3.12 TRANSPORTATION

This section provides an overview of transportation in the Bay Area and its importance from environmental and regional planning perspectives. Existing transportation modes and primary routes and corridors crossing and accessing key Bay Area destinations are described. Current and future challenges for regional transportation are also discussed.

Bay Area traffic conditions will change over time. Both the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) develop and share projections and planning information for forecasted growth and transportation conditions in the region. For this report, existing traffic refers to conditions at the present time. "Projected traffic" is the anticipated traffic conditions which is projected to exist at the time of project buildout (2025) without the WTA ferry expansion program (i.e., the 2025 No Project Alternative). These conditions are described to provide the basis for comparison to changes with the ferry expansion alternatives, discussed in Section 3.12.2.

3.12.1 Environmental Setting

3.12.1.1 Transportation Within the San Francisco Bay Area

Transportation is vital to the nine-county Bay Area and its economy. Work commutes, shipping and distribution, and routine daily tasks rely on a dependable and safe transportation system. The region is also a global gateway for international trade. The Port of Oakland, one of the busiest on the West Coast, and the three international airports in the area serve as hubs for commerce and transportation. The Bay Area also includes dense urban cores with suburban and rural peripheries. It is connected to the rest of the region through a system of federal and state highways, while a network of local major and arterial roads provide internal circulation. In addition to surface roads and freeways, the region is served by an extensive transit network including rail and ferry systems. Bay Area residents make about 21 million person trips per day. Bay Area-wide, 82.2 percent of those trips are completed by car, 6.2 percent by public transit, 1.3 percent by bike, and 10.3 percent on foot (MTC 2001).

Road System

Bay Area residents depend on automobiles for the majority of their local and regional transportation needs. The Bay Area has 19,600 miles of local streets and roads. The region is served by numerous interstate and U.S. freeways. On the west side of San Francisco Bay, I-280 and U.S. 101 run north-south. U.S. 101 continues north of San Francisco into Marin County. I-880 and I-680 run north-south on the east side of the Bay. I-80 starts in San Francisco, crosses the Bay Bridge, and runs northeast toward Sacramento. SR 92 and SR 84, both highways that allow at-grade crossings, in certain parts of the region become freeways that run east-west and cross the Bay. I-580 starts in San Rafael, crosses the Richmond-San Rafael Bridge, joins with I-80, runs through Oakland, and then runs eastward toward Livermore.

The California Department of Transportation (Caltrans) is responsible for the design, construction, and maintenance of the California State Highway System, in addition to the portion of interstate highways within California's boundaries. The U.S. Department of Transportation Federal Highway Administration (FHWA) provides oversight of projects involving federal

highways or projects that are funded through the Department of Transportation. The MTC is the nine-county transportation planning and coordinating agency for the region. Local government, (such as county or city public works departments) and regional transportation planning agencies are responsible for the design, construction, and maintenance of county and local roads.

Mass Transit

Public transportation is managed by private, public, and quasi-governmental agencies at the local, county, or regional level. Bay Area transit system components include buses, rail systems (including light rail, rapid rail, and commuter rail), and ferries. Historically, the Bay Area's transit systems have developed independently of one another, which has resulted in geographic gaps in service and limited direct connections between different transit modes.

MTC encourages the integration of expansion of existing systems in the Bay Area Regional Transportation Plan (RTP). Figure 3.12.1 shows the different transit systems in the region. Table 3.12.1 lists transit systems by county. Appendix Tran-A describes those systems. Ferries are part of this Bay Area transit system. Existing ferry service is summarized in Table 3.12.2.

The existing and forecast future transit supply of each transit component is presented in Table 3.12.3. Transit supply can be expressed in terms of passenger-seat miles per hour. Based on that measure, the ferries currently carry the least number of passengers when compared to other transit modes. The 2025 forecast increases in transit supply take into account planned expansions in bus, BART, light rail and train service. While increases in ferry patronage are expected, they will likely be outpaced by supply increases in other transit, and the proportion of ferry supply from the total transit supply will drop without enhancements in ferry service.

Transportation Challenges in the Bay Area

Almost 7 million people live in the Bay Area's nine counties and 101 cities. According to ABAG, this number is projected to grow to 8 million by 2020. Imbalances in area employment and available affordable housing have resulted in mounting traffic congestion. Reliance on the automobile is illustrated by the vehicle ownership statistics. In the 1940s growth in vehicle ownership began to outpace the growth in the number of households. According to ABAG's figures, in 1980 there were approximately 1.5 vehicles per household. By 2010, the ratio is projected to reach approximately 2 cars per household, with almost 6 million vehicles in the nine-county region (Figure 3.12.2). The number of people driving alone to work every day grew by 35 percent, from 1.6 million to 2.1 million, between 1980 and 1990. With the growth in the number of cars, there has been a growth in highway congestion.

Current Highway Bottlenecks

Traffic performance of the freeway system within the nine counties of the San Francisco Bay Area has been the subject of study by the Caltrans District 4 Office of Highway Operations. The Highway Congestion Monitoring Program (HICOMP) was established to compile data on locations and magnitude of recurrent traffic congestion. With the exception of 1985 and 1997, HICOMP reports were issued by Caltrans from 1981 until 2001, when funding was discontinued.

Congestion is measured as Level of Service (LOS), which reflects the ease with which one can drive on a roadway. There are six LOS gradations, from A to F. LOS A represents free flow, unimpeded travel (at maximum posted speed). LOS F represents bumper-to-bumper or very

congested conditions. Congestion becomes a problem when it affects the capacity for movement. Congestion on Bay Area freeways has been increasing steadily. The 1988 HICOMP reported 58,600 vehicle-hours of delay (the combined amount of time cars and trucks spend idling on freeways), costing commuters an estimated $548,000 daily in lost productivity. By 1998 Bay Area commuters were spending an estimated 112,000 vehicle-hours in congestion, costing approximately $1,249,000 per day. All counties in the region experienced an increase in congestion, with the greatest increases occurring in Alameda and Santa Clara Counties. The 1998 HICOMP reported congestion regularly occurring at 145 different freeway locations each day, affecting 327 directional miles of freeway (a one-mile length of freeway has two directional miles, irrespective of the number of lanes.)

One of the more apparent effects of increased congestion is the expanded duration of commute periods. In many locations, peak commute periods now last up to 5 hours. Commutes have stretched both in time and distance as people move farther from their workplaces. In Alameda County, for example, the average commute time has increased from 17 minutes in 1993 to 35 minutes in 2000. During that same period, according to the Alameda County Congestion Management Agency (ACCMA), the average one-way commute length increased from 15.3 to 17.1 miles (ACCMA 2001). Congestion occurs at distinct locations in the freeway system, depending on commute patterns and the ability of the system to accommodate traffic flow. Table 3.12.4 shows the main Bay Area bottlenecks, by county, recorded by the 1998 HICOMP. Noted on Table 3.12.4 are those congested areas associated with Bay Area bridges. Figure 3.12.3 illustrates congested and heavily congested highway locations.

Bay Area Crossings

Some of the Bay Area's most congested corridors are associated with the three principal transbay crossings: Oakland-San Francisco, San Mateo-Hayward, and the Dumbarton Bridge corridor. Of these three corridors, only the Oakland-San Francisco crossing is currently served by ferries. These corridors are currently filled to capacity much of the time and, according to MTC projections, transbay travel is expected to increase 40 percent by 2025. To address the situation, MTC launched the San Francisco Bay Crossings Study in 2000 to update a 1991 study (http://www.mtc.ca.gov/projects/bay_crossing/bay_crossing.htm). The Crossings Study is attempting to answer questions regarding more efficient use of existing corridors, as well as the need for construction of new transbay bridge or tunnel crossings. One of the study's first activities consisted of the preparation of a forecast of travel patterns, traffic volumes, and trip times for the year 2025 if no major improvements are made in the three principal transbay corridors. This forecast is known as the 2025 baseline. The first phase of the study included identification of the possible range of improvements in each transbay corridor, including:

- Carpool facilities and other operational improvements on existing highway bridges;
- New highway, BART, commuter rail, or multimodal crossings;
- Express bus services;
- BART services; and
- Water-based transportation services.

While the Bay Crossings Study is not focusing on expanded ferry service, the San Francisco Bay Area Water Transit Authority (WTA) is studying several alternatives, which are the subject of this program EIR, to improve mobility for transbay travelers.

Screenlines

A useful tool to consider traffic conditions in the Bay Area is a "screenline" analysis. Screenlines are representative geographic lines that provide a measurement point of people making trips either by public transit or private car. Cambridge Systematics analyzed daily person trips made across screenlines that correspond to important bottlenecks in the Bay Area, as shown in Table 3.12.5.

The Cambridge Systematics screenline analysis indicates that public transit accounted for 215,458 person trips across Bay Area screenlines in 1998 (i.e., 13.5 percent of the baseline year total). Ferry trips accounted for 5.5 percent of person trips by transit and 0.7 percent of the total person trips across the screenlines considered. By the year 2025, without any expansion or enhancement of the ferry service, the number of public transit person trips across screenlines would almost double, according to the modeling, reaching 402,905 or 20 percent of that year's total. Ferry transit is also expected to increase and will make up 5.7 percent of transit person trips and 1.1 percent of the total person trips in 2025 across the screenlines.

Bay Area Vehicle Trips

Although most instances of congestion are related to work commutes, fewer than one in three automobile trips made by Bay Area residents are to work. The vast majority of daily trips are less than 5 miles. According to ABAG, "they are trips to the grocery store, gym, daycare center, or a child's soccer practice" (ABAG 2002). Table 3.12.6 shows the number of Bay Area trips by purpose. Commuter trips, approximately 3.7 million in 1998, were outnumbered by trips in the other categories. Table 3.12.6 also indicates that 98 percent of the private vehicle trips in the Bay Area are made by automobile and the remaining 2 percent by truck. The total number of trips made during the 1998 baseline year was 12.6 million. While the number of trips is expected to increase by 33 percent in 2025, the proportion of trips made by car and truck will remain the same.

Table 3.12.7 shows the number of vehicle miles traveled (VMT) by vehicle type in the nine-county area during the 1998 baseline year. Santa Clara and Alameda are the two counties with the greatest traffic volumes.

3.12.2 Impacts and Mitigation

3.12.2.1 Significance Criteria

According to CEQA guidelines, a project would have a significant impact if it would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. This assessment was performed at a regional level and impacts are identified in terms of their potential to substantially change traffic volumes; hence a specific numerical criterion was not applied.

3.12.2.2 Impacts and Mitigation

The proposed enhancement of the ferry system would expand transportation options for Bay Area commuters. In general, this may result in lower use of the automobile and non-ferry transit as commuters shift to ferries. Table 3.12.8 shows VMT for year 2025, without any expansion of ferry service (No Project Alternative) and for the Proposed Project and compares them to the 1998 data. As shown in Table 3.12.8, the total regional VMT for the No Project Alternative will increase by 33.7 percent over the baseline, while the total regional VMT for the Proposed Project would increase by 33.6%. All nine counties will experience traffic increases, with the highest relative percent changes in the North Bay counties. Notably, Solano County will experience a 75 percent increase over baseline conditions. The largest reductions in VMT occur in counties where ferries are competing with congested highway facilities, such as San Francisco, San Mateo, and Marin. However, an increase in drivers accessing transit is expected due to increases in VMT in the vicinity of terminals to ferry ridership at new terminals (as discussed in Impact T-1). The Proposed Project would have a total regional VMT of 0.07% less than the No Project Alternative. While the overall percentage reduction may seem small, it may reduce peak hour volumes on the Bay Bridge by almost a lane's worth of traffic.

Table 3.12.9 shows the effect of the Proposed Project on vehicle trips by purpose and vehicle type. As expected, only auto trips would be affected because they are the transportation mode most affected by commute improvements. Truck trips would remain constant for 2025. Among the auto trips, the addition of ferry routes and vessels would mostly affect trips to work and recreation, where ferry travel presents a real option for Bay Area residents. However, as Table 3.12.9 indicates, the percentage change in total vehicle trips from the Proposed Project to the No Project Alternative is minimal.

Table 3.12.10 shows total ridership in non-ferry transit for the No Project Alternative and the Proposed Project. As shown, the modeling for the Proposed Project predicts small decreases in ridership for busses (0.6%), light rail (0.3%), and BART (0.5%), and 2.0% increase in ridership for commuter rail. It is important to note, however, that this modeling result is similar to the modeling results from other transit expansion. For example, the WTA's ridership model showed that expansion of express buses or BART also forecast shifts from one mode to another. It is important to note that the MTC regional model does not use capacity constraints for transit systems. This likely causes an overestimation of shifts from BART to ferries. In addition, it is unclear whether the capacity constraints are in BART terminal access or in the trains themselves. BART has indicated that capacity of the trains could be expanded by eliminating seats and shifting to 3-door cars. It is also not clear how increased crowding would affect BART ridership. Based on these uncertainties, it is expected that there would be little effect on BART revenues from ferry expansion.

The Proposed Project would result in a reduction in automobile trips across the Bay Area bridge screenlines, as shown in Table 3.12.11. The Bay Area screenlines would experience a 0.7 percent reduction in automobiles. The Bay Bridge and Golden Gate Bridge corridors would experience more than 1 percent reductions in automobile trips.

Impact T-1 **At the regional level, expansion of the ferry service would result in a decrease of the total automobile VMT. At the local level, expansion of the ferry service could facilitate changes in traffic patterns at new and existing ferry terminals. This could potentially result in localized increases in traffic in the vicinity of the terminals.**

As shown in Table 3.12.8, the Proposed Project would result in a 0.07 percent reduction in automobile VMT for the nine-county Bay Area. Reductions in automobile VMT would occur in all counties.

Due to the increase in ferry riders of 13,736 under the Proposed Project, the expanded ferry service would facilitate an increase in access to terminals by riders. As shown in Table 3.12.12, of the 36,974 daily riders under the Proposed Project, 65 percent would access the terminals by car, 15 percent by bus or rail, and 20 percent on foot. With a 65 percent total access to terminals by car and a 13,736 increase in total daily riders, 8,928 new riders could be accessing ferry terminals in automobiles. There could also be an increase in bus access to ferry terminals. The increase in riders accessing the ferry terminals in cars could alter traffic circulation patterns in localized areas near the ferry terminals. In locations where terminals would only exist under the Proposed Project, traffic could be expected to increase. Localized traffic could likely increase and decrease, depending on the location, between the Proposed Project and the No Project Alternative at existing terminal locations due to shifts in local traffic movements related to the implementation of the Proposed Project.

Therefore, there is a potential that traffic impacts could be significant on a site specific level, where access and circulation are not adequate to accommodate riders attracted to the terminal and system

Summary of Impact T-1

- The Proposed Project would result in an overall decrease in regional auto VMT. At a more localized level, the Proposed Project could result in increased car and bus traffic to and from existing ferry terminals, depending on local access and traffic conditions. This impact could be potentially significant on a site specific level.

Mitigation T-1.1: Once terminal locations are narrowed down, site specific traffic analyses shall be conducted to compare predicted traffic with applicable local LOS standards. Traffic mitigation measures would depend on site specific conditions, including design of vehicular access to terminals, major access routes, parking availability, and traffic patterns. For example, impacts that were predicted to occur at intersections could be mitigated by addition of turning lanes. For some cases, where access is problematic or presents serious community concerns, the viability of the terminal location would need to be further evaluated.

Impact After Mitigation: Impacts after mitigation must be determined on a case-by-case basis after mitigation measures are considered. Impact T-1 could be potentially significant.

Impact T-2 **Additional automobiles accessing existing and new ferry terminals would require parking. This could result in potential localized parking problems and conflicts in the vicinity of the terminals.**

Ridership increases would result from new and expanded ferry service. It is expected that more commuters would drive their cars to access ferry terminals. As discussed in Impact T-1, up to 65 percent of the ferry riders, under the Proposed Project, are expected to drive to the terminals. While some of the additional cars may be accommodated in terminal parking structures, it is the intention of WTA to limit parking in an effort to encourage transit use to access existing and new terminals. The demand for parking as a percentage of available parking is listed in Table 3.12.13. Approximately 40 percent of the ferry terminals under the Proposed Project could have parking demands exceeding parking availability. In some locations, due to lack of sufficient space or desire to avoid paying parking fees, commuters would choose to park offsite, along local streets in the vicinity of the ferry terminals. This can lead to enforcement of restrictions on local street parking, which can inconvenience local residents and businesses. It is important to note, however, that the potential parking at each site was estimated based on limited knowledge of the potential sites. Actual parking would be based on the demand and site specific constraints. Actual parking would likely vary from the estimates of available parking included in Table 3.12.13.

Summary of Impact T-2

- Implementation of the Proposed Project would result in increased car traffic to and from new ferry terminals and lead to an increased demand for parking. Parking demand would exceed parking availability at some locations. The project proponent(s) should seek to encourage and increase transit access to terminals. The impact would be localized and site specific. Its significance cannot be determined at the program level. Therefore this is a potentially significant impact.

Mitigation T-2.1: The project proponent(s) and ferry terminal authorities, in conjunction with local and regional transit agencies, shall study and develop terminal-specific plans to ensure that potential driving ferry patrons can be adequately served by transit in locations with limited parking and currently insufficient transit access.

Mitigation T-2.2: Non-drive access could be encouraged through measures such as charging fees for parking, provision of preferential parking for carpools and vanpools, comprehensive shuttle access, land use scenarios that encourage non-drive access, and encouraging bicycle and pedestrian access.

Impact After Mitigation: Traffic access and parking impacts can often be mitigated through design or operational improvements. Mitigation improvements would be defined with each proposed new terminal or terminal improvement. This is a potentially significant impact.

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Table 3.12.1
Bay Area Regional and County Transit Systems

	Local Service	Connecting Service
Regional	Alameda/Oakland Ferry Service BART Blue & Gold Fleet Caltrain Dumbarton Express Golden Gate Ferry Harbor Bay Ferry Red and White Fleet Vallejo Baylink Ferry	
Alameda	AC Transit Air-BART BART Broadway Shuttle CSUH Hill Hopper Emery Go-Round UC Berkeley Campus Shuttle Union City Transit WHEELS (LAVTA) West Berkeley Shuttle	Alameda/Oakland Ferry Service Altamont Commuter Express County Connection Dumbarton Express Harbor Bay Ferry Modesto MAX SamTrans San Joaquin Regional Transit (SMART) Santa Clara VTA
Contra Costa	AC Transit BART Brentwood Dimes-A-Ride County Connection Tri Delta Transit WestCAT	Benicia Transit Fairfield-Suisun Transit Golden Gate Transit
Marin	Angel Island - Tiburon Ferry Golden Gate Transit	Blue & Gold Fleet Golden Gate Ferry
Napa	American Canyon Transit Calistoga Handy Van Napa Downtown Trolley Napa Valley Commute Club St. Helena VINE VINE VINE Go Yountville Shuttle	Lake Transit
San Francisco	BART Caltrain San Francisco Muni	AC Transit Alameda/Oakland Ferry Service Blue & Gold Fleet Golden Gate Ferry Golden Gate Transit Harbor Bay Ferry Napa Valley Commute Club SamTrans Vallejo Baylink Ferry
San Mateo	BART BART Employer Shuttles Burlingame Free Bee Shuttle Caltrain Caltrain Shuttles Foster City Sunshine Shuttle Menlo Park Midday Shuttle SamTrans	Dumbarton Express San Francisco Muni Santa Clara VTA

Table 3.12.1 - Continued
Bay Area Regional and County Transit Systems

Santa Clara	Caltrain Caltrain Shuttles Palo Alto Shuttle Santa Clara BEE Santa Clara VTA Stanford Marguerite Shuttle VTA Light Rail Shuttles	AC Transit Altamont Commuter Express Menlo Park Midday Shuttle SamTrans San Benito County Transit San Joaquin Regional Transit (SMART)
Solano	Benicia Transit Fairfield-Suisun Transit Rio Vista Transit Vacaville City Coach Vallejo Transit	Vallejo Baylink Ferry
Sonoma	Cloverdale Transit Healdsburg In-City Transit Petaluma Transit Santa Rosa CityBus Sonoma County Transit	Golden Gate Transit Mendocino Transit
Outside the Bay Area	Altamont Commuter Express Amtrak California / Capitol Corridor Greyhound Lake Transit Mendocino Transit Modesto MAX Monterey/Salinas Transit Sacramento Regional Transit (RT) San Benito County Transit San Joaquin Regional Transit (SMART) Santa Cruz Metro Unitrans (Davis) Yolobus	

Source: www.transitinfo.org/county.html

Table 3.12.2
Existing Ferry Service

Corridor	Route	Operator	Number of Vessels	Annual Patronage
Transbay	Vallejo –S.F. Ferry Bldg.	Blue and Gold	2	736,000
	Oakland-Alameda-S.F. Ferry Bldg.	Blue and Gold	2	496,000
	Harbor Bay- S.F. Ferry Bldg.	Harbor Bay Maritime	1	114,000
Golden Gate	Sausalito - San Francisco	GGBH&TD*	1	454,000
	Tiburon - San Francisco	Blue and Gold	1	125,000
	Larkspur – San Francisco	GGBH&TD	4	1,400,000
Sub-Total Commuter Ferry				3,325,000
GGNRA Service	Alcatraz	Blue and Gold	1	2,720,000
TOTAL			12	6,045,000

(*) Golden Gate Bridge Highway and Transportation Department
Source: WTA

Table 3.12.3
Transit Supply for 1998 and 2025 During Morning Peak Hours

Mode	1998 passenger-seat miles per hour	Percentage of 1998 total	2025 passenger-seat miles per hour[a]	Percentage of 2025 total	Percentage increase between 1998 and 2025
Bus	1,365,270	43.53	1,470,102	36.95	7.68
Light rail	143,011	4.56	268,134	6.74	87.49
BART	1,058,138	33.74	1,452,045	36.50	37.23
Train	473,046	15.08	672,602	16.90	42.19
Ferry	96,720	3.08	115,860	2.91	19.79
Total	3,136,185	100.00	3,978,743	100.00	26.87

Source: MTC 2001
[a] 2025 data is the forecasted data under the No Project Alternative, i.e. the forecasted 2025 passenger seat miles per hour data if the project were to not occur.

Table 3.12.4
Highway Congestion Locations in the Bay Area

County	Congestion Location
Alameda	• Southbound Route 680 over the Sunol Grade • Westbound Route 92 over the San Mateo Bridge * • Route 84 over the Dumbarton Bridge * • Westbound Route 80 approaching the Bay Bridge Toll Plaza (morning)* • Eastbound Route 80 (afternoon) • Northbound Route 880 approaching the Bay Bridge toll plaza.*
Contra Costa	• Route 4 in Pittsburg (morning and afternoon commutes) • Route 680 in Concord/Walnut Creek (morning)
Marin	• Southbound Route 101 from Novato to central San Rafael (morning peak) • Westbound Route 580 approaching Route 101 (evening)
Napa	• There is no significant freeway congestion in this county.
San Francisco	• Route 101 in the vicinity of Hospital Curve (at the Cesar Chavez Street interchange) in both directions (morning)* • Bay Bridge approach (afternoon commute)*
San Mateo	• Eastbound on the San Mateo-Hayward Bridge (evening)* • Southbound Route 101 between San Bruno and Burlingame (morning) • Southbound Route 280 from Daly City to Route 380 (morning)
Santa Clara	• Southbound Route 101 between Great America Parkway and Tully Road (evening) • Northbound Route 101 from Route 237 to University Avenue (evening) • Several locations on Route 87 and Route 680 (evening peak) • Southbound Route 280 from Page Mill Road to Magdalena (evening)
Solano	• Northbound Route 680 near the 80/680 interchange (evening peak period) • Approaches to the toll plazas at the Carquinez and Benicia-Martinez Bridges (evening).*
Sonoma	• Route 101 north of the Route 101/12 interchange in Santa Rosa (evening) • Northbound Route 101 north of Route 12/101 interchange (morning) • Southbound Route 101 south of Route 12/101 interchange (morning) • Southbound Route 101 near Lakeville Highway in Petaluma (morning)

(*) indicates congested area associated with bridge approaches and crossings.
Source: Caltrans District 4, HICOMP 1998

Table 3.12.5
Daily Person Trips Across Bay Area Screenlines

	Screenline	Daily Person Trips 1998	Daily Person Trips 2025[a]
Bay Bridge	BART	143,958	262,671
	AC Transit	2,089	3,812
	Ferry Transit	1,801	3,058
	Highway	408,851	451,521
	Bay Bridge Total	***556,699***	***721,062***
Golden Gate	Golden Gate Transit	9,298	14,055
	Ferry Transit	8,118	14,247
	Highway	151,926	168,637
	Golden Gate Total	***169,342***	***196,939***
SF/San Mateo County Line	Caltrain, BART and Samtrans	48,204	99,129
	Highway	318,955	380,252
	SF/SM County line Total	***367,159***	***479,381***
San Mateo Bridge	Highway	***145,258***	***161,611***
Dumbarton Bridge	Highway	***129,638***	***161,796***
Richmond-San Rafael Bridge	Highway	***78,058***	***90,986***
Carquinez/Benicia Bridges	Ferry Transit	1,990	5,933
	Highway	157,224	176,634
	Carquinez/Benicia Bridges Total	***159,214***	***182,567***
TOTAL		**1,605,368**	**1,994,342**

Source: Cambridge Systematics, 2002

[a] 2025 data is the forecasted data under the No Build alternative, i.e. the forecasted 2025 daily person trips data if the project were to not occur.

Table 3.12.6
Daily Number of Trips in the Bay Area by Vehicle Type

Purpose	1998 trips	2025 trips[a]	Percentage Change
Car			
Home-Based Work	3,707,297	5,103,132	38
Home-Based Shop	3,277,781	4,030,835	23
Home-Based Social/Rec.	1,302,011	1,607,989	24
Non-Home Based	3,610,424	4,738,388	31
Internal- External	458,523	913,203	99
Total cars	12,356,037	16,393,547	33
Trucks			
Small Truck	192,446	264,732	38
Medium Truck	18,633	25,580	37
Large Truck	40,851	56,647	39
Total trucks	251,930	346,959	38
TOTAL	**12,607,967**	**16,740,507**	**33**

Source: Cambridge Systematics (2002)

[a] 2025 data is the forecasted data under the No Build alternative, i.e. the forecasted 2025 trips if the project were to not occur.

Table 3.12.7
Daily Vehicle Miles Traveled (VMT) by County and Vehicle Type in 1998

County	Auto	Small Truck	Medium Truck	Large Truck	TOTAL
San Francisco	7,755,334	183,804	14,900	63,721	8,017,759
San Mateo	17,850,190	402,968	29,657	175,474	18,458,290
Santa Clara	32,754,307	651,396	53,770	211,556	33,671,029
Alameda	29,345,683	809,450	61,280	317,724	30,534,137
Contra Costa	16,701,084	376,108	27,912	144,147	17,249,251
Solano	9,057,951	181,832	12,131	68,505	9,320,419
Napa	2,978,750	73,024	4,656	28,699	3,085,129
Sonoma	7,509,204	187,843	13,405	75,265	7,785,717
Marin	7,084,922	164,598	11,112	74,768	7,335,401
INTRAZONAL VMT	1,347,897	-	-	-	1,347,897
TRANSIT DRIVE ACCESS VMT	984,344	-	-	-	984,344
TOTAL BAY AREA	**133,369,665**	**3,031,024**	**228,824**	**1,159,859**	**137,789,372**

Source: Cambridge Systematics (2002)

Table 3.12.8
Vehicle Miles Traveled for the Proposed Project for Automobiles, Trucks, and Buses

		2025 No Project Alternative		2025 Proposed Project		
County	**1998 Vehicle Miles Traveled**	**Vehicle Miles Traveled**	**% Change from 1998 Baseline**	**Vehicle Miles Traveled**	**% Change from 1998 Baseline**	**% Change from No Project**
San Francisco	8,017,759	9,075,385	13.19	9,035,662	12.70	-0.4
San Mateo	18,458,290	20,838,110	12.89	20,743,861	12.38	-0.5
Santa Clara	33,671,029	45,696,564	35.71	45,688,423	35.69	-0.02
Alameda	30,534,137	40,021,231	31.07	40,007,689	31.03	-0.03
Contra Costa	17,249,251	23,702,339	37.41	23,693,094	37.36	-0.04
Solano	9,320,419	16,317,037	75.07	16,331,542	75.22	0.09
Napa	3,085,129	5,038,273	63.31	5,044,401	63.51	0.1
Sonoma	7,785,717	11,045,667	41.87	11,041,454	41.82	-0.04
Marin	7,335,401	8,539,503	16.41	8,505,155	15.95	-0.4
Intrazonal VMT	1,347,897	2,112,613	56.73	2,112,563	56.73	-0.002
Transit Drive Access VMT	984,344	1,892,977	92.31	1,933,395	96.41	2.1
Bus VMT	268,239	323,225	20.50	333,167	24.21	3.1
TOTAL BAY AREA	**138,057,611**	**184,602,925**	**33.71**	**184,470,407**	**33.62**	**-0.07**

Source: Cambridge Systematics (2002)

Table 3.12.9
Vehicle Trips by Purpose and Vehicle Type for the Proposed Project

Purpose/Vehicle Type	1998 Vehicle Trips	2025 No Project Vehicle Trips	2025 Proposed Project Vehicle trips	Percent Change from No Project
Car				
Home-Based Work	3,707,297	5,103,132	5,096,452	-0.131%
Home-Based Shop	3,277,781	4,030,835	4,030,347	-0.012%
Home-Based Social/Recreation	1,302,011	1,607,989	1,605,594	-0.149%
Non-Home-Based	3,610,424	4,738,388	4,737,488	0.019%
Internal-External	458,523	913,203	913,203	0%
Truck				
Small Truck	192,446	264,732	264,732	0%
Medium Trucks	18,633	25,580	25,580	0%
Large Trucks	40,851	56,647	56,647	0%
TOTAL	**12,607,967**	**16,740,507**	**16,730,045**	**-0.062%**

Source: Cambridge Systematics (2002)

Table 3.12.10
Total Ridership in Non-Ferry Transit under the Proposed Project

Transit Mode	2025 No Project Riders	2025 Proposed Project Riders	Percent Change from No Project
Bus	1,728,641	1,719,018	-0.6%
Light Rail (Muni, SCVTA)	240,818	240,041	-0.3%
BART	890,084	885,524	-0.5%
Commuter Rail (Caltrain, ACE, Amtrak)	133,896	136,613	2.0%

Source: Cambridge Systematics (2002)

Table 3.12.11
2025 Daily Vehicle Trips (Auto Modes Only) Across a Screenline

Screenline	2025 No Project	2025 Proposed Project	Difference from No Project	Percent Change from Total
Bay Bridge	383,245	379,009	-4,236	-1.1
Golden Gate	143,510	141,493	-2,017	-1.4
SF/SM County line	327,759	325,264	-2,496	-0.8
San Mateo Bridge	137,838	137,547	-291	-0.2
Dumbarton Bridge	133,989	133,971	-18	0.0
Richmond-San Rafael Bridge	79,000	79,000	0	0.0
Carquinez/Benecia Bridges	157,000	157,000	0	0.0
TOTAL	**1,362,348**	**1,353,290**	**-9,058**	**-0.7%**

Source: Cambridge Systematics (2002)

Table 3.12.12
Daily Ridership According To Access Mode to Terminals by Ferry Corridor for the Proposed Project

Corridor	Ferry Route	Walk Access	Drive Access	Transit Access
Solano	Vallejo - San Francisco	257	3,805	349
Contra Costa	Pittsburg/Antioch – Martinez - San Francisco	24	1,995	19
Contra Costa	Hercules/Rodeo - San Francisco	172	619	142
Contra Costa	Richmond - San Francisco	219	1,435	126
Alameda	Berkeley – San Francisco - Mission Bay	24	1,789	544
Alameda	Oakland – San Francisco	107	1,695	525
Alameda	Harbor Bay - San Francisco	314	345	20
Alameda	Alameda – San Francisco	410	746	549
Marin	Sausalito - San Francisco	2,520	2,201	397
Marin	Tiburon - San Francisco	1,288	988	373
Marin	Larkspur - San Francisco	693	4,888	995
San Mateo	Oyster Point (South San Francisco) - San Francisco	128	2,159	209
San Mateo	Redwood City - San Francisco	76	1,286	58
Treasure Island	San Francisco - Treasure Island	1,074	0	1,411
TOTAL		**7,306**	**23,951**	**5,717**

Source: Cambridge Systematics (2002)

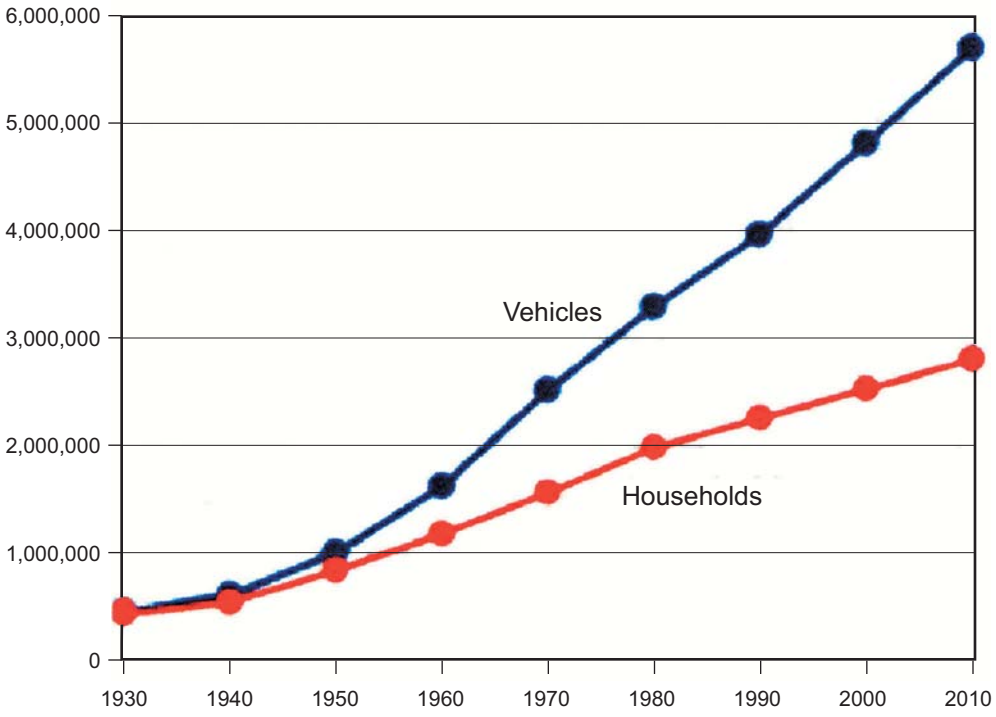
Table 3.12.13
Potential Parking Availability and Parking Demand for the Proposed Project

Corridor	Route	Potential Available Parking	Proposed Project Parking Demand
Transbay	Vallejo - San Francisco	1,600	1,084
	Pittsburg /Antioch – Martinez - San Francisco	300	568
	Hercules/Rodeo - San Francisco	500	176
	Berkeley – San Francisco – Mission Bay	1,000	510
	Alameda - San Francisco	1,000	263
	Richmond - San Francisco	1,000	409
	Jack London Square (Oakland) - San Francisco	500	509
	Harbor Bay - San Francisco	400	122
	Subtotal Transbay Corridor	***6,300***	***3,641***
Golden Gate	Sausalito - San Francisco	100	259
	Tiburon - San Francisco	100	143
	Larkspur - San Francisco	2,000	1,438
	Subtotal Golden Gate Corridor	***2,200***	***1,840***
Peninsula	Oyster Point (South San Francisco) - San Francisco	600	615
	Redwood City - San Francisco	500	366
	Subtotal Peninsula Corridor	***1,100***	***981***

Source: Cambridge Systematics (2002)

URS	Water Transity Authority Program EIR Project No. 28066519	REGIONAL TRANSIT SYSTEMS	Figure 3.12.1

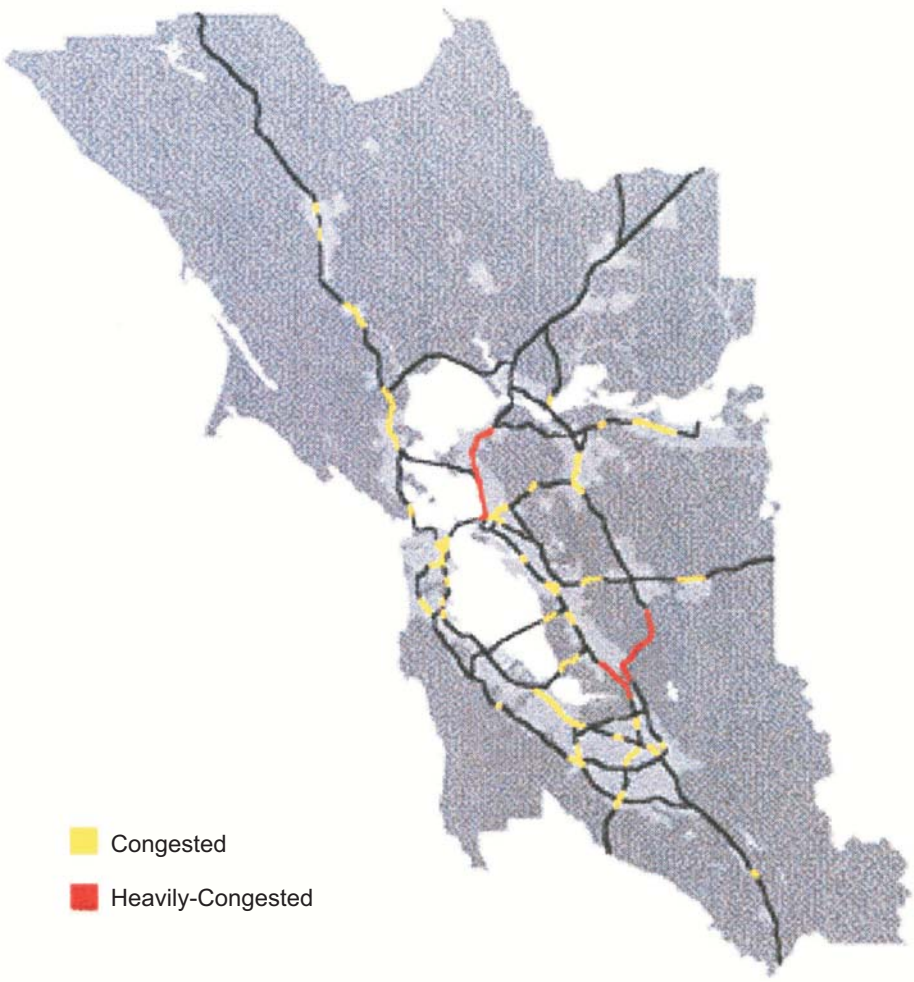
28066519.00200/051503/gos



Source: www.abag.ca.gov

URS	Water Transity Authority Program EIR Project No. 28066519	SAN FRANCISCO BAY AREA VEHICLE OWNERSHIP 1930-2010	Figure 3.12.2

28066519.00200/051503/gos



Source: www.abag.ca.gov

URS	Water Transity Authority Program EIR Project No. 28066519	LOCATIONS OF FREEWAY CONGESTION	Figure 3.12.3

28066519.00200/051503/gos