximately ½ mile before reaching the transit-only westbound on-ramp, causing delays of about five minutes in the AM and PM peaks. This would be considered a significant impact to Muni operations.

Mitigation Measures 1 & 2 – Implementing the Expanded Transit Scenario (Mitigation 1) would reduce auto traffic generation such that the delay at the on-ramps would be less than 3.5 minutes; however, the impact to Muni operations would remain significant. As noted earlier, the funding for this expanded service is uncertain. Therefore, to ensure that transit circulation is not adversely affected by queues approaching the SFOBB on-ramps, a continuous southbound transit-only lane shall be provided from the transit center on Treasure Island to the westbound on-ramp to the SFOBB on the west side of Yerba Buena Island (Mitigation Measure 2).

Implementation of Mitigation Measure 2 would only be triggered if the extent of actual vehicle queuing impacts the proposed 108-Treasure Island on Treasure Island Road and creates delays for Muni buses accessing the westbound transit-only on-ramp. As such, throughout the life of the project, the TITMA, in

consultation with SFMTA and using SFMTA's methodology, shall monitor the length and duration of potential queues on Treasure Island Road and the associated delays to Muni service. If the queues formed between First Street and the westbound on-ramp on the west side of Yerba Buena Island result in an operational delay to Muni service equal to or greater than the prevailing headway during the AM, PM or Saturday peak periods, TITMA shall implement a southbound transit-only lane between First Street on Treasure Island and the transit- and emergency vehicle-only westbound Bay Bridge on-ramp. In addition to providing a transit-only lane, TITMA shall stripe sharrows in the southbound mixed flow lane between First Street and the westbound on-ramp. The implementation of a transit-only lane would be triggered if impacts are observed over the course of six months at least 50 percent of the time during the AM, PM, or Saturday peak periods.

Implementation of Mitigation Measure 2 to provide a transit and emergency vehicle-only lane between First Street on Treasure Island and the westbound Bay Bridge on-ramp would allow Muni vehicles to bypass vehicle queues that may occur and therefore, the impact to Muni operations would be reduced to a **less-than-significant** level.

Implementation of this mitigation measure would entail the following:

- Elimination or reduction of the proposed median on Treasure Island Road between First Street and just south of Macalla Road; and
- Elimination of the proposed southbound bicycle lane on Treasure Island and Hillcrest Roads after the intersection with Macalla Road. Bicyclists would still be able to use Class I bicycle paths and Class II bicycle lanes proposed on Macalla Road to connect between the Islands and the bicycle path on the new eastern span of the Bay Bridge. Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from the westbound on-ramp on the east side of Yerba Buena Island would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. AC Transit vehicles would travel in this queue nearly for its entire length, from just north of Macalla Road to the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations.

Providing this transit-only lane would allow transit vehicles to bypass vehicle queues; however, since this improvement would extend only to the transit-only westbound on-ramp because there is not sufficient right-of-way to extend a transit-only lane beyond the transit-only westbound on-ramp, AC Transit vehicles would continue to experience congestion between the transit-only westbound on-ramp and the eastbound on-ramp. Therefore, the impact to AC Transit operations would be **significant and unavoidable**.

4.3.2 Proposed Project with Expanded Transit Scenario

This section evaluates the Proposed Project's transit impacts under the Expanded Transit Scenario. The Expanded Transit Scenario would include all of the elements of the Base Transit Scenario plus:

- More frequent ferry service at 15-minute headways during peak periods (corresponding to three ferries operating between Treasure Island and improved docks in San Francisco, dedicated for use by the Treasure Island ferry);
- More frequent bus service on the Muni 108-Treasure Island route, with frequency increased to 7-minute headways in the AM peak period and 5-minute headways in the PM peak period to and from the San Francisco Transbay Terminal. Overnight Owl service would continue at lower frequencies;
- New bus line with service to another location in San Francisco (assumed to be Civic Center for purposes of this analysis) with 12-min headways during the AM and PM peak periods. Service would be provided between approximately 5:00 AM and 10:00 PM;

The transit infrastructure (ferry quay, Transit Hub, new bus stops and layover areas, and a transit-only on-ramp to the westbound SFOBB) would remain the same as the Proposed Project.

This would result in an overall transit capacity of 4,241 passengers per hour per direction in the AM peak hour and 4,563 passengers per hour per direction in the PM peak hour. Specifically, the transit capacity would be 2,796 passengers per hour by ferry in both peak hours and 1,445 passengers per hour by bus in the AM peak hour and 1,767 passengers per hour by bus in the PM Peak hour. The transit capacity during the Saturday peak hour would be 3,680 passengers. Specifically, the transit capacity would be 2,796 passengers per hour by ferry and 2,767 passengers per hour by bus.

4.3.2.1 Transit Capacity Utilization (Expanded Transit Scenario)

Table 43, on page 162, summarizes the transit trips to and from the Islands, and compares the projected ridership with the hourly passenger capacity provided by each transit operator for all four scenarios evaluated in this study, including the Proposed Project under the Expanded Transit Scenario.

The Proposed Project under the Expanded Transit Scenario will generate 2,033 net new AM peak hour transit trips, 2,802 net new PM peak hour transit trips, and 1,796 net new Saturday peak hour transit trips. The project's net increase to transit demand was added to existing transit usage (generated by uses that would remain) to determine Existing plus Project transit demand under the Expanded Transit Scenario.

The analysis forecasts an increase in transit ridership between the Funded and Expanded Transit Scenarios. With more frequent transit service and additional destinations served, compared to the Base Transit Scenario, travel by transit becomes more desirable under the Expanded Transit Scenario. As a result, transit service experiences higher ridership, although the total travel demand in terms of person-trips generated remains the same between the two scenarios. Further, although transit service between the Islands and the East Bay via AC Transit buses remains the same between the two scenarios, this analysis assumes AC Transit ridership would be higher under the Expanded Transit Scenario since under this scenario, the Proposed Project would generally be more transit-oriented and would attract residents and tenants who are more attracted to use transit.

As shown in **Table 43**, transit ridership would be less than 70 percent of the total capacity for each service type, which would be well within each provider's capacity utilization standard. Therefore, under the Expanded Transit Scenario, the Proposed Project's impacts to transit capacity utilization would be **less than significant**.

4.3.2.2 Downtown Screenline Analysis (Expanded Transit Scenario)

In addition to analysis of specific transit lines with service directly to the Islands, the transit impact analysis includes an assessment as to whether the Proposed Project would be likely to add substantial amounts of transit ridership to transit routes serving Downtown San Francisco during peak commute hours.

Table 44, on page 168, summarizes the impacts to the Muni downtown screenlines from the Proposed Project under the Expanded Transit Scenario. Although the project is expected to generate a substantial number of transit riders, as they relate to Downtown screenlines, project-generated transit riders are more likely to be traveling in off-peak directions. For example, in the AM peak hour, the peak direction of transit riders generated by the Proposed Project is into Downtown San Francisco from the Islands (which does not affect the screenlines). Those riders continuing on transit to other destinations from Downtown San Francisco will travel in the "outbound" direction, away from Downtown. This is the off-peak direction for the Downtown screenlines, when peak transit flows are in the "inbound" direction in the AM peak hour. The reverse phenomenon occurs during the PM peak hour.

As shown in **Table 44**, the Proposed Project's contribution to ridership in the peak direction for any of the Downtown screenlines is relatively small. The Proposed Project would not increase demand for peak direction of travel through any of the four screenlines surrounding Downtown such that they would exceed Muni's capacity standard of 85 percent utilization. Therefore, under the Expanded Transit Scenario, the proposed project's impacts to Muni downtown screenlines would be **less than significant**.

4.3.2.3 Regional Transit Analysis (Expanded Transit Scenario)

A portion of the new transit trips generated by the Proposed Project would transfer from the 108-Treasure Island and new ferry route to other regional transit operators including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes. Similar to the impact assessment presented for the Muni downtown screenlines, Proposed Project-generated transit riders transferring to other regional operators would more likely be traveling in the off-peak direction, for which there is generally available capacity.

For example, during the AM peak hour, the majority of Proposed Project-generated transit trips would be traveling off of the Islands. Those traveling to the East Bay would take the new AC Transit bus line to downtown Oakland, and then transfer to BART to continue to destinations served by BART. These BART trips would be in the off-peak direction for BART in the AM peak hour. Similarly, trips destined for points served by BART in San Francisco and the Peninsula would take either the Muni 108-Treasure Island bus or the new ferry route into downtown San Francisco. From there they would transfer to BART and travel away from downtown San Francisco, which is also the off-peak direction in the AM peak hour. The reverse would occur during the PM peak hour, when transit riders returning to the Islands would travel in the off-peak direction to access the 108-Treasure Island, the new AC Transit line, or the new ferry service. For example, transit riders returning to the Ferry Building from Peninsula destinations on BART would be traveling in the off-peak direction for BART in the PM peak hour.

Since Proposed Project-generated transit riders transferring to other routes would be dispersed over multiple operators and routes, and since these trips would occur in the off-peak direction of transit demand, the additional trips would not substantially affect the peak direction capacity utilization. Therefore, impacts to regional transit operator capacity, including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes would be less than significant, and no mitigation measures would be required.

4.3.2.4 Transit Delay Analysis (Expanded Transit Scenario)

As described in Section 4.2 (Traffic Impacts), traffic from the Proposed Project would contribute to significant impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Proposed Project would contribute significant contributions to impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Proposed Project's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM peak hour, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Proposed Project would create a significant contribution to delay on this approach, the Proposed Project would have a significant impact to transit travel times on the 30X-Stockton Express.

1st Street/Mission Street – The Proposed Project would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Proposed Project-generated increases in cumulative intersection delay, and the Proposed Project's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Proposed Project would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and Golden Gate Transit bus lines travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the PM peak hour, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB; however, these approaches operate at acceptable levels of service. Thus, the Proposed Project's contribution to travel time impacts to the 10-Townsend at this intersection would be considered less than significant.

5th Street/Bryant Street/I-80 On-Ramp – The Proposed Project would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour and would cause this intersection to deteriorate from LOS D to LOS E during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street and the 47-Van Ness travels northbound and southbound on 5th Street.

During the PM peak hour, the northbound right and eastbound through movements and southbound approaches would operate at unacceptable levels of service, and a majority of the delay would be a result of congestion leading towards the SFOBB. The proposed project would only add traffic to the northbound and southbound approaches and the eastbound left turn movement. The 8-Bayshore lines operate in the southernmost through lane on Bryant Street and the project would not add new trips to the eastbound through movement; therefore, the Proposed Project would only have a significant impact to transit travel times on the 27-Bryant (which turns left from Bryant Street to 5th Street) and 47-Van Ness (which runs northbound on 5th Street) during the PM peak hour.

During the Saturday peak hour, the northbound approach would operate at unacceptable levels of service. The project would add new trips to this approach; therefore, the Proposed Project would have a significant impact on the 47-Van Ness during the Saturday peak hour.

5th Street/Harrison Street/I-80 Off-Ramp – The Proposed Project would cause this intersection to deteriorate from LOS D to LOS E during the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 12-Folsom/Pacific and 8-Bayshore lines run westbound on Harrison Street, and the westbound approach operates acceptably; therefore, no impact to these lines was identified. The Proposed Project's contribution to increases in delay on the northbound and southbound approaches would be substantial; therefore, the Proposed Project's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Proposed Project's contribution to increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **27-Bryant:** 5th Street/Bryant Street/I-80 On-Ramp, 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM and Saturday Peak Hours)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan ("TCDP") transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Proposed Project. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Proposed Project's impacts to transit delay would remain **significant and unavoidable**.

4.3.2.4 On-Island Transit Circulation (Expanded Transit Scenario)

The circulation of transit routes on the Islands was described in the Project Description section and illustrated in **Figure 6** (page 14). In general, the street network has been designed in close coordination with transit operators, as well as MTA's bicycle and pedestrian group, to accommodate transit vehicle circulation and includes provisions, such as the design of curb radii and roadway widths to ensure that bus, emergency vehicles and truck maneuvers can be accommodated while minimizing conflicts with pedestrians and bicyclists.

However, as discussed in the ramp queuing section, vehicle queues on the SFOBB ramp approaches would extend along Treasure Island Road potentially blocking bus circulation from Treasure Island toward the SFOBB, causing delays to bus service. This may result in substantial delays to transit service.

Under conditions without the separately-proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the two existing westbound on-ramps would both remain open to mixed traffic. It is likely that Muni would use the westernmost on-ramp. As illustrated on **Figure 27** (page 128) and **Table 38** (page 108), queues from this ramp would be minimal during the weekday AM and PM peak hours, extending no longer than 400 feet. However, queues would remain just over 1/3 mile during Saturday peak hours. This would be considered a significant impact to Muni operations. Implementation of the separately-proposed westbound ramps reconstruction project would reduce queues to less than significant levels during the Saturday peak hour, but would result in substantially longer queues during the

weekday AM and PM peak hours. Therefore, under conditions without the westbound ramp reconstruction project, no feasible mitigation measures were identified to reduce the Proposed Project's impacts to Muni operations to less than significant levels during the Saturday peak hour and the impact would remain **significant and unavoidable**.⁴⁵

Similarly, the minimal queues would not affect AC Transit vehicles traveling between Treasure Island and the eastbound on-ramp to the SFOBB during the weekday AM and PM peak hour. However, Saturday peak hour queues would remain approximately 1/3 mile, which would cause delays to AC Transit service. As described in Mitigation Measure 2, providing a transit-only lane between the western westbound on-ramp and 1st Street would provide a queue jump lane for transit vehicles accessing the SFOBB. However, since this improvement would extend only to the transit-only westbound on-ramp and there is not room to extend a transit-only lane beyond the transit-only westbound on-ramp to the eastbound on-ramp, AC Transit vehicles would continue to experience congestion between the transit-only westbound on-ramp and the eastbound on-ramp. Therefore, the impact to AC Transit operations would be **significant and unavoidable**.

Under conditions with the separately-proposed westbound ramp reconstruction project, the westbound on-ramp on the west side of Yerba Buena Island would be converted to transit-only and all traffic destined for the westbound SFOBB would be routed to the westbound on-ramp on the east side of Yerba Buena Island. In this case, queues may extend from the westbound on-ramp on the east side of Yerba Buena Island to nearly one mile onto Treasure Island Road, approximately to the transit-only westbound on-ramp. Muni buses leaving the Transit Hub would not likely experience queues as they approach the westbound on-ramp. Therefore, impacts to Muni operations would be considered **less than significant**.

Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from the westbound on-ramp on the east side of Yerba Buena Island would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. AC Transit vehicles would travel in this queue nearly for its entire length, approximately from the transit-only westbound on-ramp to the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations. Since there is not room to extend a transit-only lane beyond the transit-only westbound on-ramp, AC Transit vehicles would continue to experience congestion between the transit-only westbound on-ramp and the eastbound on-ramp. Therefore, the impact to AC Transit operations would be **significant and unavoidable**.

4.3.3 Reduced Development Alternative with Base Transit Scenario

This section analyzes the transit impacts associated with the Reduced Development Alternative under the Base Transit Scenario.

4.3.3.1 Transit Capacity Utilization (Reduced Development, Base Transit Scenario)

Table 43, on page 159, summarizes the transit trips to and from the Islands, and compares the projected ridership with the hourly passenger capacity provided by each transit operator for all four scenarios evaluated in this study, including the Reduced Development Alternative under the Base Transit Scenario.

The Reduced Development Alternative under the Base Transit Scenario will generate 1,008 net new AM peak hour transit trips, 1,462 net new PM peak hour transit trips, and 953 net new Saturday peak hour transit trips. The project's net increase to transit demand was added to existing transit usage (generated by uses that would remain) to determine Existing plus Reduced Development Alternative transit demand under the Base Transit Scenario.

45. Converting the western on-ramp to transit-only without improvements to the westbound on-ramps on the east side of the Islands would substantially affect vehicle queuing and delay and was not evaluated as part of this analysis.

As shown in **Table 43**, the Reduced Development Alternative would create a demand for transit service, particularly bus transit service to Downtown San Francisco greater than that provided. The Reduced Development Alternative's transit travel demand would exceed Muni's capacity standard of 85 percent during the weekday AM and PM peak hours as well as during the Saturday peak hour. The proposed project would not exceed AC Transit or WETA capacity utilization standards during any of the peak periods (both transit operators have capacity standards equal to the seated capacity of their vehicles). If the unserved bus demand shifted to ferry, the combined bus and ferry demand would be less than Muni's 85 percent capacity utilization standard in all three peak hours, Muni bus service would still likely exceed 85 percent utilization. Since Muni bus service between the Islands and San Francisco would exceed Muni's standard of 85 percent capacity utilization in the AM, PM, and Saturday peak hours, the project's impact to transit capacity would be significant.

Mitigation Measure 1 – Implement the Expanded Transit Scenario. With implementation of the Expanded Transit Service, the project's transit demand would be accommodated within Muni's capacity threshold of 85 percent occupancy, which would reduce the impact on transit to a less than significant level. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, this impact would remain **significant and unavoidable**.

4.3.3.2 Downtown Screenline Analysis (Reduced Development, Base Transit Scenario)

In addition to analysis of specific transit lines with service directly to the Islands, the transit impact analysis includes an assessment as to whether the Reduced Development Alternative would be likely to add substantial amounts of transit ridership to transit routes serving Downtown San Francisco during peak commute hours.

Table 44, on page 168, summarizes the impacts to the Muni downtown screenlines from the Reduced Development Alternative under the Base Transit Scenario. Although the project is expected to generate a substantial number of transit riders, as they relate to Downtown screenlines, project-generated transit riders are more likely to be traveling in off-peak directions. For example, in the AM peak hour, the peak direction of transit riders generated by the Reduced Development Alternative is into Downtown San Francisco from the Islands (which does not affect the screenlines). Those riders continuing on transit to other destinations from Downtown San Francisco will travel in the "outbound" direction, away from Downtown. This is the off-peak direction for the Downtown screenlines, when peak transit flows are in the "inbound" direction in the AM peak hour. The reverse phenomenon occurs during the PM peak hour.

As shown in **Table 44**, the Reduced Development Alternative's contribution to ridership in the peak direction for any of the Downtown screenlines is relatively small. The Reduced Development Alternative would not increase demand for peak direction of travel through any of the four screenlines surrounding Downtown such that they would exceed Muni's capacity standard of 85 percent utilization. Therefore, under the Base Transit Scenario, the Reduced Development Alternative's impacts to Muni downtown screenlines would be **less than significant**.

4.3.3.3 Regional Transit Analysis (Reduced Development, Base Transit Scenario)

A portion of the new transit trips generated by the Reduced Development Alternative with Base Transit Service would transfer from the 108-Treasure Island and new ferry route to other regional transit operators including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes. Similar to the impact assessment presented for the Muni downtown screenlines, Proposed Project-generated transit riders transferring to other regional operators would more likely be traveling in the off-peak direction, for which there is generally available capacity.

For example, during the AM peak hour, the majority of Project-generated transit trips would be traveling off of the Islands. Those traveling to the East Bay would take the new AC Transit bus line to downtown

Oakland, and then transfer to BART to continue to destinations served by BART. These BART trips would be in the off-peak direction for BART in the AM peak hour. Similarly, trips destined for points served by BART in San Francisco and the Peninsula would take either the Muni 108-Treasure Island bus or the new ferry route into downtown San Francisco. From there they would transfer to BART and travel away from downtown San Francisco, which is also the off-peak direction in the AM peak hour. The reverse would occur during the PM peak hour, when transit riders returning to the Islands would travel in the off-peak direction to access the 108-Treasure Island, the new AC Transit line, or the new ferry service. For example, transit riders returning to the Ferry Building from Peninsula destinations on BART would be traveling in the off-peak direction for BART in the PM peak hour.

Since Reduced Development Alternative with Base Transit Service-generated transit riders transferring to other routes would be dispersed over multiple operators and routes, and since these trips would occur in the off-peak direction of transit demand, the additional trips would not substantially affect the peak direction capacity utilization. Therefore, impacts to regional transit operator capacity, including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes would be less than significant, and no mitigation measures would be required.

4.3.3.4 Transit Delay Analysis (Reduced Development, Base Transit Scenario)

As described in Section 4.2 (Traffic Impacts), traffic from the Reduced Development Alternative with Base Transit Service would contribute to significant impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Proposed Project would contribute significant contributions to impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Reduced Development Alternative with Base Transit Service would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Reduced Development Alternative with Base Transit Service's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM peak hour, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Reduced Development Alternative with Base Transit Service would create a significant contribution to delay on this approach, the Reduced Development Alternative with Base Transit Service would have a significant impact to transit travel times on the 30X-Stockton Express.

1st Street/Mission Street – The Reduced Development Alternative with Base Transit Service would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Reduced Development Alternative with Base Transit Service-generated increases in cumulative intersection delay, and the Proposed Project's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Reduced Development Alternative with Base Transit Service would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and Golden Gate Transit bus lines travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the PM peak hour, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB; however, these approaches operate at acceptable levels of service. Thus, the Reduced Development Alternative with Base Transit Service's contribution to travel time impacts to the 10-Townsend at this intersection would be considered less than significant.

5th Street/Bryant Street/I-80 On-Ramp – The Reduced Development Alternative with Base Transit Service would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour and would cause this intersection to deteriorate from LOS D to LOS E during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street and the 47-Van Ness travels northbound and southbound on 5th Street.

During the PM peak hour, the northbound right and eastbound through movements and southbound approaches would operate at unacceptable levels of service, and a majority of the delay would be a result of congestion leading towards the SFOBB. The proposed project would only add traffic to the northbound and southbound approaches and the eastbound left turn movement. The 8-Bayshore lines operate in the southernmost through lane on Bryant Street and the project would not add new trips to the eastbound through movement; therefore, the Reduced Development Alternative with Base Transit Service would only have a significant impact to transit travel times on the 27-Bryant (which turns left from Bryant Street to 5th Street) and 47-Van Ness (which runs northbound on 5th Street) during the PM peak hour.

During the Saturday peak hour, the northbound approach would operate at unacceptable levels of service. The project would add new trips to this approach; therefore, the Reduced Development Alternative with Base Transit Service would have a significant impact on the 47-Van Ness during the Saturday peak hour.

5th Street/Harrison Street/I-80 Off-Ramp – The Reduced Development Alternative with Base Transit Service would cause this intersection to deteriorate from LOS D to LOS E during the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 12-Folsom/Pacific and 8-Bayshore lines run westbound on Harrison Street, and the westbound approach operates acceptably; therefore, no impact to these lines was identified. The Reduced Development Alternative with Base Transit Service's contribution to increases in delay on the northbound and southbound approaches would be substantial; therefore, the Reduced Development Alternative with Base Transit Service's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Reduced Development Alternative with Base Transit Service's contribution to increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **27-Bryant:** 5th Street/Bryant Street/I-80 On-Ramp, 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM and Saturday Peak Hours)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan (“TCDP”) transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Proposed Project. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Reduced Development Alternative with Base Transit Service’s impacts to transit delay would remain **significant and unavoidable**.

4.3.3.5 On-Island Transit Circulation (Reduced Development, Base Transit Scenario)

The circulation of transit routes on the Islands was described in the Project Description section and illustrated in **Figure 6** (page 14). In general, the street network has been designed in close coordination with transit operators, as well as MTA’s bicycle and pedestrian group, to accommodate transit vehicle circulation and includes provisions, such as the design of curb radii and roadway widths to ensure that bus, emergency vehicles and truck maneuvers can be accommodated while minimizing conflicts with pedestrians and bicyclists.

However, as discussed in the ramp queuing section, vehicle queues on the SFOBB ramp approaches would extend along Treasure Island Road potentially blocking bus circulation from Treasure Island toward the SFOBB, causing delays to bus service. This may result in substantial delays to transit service.

Under conditions without the separately-proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the two existing westbound on-ramps would both remain open to mixed traffic. It is likely that Muni would use the westernmost on-ramp. As illustrated on **Figure 32** and **Table 38**, (pages 139 and 108), queues from this ramp may extend as far as approximately ½-mile from the on-ramp during the weekday AM and PM peak hours, causing delays of approximately two minutes per vehicle. During the Saturday peak hour, queues may extend to near 2/3 mile, with delays of approximately 2.5 minutes per vehicle. This would be considered a significant impact to Muni operations.

Mitigation Measure 1 – Implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project’s auto traffic generation would be reduced such that queues would be reduced to negligible levels at each on-ramp during weekday peak hours, but would remain approximately 1/2 mile during the Saturday peak hour. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to Muni operations would remain **significant and unavoidable**.

Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from both westbound ramps would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations.

Mitigation Measure 1 – Implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project's auto traffic generation would be reduced such that queues would be reduced to negligible levels at each on-ramp during weekday peak hours, but would remain approximately 1/2 mile during the Saturday peak hour. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to AC Transit operations would remain **significant and unavoidable**.

Under conditions with the separately-proposed westbound ramp reconstruction project, the westbound on-ramp on the west side of Yerba Buena Island would be converted to transit-only and all traffic destined for the westbound SFOBB would be routed to the westbound on-ramp on the east side of Yerba Buena Island. In this case, queues may extend from the westbound on-ramp on the east side of Yerba Buena Island to just over 1/2 mile onto Treasure Island Road, approximately to the transit-only westbound on-ramp. Muni buses leaving the Transit Hub would not likely experience queues as they approach the westbound on-ramp. Therefore, impacts to Muni operations would be considered **less than significant**.

Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from the westbound on-ramp on the east side of Yerba Buena Island would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. AC Transit vehicles would travel in this queue nearly for its entire length, approximately from the transit-only westbound on-ramp to the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations. Since there is not room to extend a transit-only lane beyond the transit-only westbound on-ramp, AC Transit vehicles would continue to experience congestion between the transit-only westbound on-ramp and the eastbound on-ramp. Therefore, the impact to AC Transit operations would be **significant and unavoidable**.

4.3.4 Reduced Development Alternative with Expanded Transit Scenario

This section analyzes the transit impacts associated with the Reduced Development Alternative under the Expanded Transit Scenario.

4.3.4.1 Transit Capacity Utilization (Reduced Development, Expanded Transit Scenario)

Table 43, on page 162, summarizes the transit trips to and from the Islands, and compares the projected ridership with the hourly passenger capacity provided by each transit operator for all four scenarios evaluated in this study, including the Reduced Development Alternative under the Expanded Transit Scenario.

The Reduced Development Alternative under the Expanded Transit Scenario would generate 1,646 net new AM peak hour transit trips, 2,396 net new PM peak hour transit trips, and 1,605 net new Saturday peak hour transit trips. The project's net increase to transit demand was added to existing transit usage (generated by uses that would remain) to determine Existing plus Reduced Development Alternative transit demand under the Expanded Transit Scenario.

The analysis forecasts an increase in transit ridership between the Funded and Expanded Transit Scenarios. With more frequent transit service and additional destinations served, compared to the Base Transit Scenario, travel by transit becomes more desirable under the Expanded Transit Scenario. As a result, transit service experiences higher ridership, although the total travel demand in terms of person-trips generated remains the same between the two scenarios. Further, although transit service between

the Islands and the East Bay via AC Transit buses remains the same between the two scenarios, this analysis assumes AC Transit ridership would be higher under the Expanded Transit Scenario since under this scenario, the Reduced Development Alternative would generally be more transit-oriented and would attract residents who are more attracted to use transit.

As shown in **Table 43**, transit ridership would be less than 70 percent of the total capacity for each service type, which would be well within each provider's capacity utilization standard. Therefore, under the Expanded Transit Scenario, the Reduced Development Alternative's impacts to transit capacity utilization would be **less than significant**.

4.3.4.2 Downtown Screenline Analysis (Reduced Development, Expanded Transit Scenario)

In addition to analysis of specific transit lines with service directly to the Islands, the transit impact analysis includes an assessment as to whether the Reduced Development Alternative would be likely to add substantial amounts of transit ridership to transit routes serving Downtown San Francisco during peak commute hours.

Table 44, on page 168, summarizes the impacts to the Muni downtown screenlines from the Reduced Development Alternative under the Expanded Transit Scenario. Although the project is expected to generate a substantial number of transit riders, as they relate to Downtown screenlines, project-generated transit riders are more likely to be traveling in off-peak directions. For example, in the AM peak hour, the peak direction of transit riders generated by the Reduced Development Alternative is into Downtown San Francisco from the Islands (which does not affect the screenlines). Those riders continuing on transit to other destinations from Downtown San Francisco will travel in the "outbound" direction, away from Downtown. This is the off-peak direction for the Downtown screenlines, when peak transit flows are in the "inbound" direction in the AM peak hour. The reverse phenomenon occurs during the PM peak hour.

As shown in **Table 44**, the Reduced Development Alternative's contribution to ridership in the peak direction for any of the Downtown screenlines is relatively small. The Reduced Development Alternative would not increase demand for peak direction of travel through any of the four screenlines surrounding Downtown such that they would exceed Muni's capacity standard of 85 percent utilization. Therefore, under the Expanded Transit Scenario, the Reduced Development Alternative's impacts to Muni downtown screenlines would be **less than significant**.

4.3.4.3 Regional Transit Analysis (Reduced Development, Expanded Transit Scenario)

A portion of the new transit trips generated by the Reduced Development Alternative would transfer from the 108-Treasure Island and new ferry route to other regional transit operators including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes. Similar to the impact assessment presented for the Muni downtown screenlines, Reduced Development Alternative-generated transit riders transferring to other regional operators would more likely be traveling in the off-peak direction, for which there is generally available capacity.

For example, during the AM peak hour, the majority of Reduced Development Alternative-generated transit trips would be traveling off of the Islands. Those traveling to the East Bay would take the new AC Transit bus line to downtown Oakland, and then transfer to BART to continue to destinations served by BART. These BART trips would be in the off-peak direction for BART in the AM peak hour. Similarly, trips destined for points served by BART in San Francisco and the Peninsula would take either the Muni 108-Treasure Island bus or the new ferry route into downtown San Francisco. From there they would transfer to BART and travel away from downtown San Francisco, which is also the off-peak direction in the AM peak hour. The reverse would occur during the PM peak hour, when transit riders returning to the Islands would travel in the off-peak direction to access the 108-Treasure Island, the new AC Transit line, or the new ferry service. For example, transit riders returning to the Ferry Building from Peninsula destinations on BART would be traveling in the off-peak direction for BART in the PM peak hour.

Since Reduced Development Alternative with Expanded Transit Service-generated transit riders transferring to other routes would be dispersed over multiple operators and routes, and since these trips would occur in the off-peak direction of transit demand, the additional trips would not substantially affect the peak direction capacity utilization. Therefore, impacts to regional transit operator capacity, including AC Transit, BART, Golden Gate Transit, SamTrans, Caltrain and other ferry routes would be less than significant, and no mitigation measures would be required.

4.3.4.4 Transit Delay Analysis (Reduced Development, Expanded Transit Scenario)

As described in Section 4.2 (Traffic Impacts), traffic from the Reduced Development Alternative with Expanded Transit Service would contribute to significant impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Reduced Development Alternative with Expanded Transit Service would contribute significant contributions to impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Proposed Project's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM peak hour, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Proposed Project would create a significant contribution to delay on this approach, the Reduced Development Alternative with Expanded Transit Service would have a significant impact to transit travel times on the 30X-Stockton Express.

1st Street/Mission Street – The Reduced Development Alternative would cause this intersection to deteriorate from LOS E to LOS F during the PM peak hour.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Reduced Development Alternative with Expanded Transit Service-generated increases in cumulative intersection delay, and the Reduced Development Alternative with Expanded Transit Service's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Reduced Development Alternative would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and Golden Gate Transit bus lines travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the PM peak hour, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project

contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB; however, these approaches operate at acceptable levels of service. Thus, the Reduced Development Alternative with Expanded Transit Service's contribution to travel time impacts to the 10-Townsend at this intersection would be considered less than significant.

5th Street/Bryant Street/I-80 On-Ramp – The Reduced Development Alternative would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service during the PM peak hour and would cause this intersection to deteriorate from LOS D to LOS E during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street and the 47-Van Ness travels northbound on 5th Street.

During the PM peak hour, the northbound right and eastbound through movements and southbound approaches would operate at unacceptable levels of service, and a majority of the delay would be a result of congestion leading towards the SFOBB. The Reduced Development Alternative with Expanded Transit Service would only add traffic to the northbound and southbound approaches and the eastbound left turn movement. The 8-Bayshore lines operate in the southernmost through lane on Bryant Street and the project would not add new trips to the eastbound through movement; therefore, the Proposed Project would only have a significant impact to transit travel times on the 27-Bryant (which turns left from Bryant Street to 5th Street) and 47-Van Ness (which runs northbound on 5th Street) during the PM peak hour.

During the Saturday peak hour, the northbound approach would operate at unacceptable levels of service. The project would add new trips to this approach; therefore, the Reduced Development Alternative with Expanded Transit Service would have a significant impact on the 47-Van Ness during the Saturday peak hour.

5th Street/Harrison Street/I-80 Off-Ramp – The Reduced Development Alternative with Expanded Transit Service would cause this intersection to deteriorate from LOS D to LOS E during the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 12-Folsom/Pacific and 8-Bayshore lines run westbound on Harrison Street, and the westbound approach operates acceptably; therefore, no impact to these lines was identified. The Reduced Development Alternative with Expanded Transit Service's contribution to increases in delay on the northbound and southbound approaches would be substantial; therefore, the Reduced Development Alternative with Expanded Transit Service's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Reduced Development Alternative's contribution to increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **27-Bryant:** 5th Street/Bryant Street/I-80 On-Ramp, 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM and Saturday Peak Hours)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of

transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan (“TCDP”) transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Proposed Project. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Reduced Development Alternative with Expanded Transit Service’s impacts to transit delay would remain **significant and unavoidable**.

4.3.4.5 On-Island Transit Circulation (Reduced Development, Expanded Transit Scenario)

The circulation of transit routes on the Islands was described in the Project Description section and illustrated in **Figure 6** (page 14). In general, the street network has been designed in close coordination with transit operators, as well as MTA’s bicycle and pedestrian group, to accommodate transit vehicle circulation and includes provisions, such as the design of curb radii and roadway widths to ensure that bus, emergency vehicles and truck maneuvers can be accommodated while minimizing conflicts with pedestrians and bicyclists.

However, as discussed in the ramp queuing section, in some circumstances, vehicle queues on the SFOBB ramp approaches would extend along Treasure Island Road potentially blocking bus circulation from Treasure Island toward the SFOBB, causing delays to bus service. This may result in substantial delays to transit service.

Under conditions without the separately-proposed reconstruction of the westbound ramps on the east side of Yerba Buena Island, the two existing westbound on-ramps would both remain open to mixed traffic. It is likely that Muni would use the westernmost on-ramp. As illustrated on **Figure 37** and **Table 38**, (pages 152 and 108), queues from this ramp would be minimal during the weekday AM and PM peak hours. However, queues would remain approximately 1/2 mile long during Saturday peak hours. This would be considered a significant impact to Muni operations. Implementation of the separately-proposed westbound ramps reconstruction project would reduce queues to less than significant levels during the Saturday peak hour, but would result in substantially longer queues during the weekday AM and PM peak hours. Therefore, under conditions without the westbound ramp reconstruction project, no feasible mitigation measures were identified to reduce the Reduced Development Alternative’s impacts to Muni operations to less than significant levels during the Saturday peak hour and the impact would remain **significant and unavoidable**.⁴⁶

Similarly, the minimal queues would not affect AC Transit vehicles traveling between Treasure Island and the eastbound on-ramp to the SFOBB during the weekday AM and PM peak hour. However, Saturday peak hour queues would remain approximately 1/2 mile, which would cause delays to AC Transit service. This would be considered a **significant and unavoidable** impact to AC Transit operations.

Under conditions with the separately-proposed westbound ramp reconstruction project, the westbound on-ramp on the west side of Yerba Buena Island would be converted to transit-only and all traffic destined for the westbound SFOBB would be routed to the westbound on-ramp on the east side of Yerba Buena Island. In this case, queues may extend from the westbound on-ramp on the east side of Yerba Buena

46. Although no scenario described in this report discusses converting the western westbound on-ramp to transit only without reconstructing the eastern westbound on-ramp, westbound transit would likely use the western ramp. Converting this western ramp to a transit-only ramp would benefit Muni operations; however, vehicle queues from the westbound on-ramp on the east side of Yerba Buena Island would remain and affect AC Transit operations.

Island to just over ½ mile onto Treasure Island Road, approximately to the transit-only westbound on-ramp. Muni buses leaving the Transit Hub would not likely experience queues as they approach the westbound on-ramp. Therefore, impacts to Muni operations would be considered **less than significant**.

Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from the westbound on-ramp on the east side of Yerba Buena Island would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. AC Transit vehicles would travel in this queue nearly for its entire length, approximately from the transit-only westbound on-ramp to the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations. Since there is not room to extend a transit-only lane beyond the transit-only westbound on-ramp, AC Transit vehicles would continue to experience congestion between the transit-only westbound on-ramp and the eastbound on-ramp. Therefore, the impact to AC Transit operations would be **significant and unavoidable**.

4.4 PEDESTRIAN IMPACTS

Development on Treasure Island is expected to increase pedestrian demand both on the Islands and around the Ferry Building in San Francisco. The analysis of pedestrian impacts describes the future pedestrian conditions around the Ferry Building in San Francisco with the addition of demand from the Islands and also provides a qualitative analysis of the pedestrian conditions proposed for Treasure Island and Yerba Buena Island.

4.4.1 Proposed Project with Base Transit Service

This section describes the pedestrian impacts associated with the Proposed Project Base Transit Scenario.

4.4.1.1 San Francisco Ferry Building Pedestrian Circulation (Base Transit Scenario)

The project is expected to add new pedestrian trips through the San Francisco Ferry Building associated with ferry service to the Islands. These new pedestrian trips would be accommodated on the sidewalks and crosswalks near the Ferry Building. The additional pedestrians from the Proposed Project would most affect conditions during peak AM and PM commute times, when ferries arrive and depart for other cities in the Bay Area. The proposed project would generate 641 pedestrian trips in the AM peak hour, 818 pedestrian trips in the PM peak hour, and 473 trips during the Saturday peak hour, corresponding to the number of ferry passengers generated by the Proposed Project under the Base Transit Scenario. Assuming that the new pedestrian trips are distributed to crosswalks around the Ferry Building similar to existing pedestrian travel patterns, a majority of pedestrians would cross Embarcadero at Market Street. **Table 45** on page 186 summarizes the distribution of pedestrian trips across Market Street at crosswalks near the Ferry Building, and the resulting LOS for each of the four project scenarios, including the Proposed Project under the Base Transit Scenario.⁴⁷

As shown in **Table 45**, the Proposed Project is expected to increase densities at each crosswalk.⁴⁸ However, all crosswalks are expected to operate at acceptable LOS D or better under the Base Transit Scenario, and therefore, the Proposed Project's impacts to pedestrian facilities in San Francisco would be **less than significant**.

47. **Table 15**, on page 60, described the pedestrian delay under existing conditions. Since the calculation of pedestrian delay is solely a function of traffic signal timing, the addition of new pedestrian trips associated with the Proposed Project is not expected to have an effect on pedestrian delay. The delay information was provided for informational purposes only and no further discussion is provided.

48. Note that in this table, density is measured in square feet per pedestrian; thus, as additional pedestrians are added and densities increase, the amount of square feet per pedestrian decreases.

TABLE 45 – PEDESTRIAN LEVELS OF SERVICE

Crosswalk ¹	Existing			Existing + Project: Base Transit Scenario			Existing + Project: Expanded Transit Scenario			Existing + Reduced Development: Base Transit Scenario			Existing + Reduced Development: Expanded Transit Scenario		
	Crossing Volume ²	Density ⁴	LOS	Project Trips	Density ⁴	LOS	Project Trips	Density ⁴	LOS	Project Trips	Density ⁴	LOS	Project Trips	Density ⁴	LOS
AM Peak Hour															
Washington Street ¹	120	33.3	A	25	27.6	A	38	25.3	A	20	28.6	A	31	26.5	A
Ferry Bldg (North)	400	8.0	C	82	6.6	C	126	6.1	C	67	6.9	C	103	6.4	C
Market Street	1,964	8.2	C	403	6.8	C	619	6.2	C	330	7.0	C	507	6.5	C
Don Chee	133	21.1	A	27	17.5	A	42	16.0	A	22	18.1	A	34	16.8	A
Mission Street ¹	333	12.0	B	68	10.0	C	105	9.1	C	56	10.3	B	86	9.6	C
PM Peak Hour															
Washington Street ¹	261	15.3	A	44	13.1	A	68	12.2	B	38	13.4	A	58	12.5	B
Ferry Bldg (North)	378	8.5	C	64	7.2	C	99	6.7	C	55	7.4	C	84	6.9	C
Market Street	3,452	4.6	D	588	4.0	D	904	3.7	D	501	4.1	D	770	3.8	D
Don Chee	184	15.2	A	31	13.0	A	48	12.1	B	27	13.3	A	41	12.4	B
Mission Street ¹	345	11.6	B	59	9.9	C	90	9.2	C	50	10.1	B	77	9.5	C
Saturday Peak Hour³															
Market Street	3,718	4.3	D	334	4.0	D	508	3.8	D	301	4.0	D	456	3.8	D
Don Chee	380	7.4	C	28	6.9	C	43	6.6	C	25	6.9	C	38	6.7	C

Notes:

1. Since the intersections of The Embarcadero with Washington Street and Mission Street each have two crosswalks, the north and south legs of each intersection were averaged.
2. Pedestrian counts provided by the City of San Francisco, taken from the Regional Signal Timing Program study conducted by Katz, Okitsu & Associates in 2006 and 2007.
3. The Ferry Building hosts a farmers market on Saturdays.
4. Density measured in square feet per pedestrian.

Source: Fehr & Peers, 2009.

4.4.1.2 Treasure Island and Yerba Buena Island Pedestrian Circulation (Base Transit Scenario)

As noted earlier, the 2006 Transportation Plan is designed to encourage walking and bicycling as primary on-island travel modes. To accommodate this demand, the street system on the Islands would be designed with special attention to sidewalks, pedestrian paths, and shared public ways.⁴⁹ In addition to the general opportunities for walking in the open space areas on Treasure Island, the project would provide the following pedestrian facilities on the Island:

- Sidewalks along all streets on Treasure Island and Yerba Buena Island, except on Treasure Island Road, south of Macalla Road, where grading constrains the width of the right of way along roadways. In addition to sidewalks, several trails through the open spaces and development areas would be constructed on Yerba Buena Island;
- A shared public way in the Cityside neighborhood, linking to the Island Core neighborhood;
- A mixed-use path around the perimeter of the Island;
- A mixed-use promenade along the Marina; and
- An 80-foot pedestrian-only linear park along 3rd Street between California Avenue and Eastside Avenue.

The proposed sidewalk system on Treasure Island would facilitate direct, convenient travel between proposed uses on the Island. The proposed sidewalk and pedestrian path system on Yerba Buena Island would be less direct due to the topography of the Island, but would nonetheless provide adequate pedestrian connections to all uses on the Island.

Intersections would include crosswalks and a number of corner bulbouts to shorten pedestrian crossing distances and improve pedestrian visibility. As described earlier, sidewalk widths would vary throughout the area, but in all cases would adhere to Americans with Disabilities (ADA) requirements. The additional pedestrian trips associated with the proposed project would be accommodated within the proposed sidewalk network.

The shared public ways would be narrow, low-speed facilities without separate pedestrian and auto accommodations. Instead, pedestrians and autos would be permitted to use and share the entire space. While autos would be permitted to use shared public ways, vehicular volumes are expected to be relative low because these streets would be narrow and less direct than the Secondary Arterials and Collector Streets. Generally, vehicles are expected to use shared public ways to access some parking and/or make short trips. Since auto trips on these streets would be at low-speed, conflicts with pedestrians and bicycles sharing the facility are expected to be minimal.

For pedestrians, shared public ways are likely to be used for access to buildings and short walks; the other streets in the neighborhoods that provide more direct routes of travel between key destinations are likely to be used for longer walking trips (i.e., from the residential neighborhoods to the Transit Hub or Island Core retail). Where these streets intersect with Collector Streets, no crosswalks are expected to be marked, although pedestrians may legally cross.

Proposed pedestrian facilities would be adequate to meet pedestrian demand associated with the Proposed Project, and the project's impacts to pedestrian circulation would be ***less than significant***.

49. Shared public ways were described in the Project Description section of this report and would be subject to design criteria currently being developed by City agencies and project sponsor.

4.4.2 Proposed Project with Expanded Transit Service

This section describes the pedestrian impacts associated with the Proposed Project under the Expanded Transit Scenario.

4.4.2.1 San Francisco Ferry Building Pedestrian Circulation (Expanded Transit Scenario)

The project is expected to add new pedestrian trips through the San Francisco Ferry Building associated with ferry service to the Islands. These new pedestrian trips would be accommodated on the sidewalks and crosswalks near the Ferry Building. Under the Expanded Transit Scenario, the Proposed Project would generate greater pedestrian volumes in San Francisco than under the Base Transit Scenario because the Expanded Transit Scenario would generate more ferry riders. The pedestrians generated by the Proposed Project would most affect conditions during peak AM and PM commute times, when ferries arrive and depart for other cities in the Bay Area. The Proposed Project would generate 958 pedestrian trips in the AM peak hour, 1,235 pedestrian trips in the PM peak hour, and 718 trips during the Saturday peak hour, corresponding to the number of ferry passengers generated by the Proposed Project under the Expanded Transit Scenario. Assuming that the new pedestrian trips are distributed to crosswalks around the Ferry Building similar to existing pedestrian travel patterns, a majority of pedestrians would cross Embarcadero at Market Street. **Table 45** (page 186) summarizes the distribution of pedestrian trips across Market Street at crosswalks near the Ferry Building, and the resulting LOS for each of the four project scenarios, including the Proposed Project under the Expanded Transit Scenario⁵⁰.

As shown in **Table 45**, the Proposed Project is expected to increase densities at each crosswalk.⁵¹ However, all crosswalks are expected to operate at acceptable LOS D or better under the Expanded Transit Scenario, and therefore, the Proposed Project's impacts to pedestrian facilities in San Francisco would be **less than significant**.

4.4.2.2 Treasure Island and Yerba Buena Island Pedestrian Circulation (Expanded Transit Scenario)

The general adequacy of pedestrian facilities on the Islands would be the same under the Expanded Transit Scenario as discussed for the Proposed Project under the Base Transit Scenario beginning on page 175. Proposed pedestrian facilities would be adequate to meet pedestrian demand associated with the Proposed Project, and the project's impacts to pedestrian circulation would be **less than significant**.

4.4.3 Reduced Development Alternative with Base Transit Service

This section describes the pedestrian impacts associated with the Reduced Development Alternative under the Base Transit Scenario.

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50. **Table 15**, on page 80, described the pedestrian delay under existing conditions. Since the calculation of pedestrian delay is solely a function of traffic signal timing, the addition of new pedestrian trips associated with the Proposed Project is not expected to have an effect on pedestrian delay. The delay information was provided for informational purposes only and no further discussion is provided.
51. Note that in this table, density is measured in square feet per pedestrian; thus, as additional pedestrians are added and densities increase, the amount of square feet per pedestrian decreases.

4.4.3.1 San Francisco Ferry Building Pedestrian Circulation (Reduced Development; Base Transit Scenario)

The project is expected to add new pedestrian trips through the San Francisco Ferry Building associated with ferry service to the Islands. These new pedestrian trips would be accommodated on the sidewalks and crosswalks near the Ferry Building. The pedestrians generated by the Reduced Development Alternative would most affect conditions during peak AM and PM commute times, when ferries arrive and depart for other cities in the Bay Area. The Reduced Development Alternative would generate 522 pedestrian trips in the AM peak hour, 696 pedestrian trips in the PM peak hour, and 426 trips during the Saturday peak hour, corresponding to the number of ferry passengers generated by the Reduced Development Alternative under the Base Transit Scenario. Assuming that the new pedestrian trips are distributed to crosswalks around the Ferry Building similar to existing pedestrian travel patterns, a majority of pedestrians would cross Embarcadero at Market Street. **Table 43** summarizes the distribution of pedestrian trips across Market Street at crosswalks near the Ferry Building, and the resulting LOS for each of the four project scenarios, including the Reduced Development Alternative under the Base Transit Scenario⁵².

As shown in **Table 43** on page 162, the Reduced Development Alternative is expected to increase densities at each crosswalk.⁵³ However, all crosswalks are expected to operate at acceptable LOS D or better under the Base Transit Scenario, and therefore, the Reduced Development Alternative's impacts to pedestrian facilities in San Francisco would be **less than significant**.

4.4.3.2 Treasure Island and Yerba Buena Island Pedestrian Circulation (Reduced Development; Base Transit Scenario)

The general adequacy of pedestrian facilities on the Islands would be the same under the Reduced Development Alternative as described for the Proposed Project beginning on page 180. Proposed pedestrian facilities would be adequate to meet pedestrian demand associated with the Proposed Project, and the project's impacts to pedestrian circulation would be **less than significant**.

4.4.4 Reduced Development Alternative with Expanded Transit Service

This section describes the pedestrian impacts associated with the Reduced Development Alternative under the Expanded Transit Scenario.

4.4.4.1 San Francisco Ferry Building Pedestrian Circulation (Reduced Development; Expanded Transit Scenario)

The project is expected to add new pedestrian trips through the San Francisco Ferry Building associated with ferry service to the Islands. These new pedestrian trips would be accommodated on the sidewalks and crosswalks near the Ferry Building. Under the Expanded Transit Scenario, the Reduced Development Alternative would generate greater pedestrian volumes in San Francisco than under the Base Transit Scenario because the Expanded Transit Scenario would generate more ferry riders. The pedestrians generated by the Reduced Development Alternative would most affect conditions during peak

52. **Table 15**, on page 80, described the pedestrian delay under existing conditions. Since the calculation of pedestrian delay is solely a function of traffic signal timing, the addition of new pedestrian trips associated with the Proposed Project is not expected to have an effect on pedestrian delay. The delay information was provided for informational purposes only and no further discussion is provided.

53. Note that in this table, density is measured in square feet per pedestrian; thus, as additional pedestrians are added and densities increase, the amount of square feet per pedestrian decreases.

AM and PM commute times, when ferries arrive and depart for other cities in the Bay Area. The Reduced Development Alternative would generate 783 pedestrian trips in the AM peak hour, 1,050 pedestrian trips in the PM peak hour, and 646 trips during the Saturday peak hour, corresponding to the number of ferry passengers generated by the Reduced Development Alternative under the Expanded Transit Scenario. Assuming that the new pedestrian trips are distributed to crosswalks around the Ferry Building similar to existing pedestrian travel patterns, a majority of pedestrians would cross Embarcadero at Market Street. **Table 45** (page 186) summarizes the distribution of pedestrian trips across Market Street at crosswalks near the Ferry Building, and the resulting LOS for each of the four project scenarios, including the Reduced Development Alternative under the Expanded Transit Scenario⁵⁴.

As shown in **Table 45**, the Reduced Development Alternative is expected to increase densities at each crosswalk.⁵⁵ However, all crosswalks are expected to operate at acceptable LOS D or better under the Expanded Transit Scenario, and therefore, the Reduced Development Alternative's impacts to pedestrian facilities in San Francisco would be **less than significant**.

4.4.4.2 Treasure Island and Yerba Buena Island Pedestrian Circulation (Reduced Development; Expanded Transit Scenario)

The general adequacy of pedestrian facilities on the Islands would be the same under the Reduced Development Alternative as described for the Proposed Project beginning on page 180. Proposed pedestrian facilities would be adequate to meet pedestrian demand associated with the Proposed Project, and the project's impacts to pedestrian circulation would be **less than significant**.

4.5 BICYCLE IMPACTS

Development of the Islands is expected to increase bicycle demand both on the Islands and around the Ferry Building in San Francisco. This section describes the impacts of development on bicycle circulation.

4.5.1 Proposed Project with Base Transit Service

The first part of the bicycle impact analysis describes the bicycle circulation impacts within San Francisco around the Ferry Building. The second section is a qualitative analysis of the bicycle facilities expected on Treasure Island and Yerba Buena Island. Finally, the project-specific bicycle parking requirements proposed for this project as part of the *D4D* process are summarized in this section.

4.5.1.1 Bicycle Circulation in San Francisco (Base Transit Scenario)

Primary bicycle access between the Islands and San Francisco would be via ferries traveling between the San Francisco Ferry Building and the proposed new Transit Hub on Treasure Island. Secondary bicycle access would be via buses between the Islands and San Francisco. The SFOBB ESSSP includes a bicycle/pedestrian path that would connect to Yerba Buena Island. The proposed project would provide a connection to this facility with the pedestrian and bicycle facilities on Yerba Buena Island and to the proposed Bay Trail around the perimeter of Treasure Island. The Bay Area Toll Authority ("BATA") has recently initiated a study to design a new bicycle/pedestrian path on the western span of the SFOBB. If this project is approved, funded and ultimately constructed, there would be a continuous bicycle

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54. **Table 15**, on page 80, described the pedestrian delay under existing conditions. Since the calculation of pedestrian delay is solely a function of traffic signal timing, the addition of new pedestrian trips associated with the Proposed Project is not expected to have an effect on pedestrian delay. The delay information was provided for informational purposes only and no further discussion is provided.
55. Note that in this table, density is measured in square feet per pedestrian; thus, as additional pedestrians are added and densities increase, the amount of square feet per pedestrian decreases.

connection between the East Bay, the Islands and San Francisco. However, that improvement is not assumed to be in place in this analysis.

The City of San Francisco has recently completed an Environmental Impact Report (“EIR”) of and adopted the *San Francisco Bicycle Plan*. The *Bicycle Plan* includes a number of projects in the South of Market area that would improve bicycle circulation. The City plans to stripe new bicycle lanes along 5th Street, Fremont Street, Beale Street and Howard Street. These new bicycle lanes would improve north and south bike circulation in the Downtown area by connecting the existing bicycle lanes on Folsom Street, Howard Street, and King Street, and Market Street. **Appendix I** includes a map showing the proposed bicycle network changes from the *Bike Plan*.

The Proposed Project is expected to generate new bicycle trips within San Francisco; however, these new trips would be relatively small in number compared to existing bicycle ridership. Therefore, it is reasonable to conclude that the project’s bicycle trip generation can be accommodated on the existing and planned bicycle network. The project’s impact to the bicycle network in San Francisco is therefore expected to be **less than significant**.

4.5.1.2 Bicycle Circulation on Treasure Island and Yerba Buena Island (Base Transit Scenario)

As noted earlier, the 2006 Transportation Plan is designed to encourage walking and bicycling as primary on-Island travel modes. To accommodate this demand, the street system on the Islands is being designed to be low-speed to create an environment that is compatible with bicycling. As illustrated on **Figure 8** (page 19), Class I bike paths would be placed around the perimeter of Treasure Island and within the open space areas to connect residential areas with open space and retail areas on Treasure Island. Class II bike lanes would be provided on Treasure Island Road and Avenue of the Palms, California Avenue, and Avenue C. A one-way (westbound) Class II bike lane would also be provided on 1st Street, parallel to California Avenue. No designated Class III bike routes would be provided on the island, although all other streets are proposed to be designed to encourage shared use by bicycles and autos through the use of various traffic calming features designed to lower auto travel speeds.

As illustrated on **Figure 9** (page 20), on Yerba Buena Island, a one-way Class II bike lane would be provided on Treasure Island Boulevard and Hillcrest Road, which would continue as a loop around South Gate Road and Macalla Road, back to Treasure Island Boulevard. Although Macalla Road is one-way northbound for vehicles, it would also provide a contra-flow Class II bike lane from Treasure Island Road to South Gate Road, separated from traffic by a two-foot buffer with painted chevrons.

There is one primary bicycle route from the SFOBB to Treasure Island, on Macalla Road. There are two primary routes from Treasure Island to the SFOBB. Macalla Road would be the most direct (albeit the steepest, reaching grades between 8.6 percent and 9.8 percent) route to the SFOBB from Treasure Island. Cyclists who opt for a longer, but less steep route from Treasure Island to the SFOBB can use the one-way Class II bicycle lane on Treasure Island Boulevard and Hillcrest Road. At the intersection of Hillcrest Road and South Gate Road, cyclists can enter the SFOBB bicycle/pedestrian path providing access to the East Bay⁵⁶.

Cyclists traveling on Macalla Road to access the SFOBB bicycle path would use the Class II bicycle lanes on Macalla Road between Treasure Island and the SFOBB westbound ramps intersection. Between that intersection and the SFOBB bike path, which begins at the intersection of Hillcrest Road and South Gate

56. The adoption of Mitigation Measure 2 would require the removal of the proposed bike lane on Treasure Island Road between 1st Street and the western transit-only westbound on-ramp on Yerba Buena Island. Bicycle access to and from the SFOBB would be via the proposed contra-flow bike lane on Macalla Road, such that the proposed Mitigation Measure would not preclude bicycle access between the Project and the SFOBB. Although Macalla Road would not preclude bicycle access to the SFOBB, Macalla Road is a steep, two-lane roadway that reaches grades of between eight and ten percent and would be likely be a challenging climb for both experienced bicyclists and less experienced cyclists.

Road, Caltrans' conceptual design calls for bicycles and pedestrians to use a 10-foot shared pathway on the west side of the street, which would continue along South Gate Road and loop around onto the bridge.

Four intersections on Yerba Buena Island have proposed enhanced bicycle treatments. These locations are discussed in detail below.

4.5.1.2.1 Hillcrest Road at South Gate Road

The proposed bicycle treatments at this intersection are shown on **Figure 40** (on page 194). This intersection would be a standard, three-legged side-street stop controlled intersection. Movements on Hillcrest Road and the Eastbound Ramps would be uncontrolled and the South Gate Road approach would be stop-controlled. Cyclists traveling on the Class II bike lane on Hillcrest Road would be uncontrolled, and can cross the intersection to access the SFOBB bicycle path on the north side of this intersection. Adequate bicycle facilities have been provided at this intersection, and designed to accommodate all intersection users.

4.5.1.2.2 Macalla Road at the SFOBB Westbound Ramps

The proposed bicycle treatments at this intersection are shown on **Figure 41** (on page 195). As described earlier, if the SFOBB Westbound Ramps are reconstructed as part of the SFCTA's ongoing study, the shared bicycle/pedestrian path connecting Yerba Buena Island to the SFOBB would continue along the west side of South Gate Road until the intersection with Macalla Road and the SFOBB Westbound Ramps. On the north side of this intersection, the shared path would end, and cyclists destined for Treasure Island would be forced to cross Macalla Road at a new crosswalk. North of this crossing, Macalla Road would provide one travel lane northbound (toward Treasure Island) and would have a Class II bicycle lane in each direction, one being a contra-flow lane. Generally, this facility appears to be designed appropriately to meet the needs of all users.

4.5.1.2.3 Treasure Island Road at Macalla Road

The proposed bicycle treatments at this intersection are shown on **Figure 42** (on page 196). Bicyclists using Treasure Island Road to access the contra-flow bicycle lane on Macalla Road from Treasure Island must turn left across the opposing direction of traffic on Treasure Island Road to access Macalla Road. The Proposed Project would provide a new five-foot wide bicycle-only left-turn lane from Treasure Island Road to Macalla Road adjacent to a 12-foot travel lane on Treasure Island Road and separated from oncoming traffic by an 11-foot median. This is the same maneuver that bicyclists make any time they turn left from one road to another, but with enhancements such as a bicycle-only turn lane and wide median to facilitate the maneuver. These enhancements are beneficial to cyclists and would provide a clearer, safer route to access Macalla Road from Treasure Island Road.

4.5.1.2.4 Treasure Island Road at Hillcrest Road/Westbound Bus On-Ramp

The proposed bicycle treatments at this intersection are shown on **Figure 43** (on page 197). At this juncture, bicycles traveling southbound on Treasure Island Road must travel through the divergence of the transit-only westbound on-ramp to the SFOBB. Approaching this junction, Treasure Island Road provides a six-foot bike lane with a three-foot chevron buffer, separating the bike lane from a 12-foot traffic lane. Just past the ramp junction, where bicycles cross over Treasure Island Road to merge onto Hillcrest Road, the existing roadway, which is on a bridge structure, narrows to 14 feet, which would not be adequate to provide a travel lane and a Class II bicycle lane. Since the roadway is on a bridge structure at this location, widening the roadway is not a feasible option. Instead, this section would be marked with shared-use arrows stenciled on the pavement reminding drivers and cyclists to share the space. Once sufficient roadway width can be maintained, the roadway would return to having an 11-foot travel lane with a five-foot bike lane.

This merge is less than ideal for cyclists, particularly because it occurs on an uphill grade where cyclists are generally traveling much slower than auto traffic, and requires cyclists to cross over a lane of travel expected to be used exclusively by transit vehicles. However, the Proposed Project would include a number of enhancements, including a 3-foot buffer between the bike lane and travel lane and frequent stencils alerting drivers and cyclists to merge cautiously. The resulting facility would be improved for bicycling compared to the existing condition. The proposed treatment would provide a highly-visible shared roadway, which should be adequate to accommodate all roadway users.

If the proposed Mitigation Measure 2 is adopted (installing a transit-only lane between the westbound on-ramp and 1st Street), the proposed bike lane on Treasure Island Road would be removed. Bicycle access to the SFOBB and the rest of Yerba Buena Island would be via the Macalla Road contra-flow bike lane.



Source: AECOM, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

SOUTH GATE ROAD AT HILLCREST ROAD INTERSECTION CONFIGURATION

FIGURE 40



Treasure Island and Yerba Buena Island Redevelopment Plan TIS

MACALLA ROAD AT SFOBB WESTBOUND ON-RAMP INTERSECTION CONFIGURATION

FIGURE 41



Source: AECOM, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

TREASURE ISLAND ROAD AT SFOBB WESTBOUND ON-RAMP (WESTSIDE) INTERSECTION CONFIGURATION

June 2010
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FIGURE 43

4.5.1.3 Colored Pavement Treatments (Base Transit Scenario)

The Proposed Project has proposed installing colored bicycle lane pavement treatments for purposes of increasing bicycle visibility and safety at the following locations:

- Hillcrest Road approach to South Gate Road and the SFOBB bicycle/pedestrian path;
- Macalla Road contra-flow bicycle lane at intersecting cross-streets; and
- Treasure Island Road/Macalla Road intersection.
- Bicycle-only left-turn lane from Treasure Island Road to the contra-flow bicycle lane on Macalla Road; and
- Bicycle-only section of median on Treasure Island Road at Macalla Road.

Although colored bicycle lane pavement is not approved in the Manual on Uniform Traffic Control Devices (MUTCD), which is published by the Federal Highway Administration (FHWA) and governs traffic control devices used in the United States, the *City of San Francisco Bicycle Plan Update: Supplemental Design Guidelines* include the use of colored bicycle lanes to further enhance the bicycle environment and safety. The Federal Highway Administration (FHWA) recently approved a study proposed by SFMTA of solid and dashed green pavement for bicycle lanes. If the use of colored pavement materials is approved by the FHWA and the California Traffic Control Device Committee (CTCDC), San Francisco may add colored pavement materials to selected bicycle lanes. The colored treatments proposed by the project could be candidates for implementation of the colored pavement materials treatment

4.5.1.4 General Bicycle Circulation Provisions (Base Transit Scenario)

Overall, the Proposed Project would provide a roadway network that would encourage cycling. The Proposed Project includes a number of enhancements at intersections that would serve to reduce conflicts and generally provide clearer direction to both drivers and cyclists. As a result, the proposed project would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. To the contrary, the proposed bicycle circulation network would allow for greater accessibility than exists today and would encourage residents and visitors alike to use cycling as a safe and convenient mode of transport. Therefore, the project's bicycle impacts would be **less than significant**.

4.5.1.5 Bicycle Parking Requirements (Base Transit Scenario)

The project sponsor has proposed bicycle parking requirements through the *D4D* process, similar to the Proposed Project's vehicle parking requirements. **Table 46** (on page 199) presents the schedule of bicycle parking spaces proposed. The parking requirements would be determined for each building based on the requirements listed in **Table 46**. The project would provide this amount of bicycle parking for each new building constructed.

TABLE 46 – PROPOSED BICYCLE PARKING REQUIREMENTS

Land Use	Proposed Bicycle Parking Requirement
Residential Buildings with fewer than 50 units	1 space for every 2 dwelling units
Residential Buildings with greater than 50 units	25 spaces plus 1 space for every 4 dwellings units over 50
Residential Group Housing	1 space for every 3 bedrooms
Office/Manufacturing/R&D (10,000 sf – 20,000 sf)	3 bicycle parking spaces
Office/Manufacturing/R&D (20,000 sf – 50,000 sf)	6 bicycle parking spaces
Office/Manufacturing/R&D (> 50,000 sf)	12 bicycle parking spaces
Retail (25,000 sf – 50,000 sf)	3 bicycle parking spaces
Retail (50,000 sf – 100,000 sf)	6 bicycle parking spaces
Retail (> 100,000 sf)	12 bicycle parking spaces
Source: TIDA/TIDC, 2009	

4.5.2 Proposed Project with Expanded Transit Service

By providing Expanded Transit Service, the number of transit riders between Treasure Island and San Francisco would be expected to increase. It is likely that some of these additional riders would carry bicycles to San Francisco, and increase overall bicycle usage in San Francisco compared to the Proposed Project under the Base Transit Scenario. Increases to bicycle usage associated with the Expanded Transit Scenario compared to the Base Transit Scenario would be relatively small compared to the overall number of bicycles already on San Francisco streets.

The on-island bicycle network and proposed bicycle parking requirements described for the Proposed Project would be the same under both the Funded and Expanded Transit Scenarios. As described above for the Base Transit Scenario, the Proposed Project would include enhanced bicycle treatments in a number of locations. These treatments would serve to reduce the conflict points and generally provide clearer direction to both drivers and cyclists. As a result, the Proposed Project under the Expanded Transit Scenario would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. Thus, the Proposed Project with the Expanded Transit Scenario would result in **less than significant** bicycle impacts.

4.5.3 Reduced Development Alternative with Base Transit Service

The Reduced Development Alternative would generate fewer transit riders between Treasure Island and San Francisco, compared to the Proposed Project. The bicycle network in San Francisco was found to be adequate to accommodate bicycle demand associated with the Proposed Project. Therefore, it would be adequate to accommodate the lower number of bicycles generated by the Reduced Development Alternative.

As described above for the Proposed Project under the Base Transit Scenario, the Proposed Project would include enhanced bicycle treatments in a number of locations. These treatments would serve to reduce the conflict points and generally provide clearer direction to both drivers and cyclists. The on-island bicycle network and proposed bicycle parking requirements described for the Proposed Project would be the same under the Reduced Development Alternative. As a result, the Reduced Development Alternative under the Base Transit Scenario would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. Thus, the Reduced Development Alternative under the Base Transit Scenario would result in **less than significant** bicycle impacts.

4.5.4 Reduced Development Alternative with Expanded Transit Service

By providing Expanded Transit Service, the number of transit riders between Treasure Island and San Francisco would be expected to increase. It is likely that some of these additional riders would carry bicycles to San Francisco, and increase overall bicycle usage in San Francisco compared to the Reduced Development Alternative under the Base Transit Scenario. Increases to bicycle usage associated with the Expanded Transit Scenario compared to the Base Transit Scenario would be relatively small compared to the overall number of bicycles already on San Francisco streets.

As described above for the Proposed Project under the Base Transit Scenario, the Proposed Project would include enhanced bicycle treatments in a number of locations. These treatments would serve to reduce the conflict points and generally provide clearer direction to both drivers and cyclists. The on-island bicycle network and proposed bicycle parking requirements described for the Proposed Project would be the same under the Reduced Development Alternative. As a result, the Reduced Development Alternative under the Expanded Transit Scenario would not create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. Thus, the Reduced Development Alternative under the Expanded Transit Scenario would result in **less than significant** bicycle impacts.

4.6 PARKING IMPACTS

This section includes a discussion of the Proposed Project's parking impacts in relation to anticipated demand and anticipated parking supply.

4.6.1 Proposed Project with Base Transit Service

This section describes parking impacts associated with the Proposed Project under the Base Transit Scenario.

4.6.1.1 Parking Supply (Base Transit Scenario)

The parking program for the Proposed Project has been developed to encourage transit use and discourage use of the private automobile. Residential parking is provided at up to one space per dwelling unit. As noted earlier, residential parking spaces will be economically "unbundled" from the dwelling units, such that residents will have the option to purchase or rent a parking space (or not) along with their home. Retail parking is proposed at much lower ratios than the *San Francisco Planning Code (Planning Code)* requirements for retail uses to encourage use of public transit to reach these uses. Spaces will generally be located in off-street facilities, although some on-street parking would be provided. There would be no free parking on the Islands, for either on-street or off-street spaces.

The parking supply rates and total supply proposed by the project sponsor was previously described on page 21 in **Table 2**. It should be noted that because the Proposed Project is considered a redevelopment area, it is not subject to the *Planning Code* parking supply requirements. Instead, the parking requirements are subject to final project approvals by the City. However, as shown earlier in **Table 2**, many of the parking supply rates are nonetheless consistent with the *Planning Code*. Overall, the project proposes 11,153 parking spaces, including 1,035 on-street spaces.

As noted, the Proposed Project includes maximum permitted parking controls, rather than imposing minimum amounts of parking to be constructed with each use. Since developers would not be required to provide parking, theoretically, these requirements could result in no off-street parking on the Islands, resulting in a substantially greater parking deficit. However, this is not a reasonably likely scenario, as most developments projects in San Francisco develop the maximum permitted supply. Some centralized off-street parking is proposed as part of the Project and is likely to be built even if individual buildings did not provide parking. In addition, parking fees would be a substantial portion of the funding supporting

transit facilities and other features of the Proposed Project's TDM Plan. With no off-street parking, there would not be sufficient funds to support the entire TDM Plan and transit services, and the Proposed Project would be infeasible.

4.6.1.2 Parking Demand (Base Transit Scenario)

As discussed in Chapter 3, the parking demand was developed according to the *SF Guidelines* methodology, with adjustments made to account for the project's mix of land uses and disincentives to vehicle use. A shared parking analysis was conducted to quantify the parking demands of the mix of land uses proposed. Since the shared parking analysis takes into account the unique time distribution and peaking characteristics of each use on the site, the resulting peak shared parking demand typically differs from the parking supply calculated using the parking rates required by the *SF Guidelines* for the individual land uses. Residential parking demands were not considered shared; all other land uses were considered to be able to share parking.

The Proposed Project's parking supply was compared to the expected parking demand. The assumed allocation of parking supply by neighborhood was obtained from the Project Sponsor. The results of the parking analysis, accounting for the effects of shared parking, are presented in **Table 47** (on page 203). The results of the parking analysis conducted for residential uses is presented in **Table 48** (on page 204).

As shown, overall, during the peak hour of parking demand for all of Treasure Island, the Proposed Project would result in a surplus of 1,032 non-residential parking spaces and a deficit of 2,103 residential parking spaces under the Base Transit Scenario. Yerba Buena Island may experience a shortfall of 76 spaces during its peak hour of parking demand (or 59 residential spaces and 17 non-residential spaces). By neighborhood, the Island Core neighborhood may experience a residential parking shortfall of up to 793 residential parking spaces, but a non-residential parking surplus of 228 parking spaces. Similarly, the other neighborhoods have residential parking shortfalls and non-residential parking surpluses. Any residential demand not accommodated in dedicated residential spaces would likely use available on-street parking. Overall, together the Islands have a parking shortfall of 1,147 spaces. Because the City of San Francisco does not consider parking shortfalls to be a significant impact under CEQA, the shortfalls projected in **Table 47** and **Table 48** are considered **less than significant**.

If the maximum permitted parking supply is provided, there would be an overall shortfall of parking spaces on the Islands, primarily related to the residential uses. In general, in San Francisco, parking deficits are considered to be social impacts. The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, noise impacts caused by congestion, or transit impacts associated with a shift in mode. The lack of readily available parking supply may result in some drivers seeking and finding alternative parking facilities, shifting to other modes of travel, or changing their overall travel habits. The conditions on the Islands are unique from the rest of San Francisco, in that the isolated nature of the Islands does not allow for drivers to seek alternative parking facilities, and instead drivers would need to shift to other modes of travel or change their travel habits. Unlike the rest of San Francisco where alternate available modes include transit, walking, bicycling and taxis, alternate travel modes for off-Islands travel are limited to transit. Therefore, it is anticipated that the parking shortfall on the Islands could result in a shift from auto to transit modes, resulting in an increase in transit travel demand during the peak hours. Depending on the direction of travel, the shift would affect the Muni 108-Treasure Island bus line, the new AC Transit bus line, and the new ferry service between Treasure Island and downtown San Francisco.

As presented in the transit capacity impact analysis, implementation of the Proposed Project would not exceed the transit capacity of the new AC Transit bus line or the new ferry service. In fact, utilization would be considerably below the relevant capacity utilization standard for those providers. Therefore, an increase in transit demand on these lines due to a mode shift would be accommodated without substantially affecting the lines' capacity utilization standard.

The transit capacity analysis did identify a significant and unavoidable impact for capacity utilization of the Muni 108-Treasure Island bus line. During the three peak hours of analysis, the total transit demand for the 108-Treasure Island would not be accommodated within the 85 percent capacity utilization standard, and an increase in transit demand due to a mode shift would exacerbate the exceedance of the capacity utilization standard. Therefore, a shift in mode from auto to transit would result in a worsening of the identified significant impact on 108-Treasure Island transit operations.

Implementation of Mitigation Measure 2 (Expanded Transit Service) would reduce the secondary impact on transit to a less than significant level. However, because full funding for the Expanded Transit Service has not yet been identified its implementation remains uncertain and therefore, the secondary parking impacts on transit would remain **significant and unavoidable**.

4.6.1.3 Parking for Existing Uses (Coast Guard and Job Corps) (Base Transit Scenario)

The Proposed Project would not eliminate any parking specifically reserved for employees and visitors of the existing uses on Treasure Island (Job Corps) and Yerba Buena Island (U.S. Coast Guard) that would remain in use after implementation of the Proposed Project. However, U.S. Coast Guard employees currently park in the approximately 15 parking spaces near the Yerba Buena Island hilltop parking lot outside of Coast Guard property. The Proposed Project would eliminate these 15 parking spaces. Thus, with construction of the Proposed Project, U.S. Coast Guard employees accustomed to finding relatively easy free parking on the Islands would no longer be able to do so. With implementation of the Proposed Project, U.S. Coast Guard and Job Corps staff would either have to park within their respective campuses or within the paid parking lots constructed as part of the Proposed Project (similar to other visitors and employees on the Islands). Visitors to the Proposed Project would not be able to park in the Job Corps or U.S. Coast Guard areas.

4.6.2 Proposed Project with Expanded Transit Service

The Proposed Project's parking supply would be the same under the Expanded Transit Scenario as under the Base Transit Scenario. However, under the Expanded Transit Scenario, the Proposed Project's parking demand would be lower than under the Base Transit Scenario, because there would be fewer vehicular trips.

As shown, overall, during the peak hour of parking demand for all of Treasure Island, the Proposed Project would result in a surplus of 1,269 non-residential parking spaces and a deficit of 2,093 residential parking spaces under the Expanded Transit Scenario. Yerba Buena Island may experience a shortfall of 74 spaces during its peak hour of parking demand (or 59 residential spaces and 15 non-residential spaces). By neighborhood, the Island Core neighborhood may experience a residential parking shortfall of up to 783 residential parking spaces, but a non-residential parking surplus of 398 parking spaces. Generally speaking, the other neighborhoods have residential parking shortfalls and non-residential parking surpluses. Any residential demand not accommodated in dedicated residential spaces would likely use available on-street parking. Overall, together the Islands have a parking shortfall of 898 spaces. Because the City of San Francisco does not consider parking shortfalls to be a significant impact under CEQA, the shortfalls projected in **Table 47** and **Table 48** are considered **less than significant**.

TABLE 47 – NON-RESIDENTIAL PEAK HOUR PARKING SUPPLY AND DEMAND ANALYSIS

Neighborhood	Proposed Project (Base Transit Scenario)			Proposed Project (Expanded Transit Scenario)			Reduced Development Alternative (Base Transit Scenario)			Reduced Development Alternative (Expanded Transit Scenario)		
	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)
Cityside	92	541	449	80	541	461	98	541	443	84	541	457
Eastside	48	334	286	42	334	292	51	334	283	44	334	290
Island Core	1,546	1,774	228	1,376	1,774	398	1,455	1,574	119	1,278	1,574	296
Open Space	395	464	69	346	464	118	395	464	69	346	464	118
Total Treasure Island	2,081	3,113	1,032	1,844	3,113	1,269	1,999	2,913	914	1,752	2,913	1,161
Yerba Buena Island	57	40	(17)	55	40	(15)	57	40	(17)	55	40	(15)
Total Proposed Project	2,138	3,153	1,015	1,899	3,153	1,254	2,056	2,953	897	1,807	2,953	1,146

Note:

- Supply allocation by neighborhood obtained from the Project Sponsor and includes 495 on-street spaces in the Cityside neighborhood, 310 on-street spaces in the Eastside neighborhood, and 230 on-street spaces in the Island Core neighborhood. Since residential visitor parking demand would be accommodated on-street, rather than in the off-street residential parking supply, the non-residential surplus may be overstated.

Source: Fehr & Peers, 2009.

TABLE 48 – RESIDENTIAL PEAK HOUR PARKING SUPPLY AND DEMAND ANALYSIS

Neighborhood	Proposed Project (Base Transit Scenario)			Proposed Project (Expanded Transit Scenario)			Reduced Development Alternative (Base Transit Scenario)			Reduced Development Alternative (Expanded Transit Scenario)		
	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)	Peak Demand	Parking Supply ¹	Surplus/ (Deficit)
Cityside	4,134	3,255	(879)	4,134	3,255	(879)	3,052	2,402	(650)	3,052	2,402	(650)
Eastside	2,032	1,601	(431)	2,032	1,601	(431)	1,975	1,555	(420)	1,975	1,555	(420)
Island Core ¹	3,737	2,944	(793)	3,727	2,944	(783)	2,338	1,843	(495)	2,328	1,843	(485)
Open Space	0	0	0	0	0	0	0	0	0	0	0	0
Total Treasure Island	9,903	7,800	(2,103)	9,893	7,800	(2,093)	7,365	5,800	(1,565)	7,355	5,800	(1,555)
Yerba Buena Island	259	200	(59)	259	200	(59)	259	200	(59)	259	200	(59)
Total Proposed Project	10,162	8,000	(2,162)	10,152	8,000	(2,152)	7,624	6,000	(1,624)	7,614	6,000	(1,614)

Note:

1. Parking demand for the 117-room all-suite hotel is included in the Island Core parking demand estimates. It was analyzed using SF Guidelines methodology for hotels since it would likely generate more short-term trips (e.g., laundry, food service, etc) than a standard residential building. Therefore, there is a slight variation in parking demand between the Base Transit Scenario and the Expanded Transit Scenario.
2. Since residential visitor parking demand would be accommodated on-street, rather than in the off-street residential parking supply, the residential deficit may be overstated. Supply allocation by neighborhood obtained from the Project Sponsor and includes 495 on-street spaces in the Cityside neighborhood, 310 on-street spaces in the Eastside neighborhood, and 230 on-street spaces in the Island Core neighborhood.

Source: Fehr & Peers, 2009.

4.6.3 Reduced Development Alternative with Base Transit Service

The Reduced Development Alternative's parking supply would be lower than under the Proposed Project due to less overall development. The proposed parking supply under the Reduced Development Alternative is shown in **Table 47** (on page 203).

As shown, overall, during the peak hour of parking demand for all of Treasure Island, the Proposed Project would result in a surplus of 914 non-residential parking spaces and a deficit of 1,565 residential parking spaces under the Reduced Development Alternative with Base Transit Service. Yerba Buena Island may experience a shortfall of 76 spaces during its peak hour of parking demand (or 59 residential spaces and 17 non-residential spaces). By neighborhood, the Island Core neighborhood may experience a residential parking shortfall of up to 495 residential parking spaces, but a non-residential parking surplus of 119 parking spaces. Generally speaking, the other neighborhoods have residential parking shortfalls and non-residential parking surpluses. Any residential demand not accommodated in dedicated residential spaces would likely use available on-street parking. Overall, together the Islands have a parking shortfall of 727 spaces. Because the City of San Francisco does not consider parking shortfalls to be a significant impact under CEQA, the shortfalls projected in **Table 47** (on page 203) and **Table 48** (on page 204) are considered **less than significant**.

If the maximum permitted parking supply is provided, there would be an overall shortfall of parking spaces on the Islands, primarily related to the residential uses. In general, in San Francisco, parking deficits are considered to be social impacts. The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, noise impacts caused by congestion, or transit impacts associated with a shift in mode. The lack of readily available parking supply may result in some drivers seeking and finding alternative parking facilities, shifting to other modes of travel, or changing their overall travel habits. The conditions on the Islands are unique from the rest of San Francisco, in that the isolated nature of the Islands does not allow for drivers to seek alternative parking facilities, and instead drivers would need to shift to other modes of travel or change their travel habits. Unlike the rest of San Francisco where alternate available modes include transit, walking, bicycling and taxis, alternate travel modes for off-Islands travel are limited to transit. Therefore, it is anticipated that the parking shortfall on the Islands could result in a shift from auto to transit modes, resulting in an increase in transit travel demand during the peak hours. Depending on the direction of travel, the shift would affect the Muni 108-Treasure Island bus line, the new AC Transit bus line, and the new ferry service between Treasure Island and downtown San Francisco.

As presented in the transit capacity impact analysis, implementation of the Proposed Project would not exceed the transit capacity of the new AC Transit bus line or the new ferry service. In fact, utilization would be considerably below the relevant capacity utilization standard for those providers. Therefore, an increase in transit demand on these lines due to a mode shift would be accommodated without substantially affecting the lines' capacity utilization standard.

The transit capacity analysis did identify a significant and unavoidable impact for capacity utilization of the Muni 108-Treasure Island bus line. During the three peak hours of analysis, the total transit demand for the 108-Treasure Island would not be accommodated within the 85 percent capacity utilization standard, and an increase in transit demand due to a mode shift would exacerbate the exceedance of the capacity utilization standard. Therefore, a shift in mode from auto to transit would result in a worsening of the identified significant impact on 108-Treasure Island transit operations.

Implementation of Mitigation Measure 2 (Expanded Transit Service) would reduce the secondary impact on transit to a less than significant level. However, because full funding for the Expanded Transit Service has not yet been identified its implementation remains uncertain and therefore, the secondary parking impacts on transit would remain significant and unavoidable.

4.6.4 Reduced Development Alternative with Expanded Transit Service

The Reduced Development Alternative's parking supply would be the same under the Expanded Transit Scenario as under the Base Transit Scenario. However, under the Expanded Transit Scenario, the Reduced Development Alternative's parking demand would be lower than under the Base Transit Scenario.

As shown, overall, during the peak hour of parking demand for all of Treasure Island, the Proposed Project would result in a surplus of 1,161 non-residential parking spaces and a deficit of 1,555 residential parking spaces under the Reduced Development Alternative with Expanded Transit Service. Yerba Buena Island may experience a shortfall of 74 spaces during its peak hour of parking demand (or 59 residential spaces and 15 non-residential spaces). By neighborhood, the Island Core neighborhood may experience a residential parking shortfall of up to 485 residential parking spaces, but a non-residential parking surplus of 296 parking spaces. Generally speaking, the other neighborhoods have residential parking shortfalls and non-residential parking surpluses. Any residential demand not accommodated in dedicated residential spaces would likely use available on-street parking. Overall, together the Islands have a parking shortfall of 468 spaces. Because the City of San Francisco does not consider parking shortfalls to be a significant impact under CEQA, the shortfalls projected in **Table 47** and **Table 48** are considered **less than significant**.

4.7 SERVICE AND LOADING IMPACTS

The demand for loading spaces generated by the Proposed Project and Reduced Development Alternative was described in Chapter 3, and was calculated based on the methods described in the *SF Guidelines*. The proposed rates for provision of loading spaces were presented in Table 3.

4.7.1 Proposed Project with Base Transit Scenario

Based on the square footages proposed for each neighborhood, the rates in **Table 3** (on page 22) were applied to obtain the minimum number of loading spaces that would be supplied for the project. This information is summarized in **Table 49** (on page 207). As shown, the minimum number of loading spaces to be provided by the Proposed Project is 38. The expected peak hour loading demand is 36 loading spaces. Overall, the Proposed Project would provide an adequate number of loading spaces to accommodate peak hour loading demand. **Table 49** also indicates that specific uses within the Proposed Project, such as restaurant and office may not have adequate supply. However, this is based on supply calculations that assume the entire square footage as a single use, a conservative assumption, when in reality the individual uses may provide a higher total supply of loading spaces.

TABLE 49 – PROJECT-GENERATED AND REDUCED DEVELOPMENT ALTERNATIVE-GENERATED LOADING DEMAND AND SUPPLY

Land Use	Daily Truck Generation Rates	Proposed Project				Reduced Development Alternative			
		Size (Square Feet)	Daily Truck Generation	Peak Loading Space Demand ⁷	Minimum Supply	Size (Square Feet)	Daily Truck Generation	Peak Loading Space Demand ⁷	Minimum Supply
Office	0.21	130,000 ¹	27	2	1	30,000 ¹	6	1	0
Retail	0.22	320,000 ²	70	5	6	320,000 ²	70	5	6
Restaurant	3.60	37,000	133	8	1	37,000	133	8	1
Hotel	0.09	450,000 ³	41	2	2	450,000 ³	41	2	2
Institutional	0.10	138,500 ⁴	14	1	1	138,500 ⁴	14	1	1
Manufacturing	0.51	22,000 ⁵	11	1	1	22,000 ⁵	11	1	1
Residential	0.03	9,577,150 ⁶	287	17	26	7,273,400 ⁶	218	13	20
		Total	583 Trucks	36 Spaces	38 Spaces		493 Trucks	31 Spaces	31 Spaces

Notes:

1. Proposed Project includes 100,000 square feet of new office plus 30,000 square feet of community uses/offices planned in adaptive reuse of Building 1. Reduced Development Alternative would not provide 100,000 square feet of new office.
2. Includes all non-restaurant retail (170,000 square feet) and 150,000 square feet of entertainment uses proposed for adaptive reuse of Building 3.
3. 500 hotel rooms.
4. Includes 13,500 square feet of community facilities, 35,000 square feet for Pier 1 Community Center, 15,000 square foot sailing center, and 75,000 square foot museum. Similar to parking analysis, loading demand for elementary school and police/fire facility would be provided separately within their facilities. Neither demand nor supply for elementary school and police/fire facility is included in this analysis.
5. Includes 22,000 square feet of food production space proposed in adaptive reuse of Building 2.
6. Proposed Project includes 8,000 dwelling units. Reduced Development Alternative includes 6,000 dwelling units.
7. Typical peak hour of truck loading space demand occurs between 10 AM to 1 PM. Peak hour generation assumes deliveries occur between 8 AM and 5 PM, average park time of 25 minutes per vehicle, and that the peak hour deliveries occur at a 25 percent higher rate than other hours.

Source: *SF Guidelines*, 2002 and Fehr & Peers 2009.

Although the precise location and orientation of development parcels is unknown at this point, which makes it impossible to address the details of each loading space; some standards and guidelines have been proposed by the Project Sponsor to minimize the effects of loading facilities. Specifically:

- The standards for on-street loading require the TIDA Executive Director to review the design of all on-street loading facilities to ensure that they are designed to minimize conflicts with transit, bicycle and pedestrians; possible conditions include requiring a dedicated loading zone located outside of the path of travel of vehicular, bicycle, pedestrian and transit routes, or limiting hours of operation for freight loading zones located within vehicular, bicycle, pedestrian and transit routes to avoid conflicts.
- Loading zones should be located away from major pedestrian routes and intersections and shared with parking entrances, where possible;
- Entrances to loading facilities should be minimized in size and be designed with visual buffers, where feasible;
- Curb cuts where required for off-street parking loading zones should be located to minimize transit, bicycle, and pedestrian conflicts;
- Every loading zone will be located in the same development block as the use served and will have adequate means of ingress/egress to a street or alley;
- Loading can be provided either on-street or off-street; however, on-street freight loading will not be permitted to occur within the designated transit loop shown on Figure 6, unless it can be accommodated outside the travel path of transit vehicles or can be limited to hours of operation that do not conflict with operational transit requirements;
- Adequate reservoir space shall be provided on private property for entrance of vehicles to off-street parking and loading zones, except with respect to spaces independently accessible directly from the street;
- Off-street parking and loading zone requirements and access for the historic Buildings 1, 2, and 3 will be determined in conjunction with requirements to conform with *Secretary of the Interior Standards* for these buildings; Access to off-street parking and loading spaces will be from a public street or alley by means of a private service driveway. Such a private service driveway will include adequate space to maneuver trucks and service vehicles into and out of all provided spaces, and will be designed so as to facilitate access to the subject property while minimizing interference with street and sidewalk circulation. If an adjacent street or alley is determined to be primarily used for building service, up to four spaces may be allowed to be individually accessible directly from such a street or alley.

Trash/recycling facilities and other utility services would be provided for all buildings in a location that balances residential access, convenient pick-up, maintenance, and screening from the active pedestrian zones of the street.

These guidelines, in addition to the fact that individual buildings would be reviewed by the City prior to construction and approval, would ensure that loading would not create potentially hazardous traffic conditions or significant delays affecting traffic, transit, bicycles and pedestrians, and that it would minimize disruptions to adjacent users. In light of the above, the Proposed Project's loading impacts are **less than significant**.

4.7.2 Proposed Project with Expanded Transit Service

The loading supply and demand for the Proposed Project would be the same under the Expanded Transit Scenario as described above for the Base Transit Scenario. The same guidelines described above for the

Base Transit Scenario would be required of the Expanded Transit Scenario. Therefore, the Proposed Project's loading impacts would be **less than significant** under the Expanded Transit Scenario.

4.7.3 Reduced Development Alternative with Base Transit Service

The Reduced Development Alternative would generate a peak demand for 31 loading spaces, as shown in **Table 49** (on page 207). Based on the loading supply rates proposed by the project summarized in **Table 3** (page 22), the Reduced Development Alternative would provide a minimum of 31 truck loading spaces, which would be adequate to meet the peak demands of the Reduced Development Alternative. **Table 49** also indicates that specific uses within the Reduced Development Alternative, such as restaurant and office may not have adequate supply. However, this is based on supply calculations that assume the entire square footage as a single use, a conservative assumption, when in reality the individual uses may provide a higher total supply of loading spaces.

The same guidelines described above for the Proposed Project would be required of the Reduced Development Alternative. Therefore, loading impacts associated with the Reduced Development Alternative under the Base Transit Scenario would be **less than significant**.

4.7.4 Reduced Development Alternative with Expanded Transit Service

The loading supply and demand for the Reduced Development Alternative would be the same under the Expanded Transit Scenario as described above for the Base Transit Scenario. The same guidelines described above for the Proposed Project would be required of the Reduced Development Alternative. Therefore, the Reduced Development Alternative's loading impacts would be **less than significant** under the Expanded Transit Scenario.

4.8 EMERGENCY ACCESS

This section describes the potential for the Proposed Project to impact emergency access.

4.8.1 Proposed Project with Base Transit Service

The Proposed Project includes the maintenance or reconstruction of the existing roadway network on Treasure Island and Yerba Buena Island. Existing emergency response routes would be maintained in their existing locations or rerouted as necessary. Further, all development would be designed in accordance with City standards, which include provisions that address emergency access (e.g., minimum street widths, minimum turning radii, etc.).

The Islands would include local police and fire facilities. Further, congestion associated with queuing approaching the SFOBB westbound on-ramps would not interfere with emergency vehicle access to the Islands from either San Francisco or the East Bay. If emergency vehicles were required to exit the Islands during periods when there was congestion approaching the SFOBB, similar to other congested roadway facilities, emergency vehicles would be able to maneuver into opposing traffic lanes and/or take alternate routes, depending on the specific traffic conditions at the time.

The California Vehicle Code requires drivers to make way for emergency vehicles, and drivers would likely pull out of the way of oncoming emergency vehicles by using available roadway shoulders or pulling closer to other vehicles. Avenue of the Palms and Treasure Island Boulevard are both multi-lane roadways, and emergency vehicles could choose to bypass queued vehicles by traveling in the opposing traffic lane, which is allowed when sirens are active.

Under the scenario with the reconstructed westbound on-ramps, after by passing queued vehicles Treasure Island Boulevard, emergency vehicles could use the dedicated transit-only and emergency vehicle-only westbound on-ramp on the west side of Yerba Buena Island to access the SFOBB. If this is

not feasible or a desired route, the emergency vehicle could proceed to the second westbound on-ramp and use the HOV bypass lane or the eastbound on-ramp towards the East Bay. In the scenario in which the Ramps Project does not get constructed, the vehicle queues on the westbound on-ramps are expected to be shorter, and emergency vehicles would only be required to maneuver through a short queue on the westbound on-ramp on the west side of the Island, likely using the shoulder of the roadway. The existing westbound on-ramp on the west side of the Island is approximately 24 feet wide and could accommodate both queued vehicles and an emergency vehicle on the shoulder.

Queues on the Islands and associated delay may affect the U.S. Coast Guard operations around Yerba Buena Island and their access to the Bay Bridge. Primary access between the Coast Guard station and the eastbound on-ramp is via South Gate Road (which connects with North Gate Road). With the Proposed Project, South Gate Road would be two-way between Hillcrest Road and the intersection with Macalla Road and North Gate Road to allow for direct access onto the eastbound Bay Bridge on-ramp and bypass of queued vehicles on Hillcrest Road. The intersection of South Gate Road with Hillcrest Road is located at the eastbound on-ramp to the Bay Bridge, about 150 feet from the Bay Bridge mainline structure.⁵⁷ Under conditions when there is a queue at the eastbound on-ramp, vehicles on South Gate Road would access the eastbound queue via forced-flow conditions similar to conditions at a four-way STOP-sign controlled intersection (e.g., queued vehicles on Hillcrest Road would allow vehicles stopped on South Gate Road to access Hillcrest Road under alternate vehicle right-of-way. Since South Gate Road terminates at the intersection with Hillcrest Road and the eastbound on-ramp, the vehicle delays experienced by Coast Guard vehicles when there are queued conditions on Hillcrest Road would be less than if South Gate Road was one-way westbound. If South Gate Road was one-way westbound, Coast Guard vehicles bound for the Bay Bridge would be required to travel around Yerba Buena Island via Macalla Road, Treasure Island Road and Hillcrest Road, and would experience the queued conditions for a longer distance.

Vehicles exiting Coast Guard facility driveways on Hillcrest Road would be required to travel within queued conditions for some period of time. The duration of travel within queued conditions and added delays would depend on the day of week, time of day, and conditions on the Bay Bridge. Based on existing driveway locations, Coast Guard vehicles would be within queued conditions for a distance of between 50 and 550 feet from the eastbound on-ramp, compared with a maximum queue of about 1.2 miles (6,340 feet) on Hillcrest Road.

Coast Guard vehicles are equipped with lights and sirens, and during emergency conditions, would be able to bypass queued vehicles. In addition, the longest potential queue the Coast Guard vehicles would have to wait in would be about one-tenth of a mile, based on the distance between the places such vehicles access the main YBI circulation route and the Bay Bridge. Accordingly, the Proposed Project would not be expected to substantially affect access to the Coast Guard station.

Implementation of Mitigation Measure 1 (Expanded Transit Service) would reduce vehicle trip generation such that the Proposed Project's impacts on ramp delays at the ramp meter at the reconstructed westbound on-ramp would be reduced. However, even with the proposed reconstructed on-ramps, delay would remain significant and unavoidable in the weekday peak hours.

Therefore, the project would not result in inadequate emergency vehicle access and the Proposed Project's impacts to emergency access would be considered **less than significant**.

4.8.2 Proposed Project with Expanded Transit Service

The Proposed Project under the Expanded Transit Scenario would provide similar roadway facilities to the Proposed Project under the Base Transit Scenario, and would generate less overall congestion.

⁵⁷ The north leg of the intersection of Hillcrest Road and South Gate Road is the on-ramp onto the Bay Bridge eastbound.

Therefore, the Proposed Project under the Expanded Transit Scenario would have a **less than significant** impact to emergency access.

4.8.3 Reduced Development Alternative with Base Transit Service

The Reduced Development Alternative under the Base Transit Scenario would provide similar roadway facilities to the Proposed Project under the Base Transit Scenario, and would generate less overall congestion. Therefore, the Reduced Development Alternative under the Base Transit Scenario would have a **less than significant** impact to emergency access.

4.8.4 Reduced Development Alternative with Expanded Transit Service

The Reduced Development Alternative under the Expanded Transit Scenario would provide similar roadway facilities to the Proposed Project under the Base Transit Scenario, and would generate less overall congestion. Therefore, the Reduced Development Alternative under the Expanded Transit Scenario would have a **less than significant** impact to emergency access.

4.9 CONSTRUCTION IMPACTS

This section describes the potential impacts associated with construction of the Proposed Project or the Reduced Development Alternative.

4.9.1 Proposed Project with Base Transit Service

Construction and build out of the Proposed Project would be phased, and is expected to occur over approximately 15 to 20 years; however, the actual timing of construction would depend on market conditions and other factors. Project construction is expected to involve four major phases. The first phase would include demolition of existing uses, horizontal infrastructure and portions of the geotechnical stabilization. The subsequent phases would include development of the proposed new land uses and associated infrastructure extensions, as needed.

The construction schedule would be coordinated with other land owners on the Island (Department of Labor and the US Coast Guard) and the construction of the SFOBB ESSSP (Caltrans) to minimize conflicts with the existing traffic onto and off of the Islands. Construction staging would occur primarily on the Islands, though truck traffic would be required to access the Island via the SFOBB.

Construction activity would be expected to occur on Monday through Saturday, between 7:00 AM and 8:00 PM, and the typical work shift for most construction workers would be from 7:00 AM to approximately 3:30 PM. Construction is not anticipated to typically occur on Sundays or major holidays.

Construction materials and equipment used on the island would be transported by truck and/or barge throughout the construction of the project. **Table 50** (on page 212) summarizes the truck and barge traffic that the project sponsor expects to be generated during construction of the project. It is important to note that not all of these activities would be generating truck traffic simultaneously, and some activities are presented as total trips while others as annual figures, so the total annual truck traffic is not necessarily the sum of each row. Further, the number of truck trips would be considerably less than the amount of new vehicle traffic generated by the proposed project.

Traffic-related construction impacts would be concentrated on the SFOBB, primarily in the vicinity of the SFOBB ramps to the Islands, and on local streets on Yerba Buena and Treasure Islands. Trucks using the SFOBB ramps are likely to be slower at accelerating onto the SFOBB than a typical passenger car, which may cause some minor, temporary, and localized delay to traffic on the SFOBB near the ramps.

In addition, the project would involve construction of a new street system, which would require temporary closure of traffic and parking lanes and sidewalks on the Islands. These closures could last the entire duration of construction of particular phases, and it is possible that more than one area could be closed simultaneously. These closures may involve temporary disruptions to the 108-Treasure Island bus route and stops, causing the need for rerouting. Changes to transit routes would be coordinated and approved by SFMTA.

Because existing traffic volumes on the Islands are relatively low, closures of one or more traffic lanes is not expected to cause severe congestion on the Islands. However, the closures may create difficulties for bicycle and pedestrian traffic to circulate during construction. Temporary accommodations for pedestrians and bicyclists would be maintained to minimize these potential disruptions.

TABLE 50 – CONSTRUCTION TRAFFIC		
Construction Use	Trip Frequency	
	Truck Trips	Barge Trips
Equipment Transport ¹	200 per year	20 total
Demolition	100 total	-
Construction Materials ¹	100,000 total	1,000 total
Asphalt	2,500 total	-
Aggregate	100 per year	-
Concrete	2,000 per year	-
Utilities ¹	2,000 total	300 total
Landscaping ¹	500 total	200 total
Note: 1. The number of truck and barge trips will be determined by the needs of the construction crew. The maximum number of trips is listed for each; however, both transport methods will be used so the total number of trips for each will differ from what is listed. Source: TICD (BKF), 2009		

Construction activities for the early phases of development may overlap with the final phases of construction of the new SFOBB eastern span; however, the new span is expected to be complete and open by late 2013.

Given the magnitude and duration of potential construction activities, and their potential impact on ramp operations on the SFOBB, the project construction activities could result in impacts to the transportation system. Impacts include increased delay and congestion on the SFOBB near the ramps and disruption to transit, pedestrian, bicycle, and vehicular traffic on the Islands due to closures. These impacts could be significant.

Mitigation Measure 3 – The project sponsor shall develop and implement a Construction Transportation Management Plan (“CTMP”) consistent with the standards and objectives stated below and approved by TIDA, designed to anticipate and minimize impacts of various construction activities associated with the Proposed Project.

The Plan shall disseminate appropriate information to contractors and affected agencies with respect to coordinating construction activities to minimize overall disruptions and ensure that overall circulation on the Islands is maintained to the extent possible, with particular focus on ensuring pedestrian, transit, and bicycle connectivity. The CTMP shall supplement and expand,

rather than modify or supersede, any manual, regulations, or provisions set forth by SFMTA, Department of Public Works (“DPW”), or other City departments and agencies.

Specifically, the CTMP shall:

- Identify construction traffic management best practices in San Francisco, as well as others that, although not being implemented in the City, could provide valuable information for a project of the size and characteristics of Treasure Island and Yerba Buena Island. Management practices include, but are not limited to, identifying ways to reduce construction worker vehicle trips through transportation demand management programs and methods to manage construction work parking demands.
- Describe procedures required by different departments and/or agencies in the city for implementation of a Construction Traffic Management Plan, such as reviewing agencies, approval processes, and estimated timelines. For example,
 - The construction contractor will need to coordinate temporary and permanent changes to the transportation network on Treasure Island and Yerba Buena Island with TIDA. Once Treasure Island streets are accepted as City streets, temporary traffic and transportation changes must be coordinated through the SFMTA’s Interdepartmental Staff Committee on Traffic and Transportation (“ISCOTT”) and will a public meeting. As part of this process, the CTMP may be reviewed by SFMTA’s Transportation Advisory Committee (“TASC”) to resolve internal differences between different transportation modes.
 - Caltrans Deputy Directive 60 (DD-60) requires a separate Transportation Management Plan (TMP) and contingency plans for all state highway activities. These plans shall be part of the normal project development process and must be considered during the planning stage to allow for the proper cost, scope and scheduling of the TMP activities on Caltrans right-of-way. These plans should adhere to Caltrans standards and guidelines for stage construction, construction signage, traffic handling, lane and ramp closures and TMP documentation for all work within Caltrans right-of-way. (Caltrans DD-60 and TMP Guidelines are included in Appendix L)
 - Changes to transit routes would be coordinated and approved, as appropriate, by SFMTA, AC Transit, and TITMA. The TMP would set forth the process by which transit route changes would be requested and approved.
- Require consultation with other Island users, including the Job Corps and Coast Guard, to assist coordination of construction traffic management strategies. The project sponsor shall proactively coordinate with these groups prior to developing the CTMP to ensure the needs of the other users on the Islands are addressed within the Construction Traffic Management Plan.
- Identify construction traffic management strategies and other elements for the Proposed Project and present a cohesive program of operational and demand management strategies designed to maintain acceptable levels of traffic flow during periods of construction activities. These include, but are not limited to, construction strategies, demand management activities, alternative route strategies, and public information strategies. For example, the project sponsor may develop a circulation plan for the Island during construction to ensure that existing users can clearly navigate through the construction zones without substantial disruption.

Implementation of Mitigation Measure 3, a Construction Traffic Management Program, would help reduce the Proposed Project’s construction-related traffic impacts. Given the magnitude of the proposed development and the duration of the construction period, some disruptions and

increased delays could still occur even with implementation of Mitigation Measure 3 (including ramp operations on the Bay Bridge), and it is possible that significant construction-related transportation impacts on regional roadways could still occur. Construction-related transportation impacts would therefore, remain **significant and unavoidable**.

4.9.2 Proposed Project with Expanded Transit Scenario

The Proposed Project under the Expanded Transit Scenario would generate similar construction activity and impacts compared to the Proposed Project under the Base Transit Scenario. Impacts include increased delay and congestion on the SFOBB near the ramps and potential disruption to transit, pedestrian, bicycle, and vehicular traffic on the Islands due to closures. Implementation of Mitigation Measure 3 would be applicable to the Proposed Project under the Expanded Transit Scenario. However, as with the Proposed Project, given the magnitude of the proposed development and the duration of the construction period, some disruptions and increased delays could still occur even with implementation of Mitigation Measure 3 (including ramp operations on the Bay Bridge), and it is possible that significant construction-related transportation impacts on regional roadways could still occur. Construction-related transportation impacts would therefore, remain **significant and unavoidable**.

4.9.3 Reduced Development Alternative with Base Transit Service

Although the overall amount of development would be slightly less under the Reduced Development Alternative, construction would generate similar construction activity and impacts compared to the Proposed Project. Given the magnitude of the proposed development and the duration of the construction period, some disruptions and increased delays could still occur even with implementation of Mitigation Measure 3 (including ramp operations on the Bay Bridge), and it is possible that significant construction-related transportation impacts on regional roadways could still occur. Construction-related transportation impacts would therefore, remain **significant and unavoidable**.

4.9.4 Reduced Development Alternative with Expanded Transit Service

The Reduced Development Alternative under the Expanded Transit Scenario would generate similar construction activity and impacts compared to the Reduced Development Alternative under the Base Transit Scenario. Given the magnitude of the proposed development and the duration of the construction period, some disruptions and increased delays could still occur even with implementation of Mitigation Measure 3 (including ramp operations on the Bay Bridge), and it is possible that significant construction-related transportation impacts on regional roadways could still occur. Construction-related transportation impacts would therefore, remain **significant and unavoidable**.

4.10 CUMULATIVE CONDITIONS

The preceding discussion of project impacts has been related to the near-term conditions with the Proposed Project and the Reduced Development Alternative. The remainder of this Chapter discusses the long-term cumulative impacts associated with the Proposed Project and Reduced Development Alternative as well as other long-term anticipated development in the area.

4.10.1 Future Cumulative Growth

Future conditions traffic forecasts were developed based on a comparison of the SFCTA and ACCMA travel demand forecasting models. While both models predict traffic demand reasonably well at most locations and for most directions, there are some differences between the two and neither model clearly performs better than the other. Future year 2030 baseline (no project) model forecasts from both models are summarized in **Table 51** (on page 215).⁵⁷

57. A detailed discussion related to the derivation of these volumes and forecasts was provided in a letter to the City of San Francisco Planning Department, dated May 13, 2009. This letter is included in **Appendix M**.

TABLE 51 – COMPARISON OF YEAR 2030 BASELINE (NO PROJECT) TRAFFIC FORECASTS

Location	ACCMA Model			SFCTA Model		
	Base Year (2005)	Future (2030 No Project)	Background Growth (2005 to 2030)	Base Year (2005)	Future (2030 No Project)	Background Growth (2005 to 2030)
AM Peak Hour						
I-80 WB Approach to Bay Bridge	4,700	7,100	2,400	4,100	5,400	1,300
I-580 WB Approach to Bay Bridge	5,400	6,300	900	5,700	5,900	200
I-880 WB Approach to Bay Bridge	2,100	4,300	2,200	1,500	1,600	100
Total WB Bay Bridge Volume (East of Island)	12,200	17,600	5,500	11,200	12,800	1,600
Total EB Bay Bridge Volume (East of Island)	6,900	7,400	500	8,700	10,800	2,100
PM Peak Hour						
I-80 WB Approach to Bay Bridge	2,400	2,700	300	3,000	3,200	200
I-580 WB Approach to Bay Bridge	2,700	3,200	500	4,400	5,000	600
I-880 WB Approach to Bay Bridge	1,800	2,200	400	1,600	2,000	400
Total WB Bay Bridge Volume (East of Island)	7,000	8,200	1,200	9,000	10,200	1,200
Total EB Bay Bridge Volume (East of Island)	12,800	17,500	4,700	10,000	10,300	300
Source: Fehr & Peers, 2009						

The growth in travel demand predicted by each of the two travel demand forecasting models was added to the existing travel demand described earlier in this report. The results are shown in **Table 52**.

TABLE 52 – FORECASTED YEAR 2030 BASELINE (NO PROJECT) BAY BRIDGE TRAFFIC DEMAND

Direction	ACCMA		SFCTA	
	AM	PM	AM	PM
Westbound	15,950	9,150	12,050	9,250
Eastbound	7,650	14,250	9,250	9,850
Fehr & Peers, 2009				

As described earlier, each bridge direction has an observed capacity of approximately 9,000 vehicles per hour. **Table 53** presents the increase in unserved demand in each direction predicted by both models for year 2030 baseline conditions.

TABLE 53 – YEAR 2030 BASELINE UNSERVED DEMAND ON BAY BRIDGE					
Direction	Existing ¹	ACCMA Model		SFCTA Model	
		Year 2030 Baseline	Increase	Year 2030 Baseline	Increase
AM Peak Hour					
Westbound	1,550	6,950	5,400	3,050	1,500
Eastbound	0	0	0	250	250
PM Peak Hour					
Westbound	0	150	150	250	250
Eastbound	550	5,250	4,700	850	300
Notes:					
1. As shown on Figure 14 on page 48.					
Fehr & Peers, 2009					

As shown, the ACCMA model predicts relatively large increases in unserved demand in the peak directions, which would add approximately 36 lane-miles to existing queues (based on a density of 150 vehicles per lane-mile). The ACCMA model predicts the SFOBB would be largely able to handle traffic increases in the off-peak directions. The SFCTA model predicts relatively moderate increases to unserved demand in the peak direction in the AM peak hour and relatively small increases to the peak direction in the PM peak hour. Similar to the ACCMA model, the SFCTA model also predicts nearly negligible amounts of unserved demand in the off-peak directions.

Overall, although the range is large, the following conclusions can be drawn about future year 2030 baseline (no project) freeway volumes:

- In the AM peak hour, westbound queues would increase by 1,500 to 5,400 vehicles without the project;
- In the AM peak hour, eastbound queues would either stay unchanged or increase by about 250 vehicles without the project;
- In the PM peak hour, westbound queues would be between 150 to 200 vehicles without the project; and
- In the PM peak hour, eastbound queues would be 300 to 4,700 vehicles without the project

Table 54 and **Figure 44** (pages 217 and 224) summarize the expected year 2030 (no project) queuing on Bay Bridge approaches.

Saturday freeway forecasts were developed using a linear growth factor based on the growth observed between the existing and 2030 PM peak hour freeway forecasts. That factor was applied to existing Saturday peak hour forecasts to develop 2030 Saturday peak hour forecasts. That process produced the following Saturday peak hour forecasts for travel on the SFOBB:

- In the Saturday peak hour, westbound volumes would be 8,150 vehicles per hour

- In the Saturday peak hour, eastbound volumes would be 8,500 vehicles per hour

As shown, the forecasted Saturday peak hour volumes would be less than the SFOBB capacity of 9,000 vehicles per hour under 2030 No Project conditions.

The remainder of this analysis is based on the largest volume forecast for each direction and peak hour from the two models. Specifically, the forecasts assume that westbound queues increase by 5,400 vehicles in the AM peak hour and 200 vehicles in the PM peak hour while eastbound queues increase by 250 vehicles in the AM peak hour and 4,700 vehicles in the PM peak hour. There would be no queues during the typical Saturday peak hour. Although this is a compilation of output from two different models, it presents a worst case scenario.

TABLE 54 – FUTURE YEAR 2030 CUMULATIVE (NO PROJECT) QUEUING ON SFOBB APPROACHES (MILES)

	Approach	No. of Lanes ¹	Existing Peak Period ²			Year 2030 Peak Period		
			AM	PM	Sat	AM	PM	Sat
East Bay Approaches	I-80 WB	3	2.7	0.00 ³	0.00	5.5 – 8.0 miles	0.1 miles (Within Toll Plaza Area)	0.00
	I-580 WB	3	1.5	0.00 ³	0.00	1.9 – 2.5 miles		0.00
	I-880 WB	3	0.7	0.00 ³	0.00	1.0 – 5.6 miles		0.00
San Francisco Approaches⁴	Harrison WB @ 1 st	2	0.00 ⁵	0.2	0.00 ⁵	0.00	0.2 miles	0.00
	Bryant EB @ 2 nd	2	0.00 ⁵	0.2	0.00 ⁵	0.00	0.2 miles	0.00
	Folsom EB @ Essex	2	0.00 ⁵	0.3	0.00 ⁵	0.00	0.5 miles	0.00
	1 st SB @ Howard	2	0.00 ⁵	0.4	0.00 ⁵	0.00	0.7 miles	0.00
	Bryant EB @ 5 th	3	0.00 ⁵	0.1	0.00 ⁵	0.00	0.5 miles	0.00

Notes:

1. The number of lanes shown represents the number of lanes of queued traffic serving the Bay Bridge from each facility.
2. Assumes queued vehicle density of 150 vehicles per lane per mile for freeway and 264 vehicles per lane per mile for city streets based on aerial photo observations.
3. Most queues observed on westbound approaches in the PM peak period were due to weaving in the I-80/I-580/I-880 interchange and not necessarily due to bridge over-saturation or the service volume of the toll plaza.
4. Queues based on intersection turning movement forecast. Additional unserved demand will be in queues on eastbound I-80 approaching the Bay Bridge.
5. Traffic in downtown San Francisco during the AM and Saturday peak hours is generally uncongested, and queues on San Francisco surface streets are due to signal operation characteristics and not due to bridge over-saturation.

Source: Fehr & Peers, 2009

4.10.2 Cumulative Traffic Impacts

The cumulative conditions operations of the freeway system, including ramp merge and diverge operations, and study intersections are discussed in this section.

4.10.2.1 Proposed Project with Base Transit Service

This section describes the cumulative traffic impacts associated with the Proposed Project under the Base Transit Scenario and other anticipated long-term development.

4.10.2.1.1 Ramp Queuing (Base Transit)

Queues on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Proposed Project under the Base Transit Scenario.

As summarized in **Table 38** on page 108 and shown on **Figure 22** on page 107, with Base Transit Service, the Proposed Project may result in extensive queues on Treasure Island Road that may interfere with traffic circulation. Without reconstruction of the westbound on-ramp to the SFOBB (and the associated HOV3+ bypass), queues would extend back approximated ½-mile from each of the two westbound on-ramps. With reconstruction of the westbound ramps (and the associated consolidation of all traffic to a single westbound on-ramp), queues would reach over one mile on Treasure Island Road to Macalla Road.

4.10.2.1.2 Ramp Merge/Diverge (Base Transit)

Ramp merge/diverge levels of service would change with the addition of other background traffic growth to the mainline traffic volumes on the SFOBB. **Tables 55, 56, and 57** (pages 219, 220, and 221) present ramp merge and diverge levels of service under cumulative (year 2030) conditions, including traffic from the Proposed Project under the Base Transit Scenario, for the AM, PM, and Saturday peak hours, respectively. Under year 2030 conditions with the proposed project, (identified on **Tables 55, 56, and 57** as "Year 2030 Plus Project (Base Transit Scenario)"), all on- and off-ramps with the exception of the eastbound off-ramp on the west side of the tunnel would operate at acceptable LOS of D or better during all study peak periods. The eastbound off-ramp on the west side of the Islands would operate at LOS E in the PM peak hour. The proposed project would contribute the majority of the off-ramp traffic, and therefore, the Proposed Project's contribution to these cumulatively-significant impacts would be significant. As noted earlier, there is no feasible mitigation to improve this ramp to acceptable LOS. Therefore, this cumulative impact would be **significant and unavoidable**.

4.10.2.1.3 Ramp Delays (Base Transit)

Delays associated with queuing on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Proposed Project under the Base Transit Scenario. Under the condition in which the westbound on-ramps on the east side of Yerba Buena Island are not reconstructed and the existing ramps remain stop-controlled, the westbound on-ramps would operate at LOS F during the AM, PM, and Saturday peak hours with the addition of project traffic and delays would be considered significant. If the separate project to reconstruct the westbound on-ramps is constructed and the west side westbound on-ramp is converted to transit-only, vehicle delay would be approximately five minutes during both the AM and PM peak hours.

Under conditions with the existing ramp configuration and with the proposed reconstruction of the westbound ramps, as discussed on page 113, the Proposed Project's impacts to ramp delays would be **significant and unavoidable**.

TABLE 55 – CUMULATIVE CONDITIONS RAMP JUNCTION ANALYSIS (AM PEAK HOUR)

Ramp	Existing		Year 2030 Plus Project (Base Transit Scenario)		Year 2030 Plus Project (Expanded Transit Scenario)		Year 2030 Plus Reduced Development Alternative (Base Transit Scenario)		Year 2030 Plus Reduced Development Alternative (Expanded Transit Scenario)	
	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²
Ramp Junction LOS without Reconstructed Westbound Ramps										
Eastbound On-Ramp	22.3/C	74.2/F	27.9/C		27.5/C		27.5/C		27.1/C	
Eastbound Off-Ramp (West)	30.1/D		33.4/D		32.6/D		32.7/D		32.2/D	
Eastbound Off-Ramp (East) ³			26.6/C		26.2/C		26.3/C		26.3/C	
Westbound On-Ramp (West)	27.9/C	>80/F	26.8/C	>80/F	27.6/C	>80/F	27.2/C	>80/F	27.2/C	>80/F
Westbound On-Ramp (East) ³			27.1/C	>80/F	27.8/C	>80/F	27.8/C	>80/F	27.4/C	>80/F
Westbound Off-Ramp	32.8/D		32.6/D		32.1/D		32.4/D		32.2/D	
Ramp Junction LOS on Reconstructed Westbound Ramps										
Westbound On-Ramp (East) ⁴			28.4/C		28.3/C		28.3/C		28.1/C	
Westbound Off-Ramp (East)			26.0/C		26.0/C		25.8/C		25.7/C	

Notes:

1. Density measured in passenger cars per mile per lane.
2. Under conditions where the westbound ramps on the east side of Yerba Buena Island are not reconstructed, existing stop-control will remain in place on both westbound on-ramps. Under these conditions, similar to the analysis of existing conditions, both the HCM merge analysis and the HCM stop-controlled intersection analysis were performed.
3. The eastbound off-ramp (east side) and Westbound on-ramp (east) were closed due to construction at the time the existing conditions data were collected, but have since been reopened.
4. Under conditions with reconstruction of the westbound ramps (east), the westbound on-ramp (west) is planned to be transit-only. Thus, under conditions with reconstruction of the westbound ramps (east), ramp junction analysis was only performed for the westbound on-ramp (east) because volumes would be very small on the westbound on-ramp (west). All of the other ramps would continue to operate at the same level of service irrespective of whether or not the westbound ramps (east) are reconstructed.

Source: Fehr & Peers, 2009

TABLE 56 – CUMULATIVE CONDITIONS RAMP JUNCTION ANALYSIS (PM PEAK HOUR)

Ramp	Existing		Year 2030 Plus Project (Base Transit Scenario)		Year 2030 Plus Project (Expanded Transit Scenario)		Year 2030 Plus Reduced Development Alternative (Base Transit Scenario)		Year 2030 Plus Reduced Development Alternative (Expanded Transit Scenario)	
	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²
Ramp Junction LOS without Reconstructed Westbound Ramps										
Eastbound On-Ramp	27.8/C	>80/F	28.4/C		28.0/C		28.2/C		27.9/C	
Eastbound Off-Ramp (West)	36.2/E		39.3/E		39.3/E		39.6/E		38.9/E	
Eastbound Off-Ramp (East) ³			30.4/D		30.4/D		30.5/D		30.2/D	
Westbound On-Ramp (West)	25.1/C	>80/F	26.9/C	>80/F	27.2/C	>80/F	26.9/C	>80/F	27.2/C	>80/F
Westbound On-Ramp (East) ³			27.1/C	>80/F	27.5/C	>80/F	27.1/C	>80/F	27.5/C	>80/F
Westbound Off-Ramp	29.4/D		32.6/D		32.1/D		32.4/D		31.7/D	
Ramp Junction LOS with Reconstructed Westbound Ramps										
Westbound On-Ramp (East) ⁴			28.2/C		28.1/C		28.1/C		28.0/C	
Westbound Off-Ramp			26.1/C		25.6/C		25.8/C		25.3/C	

- Notes:
1. Density measured in passenger cars per mile per lane.
 2. Under conditions where the westbound ramps on the east side of Yerba Buena Island are not reconstructed, existing stop-control will remain in place on both westbound on-ramps. Under these conditions, similar to the analysis of existing conditions, both the HCM merge analysis and the HCM stop-controlled intersection analysis were performed.
 3. The eastbound off-ramp (east side) and Westbound on-ramp (east) were closed due to construction at the time the existing conditions data were collected, but have since been reopened.
 4. Under conditions with reconstruction of the westbound ramps (east), the westbound on-ramp (west) is planned to be transit-only. Thus, under conditions with reconstruction of the westbound ramps (east), ramp junction analysis was only performed for the westbound on-ramp (east) because volumes would be very small on the westbound on-ramp (west). All of the other ramps would continue to operate at the same level of service irrespective of whether or not the westbound ramps (east) are reconstructed.

Source: Fehr & Peers, 2009

TABLE 57 – CUMULATIVE CONDITIONS RAMP JUNCTION ANALYSIS (SATURDAY PEAK HOUR)

Ramp	Existing		Year 2030 Plus Project (Base Transit Scenario)		Year 2030 Plus Project (Expanded Transit Scenario)		Year 2030 Plus Reduced Development Alternative (Base Transit Scenario)		Year 2030 Plus Reduced Development Alternative (Expanded Transit Scenario)	
	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²	Density ¹ / LOS	Delay/ LOS ²
Ramp Junction LOS without Reconstructed Westbound Ramps										
Eastbound On-Ramp	24.5/C	>80/F	28.5/C		28.5/C		27.7C		28.3/C	
Eastbound Off-Ramp (West)	32.3/D		39.7/E		39.4/E		39.4/E		38.6/E	
Eastbound Off-Ramp (East) ³			30.8/D		29.9/D		31.2/D		29.7/D	
Westbound On-Ramp (West)	24.6/C	>80/F	25.1/C	>80/F	25.6/C	>80/F	25.1/C	>80/F	25.6/C	>80/F
Westbound On-Ramp (East) ³			25.9/C	>80/F	26.2/C	>80/F	25.9/C	>80/F	26.2/C	>80/F
Westbound Off-Ramp	28.5/D		31.8/D		31.5/D		31.2/D		31.2/D	
Ramp Junction LOS with Reconstructed Westbound Ramps										
Westbound On-Ramp (East) ⁴			31.6/D		30.4/D		30.7/D		29.6/C	
Westbound Off-Ramp			25.4/C		25.1/C		25.1/C		24.8/C	

- Notes:
1. Density measured in passenger cars per mile per lane.
 2. Under conditions where the westbound ramps on the east side of Yerba Buena Island are not reconstructed, existing stop-control will remain in place on both westbound on-ramps. Under these conditions, similar to the analysis of existing conditions, both the HCM merge analysis and the HCM stop-controlled intersection analysis were performed.
 3. The eastbound off-ramp (east side) and Westbound on-ramp (east) were closed due to construction at the time the existing conditions data were collected, but have since been reopened.
 4. Under conditions with reconstruction of the westbound ramps (east), the westbound on-ramp (west) is planned to be transit-only. Thus, under conditions with reconstruction of the westbound ramps (east), ramp junction analysis was only performed for the westbound on-ramp (east) because volumes would be very small on the westbound on-ramp (west). All of the other ramps would continue to operate at the same level of service irrespective of whether or not the westbound ramps (east) are reconstructed.

Source: Fehr & Peers, 2009

4.10.2.1.4 Mainline Operations: Queuing on Approaches (Base Transit)

Table 54 (on page 217) presents expected queuing on SFOBB approaches in year 2030 without the proposed project. Although the travel demand forecasting models differ regarding the extent of queuing on bridge approaches in year 2030, they both project queuing on all approaches in the peak hours in year 2030. The extent to which the proposed project would exacerbate westbound queues at the East Bay toll plaza is depicted in **Figure 44***Error! Reference source not found.*. Generally, since the SFOBB would operate at capacity during both AM and PM peak hours in year 2030 without the Proposed Project, all traffic added by the project would increase queues in Downtown San Francisco and the East Bay by a corresponding amount.

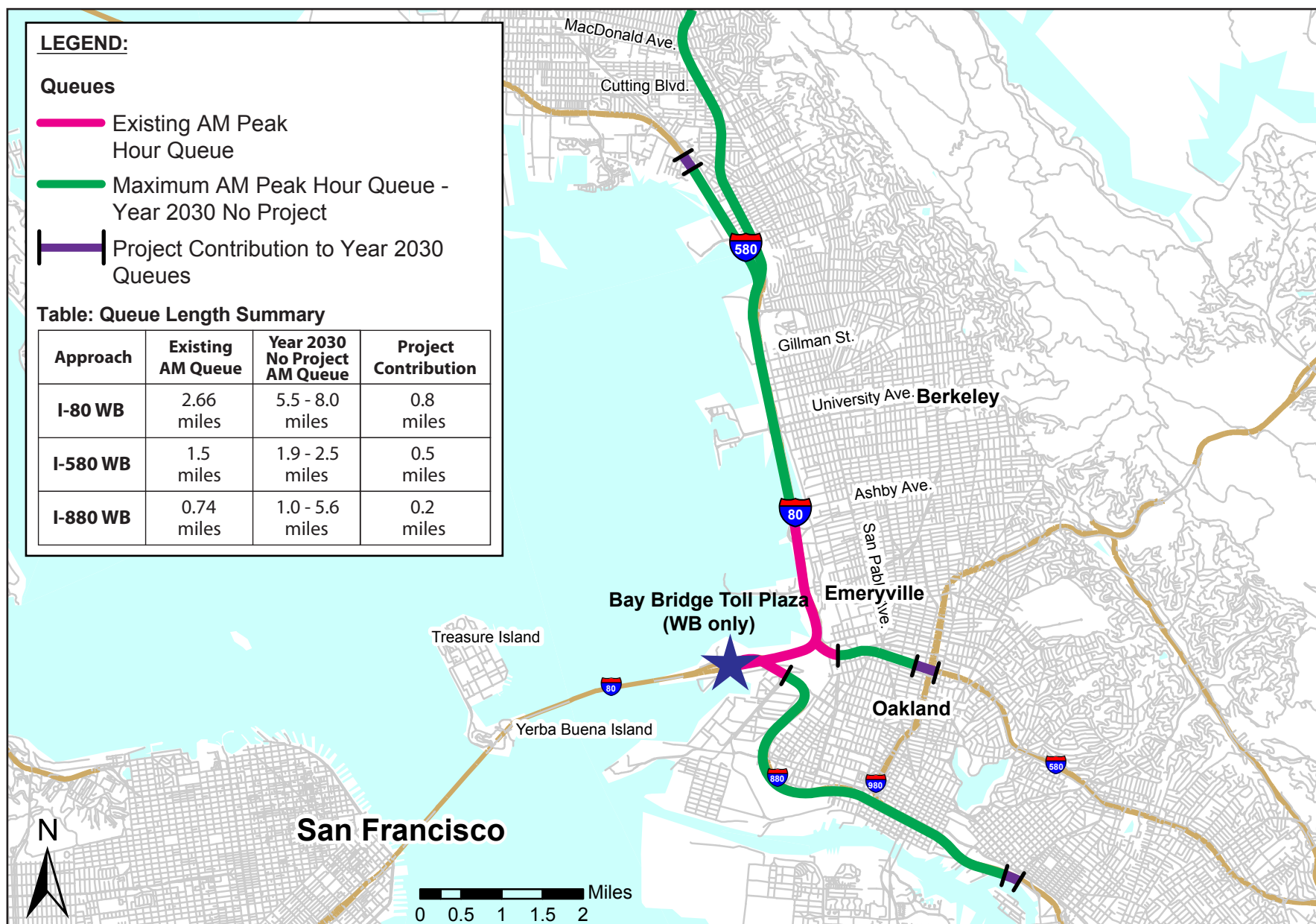
Specifically, the Proposed Project would increase queues in the East Bay by approximately 471 vehicles in the AM peak hour and approximately 465 vehicles in the PM peak hour. Similar to near-term conditions, the Proposed Project's contribution to cumulative increases to queuing on SFOBB approaches in the East Bay would be significant. Although implementing the Expanded Transit Scenario would reduce the Proposed Project's overall contribution, impacts would remain **significant and unavoidable**.

The Proposed Project would increase queues in Downtown San Francisco by 230 vehicles in the AM peak hour and 523 vehicles in the PM peak hour, and would create queues of 300 vehicles in the Saturday peak hour. Also similar to near-term conditions, the Proposed Project's contribution to cumulative increases to queuing on SFOBB approaches in Downtown San Francisco would be significant. Although implementing the Expanded Transit Scenario would reduce the Proposed Project's overall contribution, impacts would remain **significant and unavoidable**.

Overall, similar to near term conditions, impacts to the SFOBB mainline would be **less than significant**, because the traffic on the bridge cannot exceed the capacity of the bridge approaches, which would operate at capacity without the Proposed Project.

Except near ramp merge and diverge sections, operations on the SFOBB would operate similar to existing conditions (i.e., at capacity in peak directions during peak hours) since additional travel demand would be constrained by the toll plaza in the East Bay and eastbound approaches in San Francisco. Therefore, the project's impacts to the SFOBB mainline operations are expected to be less than significant, because the bridge's approaches limit the number of vehicles that can reach the bridge. Impacts to the SFOBB near ramp merge and diverge sections. Generally, through-traffic on the SFOBB may experience some increased congestion in the eastbound direction due to project-generated impacts approaching the westbound off-ramp on the west side of Yerba Buena Island.

Project-generated increases to congestion in the westbound direction are not expected to generate substantial increases in congestion, particularly if the westbound ramps are reconstructed since those improvements would increase sight distance and acceleration distance allowing smoother traffic merging than the existing configuration.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

YEAR 2030 PLUS PROJECT (BASE TRANSIT SCENARIO) MAXIMUM EAST BAY QUEUES

FIGURE 44

4.10.2.1.5 Intersections (Base Transit)

Future conditions traffic volumes were obtained using the SFCTA travel demand forecasting model as well as information provided by the City of San Francisco related to the ongoing Transit Center District Plan (“TCDP”) transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco.

Forecasts from that study were adjusted to include additional anticipated growth in San Francisco not already included in the volume forecasts developed for the TCDP. This expected growth included traffic from the TCDP, various development sites around the Transbay Transit Area, as well as some additional development in the western South of Market area along the 4th Street corridor. Traffic assumed to be generated by future development on the Islands by the SFCTA model was then removed. The result is a set of Year 2030 No Project intersection turning movement volumes. These volumes are shown in **Figure 45**.

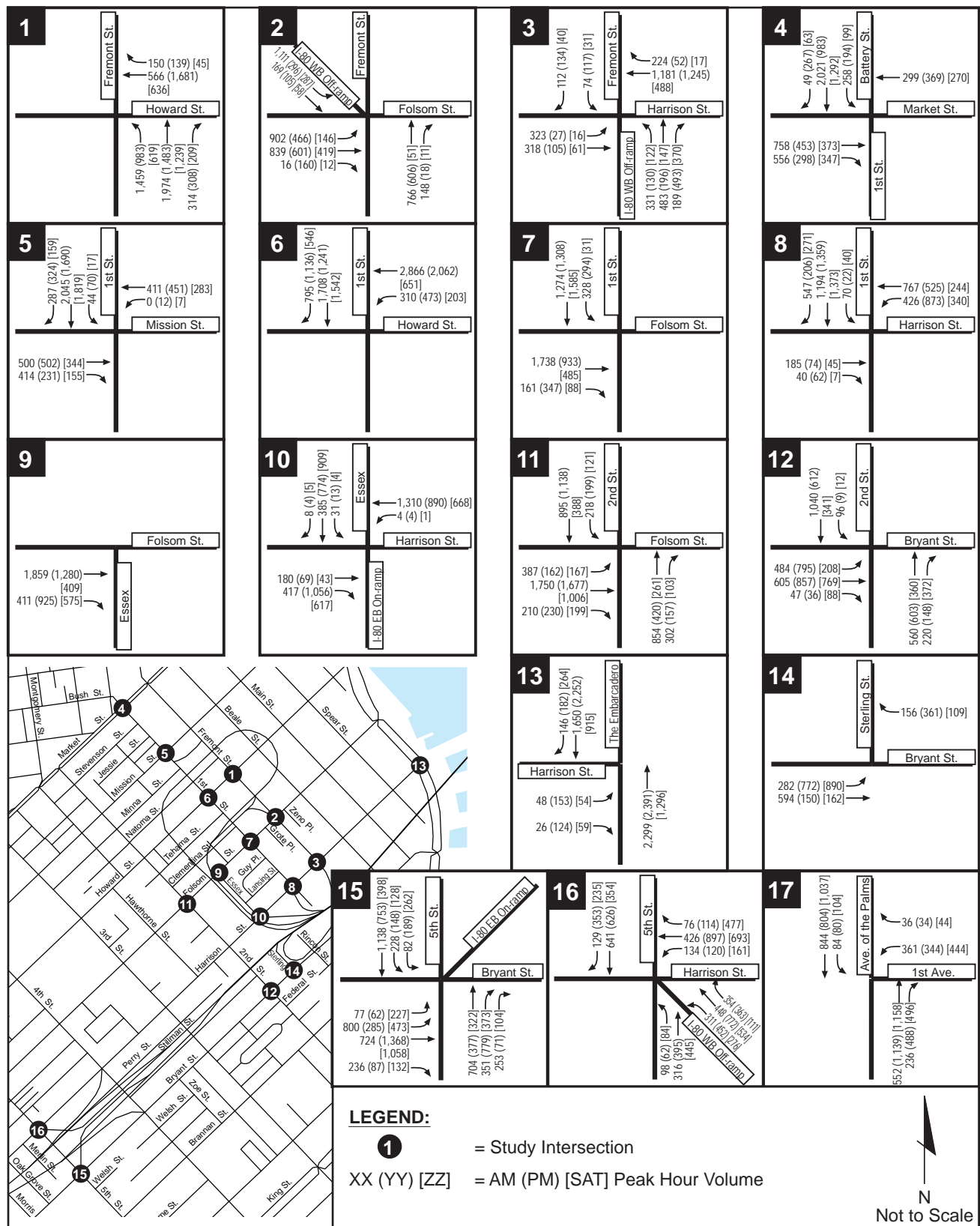
Like most travel demand forecasting models, the SFCTA model does not include a Saturday scenario; therefore Year 2030 Saturday peak hour volumes were developed by first calculating the ratio of existing weekday PM peak hour traffic volumes to existing Saturday peak hour traffic volumes for each turning movement at each study intersection. The ratio for each movement at each intersection is based on actual counts collected at the study intersections during typical weekday PM and Saturday peak hours. For each movement, the calculated weekday-to-Saturday ratios were applied to the future weekday PM peak hour forecasts derived from the SFCTA model to predict future Saturday peak hour traffic volumes. These are also shown on **Figure 45** on page 225. The overall background growth in traffic between Existing conditions and Year 2030 No Project is shown in **Figure 46** on page 226. For additional information on how Year 2030 Cumulative volumes were developed, refer to *Cumulative Year 2030 Baseline (No Project) Traffic Forecasts*,⁵⁹ contained in **Appendix M3**.

Traffic forecast to be generated by the Proposed Project under the Base Transit Scenario, as depicted on **Figure 23** on page 116, was added to the Future Year 2030 No Project volumes to determine Year 2030 plus Project intersection turning movement volumes. These volumes are shown in **Figure 47** on page 227. Intersection levels of service were calculated for Year 2030 conditions for each scenario, and are presented in **Table 58** on page 228.

In Year 2030 with the Proposed Project, 14 study intersections are expected to operate at LOS E or F in at least one peak hour. The project’s contribution to cumulative impacts at each of these intersections is discussed below, to evaluate whether the project’s contribution to the future failing condition is cumulatively considerable.

Fremont Street/Howard Street (Study Intersection #1) – The Proposed Project would add traffic to this intersection, which would operate at LOS F during the PM peak hour under Cumulative 2030 No Project conditions. The critical movement in the PM peak hour is the westbound through movement. The Proposed Project would contribute less than five percent to the critical westbound through movement (0.8 percent). Therefore, the project’s contribution to poor operating conditions at this intersection would be considered **less than significant**.

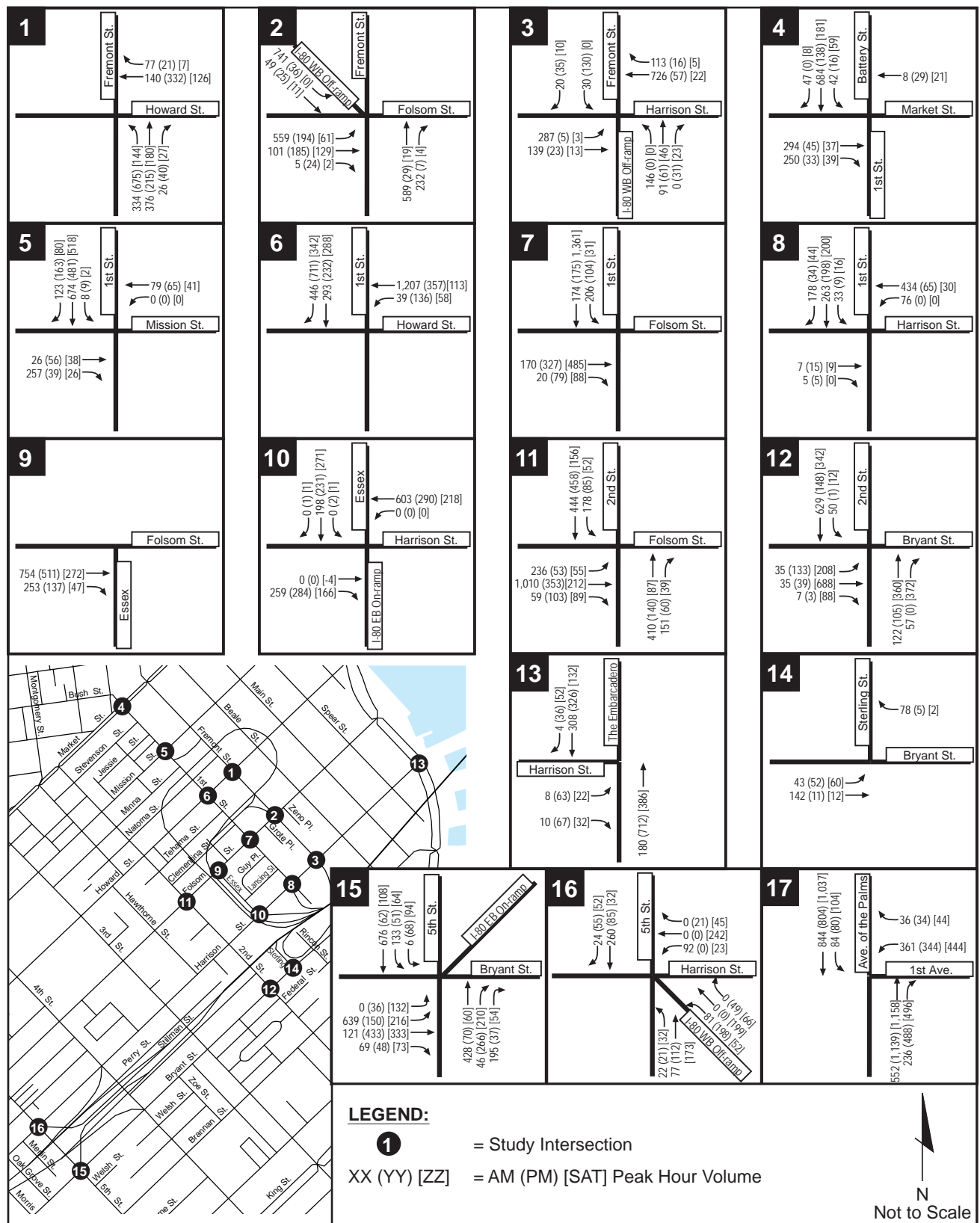
58. Fehr & Peers, May 13, 2009



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

CUMULATIVE YEAR 2030 NO PROJECT PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES



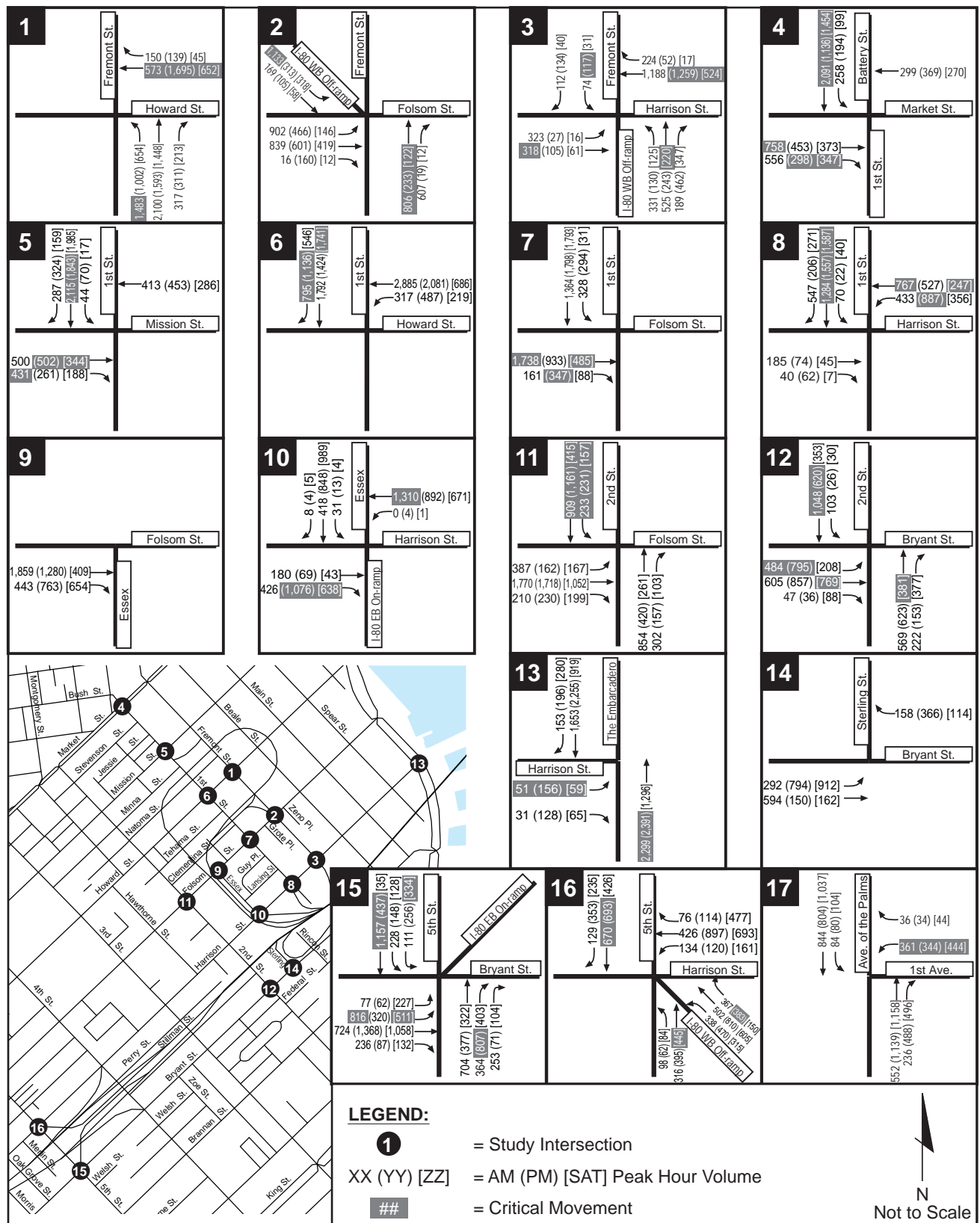
Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

PROJECTED GROWTH BETWEEN EXISTING AND 2030 NO PROJECT PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES

June 2010
SF07-0340\graphics\TIS\0340-46

FIGURE 46



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS **CUMULATIVE YEAR 2030 PLUS PROJECT (BASE TRANSIT SCENARIO)** **PEAK HOUR INTERSECTION VOLUMES**

June 2010
SF07-0340\graphics\TIS\0340-27

FIGURE 47

TABLE 58 – INTERSECTION LEVELS OF SERVICE – YEAR 2030 NO PROJECT AND PLUS PROJECT CONDITIONS

Intersection ³	Peak Hour	2030 No Project			2030 + Project: Base Transit Scenario			2030 + Project: Expanded Transit Scenario			2030 + Reduced Development: Base Transit Scenario			2030 + Reduced Development: Expanded Transit Scenario		
		Delay	LOS	v/c	Delay	LOS	Delay	LOS	v/c	Delay	LOS	Delay	LOS	v/c	Delay	LOS
1. Fremont/Howard	AM	38.5	D	1.01	47.3	D	1.04	44.3	D	1.03	44.8	D	1.03	43.7	D	1.03
	PM	>80	F	1.29	>80	F	1.32	>80	F	1.32	>80	F	1.35	>80	F	1.32
	Sat	17.3	B	0.68	20.4	C	0.74	19.8	B	0.73	20.0	B	0.73	19.5	B	0.72
2. Fremont/Folsom	AM	>80	F	1.56	>80	F	1.60	>80	F	1.59	>80	F	1.59	>80	F	1.59
	PM	32.7	C	0.59	33.2	C	0.64	33.2	C	0.64	34.0	C	0.69	33.1	C	0.63
	Sat	21.2	C	0.23	21.6	C	0.29	21.5	C	0.28	21.5	C	0.28	21.5	C	0.28
3. Fremont/I-80 EB Off-Ramp/Harrison	AM	>80	F	2.87	>80	F	2.89	>80	F	2.76	>80	F	2.89	>80	F	2.76
	PM	32.9	C	0.88	35.1	D	0.92	34.7	C	0.92	36.9	D	0.96	34.4	C	0.92
	Sat	10.9	B	0.24	11.2	B	0.28	11.2	B	0.28	11.1	B	0.27	11.2	B	0.27
4. 1 st /Market	AM	>80	F	1.10	>80	F	1.12	>80	F	1.11	>80	F	1.11	>80	F	1.11
	PM	>80	F	0.95	>80	F	1.14	>80	F	1.01	>80	F	1.07	>80	F	1.01
	Sat	28.9	C	0.66	55.0	E	0.71	50.9	D	0.70	51.6	D	0.70	48.0	D	0.70
5. 1 st /Mission	AM	21.1	C	0.93	49.2	D	1.03	47.0	D	1.03	47.7	D	1.03	45.7	D	1.02
	PM	>80	F	1.18	>80	F	1.24	>80	F	1.23	>80	F	1.28	>80	F	1.22
	Sat	22.0	C	0.80	26.3	C	0.84	25.1	C	0.83	25.5	C	0.84	24.5	C	0.83
6. 1 st /Howard	AM	>80	F	1.38	>80	F	1.39	>80	F	1.39	>80	F	1.39	>80	F	1.39
	PM	>80	F	2.18	>80	F	2.19	>80	F	2.19	>80	F	2.20	>80	F	2.19
	Sat	13.1	B	0.61	15.9	B	0.66	15.4	B	0.65	15.5	B	0.65	15.0	B	0.65
7. 1 st /Folsom	AM	19.1	B	0.81	19.1	B	0.83	19.1	B	0.83	19.1	B	0.83	19.1	B	0.83
	PM	>80	F	1.45	>80	F	1.57	>80	F	1.55	>80	F	1.64	>80	F	1.54
	Sat	6.1	A	0.47	7.0	A	0.52	6.9	A	0.51	6.9	A	0.51	6.8	A	0.51
8. 1 st /Harrison/I-80 EB On-Ramp	AM	25.5	C	0.83	26.7	C	0.87	26.4	C	0.87	26.5	C	0.87	26.2	C	0.86
	PM	>80	F	1.41	>80	F	1.53	>80	F	1.51	>80	F	1.61	>80	F	1.50
	Sat	26.0	C	0.71	44.6	D	0.80	40.6	D	0.79	41.5	D	0.79	38.1	D	0.78
9. Folsom/Essex	AM															
	PM															
	Sat															

TABLE 58 – INTERSECTION LEVELS OF SERVICE – YEAR 2030 NO PROJECT AND PLUS PROJECT CONDITIONS

Intersection ³	Peak Hour	2030 No Project			2030 + Project: Base Transit Scenario			2030 + Project: Expanded Transit Scenario			2030 + Reduced Development: Base Transit Scenario			2030 + Reduced Development: Expanded Transit Scenario		
		Delay	LOS	v/c	Delay	LOS	Delay	LOS	v/c	Delay	LOS	Delay	LOS	v/c	Delay	LOS
10. Essex/Harrison /I-80 EB On-Ramp	AM	18.3	B	0.69	18.2	B	0.71	18.2	B	0.70	18.3	B	0.71	18.3	B	0.70
	PM	>80	F	1.48	>80	F	1.49	>80	F	1.47	>80	F	1.54	>80	F	1.47
	Sat	21.2	B	0.63	23.0	C	0.68	20.5	C	0.62	22.7	C	0.62	20.4	C	0.62
11. 2 nd /Folsom	AM	>80	F	1.25	>80	F	1.27	>80	F	1.27	>80	F	1.27	>80	F	1.27
	PM	>80	F	1.53	>80	F	1.59	>80	F	1.58	>80	F	1.63	>80	F	1.57
	Sat	21.2	C	0.56	23.1	C	0.61	22.8	C	0.60	22.9	C	0.60	22.6	C	0.60
12. 2 nd /Bryant	AM	34.6	C	0.74	41.1	D	0.76	40.0	D	0.76	40.2	D	0.76	38.6	D	0.75
	PM	57.4	E	1.11	63.0	E	1.15	61.6	E	1.14	69.0	E	1.17	61.0	E	1.14
	Sat	12.1	B	0.44	12.2	B	0.45	12.2	B	0.45	12.2	B	0.45	12.2	B	0.45
13. Embarcadero/Harrison	AM	>80	F	0.88	>80	F	0.88	>80	F	0.88	>80	F	0.88	>80	F	0.88
	PM	>80	F	1.22	>80	F	1.22	>80	F	1.22	>80	F	1.23	>80	F	1.22
	Sat	14.9	B	0.51	15.0	B	0.52	15.0	B	0.52	15.0	B	0.52	15.0	B	0.52
14. Bryant /Sterling	AM															
	PM															
	Sat															
15. Bryant /5 th /I-80 EB On-Ramp	AM	>80	F	1.27	>80	F	1.27	>80	F	1.26	>80	F	1.27	>80	F	1.26
	PM	>80	F	2.49	>80	F	2.51	>80	F	2.49	>80	F	2.59	>80	F	2.48
	Sat	53.4	D	0.93	73.3	E	1.05	57.9	E	1.02	71.0	E	1.03	55.6	E	1.01
16. Harrison /5 th /I-80 WB Off-Ramp	AM	31.6	C	0.67	34.7	C	0.71	32.3	C	0.63	34.3	C	0.70	32.0	C	0.62
	PM	>80	F	1.01	>80	F	1.11	>80	F	1.10	>80	F	1.24	>80	F	1.10
	Sat	29.4	C	0.79	33.1	C	0.84	32.2	C	0.83	32.7	C	0.84	31.8	C	0.82

Notes:

- Whole intersection weighted average stopped delay expressed in seconds per vehicle calculated using methods described in the 2000 HCM. In rare cases, if the proposed project adds traffic to movements with lower average delay than the average delay for the entire intersection, the project could result in lower average delay per vehicle than the “no project” scenario.
- Bold** indicates an unacceptable level of service (LOS).
- Intersection of Avenue of the Palms/1st Street is expected to operate the same in year 2030 as existing plus project conditions.

Source: Fehr & Peers, 2009.

Fremont Street/Folsom Street/I-80 Westbound Off-Ramp (Study Intersection #2) – The intersection of Fremont Street/Folsom Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The Proposed Project would contribute less than five percent to the critical southeastbound left movement (2.0 percent) (i.e., the off-ramp approach). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #3) – The intersection of Fremont Street/Harrison Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The Proposed Project would not contribute traffic to the critical eastbound through movement at this intersection. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

1st Street/Market Street (Study Intersection #4) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The southbound through movement and the eastbound through are the critical movements at this intersection. While the eastbound through operates at an acceptable LOS, the southbound through operates at LOS F during the AM peak hour. The Proposed Project would contribute less than five percent (3.4 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Proposed Project would add traffic to this intersection, which would operate at LOS F during the PM peak hour under year 2030 No Project conditions. The southbound through movement and the eastbound right are the critical movements at this intersection. While the eastbound right operates at an acceptable LOS, the southbound through operates at LOS F in the PM peak hour. The Proposed Project would contribute more than five percent (13.9 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

The Proposed Project would cause this intersection to deteriorate from LOS C under year 2030 No Project conditions to LOS E under conditions with the Proposed Project during the Saturday peak hour. This would be a significant impact.

Because the Proposed Project's contribution to critical movements at this intersection during the PM peak hour would be considerable, and because the Proposed Project would cause the intersection to deteriorate from LOS C to LOS E during the Saturday peak hour, the project's cumulative impact is considered significant. As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the significant cumulative impact in the Saturday peak hour and the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through movement and the eastbound right is a critical movement at this intersection. While the eastbound right operates at an acceptable LOS, the southbound through operates at LOS F in the PM peak hour. The Proposed Project would contribute more than five percent (8.6 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The Proposed Project would not contribute traffic to the critical southbound right-turn movement at this

intersection. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The Proposed Project would not contribute traffic to the critical southbound right-turn movement at this intersection. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered less than significant.

Because the Proposed Project would not contribute to critical movements at this intersection in the AM and PM peak hours, the project's contribution to cumulative impacts would be considered **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Proposed Project would not contribute to the critical eastbound right-turn movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered **less than significant**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection during the PM peak hour are the southbound through movement and the westbound left turn movement. The Proposed Project would contribute less than five percent (1.6 percent) to the westbound left turn movement during the PM peak hour. The Proposed Project would contribute more than five percent (13.1 percent) to the southbound through movement during the PM peak hour. Therefore, the project's contribution to cumulative impacts at this intersection would be significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the eastbound right turn movement from Harrison Street onto the I-80 Eastbound On-ramp. The Proposed Project would contribute less than five percent (2.0 percent) to this movement. Therefore the project's contribution would be considered **less than significant** in the PM peak hour.

2nd Street/Folsom Street (Study Intersection #11) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Proposed Project would contribute less than five percent (1.5 percent) to the critical southbound through movement. However, the project would contribute more than five percent (6.4 percent) of total traffic volume to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered cumulatively considerable.

The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Proposed Project would contribute less than five percent (2.1 percent) to the critical southbound through movement. However, the project would contribute more than five percent (14.2 percent) to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered cumulatively considerable.

Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. As shown in **Table 54** (on page 217), implementation of the Expanded Transit Scenario would improve operations at this intersection. However, the project's contribution would remain cumulatively considerable. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. The Proposed Project's contribution to cumulative impacts at this intersection would remain **significant and unavoidable**.

2nd Street/Bryant Street (Study Intersection #12) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS E in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection during the PM peak hour are the eastbound left turn movement and southbound through movement. The Proposed Project would not contribute to the critical eastbound left-turn movement at this intersection. The Proposed Project would contribute less than five percent (1.5 percent) to the critical southbound through movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered **less than significant**.

The Embarcadero/Harrison Street (Study Intersection #13) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The northbound through movement and the eastbound left are the critical movements at this intersection. While the eastbound left operates at an acceptable LOS, the northbound through operates at LOS F in the AM peak hour. However, the Proposed Project would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the AM peak hour would be considered **less than significant**.

The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The northbound through movement and the eastbound left are the critical movements at this intersection. While the eastbound left operates at an acceptable LOS, the northbound through operates at LOS F in the PM peak hour. However, the Proposed Project would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the PM peak hour would be considered **less than significant**.

The Proposed Project would not contribute traffic to the critical movements at this intersection operating at poor levels of service during the AM or PM peak hours. Therefore, the project's contribution to cumulative impacts would be considered **less than significant**.

Bryant Street/5th Street/I-80 Eastbound On-ramp (Study Intersection #15) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound through movement and eastbound left turn movement. The Proposed Project would contribute less than five percent (1.6 percent) to the critical southbound through movement. The eastbound left turn movement is expected to operate at acceptable levels of service during the AM peak hour. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the northbound right turn movement and the southbound through movement. The Proposed Project would contribute less than five percent (3.6 percent) to the critical northbound right turn movement. The Proposed Project would also contribute less than five percent (2.5 percent) to the critical southbound through movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

During the Saturday peak hour, the Proposed Project would cause the intersection of Bryant Street/5th Street/I-80 Eastbound On-ramp to deteriorate from LOS D under year 2030 No Project conditions to LOS E under year 2030 conditions with the Proposed Project. This would be a significant impact.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's impact to Saturday peak hour conditions would remain **significant and unavoidable**.

Harrison Street/5th Street/I-80 Westbound Off-ramp (Study Intersection #16) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound through movement and the northbound right-turn movement (from the off-ramp onto northbound 5th Street). The Proposed Project would contribute more than five percent (9.9 percent) to the critical southbound through movement. The Proposed Project would also contribute more than five percent (5.4 percent) to the critical northbound off-ramp right turn movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered significant.

Implementation of the Expanded Transit Scenario would reduce the Proposed Project's contribution to the off-ramp to less than five percent, but the contribution to the southbound through movement would remain larger than five percent. Therefore, the project's contribution to traffic in the PM peak hour would remain significant. As described under Existing plus Project conditions, there are no other feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

4.10.2.1.5 Relationship to Transit Center District Plan (Base Transit)

As discussed earlier, the City is currently conducting a study to evaluate the effects of potential increases to allowable development in the area surrounding the proposed Transbay Transit Center. As part of this work, the City is contemplating changes to the transportation network in a several block area, generally bounded by Market Street, 2nd Street, Harrison Street, and Beale Street. Some of the potential changes to the roadway system include conversion of existing one-way streets to two-way; restricting access on portions of some streets to transit only; and reducing the number of travel lanes on some streets. At the time this analysis was conducted, the proposed roadway network changes were not defined enough to include in the analysis. Just recently, in November 2009, the Planning Department issued a Draft Plan for Public Review for this project. While this Draft for Public Review does propose some concrete changes to the roadway system in the area, these proposals are still likely to evolve, as the planning and environmental review process for that project develops. For these reasons, these proposed changes have not been included in the analysis at this time. Ultimately, the impacts of such roadway changes will be evaluated in the environmental review document for the Transit Center District Plan, which will include the additional traffic associated with the proposed project.

4.10.2.2 Proposed Project (Expanded Transit Scenario)

This section describes the cumulative traffic impacts associated with the Proposed Project under the Expanded Transit Scenario and other anticipated long-term development.

4.10.2.2.1 Ramp Queuing (Expanded Transit)

Queues on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Proposed Project under the Expanded Transit Scenario. As summarized in **Table 38** on page 108 and shown on **Figure 27** on page 128, with Expanded Transit service, queues on roadways approaching the SFOBB on-ramps would be notably shorter than those under the Base Transit Scenario. Without reconstruction of the westbound on-ramp to the SFOBB

(and the associated HOV3+ bypass), queues would extend back approximately 400 feet from each of the two westbound on-ramps during the AM and PM peak hours, and approximately 1/3 mile during the Saturday peak hour. With reconstruction of the westbound ramps, queues would be somewhat longer, extending to a maximum of less than one mile, approximately to the transit-only westbound on-ramp on the west side of Yerba Buena Island.

4.10.2.2.2 Ramp Merge/Diverge (Expanded Transit)

Ramp merge/diverge levels of service would change with the addition of other background traffic growth to the mainline traffic volumes on the SFOBB. **Tables 55, 56 and 57** (pages 219 to 221) present ramp merge and diverge levels of service under cumulative (year 2030) conditions, including traffic from the Proposed Project under the Expanded Transit Scenario, for the AM, PM, and Saturday peak hours, respectively. Under year 2030 conditions with the Proposed Project, (identified on **Tables 55, 56 and 57** as "Year 2030 Plus Project (Expanded Transit Scenario)"), all on- and off-ramps with the exception of the eastbound off-ramp on the west side of the tunnel would operate at acceptable LOS of D or better during all study peak periods. The eastbound off-ramp on the west side of the Islands would operate at LOS E in the PM peak hour. The proposed project would contribute the majority of the off-ramp traffic, and therefore, the Proposed Project's contribution to this cumulatively-significant impact would be significant. As noted earlier, there is no feasible mitigation to improve this ramp to acceptable LOS. Therefore, this cumulative impact would be **significant and unavoidable**.

4.10.2.2.3 Ramp Delays (Expanded Transit)

Delays associated with queuing on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Proposed Project under the Expanded Transit Scenario. As shown in **Tables 39, 40 and 41** (pages 109 to 111), under the condition in which the westbound on-ramps on Yerba Buena Island are not reconstructed and remain stop-controlled, both westbound on-ramps would operate at LOS F during the AM, PM and Saturday peak hours with substantial delay. If the separate project to reconstruct the westbound on-ramps was constructed and the west side westbound on-ramp was converted to a transit-only ramp, vehicular delay would be approximately 3.5 minutes during the AM peak hour and 2.5 minutes during the PM peak hour. Traffic delay during Saturday peak hour would be minimal since ramp meters were assumed to be non-operational on weekends.

Under conditions with the existing ramp configuration and with the proposed reconstruction of the westbound ramps, as discussed on page 108, the Proposed Project's impacts to ramp delays would be **significant and unavoidable**.

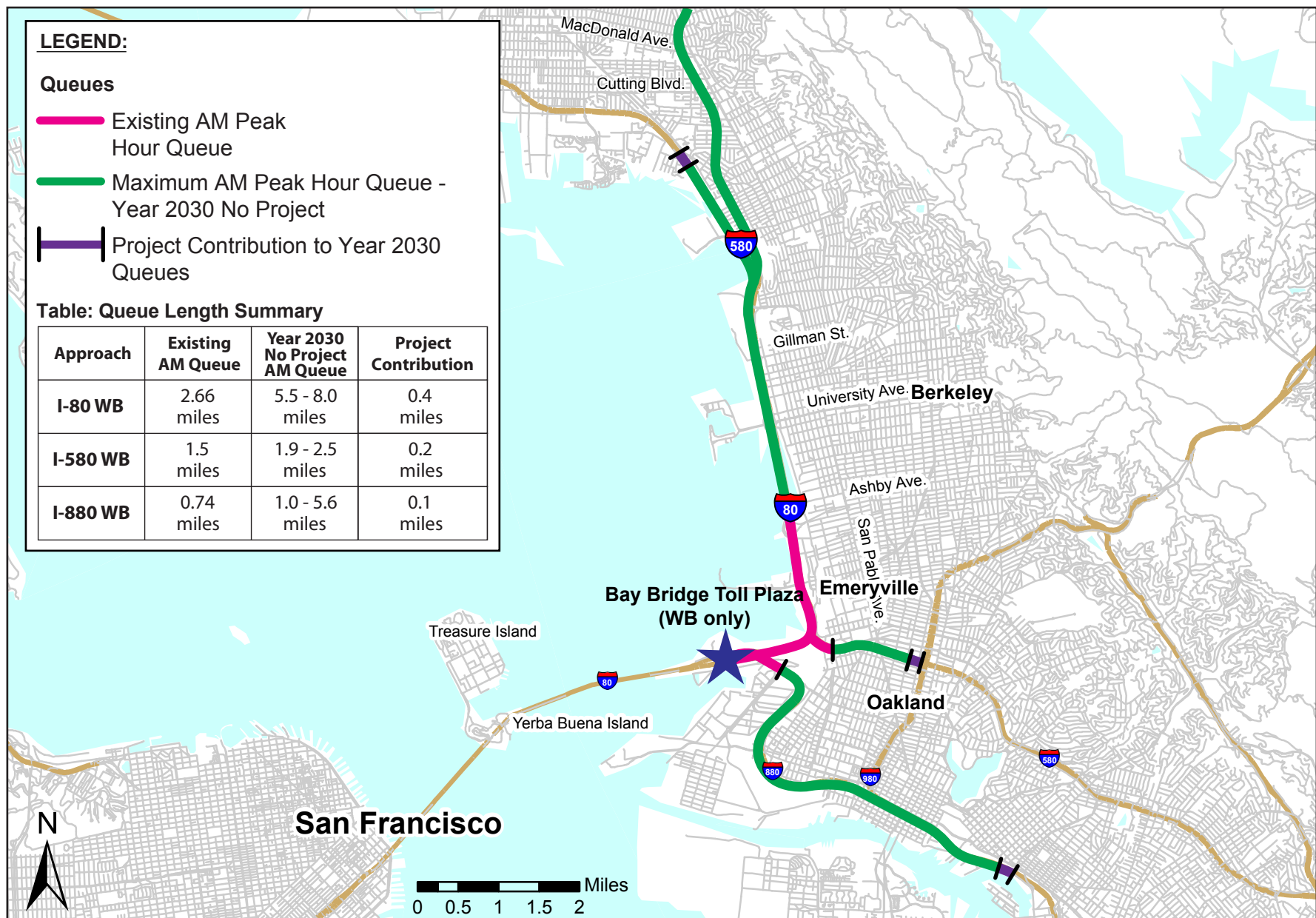
4.10.2.2.4 Mainline Operations: Queuing on Approaches (Expanded Transit)

Table 54 presents expected queuing on SFOBB approaches in year 2030 without the proposed project. Although the travel demand forecasting models differ regarding the extent of queuing on bridge approaches in year 2030, they both project queuing on all approaches in the peak hours in year 2030. The extent to which the Proposed Project, under the Expanded Transit Scenario, would exacerbate westbound queues at the East Bay toll plaza is depicted in **Figure 48** (page 236). Generally, since the SFOBB would operate at capacity during both AM and PM peak hours in year 2030 without the Proposed Project, all traffic added by the project would increase queues in Downtown San Francisco and the East Bay by a corresponding amount.

Specifically, the Proposed Project under the Expanded Transit Scenario would increase queues in the East Bay by 443 in the AM peak hour and 442 in the PM peak hour. Similar to near-term conditions, the Proposed Project's contribution to cumulative increases to queuing on SFOBB approaches in the East Bay would be **significant and unavoidable**.

The Proposed Project under the Expanded Transit Scenario would increase queues in Downtown San Francisco by 173 vehicles during the AM peak hour, 412 vehicles during the PM peak hour, and 455 vehicles during the Saturday peak hour. Also similar to near-term conditions, the Proposed Project's contribution to cumulative increases to queuing on SFOBB approaches in Downtown San Francisco would be significant and unavoidable.

Overall, similar to near term conditions, impacts to the SFOBB mainline will be **less than significant**, because the traffic on the bridge cannot exceed the capacity of the bridge approaches, which would operate at capacity without the Proposed Project, effectively metering the amount of traffic that can enter the SFOBB.



Source: Fehr & Peers, 2009

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**YEAR 2030 PLUS PROJECT
(EXPANDED TRANSIT SCENARIO) MAXIMUM EAST BAY QUEUE**

FIGURE 48

4.10.2.2.5 Intersections (Expanded Transit)

Intersection peak hour turning movement volumes under Year 2030 No Project conditions were presented in **Figure 45** (page 225). Traffic forecast to be generated by the Proposed Project under the Expanded Transit Scenario, as depicted on **Figure 28** (page 132), was added to the Future Year 2030 No Project volumes to determine Year 2030 plus Project intersection turning movement volumes. These volumes are shown in **Figure 49**. Intersection levels of service were calculated for Year 2030 conditions for each scenario, and are presented in **Table 58**.

In Year 2030 with the Proposed Project under the Expanded Transit Scenario, 14 study intersections are expected to operate at LOS E or F in at least one peak hour. The project's contribution to cumulative impacts at each of these intersections is discussed below, to evaluate whether the project's contribution to the future failing condition is cumulatively considerable.

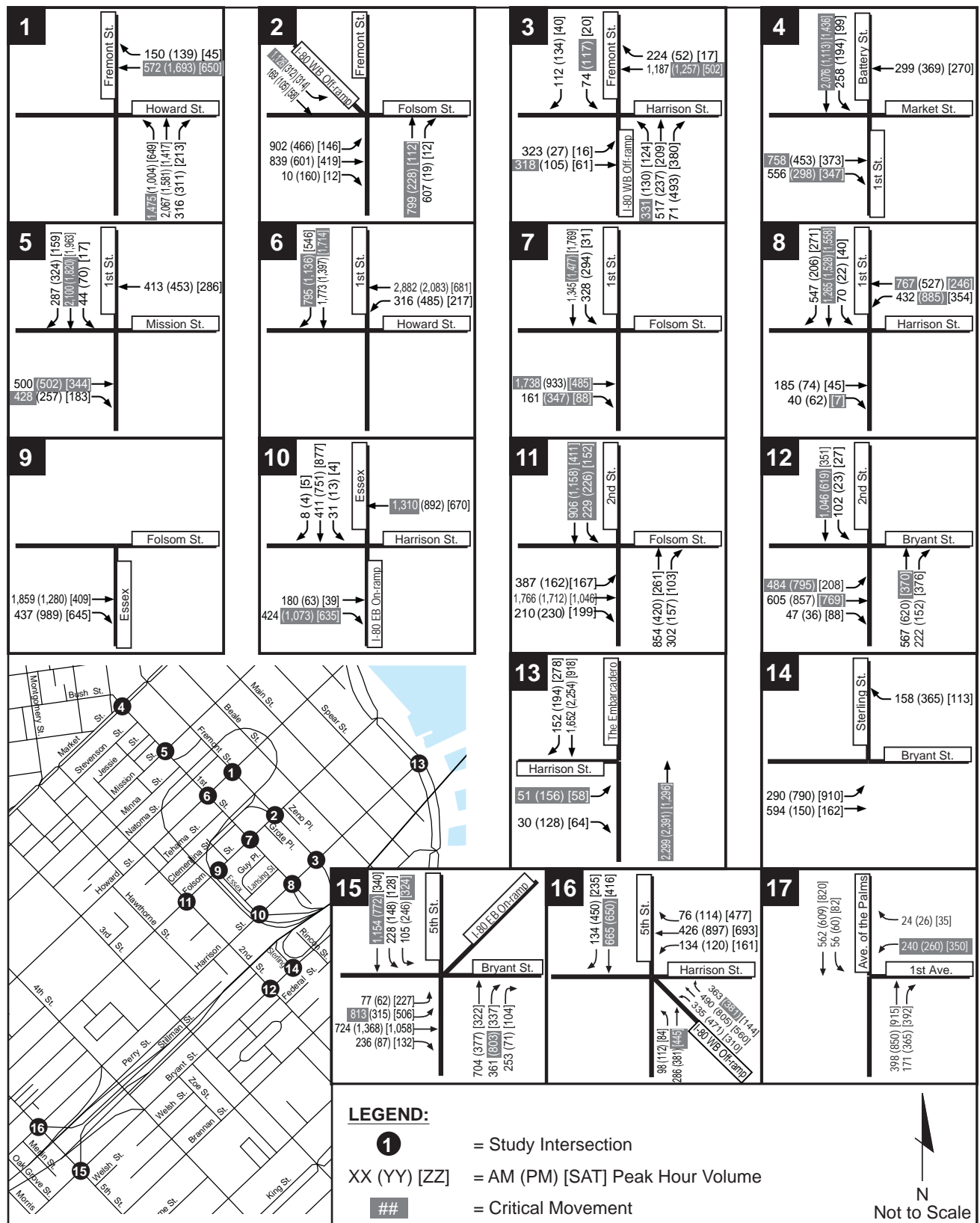
Fremont Street/Howard Street (Study Intersection #1) – The Proposed Project would add traffic to this intersection, which would operate at LOS F during the PM peak hour under year 2030 No Project conditions. The critical movement in the PM peak hour is the westbound through movement. The Proposed Project would contribute less than five percent to the critical westbound through movement (0.7 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Folsom Street/I-80 Westbound Off-Ramp (Study Intersection #2) – The intersection of Fremont Street/Folsom Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The northbound through and the southeastbound left (from the off-ramp to Folsom Street) are the critical movements at the intersection. The Proposed Project would contribute less than five percent to the critical southeastbound left movement (1.3 percent). The Proposed Project would contribute less than five percent to the critical northbound through movement (4.1 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #3) – The intersection of Fremont Street/Harrison Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The northbound through and the eastbound through movements are the critical movements at this intersection; however, only the critical eastbound movement operates unacceptably. The Proposed Project would not contribute traffic to the critical eastbound through movement at this intersection. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

1st Street/Market Street (Study Intersection #4) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The southbound through and the eastbound through are the critical movements at this intersection; however, the eastbound through is expected to operate at acceptable levels of service. The southbound through movement is a critical movement at this intersection that operates at LOS F in the AM peak hour. The Proposed Project would contribute less than five percent (2.7 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through and the eastbound through are the critical movements at this intersection; however, the eastbound through is expected to operate at acceptable levels of service. The southbound through movement is a critical movement at this intersection that operates at LOS F in the PM peak hour. The Proposed Project would contribute more than five percent (11.7 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

CUMULATIVE YEAR 2030 PLUS PROJECT (EXPANDED TRANSIT SCENARIO) PEAK HOUR INTERSECTION VOLUMES

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FIGURE 49

Because the Proposed Project's contribution to critical movements at this intersection during the PM peak hour would be considerable, the project's cumulative impact is considered significant. As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through and eastbound through movements are the critical movement at this intersection; however, the eastbound through movement operates acceptably. The Proposed Project would contribute more than five percent (7.1 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The Proposed Project would not contribute traffic to critical movement (southbound right turn) operating at LOS E or LOS F during the AM peak hour. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The Proposed Project would not contribute traffic to the critical southbound right-turn movement at this intersection. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered less than significant.

Because the Proposed Project would not contribute to critical movements at this intersection in the AM and PM peak hours, the project's contribution to cumulative impacts would be considered **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Proposed Project would not contribute to the critical eastbound right-turn movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered **less than significant**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movement at this intersection during the PM peak hour is the southbound through movement. The Proposed Project would contribute more than five percent (11.1 percent) to this movement during the PM peak hour. Therefore, the project's contribution to cumulative impacts at this intersection would be significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Proposed Project would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the eastbound right turn movement from Harrison Street onto the I-80 Eastbound On-ramp. The Proposed Project would contribute less than five percent (1.6 percent) to this movement. Therefore the project's contribution would be considered **less than significant** in the PM peak hour.

2nd Street/Folsom Street (Study Intersection #11) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Proposed Project would contribute less than five percent (1.2 percent) to the critical southbound through movement. The project would contribute less than five percent (4.8 percent) to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Proposed Project would contribute less than five percent (1.7 percent) to the critical southbound through movement. However, the project would contribute more than five percent (11.9 percent) of total traffic volume to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered cumulatively considerable.

Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. The Proposed Project's contribution to cumulative impacts at this intersection would remain **significant and unavoidable**.

2nd Street/Bryant Street (Study Intersection #12) – The Proposed Project would add traffic to this intersection, which would operate at LOS E in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound through and eastbound left turn movements. The Proposed Project would not contribute traffic to the eastbound left turn, and the project would contribute less than five percent (1.1 percent) to the southbound through movement. Therefore, the project's contribution would be considered **less than significant** in the PM peak hour.

The Embarcadero/Harrison Street (Study Intersection #13) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. However, the Proposed Project would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Proposed Project would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

The Proposed Project would not contribute traffic to critical movements at this intersection during the AM or PM peak hours. Therefore, the project's contribution to cumulative impacts would be considered **less than significant**.

Bryant Street/5th Street/I-80 Eastbound On-ramp (Study Intersection #15) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the southbound through movement. The Proposed Project would contribute less than five percent (1.4 percent) to the critical southbound through movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the northbound right turn movement and the southbound through movement. The Proposed Project would

contribute less than five percent (3.0 percent) to the critical northbound right turn movement. The Proposed Project would also contribute less than five percent (2.5 percent) to the critical southbound through movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

The Proposed Project would cause the intersection of Bryant Street/5th Street/I-80 Eastbound On-ramp to deteriorate from LOS D under year 2030 No Project conditions to LOS E under year 2030 conditions with the Proposed Project. This would be a significant impact.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's impact to Saturday peak hour conditions would remain **significant and unavoidable**.

Harrison Street/5th Street/I-80 Westbound Off-ramp (Study Intersection #16) – The Proposed Project would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound through movement and the northbound right-turn movement (from the off-ramp onto northbound 5th Street). The Proposed Project would contribute less than five percent (4.8 percent) to the critical northbound off-ramp right turn movement. However, the Proposed Project would contribute more than five percent (8.4 percent) to the critical southbound through movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered significant.

As described under Existing plus Project conditions, there are no other feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

4.10.2.3 Reduced Development Alternative (Base Transit Scenario)

This section describes the cumulative traffic impacts associated with the Reduced Development Alternative under the Base Transit Scenario and other anticipated long-term development.

4.10.2.3.1 Ramp Queuing (Reduced Development; Base Transit)

Queues on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Reduced Development Alternative under the Base Transit Scenario.

4.10.2.3.2 Ramp Merge/Diverge (Reduced Development; Base Transit)

Ramp merge/diverge levels of service would change with the addition of other background traffic growth to the mainline traffic volumes on the SFOBB. **Tables 55, 56 and 57** (pages 219 to 221) present ramp merge and diverge levels of service under cumulative (year 2030) conditions, including traffic from the Reduced Development Alternative under the Base Transit Scenario, for the AM, PM, and Saturday peak hours, respectively. Under year 2030 conditions with the Reduced Development Alternative, (identified on **Tables 55, 56 and 57** as "Year 2030 Plus Reduced Development (Base Transit Scenario)"), all on- and off-ramps with the exception of the eastbound off-ramp on the west side of the tunnel would operate at acceptable LOS of D or better during all study peak periods. The eastbound off-ramp on the west side of the Islands would operate at LOS E in the AM, PM, and Saturday peak hours. The proposed project would contribute the majority of the off-ramp traffic, and therefore, the Proposed Project's contribution to these cumulatively-significant impacts would be significant. As noted earlier, there is no feasible mitigation to improve this ramp to acceptable LOS. Therefore, this cumulative impact would be **significant and unavoidable**.

4.10.2.3.3 Freeway and Ramp Operations – Ramp Delays (Reduced Development; Base Transit)

Delays associated with queuing on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Reduced Development Alternative under the Base Transit Scenario.

Under conditions with the existing ramp configuration and with the proposed reconstruction of the westbound ramps, the Reduced Development Alternative's impacts to ramp delays would be **significant and unavoidable**.

4.10.2.3.4 Freeway and Ramp Operations – Mainline Operations: Queuing on Approaches (Reduced Development; Base Transit)

Table 54 on page 217 presents expected queuing on SFOBB approaches in year 2030 without the proposed project. Although the travel demand forecasting models differ regarding the extent of queuing on bridge approaches in year 2030, they both project queuing on all approaches in the peak hours in year 2030. The extent to which the Reduced Development Alternative, under the Base Transit Scenario, would exacerbate westbound queues at the East Bay toll plaza is depicted in **Figure 51** (page 244). Generally, since the SFOBB would operate at capacity during both AM and PM peak hours in year 2030 without the Reduced Development Alternative, all traffic added by the project would increase queues in Downtown San Francisco and the East Bay by a corresponding amount.

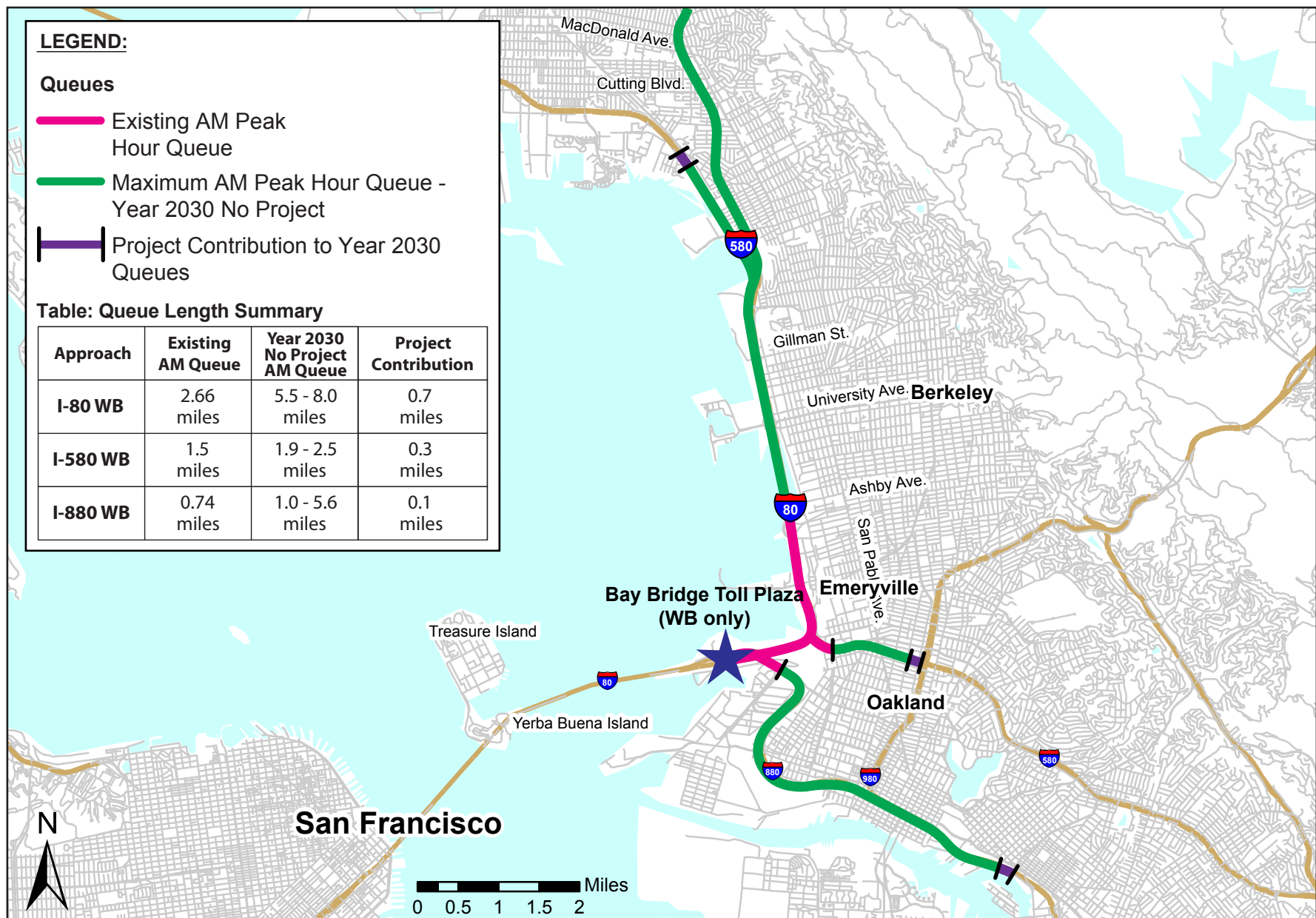
Specifically, the Reduced Development Alternative under the Base Transit Scenario would increase queues in the East Bay by approximately 445 vehicles during the AM peak hour and approximately 467 vehicles during the PM peak hour. Similar to near-term conditions, the Reduced Development Alternative's contribution to cumulative increases to queuing on SFOBB approaches in the East Bay would be **significant and unavoidable**.

The Reduced Development Alternative under the Base Transit Scenario would increase queues in Downtown San Francisco by approximately 190 vehicles during the AM peak hour, approximately 458 vehicles during the PM peak hour, and approximately 468 vehicles during the Saturday peak hour. Also similar to near-term conditions, the Reduced Development Alternative's contribution to cumulative increases to queuing on SFOBB approaches in Downtown San Francisco would be significant and unavoidable.

Overall, similar to near term conditions, impacts to the SFOBB mainline will be **less than significant**, because the traffic on the bridge cannot exceed the capacity of the bridge approaches, which would operate at capacity without the Reduced Development Alternative, effectively metering the amount of traffic that can enter the SFOBB.

4.10.2.3.5 Intersections (Reduced Development; Base Transit)

Intersection peak hour turning movement volumes under Year 2030 No Project conditions were presented in **Figure 45** (page 225). Traffic forecast to be generated by the Reduced Development Alternative under the Base Transit Scenario, as depicted on **Figure 33** (page 144), was added to the Future Year 2030 No Project volumes to determine Year 2030 plus Reduced Development Alternative intersection turning movement volumes. These volumes are shown in **Figure 52** (page 250). Intersection levels of service were calculated for Year 2030 conditions for each scenario, and are presented in **Table 58** (page 228).

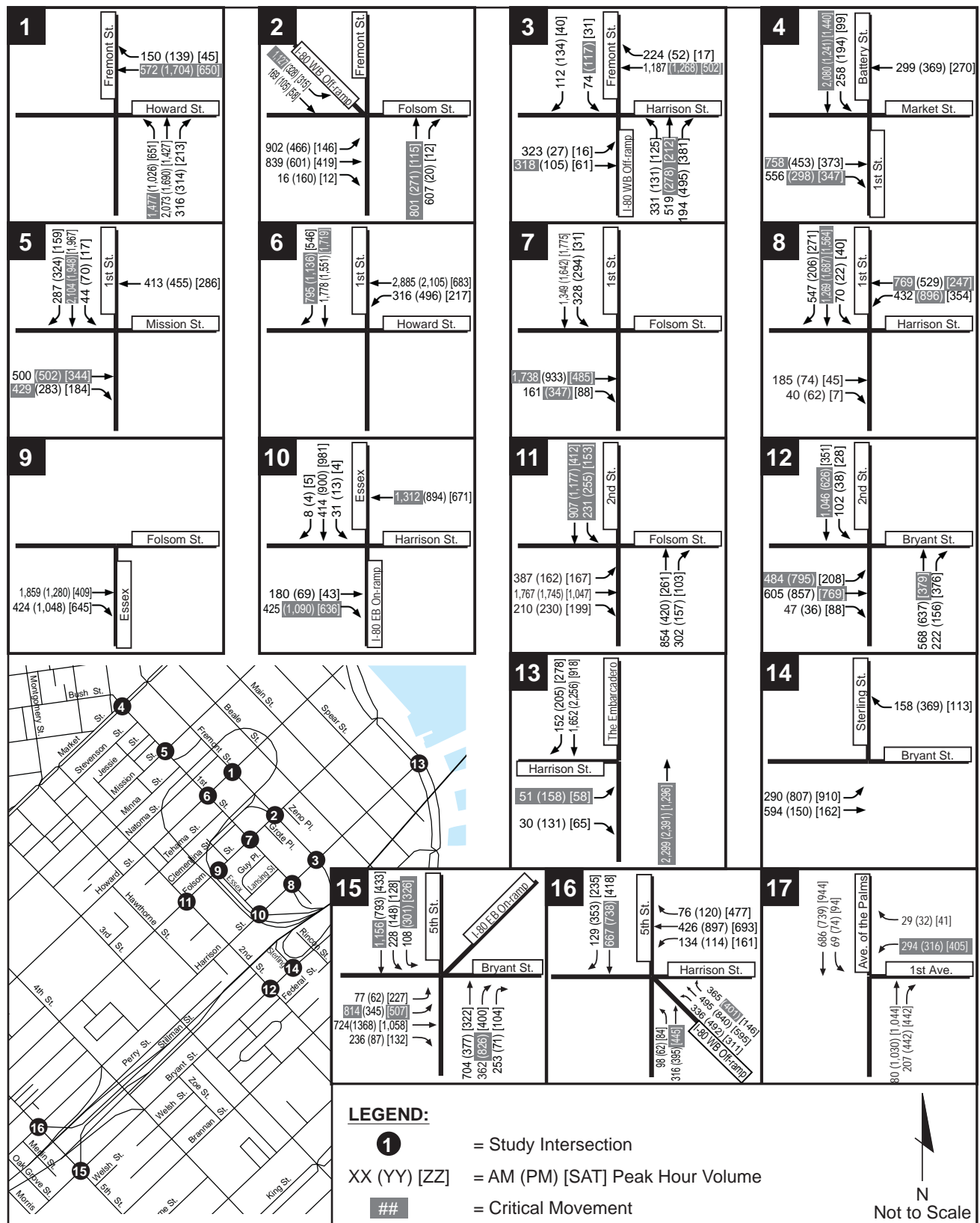


Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

2030 PLUS REDUCED DEVELOPMENT PROJECT (BASE TRANSIT SCENARIO) MAXIMUM EAST BAY QUEUE

FIGURE 50



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS **CUMULATIVE YEAR 2030 PLUS REDUCED DEVELOPMENT ALTERNATIVE** **(BASE TRANSIT SCENARIO) PEAK HOUR INTERSECTION VOLUMES**

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FIGURE 51

In Year 2030 with the Reduced Development Alternative under the Base Transit Scenario, 14 study intersections are expected to operate at LOS E or F in at least one peak hour. The project's contribution to cumulative impacts at each of these intersections is discussed below, to evaluate whether the project's contribution to the future failing condition is cumulatively considerable.

Fremont Street/Howard Street (Study Intersection #1) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F during the PM peak hour under year 2030 No Project conditions. The critical movement in the PM peak hour is the westbound through movement. The Reduced Development Alternative would contribute less than five percent to the critical westbound through movement (0.8 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Folsom Street/I-80 Westbound Off-Ramp (Study Intersection #2) – The intersection of Fremont Street/Folsom Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The critical movements at this intersection are the northbound through and the southeastbound left movements. The Reduced Development Alternative would contribute less than five percent to the critical southeastbound left movement (1.5 percent) and less than five percent to the critical northbound through movement (4.4 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #3) – The intersection of Fremont Street/Harrison Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The Reduced Development Alternative would not contribute traffic to the critical eastbound through movement at this intersection. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

1st Street/Market Street (Study Intersection #4) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The southbound through movement and is a critical movement at this intersection that operates at LOS F in the AM peak hour. The Reduced Development Alternative would contribute less than five percent (2.8 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through movement is a critical movement at this intersection that operates at LOS F in the PM peak hour. The Proposed Project would contribute more than five percent (11.5 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

Because the Reduced Development Alternative's contribution to critical movements at this intersection during the PM peak hour would be considerable, the project's cumulative impact is considered significant. As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through movement is the critical movement at this intersection. The Reduced Development Alternative would contribute more than five percent (7.3 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) - The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The Reduced Development Alternative would not contribute traffic to critical movements operating at LOS E or LOS F during the AM peak hour. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The Reduced Development Alternative would not contribute traffic to the critical southbound right-turn movement at this intersection. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered less than significant.

Because the Reduced Development Alternative would not contribute to critical movements at this intersection in the AM and PM peak hours, the project's contribution to cumulative impacts would be considered **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Reduced Development Alternative would not contribute to the critical eastbound right-turn movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered **less than significant**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection during the PM peak hour are the southbound through movement and the westbound left turn movement. The Reduced Development Alternative would contribute more than five percent (10.6 percent) at this movement during the PM peak hour. Therefore, the project's contribution to cumulative impacts at this intersection would be significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the eastbound right turn movement from Harrison Street onto the I-80 Eastbound On-ramp. The Reduced Development Alternative would contribute less than five percent (1.7 percent) to traffic at this movement. Therefore the project's contribution would be considered **less than significant** in the PM peak hour.

2nd Street/Folsom Street (Study Intersection #11) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Reduced Development Alternative would contribute less than five percent (1.3 percent) to the critical southbound through movement. However, the project would contribute more than five percent (5.6 percent) to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered significant.

The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this

intersection are the southbound left turn and the southbound through movements. The Reduced Development Alternative would contribute less than five percent (1.9 percent) to the critical southbound through movement. However, the project would contribute more than five percent (12.2 percent) to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered cumulatively considerable.

Implementing the Expanded Transit Scenario would reduce the Reduced Development Alternative's contribution to all critical movements to less than five percent in the AM peak hour. Therefore, the project's contribution in the AM peak hour would be less than significant. However, the project's contribution in the PM peak hour would remain above five percent to the critical southbound left turn movement. Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. The Reduced Development Alternative's contribution to cumulative impacts at this intersection would remain **significant and unavoidable**.

2nd Street/Bryant Street (Study Intersection #12) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS E in the PM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the southbound through movement. The Reduced Development Alternative would contribute less than five percent (1.3 percent) on this movement during the PM peak hour. Therefore, the project's contribution would be considered **less than significant** in the PM peak hour.

The Embarcadero/Harrison Street (Study Intersection #13) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. However, the Reduced Development Alternative would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Reduced Development Alternative would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

The Reduced Development Alternative would not contribute traffic to critical movements at this intersection during the AM or PM peak hours. Therefore, the project's contribution to cumulative impacts would be considered **less than significant**.

Bryant Street/5th Street/I-80 Eastbound On-ramp (Study Intersection #15) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the southbound through movement. The Reduced Development Alternative would contribute less than five percent (1.6 percent) to the critical southbound through movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the northbound right turn movement and the southbound left turn movement. The Reduced Development Alternative would contribute less than five percent (3.2 percent) to the critical northbound right turn movement. The Reduced Development Alternative would not contribute traffic to the critical southbound right turn movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

The Reduced Development Alternative would cause the intersection of Bryant Street/5th Street/I-80 Eastbound On-ramp to deteriorate from LOS D under year 2030 No Project conditions to LOS E under year 2030 conditions with the Reduced Development Alternative. This would be a significant impact.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's impact to Saturday peak hour conditions would remain **significant and unavoidable**.

Harrison Street/5th Street/I-80 Westbound Off-ramp (Study Intersection #16) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound through movement and the northbound right-turn movement (from the off-ramp onto northbound 5th Street). The Reduced Development Alternative would contribute more than five percent (5.2 percent) to the critical northbound off-ramp right turn movement. The Reduced Development Alternative would also contribute more than five percent (8.4 percent) to the critical southbound through movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered significant.

As described under Existing plus Project conditions, there are no other feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

4.10.2.4 Reduced Development Alternative with Expanded Transit Service

This section describes the cumulative traffic impacts associated with the Reduced Development Alternative under the Expanded Transit Scenario and other anticipated long-term development.

4.10.2.4.1 Ramp Queuing (Reduced Development; Expanded Transit)

Queues on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Reduced Development Alternative under the Expanded Transit Scenario. As summarized in **Table 38** on page 108 and shown in **Figure 32** on page 95, under the Reduced Development Alternative, queues on roadways approaching the SFOBB would be similar or less than those under the Proposed Project. Without reconstruction of the westbound on-ramp (and associated HOV3+ bypass), queues would extend back just under ½-mile from each of the two westbound on-ramps during the AM and PM peak hours, and approximately 2/3 mile during the Saturday peak hour. With reconstruction of the westbound ramps, queues would be somewhat longer, extending to a maximum of approximately 2/3 mile, approximately to the transit-only westbound ramp.

4.10.2.4.2 Ramp Merge/Diverge (Reduced Development; Expanded Transit)

Ramp merge/diverge levels of service would change with the addition of other background traffic growth to the mainline traffic volumes on the SFOBB. **Tables 55, 56, and 57** present ramp merge and diverge levels of service under cumulative (year 2030) conditions, including traffic from the Reduced Development Alternative under the Expanded Transit Scenario, for the AM, PM, and Saturday peak hours, respectively. Under year 2030 conditions with the Reduced Development Alternative, (identified on **Tables 55, 56, and 57** as "Year 2030 Plus Reduced Development (Expanded Transit Scenario)"), all on- and off-ramps with the exception of the eastbound off-ramp on the west side of the tunnel would operate at acceptable LOS of D or better during all study peak periods. The eastbound off-ramp on the west side of the Islands would operate at LOS E in the AM, PM, and Saturday peak hours. The Reduced Development Alternative would contribute the majority of the off-ramp traffic, and therefore, the Reduced Development Alternative's contribution to these cumulatively-significant impacts would be significant. As noted earlier, there is no feasible mitigation to improve this ramp to acceptable LOS. Therefore, this cumulative impact would be **significant and unavoidable**.

4.10.2.4.3 Ramp Delays (Reduced Development; Expanded Transit)

Delays associated with queuing on Yerba Buena Island approaching the SFOBB on-ramps would be the same in year 2030 as described earlier under near term conditions with the Reduced Development Alternative under the Expanded Transit Scenario. Under the Reduced Development Alternative, without the reconstructed westbound on-ramp, the existing westbound on-ramps would operate at LOS F during the AM, PM and Saturday peak hours with substantial delay. If the separate project to reconstruct the westbound on-ramps, vehicular delay would be just under three minutes during the AM and PM peak hours. There would be minimal delay during the Saturday peak hour since the ramp meters were assumed to be non-operational on the weekends.

Under conditions with the existing ramp configuration and with the proposed reconstruction of the westbound ramps, the Reduced Development Alternative's impacts to ramp delays would be **significant and unavoidable**.

4.10.2.4.4 Mainline Operations: Queuing on Approaches (Reduced Development; Expanded Transit)

Table 54 on page 217 presents expected queuing on SFOBB approaches in year 2030 without the proposed project. Although the travel demand forecasting models differ regarding the extent of queuing on bridge approaches in year 2030, they both project queuing on all approaches in the peak hours in year 2030. The extent to which the Reduced Development Alternative, under the Expanded Transit Scenario, would exacerbate westbound queues at the East Bay toll plaza is depicted in **Figure 53** (page 251). Generally, since the SFOBB would operate at capacity during both AM and PM peak hours in year 2030 without the Reduced Development Alternative, all traffic added by the project would increase queues in Downtown San Francisco and the East Bay by a corresponding amount.

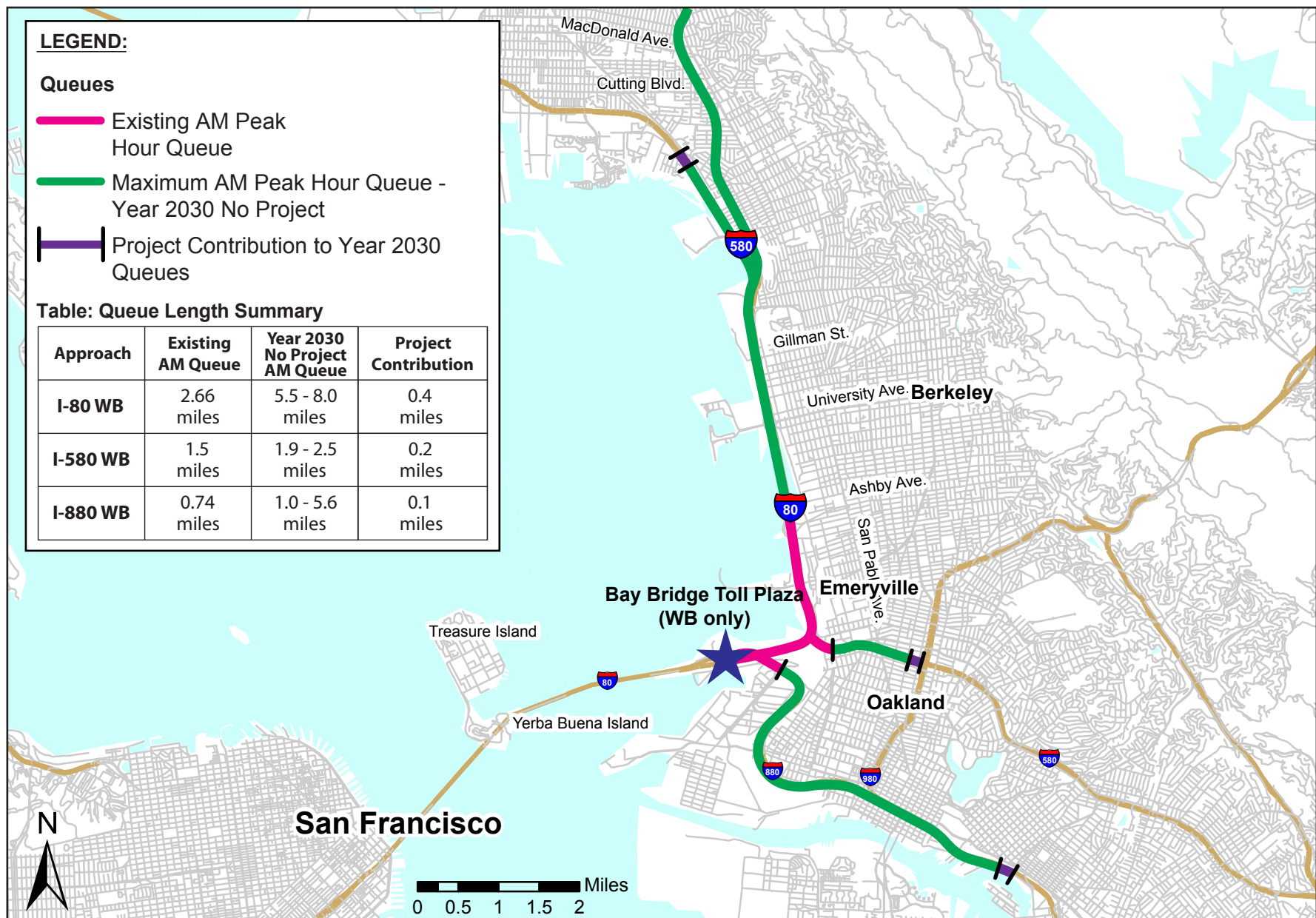
Specifically, the Reduced Development Alternative under the Expanded Transit Scenario would increase queues in the East Bay by approximately 422 vehicles during the AM peak hour and 431 vehicles during the PM peak hour. Similar to near-term conditions, the Reduced Development Alternative's contribution to cumulative increases to queuing on SFOBB approaches in the East Bay would be **significant and unavoidable**.

The Reduced Development Alternative under the Expanded Transit Scenario would increase queues in Downtown San Francisco by approximately 145 vehicles during the AM peak hour and 364 vehicles during the PM peak hour, and would create queues of approximately 406 vehicles during the Saturday peak hour. Also similar to near-term conditions, the Reduced Development Alternative's contribution to cumulative increases to queuing on SFOBB approaches in Downtown San Francisco would be **significant and unavoidable**.

Overall, similar to near term conditions, impacts to the SFOBB mainline will be **less than significant**, because the traffic on the bridge cannot exceed the capacity of the bridge approaches, which would operate at capacity without the Reduced Development Alternative, effectively metering the amount of traffic that can enter the SFOBB.

4.10.2.4.5 Intersections (Reduced Development; Expanded Transit)

Intersection peak hour turning movement volumes under Year 2030 No Project conditions were presented in **Figure 45** (on page 225). Traffic forecast to be generated by the Reduced Development Alternative under the Expanded Transit Scenario, as depicted on **Figure 38** (on page 156), was added to the Future Year 2030 No Project volumes to determine Year 2030 plus Reduced Development Alternative intersection turning movement volumes. These volumes are shown in **Figure 53** (on page **Error! Bookmark not defined.**). Intersection levels of service were calculated for Year 2030 conditions for each scenario, and are presented in **Table 58** (on page 228).

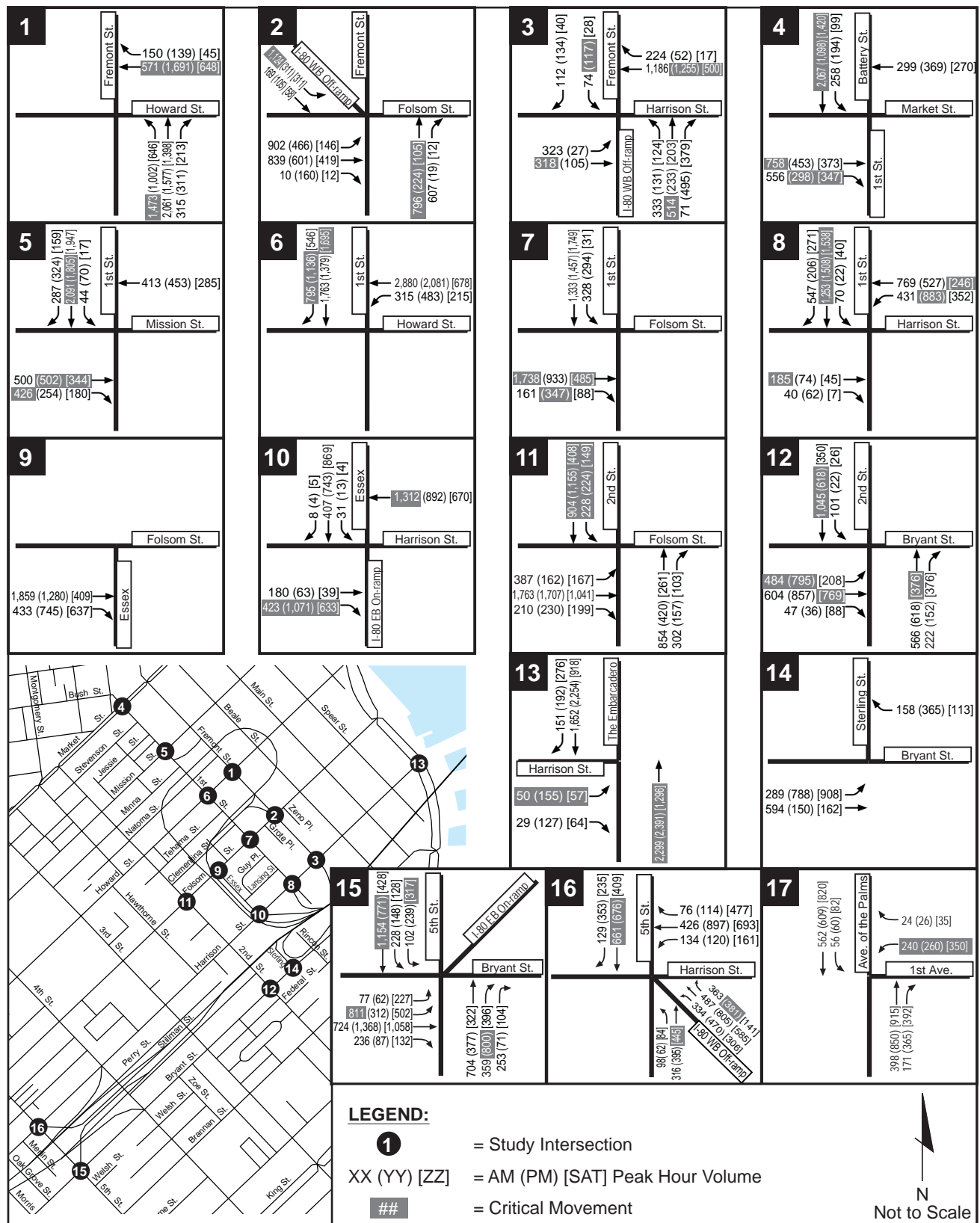


Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

YEAR 2030 PLUS REDUCED DEVELOPMENT PROJECT (EXPANDED TRANSIT SCENARIO) MAXIMUM EAST BAY QUEUE

FIGURE 52



Source: Fehr & Peers, 2009

Treasure Island and Yerba Buena Island Redevelopment Plan TIS

CUMULATIVE YEAR 2030 PLUS REDUCED DEVELOPMENT ALTERNATIVE (EXPANDED TRANSIT SCENARIO) PEAK HOUR INTERSECTION VOLUMES

June 2010
SF07-0340\graphics\TIS\0340-53

FIGURE 53

In Year 2030 with the Reduced Development Alternative under the Expanded Transit Scenario, 14 study intersections are expected to operate at LOS E or F in at least one peak hour. The project's contribution to cumulative impacts at each of these intersections is discussed below, to evaluate whether the project's contribution to the future failing condition is cumulatively considerable.

Fremont Street/Howard Street (Study Intersection #1) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F during the PM peak hour under year 2030 No Project conditions. The critical movement in the PM peak hour is the westbound through movement. The Reduced Development Alternative would contribute less than five percent to the critical westbound through movement (0.6 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Folsom Street/I-80 Westbound Off-Ramp (Study Intersection #2) – The intersection of Fremont Street/Folsom Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The Reduced Development Alternative would contribute less than five percent to the critical southeastbound left movement (1.2 percent) and the critical northbound through movement (3.8 percent). Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

Fremont Street/Harrison Street/I-80 Westbound Off-Ramp (Study Intersection #3) – The intersection of Fremont Street/Harrison Street/I-80 Westbound Off-Ramp is expected to operate at LOS F in the AM peak hour. The Reduced Development Alternative would not contribute traffic to the critical eastbound through movement at this intersection. Therefore, the project's contribution to poor operating conditions at this intersection would be considered **less than significant**.

1st Street/Market Street (Study Intersection #4) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The southbound through movement and is a critical movement at this intersection that operates at LOS F in the AM peak hour. The Reduced Development Alternative would contribute less than five percent (2.2 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through movement is a critical movement at this intersection that operates at LOS F in the PM peak hour. The Proposed Project would contribute more than five percent (10.5 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

Because the Reduced Development Alternative's contribution to critical movements at this intersection during the PM peak hour would be considerable, the project's cumulative impact is considered significant. As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Mission Street (Study Intersection #5) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The southbound through movement is the critical movement at this intersection. The Reduced Development Alternative would contribute more than five percent (6.4 percent) to this movement. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

1st Street/Howard Street (Study Intersection #6) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The Reduced Development Alternative would not contribute traffic to critical movements operating at LOS E or LOS F during the AM peak hour. Therefore, the project's contribution to poor operating conditions in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The Reduced Development Alternative would not contribute traffic to the critical southbound right-turn movement at this intersection. Therefore, the project's contribution to poor operating conditions in the PM peak hour would be considered less than significant.

Because the Reduced Development Alternative would not contribute to critical movements at this intersection in the AM and PM peak hours, the project's contribution to cumulative impacts would be considered **less than significant**.

1st Street/Folsom Street (Study Intersection #7) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Reduced Development Alternative would not contribute to the critical eastbound right-turn movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered **less than significant**.

1st Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #8) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection during the PM peak hour are the southbound through movement and the westbound left movement. The Reduced Development Alternative would contribute more than five percent (9.9 percent) to the southbound through movement during the PM peak hour. Therefore, the project's contribution to cumulative impacts at this intersection would be significant.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

Essex Street/Harrison Street/I-80 Eastbound On-Ramp (Study Intersection #10) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the eastbound right turn movement from Harrison Street onto the I-80 Eastbound On-ramp. The Reduced Development Alternative would contribute less than five percent (1.4 percent) to traffic at this movement. Therefore the project's contribution would be considered **less than significant** in the PM peak hour.

2nd Street/Folsom Street (Study Intersection #11) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Reduced Development Alternative would contribute less than five percent (1.0 percent) to the critical southbound through movement. The project would contribute less than five percent (4.4 percent) to the critical southbound left turn movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound left turn and the southbound through movements. The Reduced Development Alternative would contribute less than five percent (1.5 percent) to the critical southbound through movement. However, the project would contribute more than five percent (11.2 percent) to the

critical southbound left turn movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered cumulatively considerable.

Providing additional traffic lanes at this intersection would require substantial reduction in sidewalk widths, which would be inconsistent with the pedestrian environment encouraged by the City of San Francisco and proposed as part of the Transit Center District Plan currently under study. Therefore, no feasible mitigation measures have been identified to reduce project impacts to less than significant levels. The Reduced Development Alternative's contribution to cumulative impacts at this intersection would remain **significant and unavoidable**.

2nd Street/Bryant Street (Study Intersection #12) – The Reduced Development Alternative would add traffic to this intersection, which would operate at LOS E in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the eastbound left turn and southbound through movements. The Reduced Development Alternative would not contribute to the eastbound left turn movement and the southbound through movement operates acceptably during the PM peak hour. Therefore, the project's contribution would be considered **less than significant** in the PM peak hour.

The Embarcadero/Harrison Street (Study Intersection #13) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. However, the Reduced Development Alternative would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. However, the Reduced Development Alternative would not contribute to the critical northbound through movement at this intersection. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

The Reduced Development Alternative would not contribute traffic to critical movements at this intersection during the AM or PM peak hours. Therefore, the project's contribution to cumulative impacts would be considered **less than significant**.

Bryant Street/5th Street/I-80 Eastbound On-ramp (Study Intersection #15) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the AM peak hour under year 2030 No Project conditions. The critical movement at this intersection is the southbound through movement. The Reduced Development Alternative would contribute less than five percent (1.4 percent) to the critical southbound through movement. Therefore, the project's contribution to traffic in the AM peak hour would be considered less than significant.

The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the northbound right turn movement and the southbound through movement. The Reduced Development Alternative would contribute less than five percent (2.6 percent) to the critical northbound right turn movement. The Reduced Development Alternative would contribute less than five percent (2.3 percent) to the critical southbound right turn movement. Therefore, the project's contribution to traffic in the PM peak hour would be considered less than significant.

The Reduced Development Alternative would cause the intersection of Bryant Street/5th Street/I-80 Eastbound On-ramp to deteriorate from LOS D under year 2030 No Project conditions to LOS E under year 2030 conditions with the Reduced Development Alternative. This would be a significant impact.

As described under Existing plus Project conditions, there are no feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's impact to Saturday peak hour conditions would remain **significant and unavoidable**.

Harrison Street/5th Street/I-80 Westbound Off-ramp (Study Intersection #16) – The Reduced Development Alternative would contribute traffic to this intersection, which would operate at LOS F in the PM peak hour under year 2030 No Project conditions. The critical movements at this intersection are the southbound through movement and the northbound right-turn movement (from the off-ramp onto northbound 5th Street). The Reduced Development Alternative would contribute less than five percent (4.7 percent) to the critical northbound off-ramp right turn movement. However, the Reduced Development Alternative would contribute more than five percent (7.4 percent) to the critical southbound through movement. Therefore, the project's contribution to cumulative impacts at this intersection would be considered significant.

As described under Existing plus Project conditions, there are no other feasible mitigations at this intersection to improve automobile LOS. Therefore, the project's cumulatively-considerable contribution to LOS F conditions in the weekday PM peak hour would remain **significant and unavoidable**.

4.10.3 Cumulative Transit Impacts

This section discusses cumulative transit impacts. Transit delays on the Islands associated with ramp configurations and control devices (stop signs, queues, and/or ramp meters) would not be affected by the addition of cumulative traffic increases. Therefore, the discussion of cumulative transit impacts deals only with impacts associated with long-term growth in transit ridership, particularly as it relates to the Downtown screenlines and with impacts associated with increased congestion in Downtown San Francisco.

4.10.3.1 Proposed Project with Base Transit Service

Cumulative transit impacts were analyzed with respect to both transit capacity utilization and with respect to transit delay in Downtown San Francisco caused by cumulative increases in vehicular traffic.

4.10.3.1.1 Cumulative Transit Capacity Utilization

The screenlines around Downtown San Francisco are expected to experience both growth in demand and in total supply provided. **Table 59** presents the expected capacity utilization for each of the four Downtown screenlines for year 2030 conditions with the Proposed Project, under the Base Transit Scenario. As shown, each of the four screenlines is expected to operate within Muni's standard of 85 percent utilization. Therefore, cumulative impacts to transit associated with the Proposed Project under the Base Transit Scenario are expected to be **less than significant**.

4.10.3.1.2 Cumulative Transit Delay

As described in Section 4.10.2 (Cumulative Traffic Impacts), traffic from the Proposed Project would contribute to significant cumulative impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Proposed Project would contribute significant contributions to cumulative impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Proposed Project would contribute a significant amount of traffic to this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions. The Proposed Project would also cause operations at this intersection to deteriorate from LOS C under 2030 Cumulative No Project Conditions to LOS E under 2030 Cumulative Plus Project Conditions during the Saturday peak hour.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, and 81X-Caltrain Express), one Muni streetcar route (F-Market & Wharves), travel through this intersection during the weekday PM and Saturday peak hours.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Proposed Project's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM and Saturday peak hours, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Proposed Project would create a significant contribution to delay on this approach, the Proposed Project would have a significant impact to transit travel times on the 30X-Stockton Express, 81X-Caltrain Express during the PM and Saturday peak periods.

1st Street/Mission Street – The Proposed Project would contribute a significant amount of traffic to critical movements at this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of six Muni buses (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L/14X-Mission, 38/38L-Geary, 76-Marin Headlands) and several Golden Gate Transit and Samtrans buses travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Proposed Project-generated increases in cumulative intersection delay, and the Proposed Project's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Proposed Project would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service under year 2030 Cumulative No Project Conditions in the AM and PM peak hours.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and Golden Gate Transit bus lines travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the AM and PM peak hours, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB, and the Proposed Project has a significant contribution to the southbound movement; therefore, the Proposed Project's contribution to cumulative travel time impacts to the 10-Townsend at this intersection would be considered significant.

5th Street/Bryant Street/I-80 On-Ramp – The Proposed Project would cause this intersection to deteriorate from LOS D to LOS E under 2030 Cumulative plus Project Conditions during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. During the Saturday peak hour, the northbound approach and the southbound left-turn movement would operate at unacceptable levels of service. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street; therefore, the Proposed Project would only have a significant impact to transit travel times on the 47-Van Ness.

5th Street/Harrison Street/I-80 Off-Ramp – The Proposed Project would contribute significant volumes to this intersection that would operate at LOS F under 2030 Cumulative No Project Conditions in the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 8-Bayshore and 12-Folsom/Pacific run westbound on Harrison Street. The westbound approach is expected to operate at acceptable levels of service; therefore the Proposed Project would not substantially affect these Muni lines. The Proposed Project's contribution to increases in delay on the northbound and southbound approaches would be significant, and the Proposed Project's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Proposed Project's contribution to Cumulative increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **10-Townsend:** 2nd Street/Folsom Street (AM and PM Peak Hours)
- **27-Bryant:** 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan ("TCDP") transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Proposed Project. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Proposed Project's impacts to transit delay would remain **significant and unavoidable**.

TABLE 59 – 2030 PLUS PROJECT MUNI TRANSIT SCREENLINES

	2030 Baseline			Proposed Project (Base Transit Scenario)			Proposed Project (Expanded Transit Scenario)			Reduced Development Alternative (Base Transit Scenario)			Reduced Development Alternative (Expanded Transit Scenario)		
	Riders	Cap	% Utiliz	Project Trips	Total Riders	% Utiliz	Project Trips	Total Riders	% Utiliz	Project Trips	Total Riders	% Utiliz	Project Trips	Total Riders	% Utiliz
AM Peak Hour															
Northeast	2,986	3,857	77%	17	3,003	78%	28	3,013	78%	14	2,999	78%	23	3,008	78%
Northwest	8,891	11,983	74%	44	8,935	75%	71	8,962	75%	35	8,926	74%	58	8,949	75%
Southwest	7,420	10,197	73%	89	7,509	74%	143	7,563	74%	71	7,491	73%	116	7,536	74%
Southeast	7,661	10,045	76%	10	7,671	76%	16	7,677	76%	8	7,669	76%	13	7,674	76%
Total	26,958	36,082	75%	160	27,118	75%	258	27,215	75%	128	27,085	75%	210	27,167	75%
PM Peak Hour															
Northeast	3,105	4,699	66%	25	3,130	67%	41	3,146	67%	22	3,126	67%	35	3,140	67%
Northwest	8,064	11,612	69%	65	8,129	70%	106	8,170	70%	55	8,119	70%	91	8,155	70%
Southwest	8,052	9,940	81%	130	8,182	82%	212	8,264	83%	111	8,163	82%	181	8,233	83%
Southeast	8,809	10,703	82%	14	8,823	82%	24	8,833	83%	12	8,821	82%	20	8,829	82%
Total	28,030	36,954	76%	234	28,264	76%	383	28,413	77%	200	28,229	76%	327	28,357	76%
Source: Transit Center District Plan – Transit Network Analysis, AECOM, 2009; and Fehr & Peers, 2009.															

4.10.3.2 Proposed Project with Expanded Transit Service

Cumulative transit impacts were analyzed with respect to both transit capacity utilization and with respect to transit delay in Downtown San Francisco caused by cumulative increases in vehicular traffic.

4.10.3.2.1 Cumulative Transit Capacity Utilization

The screenlines around Downtown San Francisco are expected to experience both growth in demand and in total supply provided. **Table 59** presents the expected capacity utilization for each of the four Downtown screenlines for year 2030 conditions with the Proposed Project, under the Expanded Transit Scenario. As shown, each of the four screenlines is expected to operate within Muni's standard of 85 percent utilization. Therefore, cumulative impacts to transit associated with the Proposed Project under the Expanded Transit Scenario are expected to be **less than significant**.

4.10.3.2.2 Cumulative Transit Delay

As described in Section 4.10.2 (Cumulative Traffic Impacts), traffic from the Proposed Project would contribute to significant cumulative impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Proposed Project would contribute significant contributions to cumulative impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Proposed Project would contribute a significant amount of traffic to this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Proposed Project's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM and Saturday peak hours, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Proposed Project would create a significant contribution to delay on this approach, the Proposed Project would have a significant impact to transit travel times on the 30X-Stockton Express during the PM peak hour.

1st Street/Mission Street – The Proposed Project would contribute a significant amount of traffic to critical movements at this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Proposed Project-generated increases in cumulative intersection delay, and the Proposed Project's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Proposed Project would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service under year 2030 Cumulative No Project Conditions in the AM and PM peak hours.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and 19 Golden Gate Transit bus lines (2, 4, 8, 18, 24, 27, 38, 44, 54, 56, 58, 72, 73, 74, 76, 10, 70, 80, 101) travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the AM and PM peak hours, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB, and the Proposed Project has a significant contribution to the southbound movement; therefore, the Proposed Project's contribution to cumulative travel time impacts to the 10-Townsend at this intersection would be considered significant.

5th Street/Bryant Street/I-80 On-Ramp – The Proposed Project would cause this intersection to deteriorate from LOS D to LOS E under 2030 Cumulative plus Project Conditions during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. During the Saturday peak hour, the northbound approach and the southbound left-turn movement would operate at unacceptable levels of service. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street; therefore, the Proposed Project would only have a significant impact to transit travel times on the 47-Van Ness.

5th Street/Harrison Street/I-80 Off-Ramp – The Proposed Project would contribute significant volumes to this intersection that would operate at LOS F under 2030 Cumulative No Project Conditions in the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 8-Bayshore and 12-Folsom/Pacific run westbound on Harrison Street. The westbound approach is expected to operate at acceptable levels of service; therefore the Proposed Project would not substantially affect these Muni lines. The Proposed Project's contribution to increases in delay on the northbound and southbound approaches would be significant, and the Proposed Project's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Proposed Project's contribution to Cumulative increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **10-Townsend:** 2nd Street/Folsom Street (AM and PM Peak Hours)
- **27-Bryant:** 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan (“TCDP”) transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Proposed Project. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Proposed Project’s impacts to transit delay would remain **significant and unavoidable**.

4.10.3.3 Reduced Development Alternative with Base Transit Service

Cumulative transit impacts were analyzed with respect to both transit capacity utilization and with respect to transit delay in Downtown San Francisco caused by cumulative increases in vehicular traffic.

4.10.3.3.1 Cumulative Transit Capacity Utilization

The screenlines around Downtown San Francisco are expected to experience both growth in demand and in total supply provided. **Table 59** presents the expected capacity utilization for each of the four Downtown screenlines for year 2030 conditions with the Reduced Development Project, under the Base Transit Scenario. As shown, each of the four screenlines is expected to operate within Muni’s standard of 85 percent utilization. Therefore, cumulative impacts to transit associated with the Reduced Development Project under the Base Transit Scenario are expected to be **less than significant**.

4.10.3.3.2 Cumulative Transit Delay

As described in Section 4.10.2 (Cumulative Traffic Impacts), traffic from the Reduced Development Alternative would contribute to significant cumulative impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Reduced Development Alternative would contribute significant contributions to cumulative impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Reduced Development Alternative would contribute a significant amount of traffic to this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Reduced Development Alternative’s contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM and Saturday peak hours, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Reduced Development Alternative would create a significant contribution to delay on

this approach, the Reduced Development Alternative would have a significant impact to transit travel times on the 30X-Stockton Express during the PM peak hour.

1st Street/Mission Street – The Reduced Development Alternative would contribute a significant amount of traffic to critical movements at this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Reduced Development Alternative -generated increases in cumulative intersection delay, and the Reduced Development Alternative's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Reduced Development Alternative would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service under year 2030 Cumulative No Project Conditions in the AM and PM peak hours.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and Golden Gate Transit bus lines travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the AM and PM peak hours, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB, and the Reduced Development Alternative has a significant contribution to the southbound movement; therefore, the Reduced Development Alternative's contribution to cumulative travel time impacts to the 10-Townsend at this intersection would be considered significant.

5th Street/Bryant Street/I-80 On-Ramp – The Reduced Development Alternative would cause this intersection to deteriorate from LOS D to LOS E under 2030 Cumulative plus Project Conditions during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and 5th Street. During the Saturday peak hour, the northbound approach and the southbound left-turn movement would operate at unacceptable levels of service. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street; therefore, the Reduced Development Alternative would only have a significant impact to transit travel times on the 47-Van Ness.

5th Street/Harrison Street/I-80 Off-Ramp – The Reduced Development Alternative would contribute significant volumes to this intersection that would operate at LOS F under 2030 Cumulative No Project Conditions in the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 8-Bayshore and 12-Folsom/Pacific run westbound on Harrison Street. The westbound approach is expected to operate at acceptable levels of service; therefore the Reduced Development Alternative would not substantially affect these Muni lines. The Reduced Development Alternative's contribution to increases in delay on the northbound and

southbound approaches would be significant, and the Reduced Development Alternative's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Reduced Development Alternative's contribution to Cumulative increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **10-Townsend:** 2nd Street/Folsom Street (AM and PM Peak Hours)
- **27-Bryant:** 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan ("TCDP") transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Reduced Development Alternative. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Reduced Development Alternative's impacts to transit delay would remain **significant and unavoidable**.

4.10.3.4 Reduced Development Alternative with Expanded Transit Service

Cumulative transit impacts were analyzed with respect to both transit capacity utilization and with respect to transit delay in Downtown San Francisco caused by cumulative increases in vehicular traffic.

4.10.3.4.1 Cumulative Transit Capacity Utilization

The screenlines around Downtown San Francisco are expected to experience both growth in demand and in total supply provided. **Table 59** presents the expected capacity utilization for each of the four Downtown screenlines for year 2030 conditions with the Reduced Development Project, under the Expanded Transit Scenario. As shown, each of the four screenlines is expected to operate within Muni's standard of 85 percent utilization. Therefore, cumulative impacts to transit associated with the Reduced Development Project under the Expanded Transit Scenario are expected to be **less than significant**.

4.10.3.4.2 Cumulative Transit Delay

As described in Section 4.10.2 (Cumulative Traffic Impacts), traffic from the Reduced Development Alternative with Expanded Transit would contribute to significant cumulative impacts at several intersections in Downtown San Francisco. Increases in intersection vehicle delay may also increase delay for transit lines using those intersections. The Reduced Development Alternative with Expanded Transit would contribute significant contributions to cumulative impacts at six intersections in one or more peak hours.

1st Street/Market Street – The Reduced Development Alternative would contribute a significant amount of traffic to this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of 13 Muni bus routes (2-Clement, 3-Jackson, 5-Fulton, 6-Parnassus, 9/9L-San Bruno, 21-Hayes, 30-Stockton, 30X-Marina Express, 31-Balboa, 38/38L/38X-Geary, 71/71L-Haight/Noriega, 76-Marin Headlands, 81X Caltrain Express), one Muni streetcar route (F-Market & Wharves) travel through this intersection during the weekday PM peak hour.

The intersection approaches on Market Street would operate at acceptable levels of service (LOS D or better), so the Reduced Development Alternative's contribution of traffic on Market Street approaches would not significantly impact transit routes on the east and west approaches. During the weekday PM and Saturday peak hours, the southbound movement would operate at LOS F. Transit routes that would be affected (i.e., those that approach the intersection traveling southbound) include the 30X-Stockton Express.

These lines would experience increases in delay due to congestion on Bush Street, Battery Street, and 1st Street. Since the Reduced Development Alternative would create a significant contribution to delay on this approach, the Proposed Project would have a significant impact to transit travel times on the 30X-Stockton Express during the PM peak hour.

1st Street/Mission Street – The Reduced Development Alternative would contribute a significant amount of traffic to critical movements at this intersection that would operate at LOS F conditions in the PM peak hour under year 2030 Cumulative No Project Conditions.

A total of six Muni bus (5-Fulton, 6-Parnassus, 10-Townsend, 14/14L-Mission, 38/38L-Geary, 71/71L-Haight-Noriega, 76-Marin Headlands), eight Golden Gate Transit bus lines (10, 54, 70, 72, 73, 76, 80, 101) and three Samtrans buses (292, 391, 397) travel through this intersection. However, all approaches to this intersection include dedicated transit-only lanes; therefore, transit routes serving this intersection would not be affected by Reduced Development Alternative-generated increases in cumulative intersection delay, and the Reduced Development Alternative's contribution to cumulative transit travel time impacts at this intersection would be less than significant.

2nd Street/Folsom Street – The Reduced Development Alternative would contribute a significant amount of traffic to movements at this intersection that would operate at unacceptable levels of service under year 2030 Cumulative No Project Conditions in the AM and PM peak hours.

Three Muni bus lines (10-Townsend, 12-Folsom/Pacific, 76-Marin Headlands) and Golden Gate Transit bus lines travel through this intersection. Transit lines at this intersection share lanes with mixed-flow traffic along both Folsom Street and 2nd Street. During the AM and PM peak hours, the intersection would operate with substantial amounts of vehicle delay, primarily as a result of SFOBB-destined traffic. Folsom Street has four eastbound travel lanes at this intersection. Transit uses the north-most lane, which does not lead to an on-ramp to the SFOBB and would be less congested than the southern lanes; therefore, project contributions to congestion on Folsom Street would have a minimal effect to operations on the 12-Folsom/Pacific, 76-Marin Headlands, and Golden Gate Transit buses, which travel on Folsom Street.

The 10-Townsend would need to maneuver through northbound and southbound mixed-flow traffic destined for the SFOBB, and the Reduced Development Alternative has a significant contribution to the southbound movement; therefore, the Reduced Development Alternative's contribution to cumulative travel time impacts to the 10-Townsend at this intersection would be considered significant.

5th Street/Bryant Street/I-80 On-Ramp – The Reduced Development Alternative would cause this intersection to deteriorate from LOS D to LOS E under 2030 Cumulative plus Project Conditions during the Saturday peak hour.

Three Muni bus lines travel through this intersection (8X/8AX/8BX-Bayshore Express, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Bryant Street and

5th Street. During the Saturday peak hour, the northbound approach and the southbound left-turn movement would operate at unacceptable levels of service. The 8X/8AX/8BX-Bayshore Express and 27-Bryant travel eastbound on Bryant Street; therefore, the Reduced Development Alternative would only have a significant impact to transit travel times on the 47-Van Ness.

5th Street/Harrison Street/I-80 Off-Ramp – The Reduced Development Alternative would contribute significant volumes to this intersection that would operate at LOS F under 2030 Cumulative No Project Conditions in the PM peak hour.

Four Muni bus routes travel through this intersection (8X/8AX/8BX-Bayshore Express, 12-Folsom/Pacific, 27-Bryant, 47-Van Ness). Transit lines at this intersection share lanes with mixed-flow traffic along both Harrison Street and 5th Street. During the PM peak hour, the northbound, southbound, and off-ramp approaches would operate at unacceptable levels of service. The 8-Bayshore and 12-Folsom/Pacific run westbound on Harrison Street. The westbound approach is expected to operate at acceptable levels of service; therefore the Reduced Development Alternative would not substantially affect these Muni lines. The Reduced Development Alternative's contribution to increases in delay on the northbound and southbound approaches would be significant, and the Reduced Development Alternative's impacts to transit travel times of the 27-Bryant and 47-Van Ness would be considered significant.

In summary, the Reduced Development Alternative's contribution to Cumulative increases in delay at five intersections would result in a cumulative impact to the following transit lines, as discussed above:

- **10-Townsend:** 2nd Street/Folsom Street (AM and PM Peak Hours)
- **27-Bryant:** 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)
- **30X-Stockton Express:** 1st Street/Market Street (PM Peak Hour)
- **47-Van Ness:** 5th Street/Bryant Street/I-80 On-Ramp; 5th Street/Harrison Street/I-80 Off-Ramp (PM Peak Hour)

Appropriate mitigation measures for these impacts include transit preferential elements, such as transit-only lanes, transit preferential signal treatments, or other amenities that would improve the ability of transit vehicles to bypass area-wide congestion. The City of San Francisco is currently developing the Transit Center District Plan ("TCDP") transportation planning effort. The TCDP would allow higher-density development in the area surrounding the proposed new Transbay Transit Center in Downtown San Francisco. As part of this work, the City is contemplating changes to the transportation network in the South of Market area designed to accommodate this increased development and improve overall transit circulation. At the time this analysis was conducted, the proposed transit network changes were not defined enough to include in the analysis. As part of the TCDP analysis, the City Planning Department should account for traffic increases associated with the Reduced Development Alternative. However, because the Plan is not finalized and its environmental review is not yet complete, implementation of measures to improve transit circulation in the area are uncertain and the Reduced Development Alternative's impacts to transit delay would remain **significant and unavoidable**.

5. MITIGATION AND IMPROVEMENT MEASURES

This chapter presents the transportation mitigation measures that would be required to reduce the impacts of the Proposed Project and Reduced Development Alternative. **Table 60** summarizes significant project impacts identified in this report and **Table 61** summarizes significant cumulative impacts to which the Proposed Project or Reduced Development Alternative contribute considerably. In some cases, mitigation measures would reduce the magnitude of the project's impacts, but not to less-than-significant levels. Therefore, this chapter describes the level of significance following implementation of the recommended mitigation measure.

5.1 TRAFFIC

5.1.1 Proposed Project with Base Transit Service

Mitigation Measure 1 – Implement the Expanded Transit Scenario

As a means to reduce vehicular travel to and from the Islands, additional transit capacity shall be provided. The project sponsors shall work with WETA and SFMTA to develop and implement the Proposed Project's transit operating plan. Elements of the plan include but are not limited to:

- Additional ferry service to reduce peak period headways from 50-minutes to increase frequencies to as much as 15-minute headways during the AM and PM peak periods
- Increased frequency on the Muni Route 108-Treasure Island service to reduce peak period headways from 15 minutes to as low as 7-minute headways in the AM peak period and as low as 5 minutes in the PM peak period.
- New bus service to another location in San Francisco (e.g., to the San Francisco Civic Center area) with frequencies as low as every 12-minutes during the AM and PM peak periods. Service shall be provided between approximately 5 AM and 10 PM.

Changes to the proposed East Bay bus service are not suggested as part of this Mitigation Measure. Although specific headways are suggested as part of this Mitigation Measure, SFMTA and WETA would maintain the authority to modify service levels and routes as part of their ongoing system-wide operations management.

The additional transit capacity (in terms of increased frequencies) and transit accessibility (due to a new route) to San Francisco has been design to reduce transit travel times and has been design to make transit use a more attractive travel mode.

Implementation of Expanded Transit Service would reduce auto trip generation such that the project's impacts to the eastbound off-ramp diverge section would be reduced. However, as illustrated in **Tables 36** and **37** (pages 99 and 100) for the weekday PM and Saturday peak hours, respectively, this would have only a slight benefit to congestion around the off-ramp diverge section and the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

If the existing westbound ramp configuration remains in place, implementation of the Expanded Transit Scenario would reduce auto trip generation such that the project's impacts to ramp delays at the two stop controlled westbound on-ramps would be reduced. However, as illustrated in **Tables 35, 36** and **37** (pages 99 to 100) for the weekday AM and PM and Saturday peak hours, respectively, autos would still experience delay consistent with LOS F and the project's impacts to delay approaching the on-ramps would remain **significant and unavoidable**.

TABLE 60 – SUMMARY OF SIGNIFICANT IMPACTS (EXISTING PLUS PROJECT)

Impact	Proposed Project (Base Transit Scenario)	Proposed Project (Expanded Transit Scenario)	Reduced Development Alternative (Base Transit Scenario)	Reduced Development Alternative (Expanded Transit Scenario)
Ramp Merge/Diverge				
Eastbound Off-ramp on West Side of Island	X	X	X	X
Ramp Delays				
Westbound On-ramps under Existing Configuration	X	X	X	X
Westbound On-ramp under Reconstructed Configuration	X	X	X	X
Mainline Operations: Queuing on Approaches				
East Bay Approaches to SFOBB	X	X	X	X
San Francisco Approaches to SFOBB	X	X	X	X
Intersection Operations				
First Street / Market Street	X	X	X	X
First Street / Mission Street	X	X	X	X
First Street / Folsom Street	X	X	X	X
First Street / Harrison Street / I-80 Eastbound On-ramp	X	X	X	X
Second Street / Folsom Street	X	X	X	X
Bryant Street / Fifth Street / I-80 Eastbound On-ramp	X	X	X	X
Harrison Street / 5 th Street / I-80 Eastbound Off-ramp	X	X	X	X
Transit Capacity Utilization				
Muni Demand Exceeding Available Capacity	X		X	
Ferry Demand Exceeding Available Capacity				
AC Transit Demand Exceeding Available Capacity				

TABLE 60 – SUMMARY OF SIGNIFICANT IMPACTS (EXISTING PLUS PROJECT)

Impact	Proposed Project (Base Transit Scenario)	Proposed Project (Expanded Transit Scenario)	Reduced Development Alternative (Base Transit Scenario)	Reduced Development Alternative (Expanded Transit Scenario)
Downtown Screenline Analysis				
Muni Demand Exceeding Available Capacity				
Downtown Transit Delay Impacts				
Traffic Impacts Intersections with Transit Service	X	X	X	X
On-Island Transit Circulation				
Queues Block Muni Operations under Existing Ramp Configuration	X	X	X	X
Queues Block AC Transit Operations under Existing Ramp Configuration	X	X	X	X
Queues Block Muni Operations under Reconstructed Ramp Configuration	X			
Queues Block AC Transit Operations under Reconstructed Ramp Configuration	X	X	X	X
Parking				
Parking Maximums may cause Muni Demand to Further Exceed Available Capacity if	X		X	
Construction				
Construction Management Plan	X	X	X	X
Source: Fehr & Peers, 2009				

TABLE 61 – SUMMARY OF SIGNIFICANT IMPACTS (CUMULATIVE CONDITIONS)

Impact	Proposed Project (Base Transit Scenario)	Proposed Project (Expanded Transit Scenario)	Reduced Development Alternative (Base Transit Scenario)	Reduced Development Alternative (Expanded Transit Scenario)
Ramp Merge/Diverge				
Eastbound Off-ramp on West Side of Island	X	X	X	X
Ramp Delays				
Westbound On-ramps under Existing Configuration	X	X	X	X
Westbound On-ramp under Reconstructed Configuration	X	X	X	X
Mainline Operations: Queuing on Approaches				
East Bay Approaches to SFOBB	X	X	X	X
San Francisco Approaches to SFOBB	X	X	X	X
Intersection Operations				
First Street / Market Street	X	X	X	X
First Street / Mission Street	X	X	X	X
First Street / Harrison Street / I-80 Eastbound On-ramp	X	X	X	X
Second Street / Folsom Street	X	X	X	X
Bryant Street / Fifth Street / I-80 Eastbound On-ramp	X	X	X	X
Harrison Street / Fifth Street / I-80 Eastbound On-ramp	X	X	X	X
Transit Capacity Utilization				
Muni Demand Exceeding Available Capacity	X		X	
Ferry Demand Exceeding Available Capacity				
AC Transit Demand Exceeding Available Capacity				

TABLE 61 – SUMMARY OF SIGNIFICANT IMPACTS (CUMULATIVE CONDITIONS)

Impact	Proposed Project (Base Transit Scenario)	Proposed Project (Expanded Transit Scenario)	Reduced Development Alternative (Base Transit Scenario)	Reduced Development Alternative (Expanded Transit Scenario)
Downtown Screenline Analysis				
Muni Demand Exceeding Available Capacity				
Downtown Transit Delay Impacts				
Traffic Impacts Intersections with Transit Service	X	X	X	X
On-Island Transit Circulation				
Queues Block Muni Operations under Existing Ramp Configuration	X	X	X	X
Queues Block AC Transit Operations under Existing Ramp Configuration	X	X	X	X
Queues Block Muni Operations under Reconstructed Ramp Configuration	X			
Queues Block AC Transit Operations under Reconstructed Ramp Configuration	X	X	X	X
Construction				
Construction Management Plan	X	X	X	X
Source: Fehr & Peers, 2009				

With reconstruction of the westbound ramps, implementation of the Expanded Transit Scenario would reduce auto trip generation such that the project's impacts to ramp delays at the ramp meter at the reconstructed westbound on-ramp would be reduced by nearly one-half. However, as illustrated in **Table 34** (page 98), autos would still experience delay consistent with LOS F and the project's impacts to delay approaching the on-ramps would remain **significant and unavoidable**.

Implementation of the Expanded Transit Scenario would reduce auto trip generation such that the project's impacts to queues approaching the SFOBB from the East Bay would be reduced. However, the project would continue to increase queues on the East Bay bridge approaches during the AM peak hour, which would be a **significant and unavoidable** impact.

Implementation of the Expanded Transit Scenario would reduce auto trip generation such that the project's impacts to queues approaching the SFOBB from Downtown San Francisco would be reduced. However, the project would continue to increase queues on the bridge approaches from Downtown San Francisco during the PM peak hour, which would be a **significant and unavoidable** impact.

5.1.2 Proposed Project with Expanded Transit Service

No feasible mitigation measures were identified to reduce traffic impacts to less than significant levels under this scenario.

5.1.3 Reduced Development Alternative with Base Transit Service

Mitigation Measure 1 – Implement the Expanded Transit Scenario

As a means to reduce vehicular travel to and from the Islands, additional transit capacity shall be provided. The project sponsors shall work with WETA and SFMTA to develop and implement the Proposed Project's transit operating plan. Elements of the plan include but are not limited to:

- Additional ferry service to reduce peak period headways from 50-minutes to increase frequencies to as much as 15-minute headways during the AM and PM peak periods
- Increased frequency on the Muni Route 108-Treasure Island service to reduce peak period headways from 15 minutes to as low as 7-minute headways in the AM peak period and as low as 5 minutes in the PM peak period.
- New bus service to another location in San Francisco (e.g., to the San Francisco Civic Center area) with frequencies as low as every 12-minutes during the AM and PM peak periods. Service shall be provided between approximately 5 AM and 10 PM.

Changes to the proposed East Bay bus service are not suggested as part of this Mitigation Measure. Although specific headways are suggested as part of this Mitigation Measure, SFMTA and WETA would maintain the authority to modify service levels and routes as part of their ongoing system-wide operations management.

The additional transit capacity (in terms of increased frequencies) and transit accessibility (due to a new route) to San Francisco has been design to reduce transit travel times and has been design to make transit use a more attractive travel mode.

Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to the eastbound off-ramp diverge section would be reduced. However, as illustrated in **Tables 36** and **37** (pages 99 and 100) for the weekday PM and Saturday peak hours, respectively, this would have only a slight benefit to congestion around the off-ramp diverge section and the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

Under conditions with the existing westbound ramps, implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to delays at the stop controlled westbound on-ramps would be reduced. However, as illustrated in **Tables 35 to 37** (pages 99 to 100) for the weekday AM and PM and Saturday peak hours, respectively, this would have only a slight benefit to reducing delays, which would still be consistent with LOS F conditions and the project's impacts to this ramp diverge section would remain **significant and unavoidable**.

Under conditions with the separately-proposed reconstruction of the westbound ramps, implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to delays at the stop controlled westbound on-ramps would be reduced. In the AM peak hour, volumes approaching the westbound on-ramp would be less than the capacity of the ramp and queues and delays would be eliminated. However, as illustrated in **Tables 34** (page 98) this mitigation measure would have only a slight benefit to reducing delays in the PM peak hour, which would still be consistent with LOS F conditions. Therefore, the project's impacts to delays at the reconstructed westbound on-ramp in the PM peak hour would remain **significant and unavoidable**.

Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to queues on SFOBB approaches in the AM peak hour would be reduced. However, as discussed in the following section, the Reduced Development Alternative would continue to contribute substantially to queuing in the East Bay. Therefore, the Reduced Development Alternative's impacts to queues approaching the SFOBB from the East Bay would remain **significant and unavoidable**.

Implementation of the Expanded Transit Scenario would reduce auto trip generation of the Reduced Development Alternative such that the project's impacts to queues on SFOBB approaches in the PM peak hour would be reduced. However, as discussed in the following section, the Reduced Development Alternative would continue to contribute substantially to queuing in San Francisco approaching the SFOBB during the PM peak hour. Therefore, the Reduced Development Alternative's impacts to queues approaching the SFOBB from San Francisco would remain **significant and unavoidable**.

5.1.4 Reduced Development Alternative with Expanded Transit Service

No feasible mitigation measures were identified to reduce traffic impacts to less than significant levels under this scenario.

5.2 TRANSIT

5.2.1 Proposed Project with Base Transit Service

Mitigation Measure 1 – Implement the Expanded Transit Scenario.

With implementation of the Expanded Transit Service, the project's transit demand would be accommodated within Muni's capacity threshold of 85 percent occupancy, which would reduce the impact on transit to a less than significant level. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, this impact would remain **significant and unavoidable**.

Under conditions with the existing westbound ramps, implement the Expanded Transit Scenario. With implementation of the Expanded Transit Service, the project's auto traffic generation would be reduced such that queues would be reduced to much smaller levels (between 0 and 400 feet) at each on-ramp during weekday peak hours, reducing their impacts on transit circulation, but would remain approximately 1/3 mile during Saturday peak hours. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to Muni operations would remain **significant and unavoidable**.

Under conditions with the existing westbound ramps, with implementation of the Expanded Transit Service, the project's auto traffic generation would be reduced such that queues would be reduced to much smaller levels (between 0 and 400 feet) at each on-ramp during weekday peak hours, reducing their impacts on transit circulation, but would remain approximately 1/3 mile during Saturday peak hours. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to Muni operations would remain **significant and unavoidable**.

Mitigation Measure 2 – To ensure that transit circulation is not adversely affected by queues approaching the SFOBB on-ramps, a continuous southbound transit-only lane shall be provided from the transit center on Treasure Island to the westbound on-ramp to the SFOBB on the west side of Yerba Buena Island.

Implementation of Mitigation Measure 2 would only be triggered if the extent of actual vehicle queuing impacts the proposed 108-Treasure Island on Treasure Island Road and creates delays for Muni buses accessing the westbound transit-only on-ramp. As such, throughout the life of the project, the TITMA, in consultation with SFMTA and using SFMTA's methodology, shall monitor the length and duration of potential queues on Treasure Island Road and the associated delays to Muni service. If the queues formed between First Street and the westbound on-ramp on the west side of Yerba Buena Island result in an operational delay to Muni service equal to or greater than the prevailing headway during the AM, PM or Saturday peak periods, TITMA shall implement a southbound transit-only lane between First Street on Treasure Island and the transit- and emergency vehicle-only westbound Bay Bridge on-ramp. In addition to providing a transit-only lane, TITMA shall stripe sharrows in the southbound mixed flow lane between First Street and the westbound on-ramp. The implementation of a transit-only lane would be triggered if impacts are observed over the course of six months at least 50 percent of the time during the AM, PM, or Saturday peak periods.

Implementation of Mitigation Measure 2 to provide a transit and emergency vehicle-only lane between First Street on Treasure Island and the westbound Bay Bridge on-ramp would allow Muni vehicles to bypass vehicle queues that may occur and therefore, the impact to Muni operations would be reduced to a **less-than-significant** level.

Implementation of this mitigation measure would entail the following:

- Elimination or reduction of the proposed median on Treasure Island Road between First Street and just south of Macalla Road; and
- Elimination of the proposed southbound bicycle lane on Treasure Island and Hillcrest Roads after the intersection with Macalla Road. Bicyclists would still be able to use Class I bicycle paths and Class II bicycle lanes proposed on Macalla Road to connect between the Islands and the bicycle path on the new eastern span of the Bay Bridge. Similarly, although AC Transit vehicles would not be using the westbound on-ramps, queues from the westbound on-ramp on the east side of Yerba Buena Island would interfere with AC Transit travel between Treasure Island and the eastbound on-ramp to the SFOBB. AC Transit vehicles would travel in this queue nearly for its entire length, from just north of Macalla Road to the eastbound on-ramp to the SFOBB. This would be considered a significant impact to AC Transit operations.

Under conditions with the reconstructed westbound ramps, implement Mitigation Measure 2. However, since this improvement would extend only to the transit-only westbound on-ramp because there is not sufficient right-of-way to extend a transit-only lane beyond the transit-only westbound on-ramp, AC Transit vehicles would continue to experience congestion between the transit-only westbound on-ramp and the eastbound on-ramp. Therefore, the impact to AC Transit operations would be **significant and unavoidable**.

5.2.2 Proposed Project with Expanded Transit Service

Under conditions with the Expanded Transit Scenario, Muni, AC Transit, and the ferry service would provide adequate capacity to meet demand. Further, queues associated with on-ramp control devices would not interfere with Muni operations. Queues would interfere with AC Transit operations, but no feasible mitigation measures were identified. Therefore, there are no mitigation measures identified under this scenario.

5.2.3 Reduced Development Alternative with Base Transit Service

Mitigation Measure 1 – Implement the Expanded Transit Scenario.

With implementation of the Expanded Transit Service, the project's transit demand would be accommodated within Muni's capacity threshold of 85 percent occupancy, which would reduce the impact on transit to a less than significant level. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, this impact would remain **significant and unavoidable**.

Under conditions with the existing westbound on-ramps, implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project's auto traffic generation would be reduced such that queues would be reduced to negligible levels at each on-ramp during weekday peak hours, but would remain approximately 1/2 mile during the Saturday peak hour. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to Muni operations would remain **significant and unavoidable**.

Under conditions with the existing westbound on-ramps, implement the Expanded Transit Scenario. With implementation of the Expanded Transit Scenario, the project's auto traffic generation would be reduced such that queues would be reduced to negligible levels at each on-ramp during weekday peak hours, but would remain approximately 1/2 mile during the Saturday peak hour. However, because full funding for this service has not yet been identified, its implementation remains uncertain. In the event this mitigation measure cannot feasibly be implemented, and regardless of implementation for Saturday peak hours, this impact to AC Transit operations would remain **significant and unavoidable**.

5.2.4 Reduced Development Alternative with Expanded Transit Service

Under conditions with the Expanded Transit Scenario, Muni, AC Transit, and the ferry service would provide adequate capacity to meet demand. Further, queues associated with on-ramp control devices would not interfere with Muni operations. Queues would interfere with AC Transit operations, but no feasible mitigation measures were identified. Therefore, there are no mitigation measures identified under this scenario.

5.3 PARKING

No significant environmental impacts have been identified. No mitigation required.

5.4 PEDESTRIAN

No significant environmental impacts have been identified. No mitigation required.

5.5 BICYCLE

No significant environmental impacts have been identified. No mitigation required.

5.6 SERVICE AND LOADING

No significant environmental impacts have been identified. No mitigation required.

5.7 EMERGENCY ACCESS

No significant environmental impacts have been identified. No mitigation required.

5.8 CONSTRUCTION

Mitigation Measure 3 – The project sponsor shall develop and implement a Construction Transportation Management Plan (“CTMP”) consistent with the standards and objectives stated below and approved by TIDA, designed to anticipate and minimize impacts of various construction activities associated with the Proposed Project.

The Plan shall disseminate appropriate information to contractors and affected agencies with respect to coordinating construction activities to minimize overall disruptions and ensure that overall circulation on the Islands is maintained to the extent possible, with particular focus on ensuring pedestrian, transit, and bicycle connectivity. The CTMP shall supplement and expand, rather than modify or supersede, any manual, regulations, or provisions set forth by SFMTA, Department of Public Works (“DPW”), or other City departments and agencies.

Specifically, the CTMP shall:

- Identify construction traffic management best practices in San Francisco, as well as others that, although not being implemented in the City, could provide valuable information for a project of the size and characteristics of Treasure Island and Yerba Buena Island. Management practices include, but are not limited to, identifying ways to reduce construction worker vehicle trips through transportation demand management programs and methods to manage construction work parking demands.
- Describe procedures required by different departments and/or agencies in the city for implementation of a Construction Traffic Management Plan, such as reviewing agencies, approval processes, and estimated timelines. For example,
 - The construction contractor will need to coordinate temporary and permanent changes to the transportation network on Treasure Island and Yerba Buena Island with TIDA. Once Treasure Island streets are accepted as City streets, temporary traffic and transportation changes must be coordinated through the SFMTA’s Interdepartmental Staff Committee on Traffic and Transportation (“ISCOTT”) and will a public meeting. As part of this process, the CTMP may be reviewed by SFMTA’s Transportation Advisory Committee (“TASC”) to resolve internal differences between different transportation modes. Caltrans Deputy Directive 60 (DD-60) requires a separate Transportation Management Plan (TMP) and contingency plans for all state highway activities. These plans shall be part of the normal project development process and must be considered during the planning stage to allow for the proper cost, scope and scheduling of the TMP activities on Caltrans right-of-way. These plans should adhere to Caltrans standards and guidelines for stage construction, construction signage, traffic handling, lane and ramp closures and TMP documentation for all work within Caltrans right-of-way. (Caltrans DD-60 and TMP Guidelines are included in Appendix L)
 - Changes to transit routes would be coordinated and approved, as appropriate, by SFMTA, AC Transit, and TITMA. The TMP would set forth the process by which transit route changes would be requested and approved.
- Require consultation with other Island users, including the Job Corps and Coast Guard, to assist coordination of construction traffic management strategies. The project sponsor shall proactively coordinate with these groups prior to developing the CTMP to ensure the needs of the other users on the Islands are addressed within the Construction Traffic Management Plan.
- Identify construction traffic management strategies and other elements for the Proposed Project and present a cohesive program of operational and demand management strategies designed to maintain acceptable levels of traffic flow during periods of construction activities. These include,

but are not limited to, construction strategies, demand management activities, alternative route strategies, and public information strategies. For example, the project sponsor may develop a circulation plan for the Island during construction to ensure that existing users can clearly navigate through the construction zones without substantial disruption.

Implementation of Mitigation Measure 3, a Construction Traffic Management Program, would help reduce the Proposed Project's construction-related traffic impacts. Given the magnitude of the proposed development and the duration of the construction period, some disruptions and increased delays could still occur even with implementation of Mitigation Measure 3 (including ramp operations on the Bay Bridge), and it is possible that significant construction-related transportation impacts on regional roadways could still occur. Construction-related transportation impacts would therefore, remain **significant and unavoidable**.