

## CHAPTER 1: PURPOSE AND NEED FOR THE PROJECT

### 1.1 PURPOSE

The primary purposes of the Transbay Terminal/Caltrain Downtown Extension/Redevelopment Project are to:

- Improve public access to bus and rail services;
- Modernize the Transbay Terminal and improve service;
- Reduce non-transit vehicle usage; and
- Alleviate blight and revitalize the Transbay Terminal area.

The project is needed because the present Transbay Terminal, which was built in 1939, does not meet current seismic safety or space utilization standards. The need to modernize the Transbay Terminal provides an opportunity to revitalize the surrounding area and to extend Caltrain service from its current terminus outside the downtown area into the San Francisco employment core.

Undertaking these project components would address the following associated needs:

- Provide a multi-modal transit facility that meets future transit needs;
- Alleviate conditions of blight in the Transbay Terminal Area;
- Revitalize the Transbay Terminal area with a more vibrant mix of land uses that includes both market-rate and affordable housing;
- Facilitate transit use by developing housing next to a major transit hub;
- Improve Caltrain service by providing direct access to downtown San Francisco;
- Enhance connectivity between Caltrain and other major transit systems;
- Enable direct access to downtown San Francisco for future intercity and/or high-speed rail service;
- Accommodate projected growth in travel demand in the San Jose – San Francisco corridor;
- Reduce traffic congestion on US Highway 101 and I-280 between San Jose and San Francisco and other routes;
- Reduce vehicle hours of delay on major freeways in the Peninsula corridor;
- Improve regional air quality by reducing auto emissions;
- Support local economic development goals; and
- Enhance accessibility to employment, retail, and entertainment opportunities.

The Metropolitan Transportation Commission (MTC), State of California, City and County of San Francisco, and area transit providers (AC Transit, Muni, Golden Gate, SamTrans, and JPB) have evaluated options for replacement of the 60-year-old Transbay Terminal facility, due to its age, need for seismic upgrade, and inadequate facility layout. A properly designed, new terminal

would improve space utilization, passenger circulation, signage, security, safety, and the overall transit-rider experience.

A multi-modal transportation facility would provide a centralized location for public and private bus (AC Transit, Muni, Golden Gate, Greyhound), paratransit, and rail (Caltrain) services in San Francisco's growing Financial District/South of Market Area and would enhance transit access for passengers arriving in and departing San Francisco. The extension of the Caltrain system from its current terminus at Fourth and Townsend Streets to a new Transbay Terminal at First and Mission Streets would improve access for residents and workers in San Francisco's high-density financial district and improve connections to other local and regional transit providers. Additionally, a multi-modal terminal facility and Caltrain extension would facilitate future expansion of regional express train service and implementation of statewide high-speed rail service.

A new, multi-modal transportation facility close to housing and major retail and commercial opportunities would increase transit ridership, thus reducing the number of non-transit vehicles traveling on area streets, highways, and bridges. Reduction in automobile vehicle miles of travel would result in reduced vehicular air emissions and an improvement in air quality.

## **1.2 NEED**

The project location and vicinity are shown in Figure 1.2-1. This section discusses the existing deficiencies in the Transbay Terminal and its surrounding area and the other transportation problems that the proposed project will address. In identifying current and future needs in the Terminal vicinity and the Caltrain corridor that would be served by the Project, the following paragraphs also summarize past efforts that have been taken to address these needs.

### **1.2.1 PREVIOUS EFFORTS TO IDENTIFY AND ADDRESS DEFICIENCIES IN THE EXISTING TRANSBAY TERMINAL STRUCTURE AND OPPORTUNITIES FOR COORDINATING REDEVELOPMENT**

A decade of planning preceded current efforts to identify replacement solutions for the Transbay Terminal, which does not meet modern seismic safety or space utilization standards. The present Transbay Terminal building, which extends across both Fremont and First Streets, the related loading areas in the "hump" and crescent areas above and fronting on Mission Street, and the loop ramps connecting to the Bay Bridge occupy a large site. Much of this area is underused, which has long generated interest in developing a more efficient transportation facility that would free land for other uses. The present terminal building does not meet current building or seismic safety codes, and the 1989 Loma Prieta earthquake raised seismic safety concerns about the terminal structure. Caltrans, as the Terminal owner and operator, reviewed the need for its seismic retrofit. As part of this effort, Caltrans determined that the access ramps to and from the Bay Bridge to the Terminal are seismically deficient and in need of repair or replacement.

Figure 1.2-1 Project Location and Vicinity Map

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In November 1992, Caltrans and the Office of the State Architect released alternative designs for improvements to the existing Terminal. In December 1992, the City of San Francisco and Caltrans agreed that, given the high estimated costs to bring the existing Terminal building to seismic and code compliance, it was reasonable also to consider its replacement.

In November 1993, Caltrans and the MTC – the transportation planning, financing, and coordinating agency for the nine-county Bay Area region – conducted a “Transit Needs Study” to identify operational needs for an upgraded or new facility (for example, numbers of bus bays, necessary space for bus operations and passenger facilities) while Caltrans proceeded with critical seismic and safety improvements. Based on the City and County of San Francisco Planning Department’s October 1993 “Transit Terminal Study,” preliminary alternatives were proposed in a City Planning Department Report to the Mayor.

In June 1994, the City and County of San Francisco and Caltrans agreed to undertake a study for alternatives to replace the Transbay Terminal. In December 1994, the San Francisco Board of Supervisors created the Transbay Redevelopment Survey Area to prepare a land use and transportation plan. During 1995 and 1996, terminal upgrade and replacement alternatives were studied by the San Francisco Redevelopment Agency and Planning Department, Caltrans, a Policy Advisory Committee representing the transit operators using the Transbay Terminal, a Citizens Advisory Committee, and a Technical Advisory Committee.

The *Transit Terminal Decision Report* (released in October 1995) yielded three primary options: (1) a new transit terminal on the site of the present Transbay Terminal, (2) a new terminal between Main and Beale Streets, south of the 201 Mission Street building and north of Folsom Street, and (3) a surface terminal at the Main/Beale site. On March 4, 1996, the San Francisco Board of Supervisors recommended the Main/Beale site (identified as Main/Beale North) as the City’s preferred bus terminal alternative and recommended locating the proposed new Caltrain terminal underground at the site of the existing Transbay Terminal. The Board of Supervisors subsequently reversed this action, as discussed below at the end of this Section 1.2.1.

The September 1995 *Transbay Terminal Reconfiguration Structural Analysis Report* prepared for the Peninsula Corridor Joint Powers Board (JPB) in support of the 1997 *Caltrain San Francisco Downtown Extension Project Conceptual Design Draft EIS/EIR* considered whether the existing Transbay Terminal, retrofitted to withstand a maximum credible earthquake event, could accommodate a Caltrain Extension above-ground. This would avoid having to demolish the Terminal to construct the train box below ground level on the existing site. The structural analysis showed that the structure could be strengthened to take a new bus deck plus a train station and conform to the seismic provisions of the latest Uniform Building Code. Such a strengthening would further limit space utilization within the Terminal, however, which would render the building impractical for multiple uses, including retail or commercial space. Following retrofit, commercial and passenger uses of the levels above the parking structure would be severely limited because the new shear walls would occupy substantial amounts of space, reducing the maximum size of the remaining rentable units and compromising pedestrian and customer flows. Given the costs and construction impacts of seismic retrofit, these

limitations weighed against retrofit in comparison with the advantages of a new and more functional structure. Viewed from the perspective of the present study, seismic retrofit of the existing Terminal would not address the project purposes to modernize the Transbay Terminal, improve services, and revitalize the Terminal area.

In 1997, the City prepared a Draft Environmental Impact Report (EIR) for the Transbay Terminal Redevelopment Area Plan and construction of a new Transbay Terminal at the Main/Beale site. This project was terminated before the Draft EIR was circulated.

On January 1, 1998, MTC began operations as the Bay Area Toll Authority (BATA), created by the California Legislature to administer toll revenues on the Bay Area's seven state-owned toll bridges. In December of that year, BATA entered into a consultant contract to conduct the "Transbay Terminal Improvement Plan" study. A Transbay Panel working group was formed, consisting of public and private agencies and organizations that would be affected by the project. An Executive Committee was also formed, consisting of executive staff representatives and policy board members from AC Transit, the City and County of San Francisco, the JPB, Caltrans, and MTC. In February 1999, the San Francisco Board of Supervisors passed a resolution repealing its former endorsement of the Main/Beale site for a new terminal and urging the "City and County of San Francisco to work expeditiously with AC Transit, the MTC and Caltrans to retain AC Transit regional bus service at the current Transbay Terminal site."

The Transbay Terminal Improvement Plan study proceeded in two phases. Phase 1 identified terminal components and functional requirements to guide the development of design concepts for the new facility. This phase was completed in 1999. Phase 2 evaluated three terminal design concepts – named after Dickens novels – and BATA selected a concept (called "Great Expectations") to be carried forward for additional analysis. During 2000, refinements were made to the design concept to meet the needs of the transit operators that would use the new terminal, and project cost estimates and an implementation plan were developed. The "Great Expectations" concept is the basis for the Transbay Terminal West Ramp Alternative component of the proposed project (see Section 2.2.1.1). Another alternative evaluated by the Transbay Terminal Improvement Plan study, called "Our Mutual Friend," is the basis for the Transbay Terminal Loop Ramp Alternative component of the proposed project (see Section 2.2.1.2).

### **1.2.2 PROVIDING A MULTI-MODAL TRANSIT FACILITY THAT MEETS FUTURE TRANSIT NEEDS**

A critical element in the Transbay Terminal Improvement Plan has been to ensure that design, construction, and operation of the new Transbay Terminal meet specific performance criteria to maximize the usefulness of the facility for transit operations. This need focuses on future (Year 2020) circulation, storage, loading, and passenger space requirements for AC Transit, Muni, Golden Gate, Greyhound, and paratransit services as well as a Caltrain and high-speed train station in downtown San Francisco. A new multi-modal transit facility on the site of the present

Transbay Terminal would improve space utilization and improve operations for the various transit service providers.

**1.2.2.1 AC Transit**

Estimates of current and future AC Transit ridership summarized in Transbay Terminal Improvement Plan Working Paper 3.5: *Summary of Phase 1 Findings by the Transbay Panel* (June 11, 1999) are presented in Table 1.2-1.

<b>Table 1.2-1</b>				
<b>Estimates of Current and Future AC Transit Ridership</b>				
<b>1998 All-Day (Actual)</b>	<b>1998 PM Peak Period (4:00-7:00)</b>	<b>1998 PM Peak One Hour</b>	<b>2020 All Day (Forecasts)</b>	<b>2020 AM Peak One Hour (Forecasts)</b>
13,000	5,720	3,400	18,000 – 23,000	4,500 – 6,100
Assuming: 55% of daily total travel demand is eastbound, 45% westbound 44% transit growth 1990 – 2020 29.5% transit growth 1998 – 2020 80% of daily ridership occurs in the peak period 60% of peak period ridership occurs in the peak one hour				
Source: Transbay Terminal Improvement Plan Working Paper 3.5: <i>Summary of Phase 1 Findings by the Transbay Panel</i> (June 11, 1999)				

The lower end of the range for the projected 2020 ridership is based on the 1998 *Regional Transportation Plan* (RTP) EIR. Other estimates are higher. *The San Francisco Bay Crossing Study* (1991) projected AC Transit patronage levels would grow more rapidly and reach higher levels sooner than the RTP EIR forecasts. This study projected 2010 weekday ridership in the 18,000 to 21,000 range, which suggests peak one-hour ridership of 4,800 to 5,600. Even if growth between 2010 and 2020 were as low as one percent per year, weekday ridership could reach the 20,000 to 23,000 range, with peak hour/peak direction ridership in the range of 5,300 to 6,100 by 2020. This is almost twice current (1998) ridership levels. AC Transit’s own study of potential Transbay service demand estimated 25 to 50 percent increases. Depending on the forecast method and assumptions, AC Transit’s passenger-per-peak-hour ridership could be in the range of 4,500 to 6,100 by 2020.

It is the peak vehicle movements that define terminal space requirements. The Transbay Terminal Improvement Plan estimated that – even assuming higher bus loads (as a result of improved schedules, marketing, and the use of higher capacity buses) – AC Transit could require 31 new stops within the terminal as opposed to the current 24 (or essentially the entire length of platforms two and three) to meet this level of future service. Increasing bus service also increases terminal or terminal area midday bus storage requirements. Accommodating AC Transit’s space requirements in a new, multi-modal transit facility would ensure that AC Transit would be able to meet its future service needs to the horizon year.

### 1.2.2.2 Muni

Currently, Muni buses and trolleys with one exception do not use the interior of the Transbay Terminal, but 11 Muni routes serve the Terminal, and four terminate there, one inside the terminal and three in the “hump” area on the north side between Fremont and First Streets. Bus stacking and queuing and conflicts with pedestrians are already problems during peak commute hours because this area is somewhat undersized for Muni’s current operation. Traffic congestion on Fremont Street, which is a major off-ramp for Bay Bridge commuters, delays Muni in the morning peak; evening buses are delayed by queuing along First Street, which is a major on-ramp to the Bay Bridge. About 80 percent of current Muni riders who use the Transbay Terminal are transferring to other bus operations there (primarily AC Transit), while five percent transfer to another Muni line and the remaining 15 percent walk to their destinations, primarily in the Financial District.<sup>1</sup>

Muni has no plan to increase service to the Transbay Terminal, but a new Terminal that improves the circulation patterns for its routes could greatly facilitate current and future Muni service and improve intermodal connectivity. Also, Muni’s needs would change dramatically if a new regional or intercity rail service, such as Caltrain, Amtrak intercity, and/or California High-Speed Rail were added to the terminal. These needs have not been documented, but estimates for as much as 50 percent more space for Muni operations have been cited.<sup>2</sup>

### 1.2.2.3 Golden Gate Transit

Golden Gate Transit (operated by the Golden Gate Bridge, Highway, and Transportation District, GGBHTD) does not operate or seek to operate within the Transbay Terminal although it currently leases ramp bays as nighttime layover locations. The key issue with a new multi-modal transit facility for Golden Gate Transit is midday bus storage. Golden Gate currently stores 125 buses at Main / Folsom under a temporary lease with Caltrans; this lease terminates soon and Golden Gate needs to find alternative midday storage. Although Golden Gate does not plan to expand its services to the Transbay Terminal, its current and future operations are linked to the storage issue. Without a nearby location to store its buses in the midday, Golden Gate’s San Francisco operations cannot increase and current operations are jeopardized. Providing storage for Golden Gate buses in concert with the new terminal facility is a key component of the new terminal’s functional requirements.

### 1.2.2.4 Greyhound

Greyhound, a private bus company and package delivery service, has invested extensively in the current Transbay Terminal, making major tenant improvements to its bus deck area. In exchange, Greyhound was given a long-term lease with buy-back provisions that require its

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<sup>1</sup> Muni memorandum by John Katz, July 27, 1998, quoted in Transbay Terminal Improvement Plan Working Paper 3.5: *Summary of Phase 1 Findings by the Transbay Panel* (June 11, 1999).

<sup>2</sup> Ibid.

compensation if its space were made temporarily or permanently unavailable. Greyhound is the only operator in the Terminal with a long-term lease, with nearly 20 years remaining. Greyhound relocated to the Transbay Terminal from its former terminal on Sixth Street because of the regional transit connections offered. While it does not keep statistics, the carrier believes that many of its passengers travel to and from the Terminal area on other public transit services. Greyhound currently operates from an island on the second level bus deck and makes extensive use of the ramp structures from the freeway into the Terminal. Greyhound operates about 86 buses per day, with additional service during peak and holiday periods; approximately 100,000 annual passengers are served at Greyhound's Transbay Terminal location. The current bus island accommodates 13 over-the-road coaches in a parallel configuration. Greyhound does not store buses in the Terminal nor does it plan to increase its level of service but it sorely needs added space to provide passenger amenities, including ticketing, waiting and retail areas. A new multi-modal transit terminal that improves space utilization for all operators would meet these needs.

#### **1.2.2.5 SamTrans**

SamTrans provides connections to the Daly City and Colma BART stations, the San Francisco International Airport, and downtown San Francisco. Nine lines provide commute service between San Mateo County and the Transbay Terminal. Seven of these lines operate only during peak periods. SamTrans currently operates from the circular driveway at the front of the Transbay Terminal.

#### **1.2.2.6 Regional Paratransit**

The Transbay Terminal is a connection point for several regional paratransit services, including East Bay Paratransit Consortium, SamTrans' Redi-Wheels, Golden Gate Transit's Whistlestop Wheels, and Muni's paratransit. Current numbers of riders are small, but all operators anticipate substantial increases in ridership that would require them to increase services to the Transbay Terminal. Operators have stated that paratransit demand may be depressed because the current facility is not fully accessible. A modern multi-modal transit facility that meets Americans with Disability Act (ADA) accessibility requirements in providing accessible pathways for connections between paratransit and fixed-route services would address this need.

### **1.2.3 PROVIDING A MORE VITAL MIX OF DEVELOPMENT IN THE TRANSBAY TERMINAL AREA TO ADDRESS UNDERUSE OF LAND**

Like the current project, many of the previous efforts to upgrade or replace the existing Transbay Terminal have recognized the opportunity to improve the surrounding area at the same time. Use of the terminal and its surrounding area has fluctuated over the facility's 60-year life span, with increasing private automobile ownership and usage and the replacement of the "Key System" trains with transbay bus routes. The large footprint of the terminal building crossing Fremont and First Streets above-ground blocks views and makes underlying sidewalks and streets dark.

The large, deteriorating building reduces the attractiveness of the adjoining area for development. The 1994 Transbay Redevelopment Survey Area, which included the Transbay Terminal and its associated ramp structures as well as vacant land left from demolition of the Terminal Separator Structure and the Embarcadero Freeway in the wake of the 1989 Loma Prieta earthquake, characterized the area as blighted.

Construction of either a joint transit terminal or transit facilities in close proximity to one another would serve the interests of both Caltrain and other regional transit riders, creating an intermodal transit hub in the area. The transit hub would concentrate a large transit user population into a confined area, thereby focusing potential economic and joint development opportunities. A more efficient functional terminal design would also support City urban design goals and provide for development of some of the surrounding properties to higher and better uses. Such coordination offers an opportunity to achieve integrated development of transportation facilities and other land uses in the project area.

The redevelopment component of the project focuses on the right mix of uses to revitalize the area, support the transit program, while adding significant amounts of housing to the South of Market area. Placing new housing close to an intermodal transit hub supports transit usage and reduces the potential for increased private auto use of area streets. Another major objective of the redevelopment component of the project is to generate sufficient revenue to substantially offset the costs of the new terminal. (See Section 2.2.3).

#### **1.2.4 CLOSING THE “GAP” – ADDRESSING THE LACK OF DIRECT CALTRAIN SERVICE INTO DOWNTOWN SAN FRANCISCO**

##### **1.2.4.1 Historical Support for the Extension of Caltrain into Downtown San Francisco**

The underlying need for the Caltrain Downtown Extension component of the project relates to one central issue: getting the trains as close as possible to where most riders want to go. The concept of passenger train service directly into downtown San Francisco has been the subject of public scrutiny and debate for over a century. Currently, Caltrain’s San Francisco service terminates at Fourth and Townsend Streets – over one mile from the downtown core. The distance between the Fourth and Townsend Streets station and most downtown San Francisco job destinations is beyond walking distance for the majority of train riders and requires a transfer to the San Francisco Muni Metro light rail line or Muni bus service to complete the journey.

Figure 1.2-2 illustrates the one-mile "gap" that currently exists between major downtown San Francisco activity and employment centers and the present Caltrain terminus.

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Figure 1.2-2: "Gap" Between Downtown Activity Center and Caltrain Station

In 1987, the MTC identified an underground Caltrain extension to a station near the current Transbay Terminal site as "the single most important improvement that can be made to the Peninsula commuter line..."<sup>3</sup> Increases of over 125 percent in future Caltrain ridership to and from San Francisco have been forecast for such an extension (see Table 3.1-14). Work done for the Intercity High Speed Rail Commission, the predecessor to the current California High Speed Rail Authority, estimated a potential loss of 200,000 annual high-speed rail riders if the Caltrain terminal is not extended to the Transbay Terminal site (Charles River Associates, August 1996).

In March of 1997, the JPB and the Federal Transit Administration (FTA) released for public review a Draft Environmental Impact Statement / Draft Environmental Impact Report (Draft EIS/EIR) for the extension of Caltrain commuter rail from its Fourth and Townsend terminus in San Francisco to the site of the present Transbay Terminal. This Draft EIS/EIR reviewed a single "build" alternative with a train alignment along Seventh, Townsend, and Colin P. Kelly Streets and between Second and Essex Streets to the Transbay Terminal. It considered alignment options for the segment along Townsend Street and for the mined tunnel segment under Rincon Hill between Townsend and Folsom Streets. Although the Draft EIS/EIR was circulated and comments received, the environmental process did not proceed due to lack of sufficient funding for the project.

The voters of San Francisco have re-emphasized the critical importance of extending Caltrain service into the downtown core. Following certification of an initiative petition in December 1998, San Francisco voters in November 1999 approved Proposition H. This proposition provides that Caltrain should be extended from its present terminus at Fourth and Townsend Streets to the site of the present Transbay Terminal at First and Mission Streets. The proposition also states that the San Francisco Mayor, Board of Supervisors, and all city officers and agencies, including the Redevelopment Agency, "shall adopt such further ordinances and resolutions and take all other actions as necessary to effectuate the prompt extension of Caltrain downtown to said station." Proposition H also calls for no conflicting use or development of the Transbay Terminal site or of the proposed Caltrain extension right-of-way.

#### **1.2.4.2 Travel Delay Costs of Transfers from Caltrain Station to Downtown Employment Locations**

The top twelve Caltrain origin-destination station pairs (by ridership volume) all include the Fourth and Townsend terminal as one major trip end. About 60 percent of the Caltrain riders disembarking at the Fourth and Townsend Streets station ride the Muni Metro or bus routes that connect the Caltrain terminus to downtown San Francisco employment centers. Most of these riders would be directly served, and their numbers increased, by eliminating the transit transfer link.

Based on the JPB's May 2000 Caltrain On-Board Survey, nearly half (49 percent) of the daily work trips emanating from any of the nine counties with destinations in the City of San Francisco

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<sup>3</sup> MTC/JPB Interim Upgrade Study, 1987.

were destined for the area typically identified as downtown San Francisco. As described above (See Figure 1.2-2), the San Francisco Financial District and central downtown area (as well as the Civic Center area) are beyond walking distance from the Caltrain San Francisco terminus but accessible by Muni bus or Metro. The required transfer from one transit system to another adds to travel time and costs and discourages transit use.

Figure 1.2-3 illustrates existing typical morning peak period travel times by various transit modes between primary Peninsula origins and downtown San Francisco. For this study, the assumed point of origin is the downtown of each respective city and the California and Montgomery Streets intersection in downtown San Francisco.

The travel times include average delay or wait times required to transfer between modes (equal to one-half the time spacing -- or headway -- between scheduled bus or Caltrain and Muni train trips) in addition to the time spent in the transit vehicle and time required to reach the final destination.

As Figure 1.2-3 shows, a trip from San Jose, Redwood City or Millbrae to downtown San Francisco remains highly competitive on Caltrain compared with SamTrans buses. Even with the additional several minutes transfer time between Caltrain and Muni at Fourth and Townsend, Caltrain is the faster mode. Compared to the auto, however, Caltrain is usually a longer trip. The auto provides almost door-to-door service, but the travel time is unpredictable due to possible congestion and/or traffic accidents. Reducing Caltrain travel time and inconvenience by eliminating the transfer at Fourth and Townsend would make the service more competitive with the auto and more reliable overall. Caltrain's increased reliability could offset much of its travel time disadvantage under typical conditions when compared to the auto.

Relocating Caltrain's San Francisco terminus to the Transbay Terminal area has been projected to result in a seven percent reduction in the number of person hours of auto travel.<sup>4</sup> Morning peak hour delay would be expected to be reduced by 20 percent. Implementation of the Caltrain Extension would result in daily travel time savings of 7,200 person hours, which includes 5,700 person hours saved for Caltrain riders and 1,500 person hours for roadway travelers in the corridor. Using FTA procedures, this represents an approximate \$20 million per year savings (7,200 hours/day x \$11.26/hour x 250 work days/year).

### **1.2.4.3 Negative Impact of Transfer on Potential Caltrain Ridership**

Possibly the most significant "cost" of the intermodal transfer currently required at the Fourth and Townsend Station to reach downtown San Francisco is not the cost of added travel time but

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<sup>4</sup> August 27, 1996 memo from Korve Engineering to ICF Kaiser Engineers.

**Figure 1.2-3: Existing Travel Times to Downtown San Francisco by Mode**

the adverse impact on Caltrain ridership. Over and above the travel time delay is the inconvenience of even well-coordinated transfers. According to research studies, passengers find transfers one of the most discomfoting aspects of transit travel and regard them as “equivalent to three to four minutes of extra waiting time” in addition to the actual transfer time.<sup>5</sup> Passengers may be willing to pay double the base fare to avoid a transfer. Transfer elasticity studies of bus services have estimated that each additional transfer can lead to over a 50 percent decline in ridership.<sup>6</sup>

Transit users consider rail service more reliable and comfortable than bus services and therefore, the transfer impact could be somewhat greater for a commuter rail service. In any case, the rail-to-rail or rail-to-bus Caltrain-to-Muni transfer at the Fourth and Townsend Station can be assumed to depress San Francisco-bound Caltrain ridership by at least 50 percent below its potential with direct rail access to downtown San Francisco.

Following completion of the BART San Francisco Airport (SFO) Extension (see Section 1.4.1, BART Extension to San Francisco International Airport), riders will be able to transfer between BART and Caltrain by crossing the platform at the new Millbrae intermodal station. This will supplement Muni service for Peninsula commuters destined to/from San Francisco employment centroids along the BART corridor. Ridership projections conducted for this EIS/EIR show that not only would a substantial number of riders who would transfer to BART at Millbrae in the absence of a Caltrain Downtown Extension stay on Caltrain for their entire trip once the Extension is in place, but they also indicate a real increase in new Caltrain riders with the Caltrain Downtown Extension (see Section 3.1.6, Projected Caltrain Patronage and Accessibility Improvements). This demonstrates that there is a real benefit in removing the transfer “penalty” altogether as compared with adding new transfer options.

### 1.2.4.4 Intermodal Connections

Transit operators in the nine-county Bay Area have developed routes and schedules to facilitate inter-operator connectivity. Numerous fare prepayment and pass arrangements are available among operators. Nonetheless, connections between Caltrain and other Bay Area transit operators are constrained by the distance between the Caltrain terminus at Fourth and Townsend Streets and most other downtown transit destinations. Figure 1.2-4 highlights the downtown station locations and pick-up/drop-off points of the major transit operators.

Bus corridors are shown for Muni, AC Transit, Golden Gate Transit, and SamTrans routes that serve the downtown. At present, only Muni bus routes and the Muni Metro provide transit

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<sup>5</sup> Econometrics, Incorporated, Patronage Impacts of Changes in Transit Fares and Services, U.S. Department of Transportation, September 1980.

<sup>6</sup> Elasticity is an empirically derived or research-estimated measure comparing a change in behavior resulting from a change in a factor that influences behavior. In this case, it is the change in riders due to the change in number of transfers required (Econometrics, Incorporated).

Figure 1.2-4: Intermodal Connections

connections at the Caltrain terminal in San Francisco, with 20 Metro trains meeting all Caltrain trains arriving between 6:16 and 8:59 AM. Nine Muni bus routes also serve the Fourth and Townsend Caltrain station, including three commuter shuttles linking rail passengers with downtown destinations.

Muni also provides the only public transit connection between the Fourth and Townsend Caltrain Terminal and the Transbay Terminal, which is the primary drop-off/pick-up location for bus passengers using nearly all of the other area transit services: AC Transit, SamTrans, and Golden Gate Transit. Muni is also the only connecting transit link between Caltrain and the Ferry Building, which is the main access point for Marin, Solano, and Alameda County ferry services.

Currently, Muni Metro provides the only direct transit connection between Caltrain and BART, the major regional rail transit operator in the Bay Area, which links San Francisco to the East Bay and northern San Mateo County. Following completion of the BART San Francisco Airport (SFO) Extension, Peninsula riders will be able to transfer between BART and Caltrain by crossing the platform at the new Millbrae intermodal station. Amtrak buses serve San Francisco Caltrain passengers connecting with intercity Amtrak trains in Emeryville or Oakland in the East Bay. At San Jose, Caltrain meets most of the daily Capitol Corridor trains or buses to and from Sacramento, and three Caltrain trains connect with the Coast Starlight to Los Angeles.

Extending Caltrain to the new Transbay Terminal would allow Peninsula riders to reach downtown without transferring to other modes of travel and would at the same time enable convenient transfers to Muni, BART, AC Transit, SamTrans, Golden Gate, and private carriers.

See Section 3.1 for a detailed discussion of current transit services in the project vicinity and to and from the Caltrain Terminal.

### **1.2.4.5 Accommodating Future High Speed Rail**

The preamble to Proposition H notes that the California High Speed Rail Commission identified San Francisco as the preferred destination for a bullet train from Los Angeles to the Bay Area. The preamble goes on to state that:

“. . . as part of the extension of Caltrain downtown, a new or rebuilt terminal shall be constructed on the present site of the Transbay Transit Terminal serving Caltrain, regional and intercity bus lines, MUNI, and high speed rail, and having a convenient connection to BART and MUNI Metro.” (emphasis added)

In June 2000, the California High Speed Rail Authority issued its *Final Business Plan for Building a High-Speed Train System for California*. This document recommends that the Governor and state legislature initiate a state-level program EIR and federal-level EIS for a statewide high-speed train network. Alignments for Bay Area access presented in this document include the Caltrain corridor. The *Business Plan* states that terminating the high-speed trains at the Transbay Terminal in San Francisco should be included in environmental studies.

The JPB and the City and County of San Francisco have subsequently evaluated the compatibility of Caltrain track geometry and platforms with future high-speed trains. As a result of this analysis, new Caltrain downtown extension alignments have been identified for this EIS/EIR, as described in Chapter 2. These alignments have a track geometry (e.g., curve radii) that would enable high-speed train equipment that is currently in use in Europe and Japan to use the Caltrain downtown extension tracks, with high-speed train platforms in the basement of the new Transbay Terminal (see Section 2.2.2.4).

## **1.2.5 CURRENT AND FUTURE TRANSPORTATION DEMAND IN THE CALTRAIN SERVICE AREA**

### **1.2.5.1 Current Downtown Area Employment**

Figure 1.2-5 provides a comparison of Year 2000 employment in San Francisco by district. The seven districts shown are based upon major travel analysis zones that the Association of Bay Area Governments (ABAG) and the MTC have adopted for projecting demographic and travel data.

Data for the Year 1990, as reported in the 1997 Caltrain San Francisco Downtown Extension Draft EIS/EIR, show the San Francisco CBD containing nearly 60 percent of downtown area employment, and the downtown area accounted for 60 percent of total San Francisco employment. More recent data indicate a shift in San Francisco employment from the CBD to the South of Market area. San Francisco downtown areas included in districts 1-N, 1-S, C-3E and C-3W (See Figure 1.2-5) encompass nearly all “downtown” work locations for the purposes of this study. The area extends from the San Francisco Bay west to South Van Ness Avenue and south to Townsend Street. The downtown area also contains the Union Square, Market Street Downtown Retail, and Embarcadero Center shopping districts. According to San Francisco Planning Department, the downtown area provided approximately 321,000 jobs, or 51 percent of San Francisco's total employment in the Year 2000. Nearly one-third of these jobs were located in the district C-3E portion of the area, as shown in Figure 1.2-5. The C-3E District largely encompasses what is commonly referred to as the City's CBD.

During the decade from 1980 to 1990, San Francisco experienced a 5.4 percent increase in employment while San Mateo and Santa Clara counties each experienced increases of almost 23 percent. In 1990, Santa Clara County, with its fast-growing, high-technology companies, had the greatest number of jobs in the Bay Area, compared with other counties. This regional growth emphasizes the fast-growing, two-directional nature of corridor travel demand and the potential for Caltrain to serve both of these travel markets. These trends have become more pronounced during the decade from 1990 to 2000. For example, in February 2000, morning peak period Caltrain ridership (that is, before 9:00 AM) was 60 percent northbound and 40 percent southbound.

Figure 1.2-5: San Francisco Employment by District, 1990.

### **1.2.5.2 Characteristics of Journeys to Downtown San Francisco Employment**

The 1990 U.S. Census journey-to-work data indicate that the largest proportion (54 percent) of San Francisco employees live in San Francisco, and that this group has the highest transit mode share for travel to work (54 percent). Of the 482,700 reported daily work trips to the downtown (there are more work trips to or from the downtown than the number of employees due to multiple trips by employees, deliveries, visiting workers, etc.), just over 50 percent emanate from elsewhere in San Francisco, about 26 percent come from the East Bay, and 14 percent come from the South Bay (San Mateo and Santa Clara counties). Figure 1.2-6 presents the worker place of residence breakdown for each downtown employment district and for the four downtown districts combined.

According to “Commute Patterns to Downtown San Francisco,” a memorandum to the Transbay Study Technical Advisory Committee from the San Francisco Planning Department (Badiner, 6/30/95), the overall mode split for journeys to work in downtown San Francisco was 54 percent transit, 30 percent drive alone, and 16 percent ride share. San Francisco-originating work trips had the highest transit mode share (61 percent transit) of all Bay Area residence regions. Commuters from the East Bay were next with a 55 percent transit mode share. San Francisco-destined commuters from the South Bay, had the highest drive alone mode share (44 percent), and the lowest transit mode share (37 percent) compared with commuters from the other primary regions. This modal split was assumed as the baseline for current conditions. Caltrain ridership projections were developed from current ridership defined by on-board surveys in February 2001, with future (2020) mode splits estimated from adjustments to the previous Caltrain ridership study (Korve, 1996).

This modal split information reflects the superiority of high-quality, high-capacity, direct transit access to downtown San Francisco for San Francisco and East Bay residents relative to that afforded South Bay residents. Relocating the Caltrain Terminal closer to downtown would improve transit accessibility and result in substantially increased transit ridership for San Francisco-bound commuters from the Peninsula and South Bay. Figure 1.2-7 shows the major destinations by zip code area of northbound Caltrain commuters. The CBD centered along Market Street (zip code zones 94104, 94105, and 94111) dominates with 58 percent of all destinations. The highest proportion of Caltrain rider destinations (22 percent) is within the 94105 area containing the Transbay Terminal site.

Relocating the Caltrain terminus to the current Transbay Terminal site would not only better serve the San Francisco CBD, it would also improve accessibility to Santa Clara County's “Silicon Valley” jobs for San Francisco residents by offering better transit connections within the downtown core and better access for the area's expanding residential population. The high transit mode share among San Francisco residents highlights the potential for the extended Caltrain to capture San Francisco riders “reverse commuting” to South Bay jobs.

Figure 1.2-6: Residence of Downtown San Francisco Workers

Figure 1.2-7: Major Destinations of Caltrain Riders

**1.2.5.3 Future Downtown Area Employment and Travel Demand**

Based on San Francisco Planning Department data, employment is expected to continue to grow by nearly 16 percent during the next 20 years, but anticipated growth is concentrated in a few areas. District 3, which covers the area east of Twin Peaks and south of Townsend Street to the County line (See Figure 1.2-5) – and which is beyond the “downtown” area identified for this study – was projected to experience an increase in employment of about 30 percent. These changes will shift the balance of downtown San Francisco employment concentration somewhat southward, although the CBD will retain its lead in all City employment. As of 2000, the CBD (District C-3E) contained about 30 percent of all employment citywide. The San Francisco Planning Department anticipates that by 2020, this area will contain about 27 percent of citywide employment. In contrast, areas to the south (Districts 1-S and 3) will increase their share of citywide employment by almost four percent, from 37 percent to over 40.4 percent, as a result of adding over 62,000 jobs in this 20-year period.

Table 1.2-2 summarizes anticipated changes in San Francisco employment by workplace location.

<b>Table 1.2-2 Anticipated Changes in San Francisco Employment by District</b>					
<b>District Workplace[1]</b>	<b>2000 Employment</b>	<b>Percentage of Total</b>	<b>2020 Employment</b>	<b>Percentage of Total</b>	<b>% Change 2000-2020</b>
C-3 East	187,082	29.7	198,170	27.1	5.9
C-3 West	45,968	7.3	52,194	7.1	13.5
1-North	55,915	8.9	61,939	8.5	10.8
1-South	32,040	5.1	34,380	4.7	7.3
2	86,004	13.7	99,729	13.6	16.0
3	201,276	32.0	261,524	35.7	29.9
<b>San Francisco Total</b>	<b>628,860</b>	<b>100.0%</b>	<b>731,659</b>	<b>100.0%</b>	<b>16.3%</b>
[1] Districts numbers and boundaries shown on Figure 1.2-5 Source: San Francisco Planning Department, 2001.					

**1.2.6 CURRENT AND FUTURE ROADWAY CONGESTION**

Economic growth and the corresponding demand for transportation services in the San Francisco Bay Area have exceeded the region's ability to increase roadway capacity. Existing demand for north-south travel along the Peninsula via U.S. 101 and I-280 regularly exceeds existing highway capacities and results in congestion that is increasing in both frequency and duration. Currently, U.S. 101 is the most severely congested freeway through the corridor (*Transactions*, MTC, August 2001). Between San Francisco and San Jose a number of roadway segments are at or over capacity during the peak commute hour.

Segments considerably over capacity during the evening peak include the area between I-80 and the I-280 / U.S. 101 interchange in San Francisco; south of Broadway Avenue in Burlingame to just north of the San Mateo Bridge in San Mateo; the areas north of the State Route 84 and State Route 237 interchanges in Woodside and Santa Clara, respectively; and the area from the San Tomas Expressway to the Capitol Expressway interchange in San Jose. Other segments of the roadway are approaching capacity. No roadway segment in the peak direction (generally southbound in the evening peak and northbound in the morning peak) operates better than level of service (LOS) D during the peak hour, with the majority of segments at LOS E or F. In the non-peak direction, only two short segments near the I-880 interchange and the San Mateo Bridge have been observed to operate on average at LOS C or better. (See Table 1.2-3 for definitions of freeway levels of service.)

<b>Table 1.2-3 Level of Service Criteria for Freeways <sup>[1]</sup></b>		
<b>Level of Service</b>	<b>Description</b>	<b>Volume/Capacity Ratio &amp; Speed</b>
A	Free-flow conditions with a high level of maneuverability.	0.00 to 0.30 65 mph
B	Free-flow conditions but presence of other vehicles is noticeable. Minor disruptions easily absorbed.	0.30 to 0.47 65 mph
C	Minor disruptions cause significant local deterioration.	0.47 to 0.70 64 mph
D	Borders on unstable flow with ability to maneuver severely restricted due to congestion.	0.70 to 0.89 61 mph
E	Conditions at or near capacity. Disruptions cannot be dissipated and cause queues to form.	0.89 to 1.00 53 mph
F	Forced or breakdown flow with queues forming at locations where demand exceeds capacity.	Greater than 1.00 Variable
Note: [1] Based on a design speed of 65 miles per hour. Source: Transportation Research Board, Highway Capacity Manual, Special Report 209 (Washington, D.C., 1994), p. 3-9		

Without future roadway improvements, congestion on corridor freeways is bound to worsen to the point where travel is diverted and the peak periods spread into the midday and to later in the evening. Bottlenecks will constrain movement through the corridor. MTC's travel projections for the Peninsula corridor, based on the planned future transit (no Caltrain extension) and highway capacities for the year 2005, indicate that northbound morning peak-hour vehicle demand at the U.S. 101 / I-280 interchange in San Francisco would be approximately 22,000 vehicles, exceeding the existing interchange capacity by 57 percent. These high levels of congestion will take a toll on economic development by constraining goods and people movements.

Opportunities to improve highway capacity are constrained by a number of factors, including the need for extensive and costly right-of-way acquisitions and potentially significant environmental

impacts, such as displacements of residences, businesses, and natural resources. For these reasons, substantial capacity improvements to U.S. 101 and I-280 cannot be assumed to address long-term travel demands in the corridor, and Caltrain provides a vital transportation alternative to costly highway capacity expansion. By increasing transit ridership, the Caltrain Downtown Extension would ease congestion on Peninsula freeways.

### **1.2.7 FUTURE PARKING DEMAND IN DOWNTOWN SAN FRANCISCO**

A shift in corridor travel from auto to transit with an extension of Caltrain service would reduce parking demand in downtown San Francisco. An estimated 2,000 fewer parking spaces would be required in the area based on the projected increase in Caltrain ridership directly attributable to the Caltrain Extension. This reduction in demand would offset most of the existing parking loss attributable to the project (see Chapters 5). Less parking-related traffic would reduce congestion on local streets. The reduction in parking demand and supply attributable to the Caltrain Extension supports City of San Francisco General Plan objectives to reduce the need for parking in downtown San Francisco and elsewhere.

### **1.2.8 CORRIDOR TRAVEL AND AIR QUALITY**

High rates of auto ownership and vehicle miles of travel have contributed to air quality problems throughout California. Several of the pollutants of concern include ozone, nitrogen oxides and sulfur dioxides (precursors of smog); carbon monoxide; and particulate matter.

The San Francisco Bay Area's air quality has improved in recent years, largely in response to technological improvements in motor vehicles and less polluting fuels. The project study area is within the Bay Area Air Basin (BAAB), for which air quality conditions are monitored by the Bay Area Air Quality Management District (BAAQMD). According to the BAAQMD, the BAAB is in attainment with national standards for carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>x</sub>), and annual particulate matter (PM<sub>10</sub>). It is designated non-attainment for ozone (O<sub>3</sub>) and unclassified for PM<sub>2.5</sub> and 24-hour PM<sub>10</sub>. With respect to California standards, the BAAB has attainment status for CO, NO<sub>x</sub>, and SO<sub>x</sub>. It is designated non-attainment for O<sub>3</sub> and PM<sub>10</sub>.

Because transportation is the major contributor to O<sub>3</sub>, increasing auto travel threatens the area's improvement in air quality. Growing congestion will add to the potential problems because of increased emissions of vehicles operating in stop-and-go traffic. Shifting commuters and other travelers to higher occupancy modes is highly desirable to restrain the growth in auto travel. A new multi-modal transit facility in the heart of San Francisco's employment center will serve this goal. Developing a transit-oriented mix of land uses in the vicinity of that multi-modal facility also supports this objective. Improved Caltrain service offers the greatest potential for increased high occupancy travel along the San Francisco Peninsula, particularly in southern San Mateo and Santa Clara counties, the areas with the most severe air quality problems in the corridor. Based upon projections of potential Caltrain use in 2020, over 8,000 daily auto trips would be removed

from corridor roadways as a result of extending Caltrain service to a downtown San Francisco terminal.

### **1.3 PROJECT SPONSORS**

Three agencies are cooperating in planning and developing this Transbay Terminal / Caltrain Downtown Extension / Redevelopment project: the City and County of San Francisco, the San Francisco Redevelopment Agency, and the Peninsula Corridor (Caltrain) Joint Powers Board (JPB). Pursuant to the San Francisco Board of Supervisor's Resolution 1040101 (passed February 2, 2001), a joint exercise of powers agency, consisting of the City and County of San Francisco, AC Transit, and the JPB, was formed to "develop, design, construct and operate a new transit terminal and related facilities on and adjacent to the existing Transbay Terminal site." The new Transbay Joint Powers Authority (TJPA) is governed by a five-member board of directors, appointed respectively by the JPB, AC Transit, the San Francisco Mayor, the Muni Board of Directors, and the San Francisco Board of Supervisors (this member is to be a San Francisco Supervisor).

The joint exercise of powers agreement establishing the TJPA was signed on April 2, 2001. The TJPA is the entity that is obligated to implement and operate the new transit terminal. Resolution 1040101 urges the California legislature to enact legislation to provide the necessary state-owned real property, funding and other measures needed to support the proposed Terminal Plan and Caltrain Extension. It urges BATA to allocate funds from existing seismic surcharge revenues to fund JPA operations and contracts for the Terminal Plan and Caltrain Extension until other funds become available. Finally, it urges the Transbay JPA Directors to approve agreements and leases with AC Transit to ensure that design, construction, and operation of the new Transbay Terminal meet specific performance criteria to maximize the usefulness of the facility for transit operations.

### **1.4 OTHER RELATED PROJECTS**

The following paragraphs highlight a few related projects for their coordination or cumulative impact issues and their potential to support or be served by the Caltrain Extension. Section 3.1.5, Future Rail Transit and Bus Services, describes projects planned by individual transit operators. Further detail and an evaluation of land use impacts and development opportunities with the proposed project are presented in Chapters 4 and 5 of this document.

#### **1.4.1 BART EXTENSION TO SAN FRANCISCO INTERNATIONAL AIRPORT**

The BART – San Francisco International Airport (SFO) Extension provides 8.7 miles of new revenue service track extending southward from the present Colma Station roughly paralleling El Camino Real and the Caltrain right-of-way, entering and exiting the new San Francisco

International Airport Station within SFO on aerial track, and then continuing roughly parallel with El Camino Real and the Caltrain right-of-way to the new Millbrae intermodal station. The BART – SFO Extension includes four new stations: South San Francisco, San Bruno, San Francisco International Airport, and Millbrae. The project provides direct transit access to SFO and constructs the first cross-platform connection between a commuter rail (Caltrain) and rapid rail transit (BART) system west of the Mississippi River.

The BART – SFO Extension is projected to serve 70,000 daily transit trips and to eliminate 10,000 daily auto trips to SFO by 2010. Construction is scheduled for completion in 2002.

### **1.4.2 MILLBRAE INTERMODAL STATION**

The Millbrae intermodal station is under construction to serve both Caltrain and the new BART – SFO Extension. The existing Caltrain Millbrae Station platform is being relocated approximately 800 feet north to the new Millbrae Avenue intermodal station, which will incorporate three BART tracks with one center and one side platform to facilitate train movements. One Caltrain / BART platform will provide for cross-platform transfers; other transfers will be accommodated via an aerial walkway. About 3,000 parking spaces will be provided with a pedestrian bridge to connect between the new parking structure and surface lots and the BART and Caltrain mezzanines.

### **1.4.3 THIRD STREET LIGHT RAIL**

Muni, the City of San Francisco, and the San Francisco County Transportation Authority have initiated the Third Street Light Rail Project to reestablish rail service along Third Street in the Bayshore Corridor. Construction of the new light rail line is expected to occur in two phases:

- **Phase 1** is currently under design and will extend Muni Metro light rail service south from its current terminal at Fourth and King Streets. The line will cross the Fourth Street Bridge and run along Third Street and Bayshore Boulevard, ending at the Bayshore Caltrain Station in Visitacion Valley. Tracks will be constructed primarily in the center of the street to improve safety and reliability, and 19 stops will be provided. This phase of the light rail project is expected to open for service in 2004.
- **Phase 2** would extend light rail service north from King Street along Third Street, entering a new Central Subway near Bryant Street, crossing beneath Market Street and running under Geary and Stockton Streets to Stockton and Clay Streets. Underground subway stations would be located at Moscone Center, Market Street, Union Square and Clay Street in Chinatown. Muni and the City are actively pursuing funding for the Central Subway.

A new Metro East Operating and Maintenance Facility is expected to be built on approximately 13 to 17 acres at 25th and Illinois Streets to store, maintain and dispatch light rail vehicles.

#### **1.4.4 MISSION BAY**

Mission Bay is a 300-acre site located south and west of Pacific Bell Park (San Francisco Giants' baseball stadium) and bounded by Townsend, Mariposa, and Seventh Streets, and China Basin that is being developed by Catellus Development Corporation. Over the next decade, it is slated to contain a new 43-acre University of California at San Francisco (UCSF) satellite campus as well as 6,000 apartments, 850,000 square feet of retail shops, up to 6.8 million square feet of commercial space, 49 acres of parks and open space, and a 500-room conference hotel. The UCSF complex and a large residential block are currently under construction.<sup>7</sup>

The JPB has a permanent surface easement on property within the Mission Bay project area that is currently used for railroad purposes.

#### **1.5 USES OF THIS DOCUMENT**

This document is a Draft Environmental Impact Statement / Draft Environmental Impact Report (Draft EIS/EIR), prepared pursuant to the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations implementing NEPA, and the California Environmental Quality Act (CEQA).

This document will be used by federal, state, regional, and local agencies to assess the environmental impacts of the project on resources under their jurisdiction or to make discretionary decisions regarding the project. The Federal Transit Administration, the State of California, and the San Francisco Redevelopment Agency will use this document and the Final EIS/EIR in deciding whether and how to fund the project and in refining the project to minimize its adverse impacts.

#### **1.6 PERMITS AND APPROVALS REQUIRED**

Anticipated permits and approvals that would be required for this project are shown in Table 1.2 -4.

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<sup>7</sup> *San Francisco Chronicle*, Monday, October 23, 2000, pages A1 and A15; and Monday, March 19, 2001, p. E1 and E4.

**CHAPTER 1: PURPOSE AND NEED FOR THE PROJECT**

<b>Table 1.2-4 Permits and Approvals Anticipated to be Required</b>	
<b>Agency</b>	<b>Approval or Permit</b>
State Historic Preservation Office	Approval of Memorandum of Agreement (MOA) describing procedures for protection of and mitigation of impacts to historic and cultural resources pursuant to Section 106 of the National Historic Preservation Act and 36 CFR 800.
State Water Resources Control Board	General Construction Activity Stormwater Permit.
California Public Utilities Commission	Permits required for public safety considerations of underground Caltrain Extension and Terminal.
San Francisco Bureau of Environmental Health	Permit required for drilling or other subsurface exploration.
San Francisco Department of Public Works	Approval required for construction in public rights-of-way. Batch Industrial Wastewater Discharge Permit required for de-watering effluent discharge to the combined sewer system providing the quality of the effluent meets the NPDES General Permit discharge standards. Article 20 of San Francisco Municipal Code requires preparation of a Site Mitigation Plan if soil sampling and analysis indicate presence of hazardous waste in soil subject to construction disturbance.
San Francisco Parking and Traffic Commission	Approval required for surface street changes, traffic operation changes, traffic control measures, and on-street parking changes.
San Francisco Public Transportation Commission	Approval required for municipal public transit realignments.
San Francisco Planning Department/Commission	Certification of CEQA environmental document.  Review and approval of Project, including Redevelopment Plan, for consistency with provisions of the Planning Code and with the General Plan. Review and approval of property acquisition, including eminent domain, for consistency with General Plan.  Certificate of Appropriateness for modification/demolition of historic resources
Peninsula Corridor Joint Powers Board	Certification of CEQA environmental document.
San Francisco Board of Supervisors	Approval of General Plan amendments. Adoption of Redevelopment Plan. Approval of property acquisitions, including eminent domain. Approvals required for use of City rights-of-way.
San Francisco Redevelopment Commission	Adoption of Redevelopment Plan.
San Francisco County Transportation Authority	Review and inclusion of the project in the Countywide Transportation Plan and Capital Improvement Program of the Congestion Management Program for San Francisco.