



Final Working Paper

Ridership Model Forecasts

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July 25, 2002

Prepared for:

WATER TRANSIT AUTHORITY



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WTA Ridership Model Forecasts

■ Overview

The San Francisco Bay Area is one of the most beautiful places on earth, with sweeping views of a Bay dotted with waterfront communities. These communities are often set against a backdrop of spectacular hillsides with multi million dollar homes that face the San Francisco skyline. Many of the elements that make the Bay so beautiful also challenge its transportation network. The eight bridges that cross the Bay are often congested with commuters, with the San Francisco Bay Bridge historically being the most congested corridor in the Bay Area.

The traffic bottlenecks caused by these bridges have provided an opportunity for growth of ferry service. Ridership on the Bay Area's ferry services has seen steady growth over the last 12 years. In 1988/89, the individual ferry services carried approximately 2.5 million passengers per year. By 1999/00, that number grew to 7.0 million passengers. Much of that growth has been fueled by failures in the land transportation networks. The most publicized of the failures was the Loma Prieta earthquake in 1989, which closed the San Francisco Oakland Bay Bridge and forced many commuters to find alternative ways across the Bay. Within three weeks of the earthquake, a number of new ferry routes had been established to carry commuters into downtown San Francisco. In addition to the earthquake, and number of smaller system breakdowns, including a 1997 BART strike, sent commuters to the ferry system.

However, the most significant breakdown in the land transportation network is probably the growth in day-to-day congestion in the bridge corridors. Since 1995, Bay Area traffic congestion increased 87 percent. The Metropolitan Transportation Commission (MTC) expects that between 1990 and 2020, the average hours per day that vehicles are delayed will increase 249 percent.

In 2000, the State of California, through legislation, created the Bay Area Water Transit Authority to further study expansion of ferry service. It was clear that the acceptance of the WTA's results hinge heavily on the credibility of their ridership forecasts. In 2001, the WTA selected Cambridge Systematics to provide ridership forecasts services, based primarily on a unique approach that responds to concerns from previous studies.

This report presents the results of ridership forecasts for three alternatives and compares these alternatives to the future No Project alternative, as well as the existing conditions (1998) in some cases. Measures of performance and user benefits are presented to provide evaluation measures for each alternative.

■ Forecast Alternatives

There are currently four alternatives planned for study in the environmental document. Each alternative consists of a conceptual program of ferry transit services. Together, the alternatives represent a range of investment in service expansion.

1. **Alternative 1 - Comprehensive (Water Transit Initiative) Alternative.** As mandated by the WTA Legislation, the WTA must consider the work of the Water Transit Initiative developed by the Bay Area Council and Bay Area Economic Forum. Alternative 1 represents the potential buildout system as developed by the Bay Area Council. This alternative comprises the largest possible conceptual improvement of the Bay Area's ferry system. It includes the routes recommended in the Bay Area Water Transit Initiative Action Plan, plus additional routes identified by local entities and early project scoping. It includes all of the routes and services included in Alternative 2, but is not necessarily constrained by operational requirements or development costs.
2. **Alternative 2 - Expanded System Alternative.** The WTA legislation also mandates the study of an expanded system that can be implemented within a 10-year planning horizon. This alternative includes promising routes that emerged from the Water Transit Initiative and the Metropolitan Transportation Commission (MTC) ferry studies that could potentially be implemented within a 10-year horizon. It also includes expansion of service on existing routes. Most of the transbay routes are being studied concurrently by MTC's Bay Crossing Study. It includes a wide range of ferry service corridors throughout the Bay Area that would serve a number of passenger service markets, including commuter transit, recreation, Bay Area special events, and regional airport connections. The goal for service frequencies would be designed to provide convenient and dependable service for passengers. The development of this alternative is discussed below.
3. **Alternative 3 - Enhanced Existing Service Alternative.** There are currently six ferry routes serving the Bay Area. This alternative would focus on expansion of this existing system. This alternative would increase and improve service along these routes by adding or substituting new vessels to increase the number of trips and decrease the time (headways) between trips. Existing single routes with more than one destination (e.g., San Francisco to Jack London Square and Alameda) may be divided into two separate routes to improve travel time and performance. Improvements may also be made to the existing passenger terminal facilities. This alternative represents the lowest investment of new capital and operating costs, other than the no project alternative.
4. **Future Base - No Project Alternative.** This alternative would involve minimal service improvements. Ferry service would continue to operate on existing routes at about the same frequency, as determined by each service provider. Funding for changes or improvements to service would continue to be allocated through the MTC.

There are some specific assumptions developed during the implementation of the alternatives that are significant assumptions in the modeling efforts. These are summarized as follows:

- Highway and non-ferry transit networks are based on MTC adopted RTP networks, with a few exceptions;
- Bus services have been added to serve ferry terminals;
- Caltrain has additional drive access options to allow drive access options between rail and ferry;
- Airport ferry services will be modeled separately to identify potential ridership and are not included in current forecasts;
- Transit and ferry fares are assumed to increase with CPI;
- \$2 parking charge at every ferry terminal, no parking charges for BART; and
- Parking does not exceed expected spaces available.

Other specific assumptions for each alternative are identified in Tables 1 through 3. A brief description of the uses of these data is as follows:

- Vessel type is not used in the models directly, but affects the speed, which is used to determine run times for each route.
- Run times are used directly in the models to determine travel time for ferry riders.
- Peak and off-peak headways are used in the model to determine average wait times for ferry riders. Wait times are set at 10 minutes for all routes in the three alternatives, based on an analysis of the comparison of headways and wait times for existing services in the onboard survey.

Table 1. Model Assumptions for Alternative 1 - Comprehensive Service

Corridor/ Ferry Route	Vessel Type (seats)	Speed (Knots)	Run Times (min)	Peak/ Off-Peak Headways (min)	Fares (1990 \$)		Parking	
					Average	Full	Spaces	Fare (1990 \$)
Solano								
Vallejo to San Francisco	350+	35	56	15/30	\$3.61	\$8.40	1,600	\$2.00
Benicia/Martinez to San Francisco	350+	35	53	30/60	\$3.70	\$7.50	500	\$2.00
Contra Costa								
Antioch/Pittsburg to San Francisco	350+	35	85	30/60	\$5.00	\$8.40	300	\$2.00
Hercules/Rodeo to San Francisco	350+	35	42	30	\$3.00	\$7.50	500	\$2.00
Richmond-San Francisco	149	25	29	15/30	\$2.50	\$5.85	1,000	\$2.00
Alameda								
Berkeley-SF-Mission Bay	149	25	22-8	15	\$2.20	\$3.35	1,000	\$2.00
Alameda Point-Mission Bay-SF	149	25	15-8	15	\$2.00	\$2.75	1,000	\$2.00
Oakland to San Francisco	149	25	23	15	\$2.00	\$2.75	500	\$2.00
Harbor Bay to San Francisco	149	25	23	30	\$2.50	\$3.00	400	\$2.00
San Leandro to San Francisco	149	35	27	30	\$3.00	\$3.75	350	\$2.00
Oakland Army Base to San Francisco	149	25	14	15	\$2.00	\$2.75	1,000	\$2.00
Peninsula								
Harbor Bay to So. San Francisco	149	25	32	30	\$2.50	\$3.75	250	\$2.00
Harbor Bay to Redwood City	149	35	33	30	\$2.75	\$4.40	200	\$2.00
Harbor Bay to Moffett Field	Hover	40	37	30	\$3.50	\$4.75	200	\$2.00
Harbor Bay to Hunters Pt	149	25	18	30	\$2.50	\$3.75	200	\$2.00
Harbor Bay to Coyote pt	149	25	30	15	\$2.50	\$3.75	200	\$2.00
Harbor Bay to Foster City	149	25	30	15	\$2.50	\$3.75	200	\$2.00
Harbor Bay to East Palo Alto	Hover	40	31	15	\$3.00	\$4.75	200	\$2.00

Table 1. Model Assumptions for Alternative 1 - Comprehensive Service (continued)

Corridor/ Ferry Route	Vessel Type (seats)	Speed (Knots)	Run Times (min)	Peak/ Off-Peak Headways (min)	Fares (1990 \$)		Parking	
					Average	Full	Spaces	Fare (1990 \$)
Marin								
Sausalito to San Francisco	149	25	19	30	\$2.00	\$2.50	100	\$2.00
Tiburon to San Francisco	149	25	19	30	\$2.00	\$3.50	100	\$2.00
Larkspur to San Francisco	350+	35	33	15	\$2.70	\$3.00	2,000	\$2.00
Sonoma								
Port Sonoma to San Francisco	350+	35	51	30/60	\$3.50	\$5.75	300	\$2.00
San Mateo								
South San Francisco to San Francisco	149	25	31	30	\$2.75	\$3.00	600	\$2.00
Redwood City to San Francisco	149	35	47	30	\$3.50	\$4.50	500	\$2.00
Coyote Pt to San Francisco	149	35	29	30	\$3.00	\$3.75	200	\$2.00
Foster City to San Francisco	149	35	34	30	\$3.25	\$4.50	300	\$2.00
Santa Clara								
Moffett Field to San Francisco	Hover	40	47	30	\$4.00	\$5.50	500	\$2.00
E Palo Alto to San Francisco	Hover	40	41	30	\$3.75	\$5.50	300	\$2.00
Treasure Island								
Berkeley to Treasure Island	149	25	18	15	\$1.50	\$2.75	300	\$2.00
Oakland to Treasure Island	149	25	23	15	\$1.50	\$2.75	100	\$2.00
San Francisco to Treasure Island	149	25	10	15	\$1.00	\$1.25	0	\$2.00
Total							14,900	

Table 2. Model Assumptions for Alternative 2 - Expanded Service

Corridor/ Ferry Route	Vessel Type (seats)	Speed (Knots)	Run Times (min)	Peak/ Off-Peak Headways (min)	Fares (1990 \$)		Parking	
					Average	Full	Spaces	Fare (1990 \$)
Solano								
Vallejo to San Francisco	350+	35	56	15/30	\$3.61	\$8.40	1,600	\$2.00
Benicia/Martinez to San Francisco	350+	35	53	30/60	\$3.70	\$7.50	500	\$2.00
Contra Costa								
Antioch/Pittsburg to San Francisco	350+	35	85	30/60	\$5.00	\$8.40	300	\$2.00
Hercules/Rodeo to San Francisco	350+	35	42	30	\$3.00	\$7.50	500	\$2.00
Richmond- San Francisco	149	25	29	15/30	\$2.50	\$5.85	1,000	\$2.00
Alameda								
Berkeley-SF- Mission Bay	149	25	22-8	15	\$2.20	\$3.35	1,000	\$2.00
Alameda Point- Mission Bay-SF	149	25	15-8	15	\$2.00	\$2.75	1,000	\$2.00
Oakland to San Francisco	149	25	23	15	\$2.00	\$2.75	500	\$2.00
Harbor Bay to San Francisco	149	25	23	30	\$2.50	\$3.00	400	\$2.00
San Leandro to San Francisco	149	35	27	30	\$3.00	\$3.75	350	\$2.00
Peninsula								
Harbor Bay to So. San Francisco	149	25	32	30	\$2.50	\$3.75	250	\$2.00
Harbor Bay to Redwood City	149	35	33	30	\$2.75	\$4.40	200	\$2.00
Harbor Bay to Moffett Field	Hover	40	37	30	\$3.50	\$4.75	200	\$2.00
Marin								
Sausalito to San Francisco	149	25	19	30	\$2.00	\$2.50	100	\$2.00
Tiburon to San Francisco	149	25	19	30	\$2.00	\$3.50	100	\$2.00
Larkspur to San Francisco	350+	35	33	15	\$2.70	\$3.00	2,000	\$2.00
Sonoma								
Port Sonoma to San Francisco	350+	35	51	30/60	\$3.50	\$5.75	300	\$2.00

Table 2. Model Assumptions for Alternative 2 – Expanded Service (continued)

Corridor/ Ferry Route	Vessel Type (seats)	Speed (Knots)	Run Times (min)	Peak/ Off-Peak Headways (min)	Fares (1990 \$)		Parking	
					Average	Full	Spaces	Fare (1990 \$)
San Mateo								
So. San Francisco to San Francisco	149	25	31	30	\$2.75	\$3.00	600	\$2.00
Redwood City to San Francisco	149	35	47	30	\$3.50	\$4.50	500	\$2.00
Santa Clara								
Moffett Field to San Francisco	Hover	40	47	30	\$4.00	\$5.50	500	\$2.00
Treasure Island								
Berkeley to Treasure Island	149	25	18	15	\$1.50	\$2.75	300	\$2.00
Oakland to Treasure Island	149	25	23	15	\$1.50	\$2.75	100	\$2.00
San Francisco to Treasure Island	149	25	10	15	\$1.00	\$1.25	0	\$2.00
Total							12,300	

Table 3. Model Assumptions for Alternative 3 – Enhanced Existing Service

Corridor/ Ferry Route	Vessel Type (seats)	Speed (Knots)	Run Times (min)	Peak/ Off-Peak Headways (min)	Fares (1990 \$)		Parking	
					Average	Full	Spaces	Fare (1990 \$)
Solano								
Vallejo to San Francisco	350+	35	56	15/30	\$3.61	\$8.40	1,600	\$2.00
Alameda								
Oakland to San Francisco	149	25	23	15	\$2.00	\$2.75	500	\$2.00
Harbor Bay to San Francisco	149	25	23	30	\$2.50	\$3.00	400	\$2.00
Marin								
Sausalito to San Francisco	149	25	19	30	\$2.00	\$2.50	100	\$2.00
Tiburon to San Francisco	149	25	19	30	\$2.00	\$3.50	100	\$2.00
Larkspur to San Francisco	350+	35	33	15	\$2.70	\$3.00	2,000	\$2.00
Total							4,700	

- Average fares were calculated by PTM to allow for discounted fares and are used to determine cost for ferry riders in the model.
- Full fares were obtained from PTM and are used to generate revenues for weekend riders, where average fares were used to generate revenues for weekday riders. Full fares are not used directly in the model to determine modal choices.
- Parking spaces were also provided by PTM and were used to determine parking demand and supply ratios. They were not used in the model directly to constrain parking.
- Parking fares were identified as part of each alternative and used directly in the model as a cost to any ferry rider driving to a ferry terminal.

■ Mode Shares by County

Person trips by mode and county are presented in Table 4. As expected, there are no significant differences in mode shares by county from one alternative to another, but there are some changes in all modes that appear in counties with increased ferry services, such as Marin and Alameda. All counties have slightly higher ferry mode shares in each alternative, compared to the future No-Project alternative, except Solano County, which decreases slightly. This is a result of the assumption that there will be \$2 parking charge on all ferry terminals in each alternative, but free parking in the future No-Project alternative.

Table 4. Mode Shares by County

County	2025 No- Project	2025 Alternative 1	Percent Change from No- Project	2025 Alternative 2	Percent Change from No- Project	2025 Alternative 3	Percent Change from No- Project
Drive Alone							
San Francisco	47.0%	47.0%	0.0%	47.0%	0.0%	47.1%	0.0%
San Mateo	53.1%	52.8%	-0.3%	52.9%	-0.2%	53.0%	-0.1%
Santa Clara	56.3%	56.2%	0.0%	56.2%	0.0%	56.2%	0.0%
Alameda	51.2%	51.1%	0.0%	51.1%	-0.1%	51.2%	0.0%
Contra Costa	53.9%	53.8%	-0.1%	53.9%	0.0%	53.9%	0.0%
Solano	58.5%	58.5%	0.0%	58.5%	0.0%	58.5%	0.0%
Napa	60.6%	60.6%	0.0%	60.6%	0.0%	60.6%	0.0%
Sonoma	59.2%	59.2%	0.0%	59.2%	0.0%	59.2%	0.0%
Marin	57.3%	57.1%	-0.2%	57.2%	-0.1%	57.2%	-0.1%
Total	54.3%	54.3%	-0.1%	54.3%	-0.1%	54.3%	0.0%

Table 4. Mode Shares by County (continued)

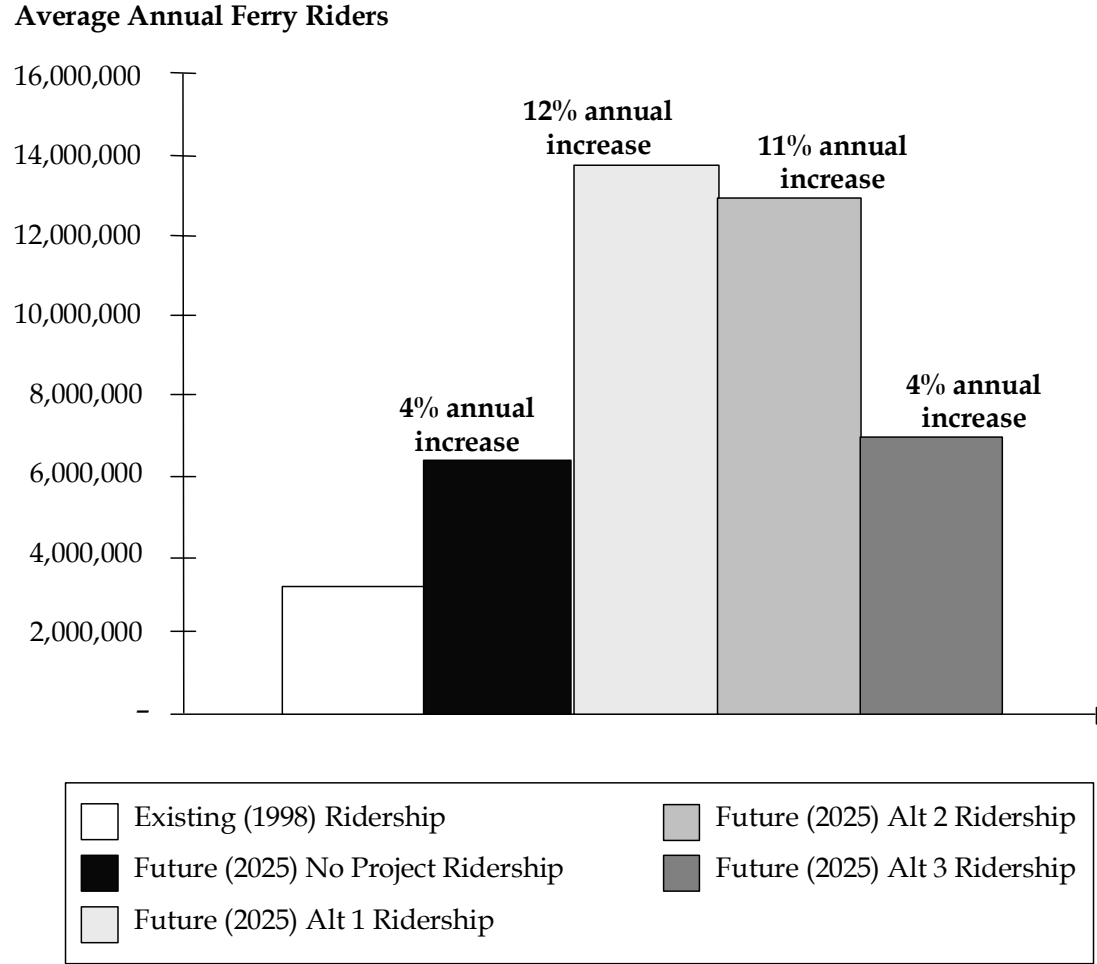
County	2025 No- Project	2025 Alternative 1	Percent Change from No- Project	2025 Alternative 2	Percent Change from No- Project	2025 Alternative 3	Percent Change from No- Project
Carpool							
San Francisco	31.8%	31.8%	0.0%	31.8%	0.0%	31.9%	0.0%
San Mateo	35.0%	34.9%	-0.1%	35.0%	-0.1%	35.0%	0.0%
Santa Clara	37.1%	37.1%	0.0%	37.1%	0.0%	37.1%	0.0%
Alameda	33.0%	32.9%	0.0%	32.9%	-0.1%	32.9%	0.0%
Contra Costa	35.0%	35.0%	0.0%	35.0%	0.0%	35.0%	0.0%
Solano	37.3%	37.3%	0.0%	37.3%	0.0%	37.3%	0.0%
Napa	37.5%	37.5%	0.0%	37.5%	0.0%	37.5%	0.0%
Sonoma	38.3%	38.3%	0.0%	38.3%	0.0%	38.3%	0.0%
Marin	36.8%	36.7%	-0.1%	36.8%	0.0%	36.8%	0.0%
Total	35.5%	35.4%	0.0%	35.4%	0.0%	35.5%	0.0%
Rail/Bus							
San Francisco	21.0%	21.0%	0.0%	21.0%	0.0%	21.0%	0.0%
San Mateo	11.9%	11.9%	0.1%	11.9%	0.1%	12.0%	0.1%
Santa Clara	6.6%	6.7%	0.0%	6.7%	0.0%	6.7%	0.0%
Alameda	15.8%	15.6%	-0.2%	15.7%	-0.1%	15.8%	0.0%
Contra Costa	11.1%	11.0%	-0.1%	11.0%	-0.2%	11.1%	0.0%
Solano	3.7%	3.8%	0.1%	3.8%	0.0%	3.8%	0.0%
Napa	1.7%	1.7%	0.1%	1.7%	0.0%	1.7%	0.1%
Sonoma	2.5%	2.4%	0.0%	2.5%	0.0%	2.4%	0.0%
Marin	3.5%	3.4%	-0.1%	3.3%	-0.2%	3.4%	-0.1%
Total	10.0%	10.0%	0.0%	10.0%	0.0%	10.1%	0.0%
Ferry							
San Francisco	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
San Mateo	0.0%	0.3%	0.3%	0.2%	0.2%	0.0%	0.0%
Santa Clara	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Alameda	0.1%	0.4%	0.3%	0.3%	0.2%	0.1%	0.0%
Contra Costa	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%
Solano	0.5%	0.4%	-0.1%	0.4%	-0.1%	0.4%	-0.1%
Napa	0.2%	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%
Sonoma	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
Marin	2.4%	2.7%	0.3%	2.7%	0.3%	2.6%	0.2%
Total	0.1%	0.3%	0.1%	0.3%	0.1%	0.2%	0.0%

Note: These are only HBW, HBSH, and HBSR trips and do not include NHB and HBSchool trips from MTC model, because these are not separated by transit mode.

■ Summary of Ridership Forecasts

Ridership forecasts were prepared by route and corridor for each future alternative and compared to both the future no project alternative and the existing ridership. Alternative 1 produced the highest ridership (49,210 trips per day) with Alternative 2, producing almost as much ridership (45,133 trips per day). Alternative 3 produced only slightly higher ridership (25,385 trips per day) than the future no project alternative (23,238 trips per day). Figure 1 presents a comparison of the annual ridership for each of the alternatives.

Figure 1. Annual Ferry Riders by Year and Alternative



Tables 5, 6, and 7 present the average daily ridership for each alternative and compare these results by route and corridor to the existing and future no project ridership. Simple annual growth percent increases are also presented for existing routes and corridors for comparison.

Table 5. 2025 Ridership for Alternative 1 - Comprehensive Service

Corridor/Ferry Route	Existing (1998) Ridership	Future (2025) No Project Ridership	Future (2025) Alternative 1 Ridership	Annual % Growth (1998 to 2025)
Solano				
Vallejo to San Francisco	1,900	5,933	4,283	4.6%
Benicia/Martinez to San Francisco			1,272	
Subtotal	1,900	5,933	5,555	7.1%
Contra Costa				
Antioch/Pittsburg to San Francisco			1,000	
Hercules/Rodeo to San Francisco			894	
Richmond-San Francisco			1,845	
Subtotal	0	0	3,739	
Alameda				
Berkeley-SF-Mission Bay			2,750	
Alameda Point-Mission Bay-SF			2,180	
Oakland to San Francisco	1,350	2,472	2,274	2.5%
Harbor Bay to San Francisco	350	586	1,424	11.4%
San Leandro to San Francisco			1,349	
Oakland Army Base to San Francisco			373	
Subtotal	1,700	3,058	10,350	18.8%
Peninsula				
Harbor Bay to So. San Francisco			463	
Harbor Bay to Redwood City			78	
Harbor Bay to Moffett Field			38	
Harbor Bay to Hunters Pt			400	
Harbor Bay to Coyote pt			49	
Harbor Bay to Foster City			73	
Harbor Bay to East Palo Alto			113	
Subtotal	0	0	1,214	
Marin				
Sausalito to San Francisco	2,650	4,271	5,334	3.8%
Tiburon to San Francisco	1,100	2,287	2,822	5.8%
Larkspur to San Francisco	4,300	7,689	7,821	3.0%
Subtotal	8,050	14,247	15,977	3.6%
Sonoma				
Port Sonoma to San Francisco			1,455	
Subtotal	0	0	1,455	

**Table 5. 2025 Ridership for Alternative 1 - Comprehensive Service
(continued)**

Corridor/Ferry Route	Existing (1998) Ridership	Future (2025) No Project Ridership	Future (2025) Alternative 1 Ridership	Annual % Growth (1998 to 2025)
San Mateo				
South San Francisco to San Francisco			1,663	
Redwood City to San Francisco			1,094	
Coyote Pt to San Francisco			1,504	
Foster City to San Francisco			798	
Subtotal	0	0	5,059	
Santa Clara				
Moffett Field to San Francisco			505	
E Palo Alto to San Francisco			643	
Subtotal	0	0	1,148	
Treasure Island				
Berkeley to Treasure Island			545	
Oakland to Treasure Island			578	
San Francisco to Treasure Island			3,590	
Subtotal	0	0	4,713	
Total	11,650	23,238	49,210	11.9%

Table 6. 2025 Ridership for Alternative 2 - Expanded Service

Corridor/Ferry Route	Existing (1998) Ridership	Future (2025) No Project Ridership	Future (2025) Alternative 2 Ridership	Annual % Growth (1998 to 2025)
Solano				
Vallejo to San Francisco	1900	5,933	4,220	4.5%
Benicia/Martinez to San Francisco			1,261	
Subtotal	1,900	5,933	5,481	7.0%
Contra Costa				
Antioch/Pittsburg to San Francisco			1,000	
Hercules/Rodeo to San Francisco			903	
Richmond-San Francisco			1,854	
Subtotal	0	0	2,757	

Table 6. 2025 Ridership for Alternative 2 - Expanded Service (continued)

Corridor/Ferry Route	Existing (1998) Ridership	Future (2025) No Project Ridership	Future (2025) Alternative 2 Ridership	Annual % Growth (1998 to 2025)
Alameda				
Berkeley-SF-Mission Bay			2,776	
Alameda Point-Mission Bay-SF			2,135	
Oakland to San Francisco	1,350	2,472	2,540	3.3%
Harbor Bay to San Francisco	350	586	1,451	11.7%
San Leandro to San Francisco			1,378	
Subtotal	1,700	3,058	10,280	18.7%
Peninsula				
Harbor Bay to So. San Francisco			465	
Harbor Bay to Redwood City			98	
Harbor Bay to Moffett Field			54	
Subtotal	0	0	617	
Marin				
Sausalito to San Francisco	2,650	4,271	5,329	3.7%
Tiburon to San Francisco	1,100	2,287	2,823	5.8%
Larkspur to San Francisco	4,300	7,689	7,820	3.0%
Subtotal	8,050	14,247	15,972	3.6%
Sonoma				
Port Sonoma to San Francisco			1,392	
Subtotal	0	0	1,392	
San Mateo				
South San Francisco to San Francisco			2,187	
Redwood City to San Francisco			1,477	
Subtotal	0	0	3,664	
Santa Clara				
Moffett Field to San Francisco			529	
Subtotal	0	0	529	
Treasure Island				
Berkeley to Treasure Island			477	
Oakland to Treasure Island			539	
San Francisco to Treasure Island			3,587	
Subtotal	0	0	4,603	
Total	11,650	23,238	46,295	11.0%

Table 7. 2025 Ridership for Alternative 3 - Enhanced Existing Service

Corridor/Ferry Route	Existing (1998) Ridership	Future (2025) No Project Ridership	Future (2025) Alternative 1 Ridership	Annual % Growth (1998 to 2025)
Solano				
Vallejo to San Francisco	1,900	5,933	4,935	5.9%
Subtotal	1,900	5,933	4,935	5.9%
Alameda				
Oakland to San Francisco	1,350	2,472	2,776	3.9%
Harbor Bay to San Francisco	350	586	1,591	13.1%
Subtotal	1,700	3,058	4,367	5.8%
Marin				
Sausalito to San Francisco	2,650	4,271	5,390	3.8%
Tiburon to San Francisco	1,100	2,287	2,820	5.8%
Larkspur to San Francisco	4,300	7,689	7,873	3.1%
Subtotal	8,050	14,247	16,083	3.7%
Total	11,650	23,238	25,385	4.4%

■ Ridership by Mode of Access

Mode of access for each alternative is presented in Tables 8, 9, and 10. They are represented in the table by route and corridor, but are reported based on the origin terminal only. Mode of access and egress in San Francisco is constrained to walk and transit modes only.

Table 8. 2025 Modes of Access for Alternative 1 - Comprehensive Service

Corridor	Ferry Route	Walk Access	Drive Access	Transit Access
Solano	Vallejo to San Francisco	327	3,589	367
	Benicia/Martinez to San Francisco	98	1,131	43
	Subtotal	425	4,720	410
Contra Costa	Antioch/Pittsburg to San Francisco	19	976	5
	Hercules/Rodeo to San Francisco	177	613	104
	Richmond-San Francisco	263	1,449	133
	Subtotal	459	3,038	242
Alameda	Berkeley-SF-Mission Bay	57	2,048	645
	Alameda Point-Mission Bay-SF	543	904	733
	Oakland to San Francisco	126	1,467	681
	Harbor Bay to San Francisco	487	903	34
	San Leandro to San Francisco	98	1,185	66
	Oakland Army Base to San Francisco	10	296	68
	Subtotal	1,321	6,803	2,227
Peninsula	Harbor Bay to So. San Francisco	23	418	22
	Harbor Bay to Redwood City	5	70	3
	Harbor Bay to Moffett Field	4	31	3
	Harbor Bay to Hunters Pt	48	339	13
	Harbor Bay to Coyote pt	6	37	6
	Harbor Bay to Foster City	8	64	1
	Harbor Bay to East Palo Alto	15	95	3
Subtotal	109	1,054	51	
Marin	Sausalito to San Francisco	2,651	2,442	241
	Tiburon to San Francisco	1,402	1,092	328
	Larkspur to San Francisco	845	5,453	1,523
	Subtotal	4,898	8,987	2,092
Sonoma	Port Sonoma to San Francisco	5	1,382	68
	Subtotal	5	1,382	68
San Mateo	South San Francisco to San Francisco	91	1,449	123
	Redwood City to San Francisco	74	973	47
	Coyote Pt to San Francisco	1	1,484	19
	Foster City to San Francisco	28	712	58
	Subtotal	194	4,618	247

Table 8. 2025 Modes of Access for Alternative 1 - Comprehensive Service (continued)

Corridor	Ferry Route	Walk Access	Drive Access	Transit Access
Santa Clara	Moffett Field to San Francisco	15	475	15
	E Palo Alto to San Francisco	16	569	58
	Subtotal	31	1,044	73
Treasure Island	Berkeley to Treasure Island	19	378	148
	Oakland to Treasure Island	73	293	212
	San Francisco to Treasure Island	1,467	0	2,123
	Subtotal	1,558	671	2,484
Total		9,000	32,317	7,893

Table 9. 2025 Modes of Access for Alternative 2 - Expanded Service

Corridor	Ferry Route	Walk Access	Drive Access	Transit Access
Solano	Vallejo to San Francisco	327	3,532	361
	Benicia/Martinez to San Francisco	99	1,118	44
	Subtotal	426	4,650	405
Contra Costa	Antioch/Pittsburg to San Francisco	18	976	6
	Hercules/Rodeo to San Francisco	176	621	106
	Richmond-San Francisco	259	1,460	135
	Subtotal	435	2,081	241
Alameda	Berkeley-SF-Mission Bay	61	2,057	658
	Alameda Point-Mission Bay-SF	537	871	727
	Oakland to San Francisco	126	1,694	720
	Harbor Bay to San Francisco	484	925	42
	San Leandro to San Francisco	99	1,212	67
	Subtotal	1,307	6,759	2,214
Peninsula	Harbor Bay to So. San Francisco	22	421	22
	Harbor Bay to Redwood City	12	84	2
	Harbor Bay to Moffett Field	5	48	1
	Subtotal	39	553	25

Table 9. 2025 Modes of Access for Alternative 2 - Expanded Service (continued)

Corridor	Ferry Route	Walk Access	Drive Access	Transit Access
Marin	Sausalito to San Francisco	2,652	2,438	239
	Tiburon to San Francisco	1,402	1,091	330
	Larkspur to San Francisco	845	5,452	1,523
	Subtotal	4,899	8,981	2,092
Sonoma	Port Sonoma to San Francisco	4	1,320	68
	Subtotal	4	1,320	68
San Mateo	South San Francisco to San Francisco	91	1,973	123
	Redwood City to San Francisco	74	1,354	49
	Subtotal	165	3,327	172
Santa Clara	Moffett Field to San Francisco	13	501	15
	Subtotal	13	501	15
Treasure Island	Berkeley to Treasure Island	20	322	135
	Oakland to Treasure Island	67	286	186
	San Francisco to Treasure Island	1,470	0	2,117
	Subtotal	1,557	608	2,438
Total		8,863	29,756	7,676

Table 10. 2025 Modes of Access for Alternative 3 - Enhanced Existing Service

Corridor	Ferry Route	Walk Access	Drive Access	Transit Access
Solano	Vallejo to San Francisco	325	4,210	400
	Subtotal	325	4,210	400
Alameda	Oakland to San Francisco	454	1,335	987
	Harbor Bay to San Francisco	474	967	150
	Subtotal	928	2,302	1,137
Marin	Sausalito to San Francisco	2,643	2,426	321
	Tiburon to San Francisco	1,397	1,094	329
	Larkspur to San Francisco	838	5,435	1,600
	Subtotal	4,878	8,955	2,250
Total		6,132	15,467	3,786

In all three future alternatives, drive access is the predominant mode of access on a systemwide basis (more than 60 percent of the total trips in all alternatives). The highest drive access alternative is the Comprehensive Service (with 66 percent), the highest walk access alternative is the Enhanced Existing Service (with 24 percent), and the highest transit access alternative is the Expanded Service (with 17 percent).

■ Ridership by Purpose and Day of Week

Ridership is produced for weekdays from the WTA forecasting model by trip purpose and summarized in Tables 11, 12, and 13 for each alternative. The home-based work (HBW), shopping (HBSH), and social-recreational (HBSR) trips are estimated using the WTA mode choice models; and non-home-based and school trips are estimated from the MTC mode choice model. Weekend ridership is calculated as a function of the weekday ridership by trip purpose and provided in these tables as well.

The average weekday work trips range from 63 percent in the Expanded Service alternative to 81 percent in the Enhanced Existing Service alternative. The home-based social-recreational trips are twice the home-based shopping trips in every alternative, ranging from eight percent in the Enhanced Existing Service alternative to 15 percent in both the Expanded and Comprehensive Service alternatives. The total weekend trips are lower in the Enhanced Existing Service alternative than the other alternatives, because of the lower frequency of non-work trips.

Table 11. 2025 Ridership by Purpose and Day of Week for Alternative 1 - Comprehensive Service

Corridor/Ferry Route	Weekday Ridership by Trip Purpose				Weekend Ridership by Trip Purpose			
	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders
Solano								
Vallejo to San Francisco	3,679	181	232	191	37	58	118	124
Benicia/Martinez to San Francisco	991	121	155	5	10	39	79	3
Subtotal	4,670	302	387	196	47	97	197	127
Contra Costa								
Antioch/Pittsburg to San Francisco	673	195	131	1	7	62	67	1
Hercules/Rodeo to San Francisco	578	169	122	25	6	54	62	16
Richmond-San Francisco	1,063	342	363	77	11	109	185	50
Subtotal	2,314	706	616	103	23	226	314	67
Alameda								
Berkeley-SF-Mission Bay	1,315	479	830	126	13	153	423	82
Alameda Point-Mission Bay-SF	945	374	665	196	9	120	339	127
Oakland to San Francisco	1,289	317	668	0	13	101	341	0
Harbor Bay to San Francisco	750	231	346	97	8	74	176	63
San Leandro to San Francisco	605	321	419	4	6	103	214	3
Oakland Army Base to San Francisco	82	105	179	7	1	34	91	5
Subtotal	4,986	1,827	3,107	430	50	585	1,585	280
Peninsula								
Harbor Bay to So. San Francisco	419	14	27	3	4	4	14	2
Harbor Bay to Redwood City	63	4	10	1	1	1	5	1
Harbor Bay to Moffett Field	34	0	4	0	0	0	2	0
Harbor Bay to Hunters Pt	311	37	49	3	3	12	25	2
Harbor Bay to Coyote Pt	16	23	7	3	0	7	4	2
Harbor Bay to Foster City	41	9	19	4	0	3	10	3
Harbor Bay to East Palo Alto	77	18	11	7	1	6	6	5
Subtotal	961	105	127	21	10	34	65	14

Table 11. 2025 Ridership by Purpose and Day of Week for Alternative 1 - Comprehensive Service (continued)

Corridor/Ferry Route	Weekday Ridership by Trip Purpose				Weekend Ridership by Trip Purpose			
	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders
Marin								
Sausalito to San Francisco	4,416	45	362	511	44	14	185	332
Tiburon to San Francisco	2,519	15	72	216	25	5	37	140
Larkspur to San Francisco	6,815	253	370	383	68	81	189	249
Subtotal	13,750	313	804	1,110	138	100	410	722
Sonoma								
Port Sonoma to San Francisco	1,350	39	64	2	14	12	33	1
Subtotal	1,350	39	64	2	14	12	33	1
San Mateo								
South San Francisco to San Francisco	903	228	474	58	9	73	242	38
Redwood City to San Francisco	843	51	184	16	8	16	94	10
Coyote Pt to San Francisco	1,120	97	287	0	11	31	146	0
Foster City to San Francisco	597	41	144	16	6	13	73	10
Subtotal	3,463	417	1,089	90	35	133	555	59
Santa Clara								
Moffett Field to San Francisco	300	21	177	7	3	7	90	5
E Palo Alto to San Francisco	448	23	162	10	4	7	83	7
Subtotal	748	44	339	17	7	14	173	11
Treasure Island								
Berkeley to Treasure Island	334	55	92	64	3	18	47	42
Oakland to Treasure Island	287	68	134	89	3	22	68	58
San Francisco to Treasure Island	378	77	407	2,728	4	25	208	1,773
Subtotal	999	200	633	2,881	10	64	323	1,873
Total	33,241	3,953	7,166	4,850	332	1,265	3,655	3,153
Percent of Total Trips	68%	8%	15%	10%	4%	15%	43%	38%

Table 12. 2025 Ridership by Purpose and Day of Week for Alternative 2 - Expanded Service

Corridor/Ferry Route	Weekday Ridership by Trip Purpose				Weekend Ridership by Trip Purpose			
	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders
Solano								
Vallejo to San Francisco	3,618	181	230	191	36	58	117	124
Benicia/Martinez to San Francisco	980	121	155	5	10	39	79	3
Subtotal	883	302	385	196	420	97	196	127
Contra Costa								
Antioch/Pittsburg to San Francisco	673	195	131	1	7	62	67	1
Hercules/Rodeo to San Francisco	584	169	125	25	6	54	64	16
Richmond-San Francisco	1,070	341	366	77	11	109	187	50
Subtotal	1,103	510	491	102	480	163	250	66
Alameda								
Berkeley-SF-Mission Bay	1,332	481	837	126	13	154	427	82
Alameda Point-Mission Bay-SF	896	379	664	196	9	121	339	127
Oakland to San Francisco	1,354	399	787	0	14	128	401	0
Harbor Bay to San Francisco	758	238	356	99	8	76	182	64
San Leandro to San Francisco	633	322	419	4	6	103	214	3
Subtotal	4,973	1,819	3,063	425	50	582	1,562	276
Peninsula								
Harbor Bay to So. San Francisco	422	14	26	3	4	4	13	2
Harbor Bay to Redwood City	80	8	9	1	1	3	5	1
Harbor Bay to Moffett Field	49	0	4	1	0	0	2	1
Subtotal	551	22	39	5	6	7	20	3
Marin								
Sausalito to San Francisco	4,413	44	361	511	44	14	184	332
Tiburon to San Francisco	2,516	15	76	216	25	5	39	140
Larkspur to San Francisco	6,818	253	366	383	68	81	187	249
Subtotal	2,225	312	803	1,110	1,231	100	410	722

Table 12. 2025 Ridership for Alternative 2 - Expanded Service (continued)

Corridor/Ferry Route	Weekday Ridership by Trip Purpose				Weekend Ridership by Trip Purpose			
	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders
Sonoma								
Port Sonoma to San Francisco	1,287	39	64	2	13	12	33	1
Subtotal	105	39	64	2	46	12	33	1
San Mateo								
South San Francisco to San Francisco	1,361	245	523	58	14	78	267	38
Redwood City to San Francisco	1,124	66	271	16	11	21	138	10
Subtotal	1,179	311	794	74	553	100	405	48
Santa Clara								
Moffett Field to San Francisco	317	21	184	7	3	7	94	5
Subtotal	317	21	184	7	3	7	94	5
Treasure Island								
Berkeley to Treasure Island	283	53	77	64	3	17	39	42
Oakland to Treasure Island	259	64	127	89	3	20	65	58
San Francisco to Treasure Island	377	76	407	2,727	4	24	208	1,773
Subtotal	919	193	611	2,880	9	62	312	1,872
Total	31,204	3,724	6,565	4,802	312	1,192	3,348	3,121
Percent of Total Trips	67%	8%	14%	10%	1%	3%	7%	7%

Table 13. 2025 Ridership for Alternative 3 - Enhanced Existing Service

Corridor/Ferry Route	Weekday Ridership by Trip Purpose				Weekend Ridership by Trip Purpose			
	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders	HBW Riders	HBSH Riders	HBSR Riders	NHB Riders
Solano								
Vallejo to San Francisco	4,228	234	281	192	42	75	143	125
Subtotal	4,228	234	281	192	42	75	143	125
Alameda								
Oakland to San Francisco	1,799	263	573	141	18	84	292	92
Harbor Bay to San Francisco	807	246	438	100	8	79	223	65
Subtotal	2,606	509	1,011	241	26	163	516	157
Marin								
Sausalito to San Francisco	4,449	46	384	511	44	15	196	332
Tiburon to San Francisco	2,506	15	84	215	25	5	43	140
Larkspur to San Francisco	6,841	253	396	383	68	81	202	249
Subtotal	13,796	314	864	1,109	138	100	441	721
Total	20,630	1,057	2,156	1,542	206	338	1,100	1,002
Percent of Total Trips	81%	4%	8%	6%	8%	13%	42%	38%

■ Ridership by Direction and Time Period

Ridership is produced by direction and time period for weekdays from the WTA forecasting model in Tables 14, 15, and 16 for each alternative. The directional factors for each time period are derived from the onboard survey data collected in the fall 2001 and applied to each alternative by corridor.

The total weekday peak trips range from 57 percent in the Comprehensive Service alternative to 71 percent in the Enhanced Existing Service alternative. The peak direction of travel in the a.m. peak period is higher in every alternative than the peak direction of travel for the p.m. peak period, which is more balanced by direction (ranging from 33 percent in the Enhanced Existing Service alternative to 28 and 26 percent in both the Expanded and Comprehensive Service alternatives, respectively). The total weekend trips are lower in the Enhanced Existing Service alternative than the other alternatives, because of the lower frequency of non-work trips.

Table 14. 2025 Ridership by Direction and Time Period for Alternative 1 - Comprehensive Service

Corridor/Ferry Route	A.M. Peak		P.M. Peak		Week-day Peak	Off-Peak		
	To SF	From SF	To SF	From SF		To SF	From SF	Week-day
Solano								
Vallejo to San Francisco	1,575	156	640	1,091	3,462	649	172	821
Benicia/Martinez to San Francisco	362	36	147	251	796	376	100	476
Subtotal	1,937	192	788	1,341	4,258	1,025	272	1,297
Contra Costa								
Antioch/Pittsburg to San Francisco	217	21	88	150	477	413	110	523
Hercules/Rodeo to San Francisco	220	22	90	152	484	324	86	410
Richmond-San Francisco	455	45	185	315	999	668	178	846
Subtotal	892	88	363	617	1,960	1,405	374	1,779
Alameda								
Berkeley-SF-Mission Bay	481	48	196	333	1,058	1,337	355	1,692
Alameda Point-Mission Bay-SF	386	29	120	295	831	987	365	1,352
Oakland to San Francisco	431	32	134	329	926	984	364	1,348
Harbor Bay to San Francisco	266	20	83	203	572	622	230	852
San Leandro to San Francisco	233	18	73	178	501	619	229	848
Oakland Army Base to San Francisco	35	3	19	19	77	219	77	296
Subtotal	1,833	150	625	1,357	3,965	4,768	1,620	6,388
Peninsula								
Harbor Bay to So. San Francisco	159	12	49	121	341	89	33	122
Harbor Bay to Redwood City	26	2	8	20	56	16	6	22
Harbor Bay to Moffett Field	17	1	5	13	36	1	1	2
Harbor Bay to Hunters Pt	142	12	77	77	309	67	24	91
Harbor Bay to Coyote Pt	12	1	6	6	25	18	6	24
Harbor Bay to Foster City	20	2	11	11	44	21	8	29
Harbor Bay to East Palo Alto	36	3	20	20	78	26	9	35
Subtotal	411	33	177	268	889	239	86	325

Table 14. 2025 Ridership by Direction and Time Period for Alternative 1 – Comprehensive Service (continued)

Corridor/Ferry Route	A.M. Peak		P.M. Peak		Week-day Peak	Off-Peak		
	To SF	From SF	To SF	From SF		To SF	From SF	Week-day
Marin								
Sausalito to San Francisco	1,640	123	335	1,428	3,526	1,591	217	1,808
Tiburon to San Francisco	1,115	84	1,115	84	2,398	373	51	424
Larkspur to San Francisco	2,494	188	1,743	939	5,364	2,162	295	2,457
Subtotal	5,249	395	3,193	2,451	11,288	4,126	563	4,689
Sonoma								
Port Sonoma to San Francisco	508	38	355	191	1,092	319	44	363
Subtotal	508	38	355	191	1,092	319	44	363
San Mateo								
South San Francisco to San Francisco	245	21	133	133	533	836	294	1,130
Redwood City to San Francisco	250	22	136	136	544	407	143	550
Coyote Pt to San Francisco	324	28	176	176	704	592	208	800
Foster City to San Francisco	179	16	97	97	389	303	106	409
Subtotal	998	87	543	543	2,170	2,138	751	2,889
Santa Clara								
Moffett Field to San Francisco	112	10	61	61	244	193	68	261
E Palo Alto to San Francisco	148	13	80	80	321	238	84	322
Subtotal	260	23	141	141	565	431	152	583
Treasure Island								
Berkeley to Treasure Island	182	14	57	139	392	112	41	153
Oakland to Treasure Island	173	13	54	132	373	150	55	205
San Francisco to Treasure Island	712	62	387	387	1,548	1,511	531	2,042
Subtotal	1,068	89	498	659	2,313	1,772	628	2,400
Total	13,156	1,094	6,682	7,568	28,500	16,224	4,489	20,713
Percent of Total Trips	27%	2%	14%	15%	58%	33%	9%	42%

Table 15. 2025 Ridership by Direction and Time Period for Alternative 2 – Expanded Service

Corridor/Ferry Route	A.M. Peak		P.M. Peak		Week-day Peak	Off-Peak		
	To SF	From SF	To SF	From SF		To SF	From SF	Week-day
Solano								
Vallejo to San Francisco	1,545	153	628	1,070	3,396	651	173	824
Benicia/Martinez to San Francisco	357	35	145	247	785	376	100	476
Subtotal	2,279	188	773	1,317	4,181	1,027	273	1,300
Contra Costa								
Antioch/Pittsburg to San Francisco	217	21	88	150	477	413	110	523
Hercules/Rodeo to San Francisco	225	22	91	156	494	323	86	409
Richmond-San Francisco	454	45	185	314	998	676	180	856
Subtotal	813	67	276	470	1,492	999	266	1,265
Alameda								
Berkeley-SF-Mission Bay	490	49	199	340	1,078	1,341	357	1,698
Alameda Point-Mission Bay-SF	372	28	116	284	801	975	361	1,336
Oakland to San Francisco	465	35	145	355	1,001	1,123	416	1,539
Harbor Bay to San Francisco	275	21	86	210	591	628	232	860
San Leandro to San Francisco	245	18	76	187	527	621	230	851
Subtotal	1,848	151	623	1,376	3,998	4,689	1,595	6,284
Peninsula								
Harbor Bay to So. San Francisco	164	12	51	125	352	82	31	113
Harbor Bay to Redwood City	30	2	9	23	65	24	9	33
Harbor Bay to Moffett Field	24	2	8	18	52	1	1	2
Subtotal	218	16	68	166	469	108	40	148
Marin								
Sausalito to San Francisco	1,636	123	334	1,425	3,519	1,474	336	1,810
Tiburon to San Francisco	1,114	84	1,114	84	2,396	376	51	427
Larkspur to San Francisco	2,494	188	1,743	939	5,364	2,161	295	2,456
Subtotal	6,034	395	3,192	2,448	11,279	4,011	682	4,693
Sonoma								
Port Sonoma to San Francisco	478	36	334	180	1,028	320	44	364
Subtotal	550	36	334	180	1,028	320	44	364

Table 15. 2025 Ridership by Direction and Time Period for Alternative 2 - Expanded Service (continued)

Corridor/Ferry Route	A.M. Peak		P.M. Peak		Week-day Peak	Off-Peak		
	To SF	From SF	To SF	From SF		To SF	From SF	Week-day
San Mateo								
South San Francisco to San Francisco	364	32	198	198	792	1,032	363	1,395
Redwood City to San Francisco	338	29	184	184	734	550	193	743
Subtotal	824	61	382	382	1,526	1,582	556	2,138
Santa Clara								
Moffett Field to San Francisco	117	10	64	64	255	203	71	274
Subtotal	117	10	64	64	255	203	71	274
Treasure Island								
Berkeley to Treasure Island	148	11	46	113	318	116	43	159
Oakland to Treasure Island	155	12	48	118	333	150	56	206
San Francisco to Treasure Island	711	62	387	387	1,546	1,510	531	2,041
Subtotal	1,014	85	481	618	2,197	1,777	629	2,406
Total	12,421	1,030	6,281	7,170	26,902	15,129	4,266	19,395
Percent of Total Trips	27%	2%	14%	15%	58%	33%	9%	42%

Table 16. 2025 Ridership by Direction and Time Period for Alternative 3 – Enhanced Existing Service

Corridor/Ferry Route	A.M. Peak		P.M. Peak		Week-day Peak	Off-Peak		
	To SF	From SF	To SF	From SF		To SF	From SF	Week-day
Solano								
Vallejo to San Francisco	1,796	178	730	1,244	3,948	780	207	987
Subtotal	1,796	178	730	1,244	3,948	780	207	987
Alameda								
Oakland to San Francisco	933	70	291	712	2,007	561	208	769
Harbor Bay to San Francisco	282	21	88	215	607	718	266	984
Subtotal	1,216	91	379	928	2,614	1,280	473	1,753
Marin								
Sausalito to San Francisco	1,655	125	338	1,442	3,560	1,489	341	1,830
Tiburon to San Francisco	1,109	83	1,109	83	2,385	383	52	435
Larkspur to San Francisco	2,511	189	1,755	945	5,400	2,176	297	2,473
Subtotal	5,275	397	3,202	2,470	11,345	4,048	690	4,738
Total	8,287	666	4,312	4,642	17,907	6,107	1,371	7,478
Percent of Total Trips	33%	3%	17%	18%	71%	24%	5%	29%

■ Parking Demand and Supply

Parking demand is developed from data on numbers of trips that drive to a ferry terminal and factors from the on-board survey data that allow us to convert these trips into numbers of vehicle that park at a ferry terminal as shown in Tables 17, 18, and 19. These factors are derived for existing ferry terminals and applied to all terminals in a corridor for future alternatives. Average auto occupancy of drive access trips is applied to drive access trips to produce drive access vehicles for all ferry terminals. Trips that park outside the ferry terminals (percent overflow) and trips that drive to the station to drop someone off (percent kiss and ride) are subtracted from the overall total of vehicles that park at a station to produce the number of vehicles that park on site. This demand is then subtracted from the parking supply, which is provided by PTM consultants for each future ferry terminal to produce utilization factors for each terminal.

Systemwide utilization is highest in the Enhanced Existing Service alternative (85 percent), with two of six terminals predicting higher demand than supply. Utilization for the Expanded Service alternative is 64 percent, with four of 18 terminals predicting higher demand than supply, and for the Comprehensive Service alternative is 60 percent, with four of 23 terminals predicting higher demand than supply.

Table 17. 2025 Parking Demand and Supply for Alternative 1 – Comprehensive Service

Corridor/Ferry Route	Percent		Average Auto Occupancy	On Site		Demand/ Supply	Utilization
	Overflow	Kiss- and- Ride		Persons Parking	Vehicles Parked		
Solano							
Benicia/Martinez to San Francisco	1%	10%	1.57	505	322	-178	64%
Subtotal				2,107	1,345	-755	64%
Contra Costa							
Antioch/Pittsburg to San Francisco	1%	10%	1.57	436	278	-22	93%
Hercules/Rodeo to San Francisco	1%	10%	1.57	274	175	-325	35%
Richmond-San Francisco	1%	10%	1.57	647	413	-587	41%
Subtotal				1,356	866	-934	58%
Alameda							
Berkeley-SF-Mission Bay	1%	10%	1.57	914	584	-416	58%
Alameda Point-Mission Bay-SF	1%	9%	1.28	407	319	-681	32%
Oakland to San Francisco	0%	7%	1.55	680	440	-60	88%
Harbor Bay to San Francisco	1%	9%	1.28	407	319	-81	80%
San Leandro to San Francisco	1%	10%	1.57	529	338	-12	96%
Oakland Army Base to San Francisco	0%	7%	1.55	137	89	-911	9%
Subtotal				3,076	2,088	-2,162	64%
Peninsula							
Harbor Bay to So. San Francisco	1%	9%	1.28	188	148	-102	59%
Harbor Bay to Redwood City	1%	9%	1.28	32	25	-175	12%
Harbor Bay to Moffett Field	1%	9%	1.28	14	11	-189	5%
Harbor Bay to Hunters Pt	1%	9%	1.28	153	119	-81	60%
Harbor Bay to Coyote Pt	1%	9%	1.28	17	13	-187	7%
Harbor Bay to Foster City	1%	9%	1.28	29	23	-177	11%
Harbor Bay to East Palo Alto	1%	9%	1.28	43	33	-167	17%
Subtotal				475	371	-1,079	57%

Table 17. 2025 Parking Demand and Supply for Alternative 1 - Comprehensive Service (continued)

Corridor/Ferry Route	Percent		Average Auto Occupancy	On Site		Demand/ Supply	Utilization
	Overflow	Kiss- and- Ride		Persons Parking	Vehicles Parked		
Marin							
Sausalito to San Francisco	19%	34%	1.99	571	287	187	287%
Tiburon to San Francisco	17%	38%	1.56	245	158	58	158%
Larkspur to San Francisco	3%	13%	1.43	2,290	1,605	-395	80%
Subtotal				3,106	2,050	-150	93%
Sonoma							
Port Sonoma to San Francisco	3%	13%	1.43	580	407	107	136%
Subtotal				580	407	107	136%
San Mateo							
South San Francisco to San Francisco	1%	10%	1.57	647	413	-187	69%
Redwood City to San Francisco	1%	10%	1.57	434	277	-223	55%
Coyote Pt to San Francisco	1%	10%	1.57	663	423	223	211%
Foster City to San Francisco	1%	10%	1.57	318	203	-97	68%
Subtotal				2,062	1,316	-284	120%
Santa Clara							
Moffett Field to San Francisco	1%	10%	1.57	212	135	-365	27%
E Palo Alto to San Francisco	1%	10%	1.57	254	162	-138	54%
Subtotal				466	297	-503	59%
Treasure Island							
Berkeley to Treasure Island	1%	10%	1.57	169	108	-192	36%
Oakland to Treasure Island	0%	7%	1.55	136	88	-12	88%
San Francisco to Treasure Island							
Subtotal				305	196	-204	49%
Total				13,534	8,935	-5,965	60%

Table 18. 2025 Parking Demand and Supply for Alternative 2 – Expanded Service

Corridor/Ferry Route	Percent		Average Auto Occupancy	On Site		Demand/ Supply	Utilization
	Overflow	Kiss- and- Ride		Persons Parking	Vehicles Parked		
Solano							
Vallejo to San Francisco	1%	10%	1.57	1,577	1,006	-594	63%
Benicia/Martinez to San Francisco	1%	10%	1.57	0	0	-500	0%
Subtotal				1,577	1,006	-1,094	48%
Contra Costa							
Antioch/Pittsburg to San Francisco	1%	10%	1.57	436	278	-22	93%
Hercules/Rodeo to San Francisco	1%	10%	1.57	277	177	-323	35%
Richmond-San Francisco	1%	10%	1.57	652	416	-584	42%
Subtotal				929	593	-907	40%
Alameda							
Berkeley-SF-Mission Bay	1%	10%	1.57	918	586	-414	59%
Alameda Point-Mission Bay-SF	1%	9%	1.28	393	307	-693	31%
Oakland to San Francisco	0%	7%	1.55	786	509	9	102%
Harbor Bay to San Francisco	1%	9%	1.28	417	326	-74	82%
San Leandro to San Francisco	1%	10%	1.57	541	345	-5	99%
Subtotal				3,055	2,074	-1,176	64%
Peninsula							
Harbor Bay to So. San Francisco	1%	9%	1.28	190	149	-101	59%
Harbor Bay to Redwood City	1%	9%	1.28	38	30	-170	15%
Harbor Bay to Moffett Field	1%	9%	1.28	22	17	-183	8%
Subtotal				249	195	-455	30%

Table 18. 2025 Parking Demand and Supply for Alternative 2 - Expanded Service (continued)

Corridor/Ferry Route	Percent		Average Auto Occupancy	On Site		Demand/Supply	Utilization
	Overflow	Kiss-and-Ride		Persons Parking	Vehicles Parked		
Marin							
Sausalito to San Francisco	19%	34%	1.99	570	287	187	287%
Tiburon to San Francisco	17%	38%	1.56	245	158	58	158%
Larkspur to San Francisco	3%	13%	1.43	2,289	1,604	-396	80%
Subtotal				3,105	2,049	-151	93%
Sonoma							
Port Sonoma to San Francisco	3%	13%	1.43	554	388	88	129%
Subtotal				554	388	88	129%
San Mateo							
South San Francisco to San Francisco	1%	10%	1.57	881	562	-38	94%
Redwood City to San Francisco	1%	10%	1.57	605	386	-114	77%
Subtotal				1,485	948	-152	86%
Santa Clara							
Moffett Field to San Francisco	1%	10%	1.57	224	143	-357	29%
Subtotal				224	143	-357	29%
Treasure Island							
Berkeley to Treasure Island	1%	10%	1.57	144	92	-208	31%
Oakland to Treasure Island	0%	7%	1.55	133	86	-14	86%
San Francisco to Treasure Island							
Subtotal				276	178	-222	44%
Total				11,891	7,852	-4,448	64%

Table 19. 2025 Parking Demand and Supply for Alternative 3 – Enhanced Existing Service

Corridor/Ferry Route	Percent		Average Auto Occupancy	On Site		Demand/Supply	Utilization
	Overflow	Kiss-and-Ride		Persons Parking	Vehicles Parked		
Solano							
Vallejo to San Francisco	1%	10%	1.57	1,880	1,200	-400	75%
Subtotal				1,880	1,200	-400	75%
Alameda							
Oakland to San Francisco	0%	7%	1.55	619	401	-99	80%
Harbor Bay to San Francisco	1%	9%	1.28	436	341	-59	85%
Subtotal				1,055	742	-158	82%
Marin							
Sausalito to San Francisco	19%	34%	1.99	567	285	185	285%
Tiburon to San Francisco	17%	38%	1.56	246	158	58	158%
Larkspur to San Francisco	3%	13%	1.43	2,282	1,599	-401	80%
Subtotal				3,095	2,043	-157	93%
Total				6,030	3,984	-716	85%

■ Revenues

Annual ridership is estimated by adding 260 average weekday riders to 105 weekend riders for an average annual total ridership. Weekday revenues are computed by assuming that all weekday riders pay the average fare (in 1990 dollars) and weekend revenues are computed by assuming that weekend riders pay the full fare (in 1990 dollars). This simplified method of estimating revenues was validated for the base year (1998) against actual revenues and matched within +/-2 percent systemwide, with +/-15 percent by corridor. It is not recommended that these revenues be used by route without more detailed analysis.

The total revenues (in 1990 dollars) for Enhanced Existing services represent a six percent increase over the future No Project alternative, while the Expanded Service alternative represents a 90 percent increase and the Comprehensive alternative represents a 111 percent increase over the future No-Project alternative.

Table 20. 2025 Revenue for Alternative 1 – Comprehensive Service

Corridor	Ferry Route	Annual Ridership	Revenues (1990 \$)		
			Weekday	Weekend	Total
Solano	Vallejo to San Francisco	1,148,984	4,020,024	\$297,393	4,317,417
	Benicia/Martinez to San Francisco	344,468	1,223,664	\$103,079	1,326,743
	Subtotal	1,493,452	\$5,243,688	\$400,472	\$5,644,160
Contra Costa	Antioch/Pittsburg to San Francisco	274,342	1,300,000	\$120,472	1,420,472
	Hercules/Rodeo to San Francisco	246,965	697,320	\$108,905	806,225
	Richmond-San Francisco	517,001	1,199,250	\$218,273	1,417,523
	Subtotal	763,966	\$1,896,570	\$327,178	\$2,223,748
Alameda	Berkeley-SF-Mission Bay	785,521	1,573,000	\$236,246	1,809,246
	Alameda Point-Mission Bay-SF	629,346	1,133,600	\$172,003	1,305,603
	Oakland to San Francisco	639,016	1,182,480	\$131,384	1,313,864
	Harbor Bay to San Francisco	403,938	925,600	\$101,093	1,026,693
	San Leandro to San Francisco	384,871	1,052,220	\$127,992	1,180,212
	Oakland Army Base to San Francisco	110,657	193,960	\$37,613	231,573
	Subtotal	2,842,693	\$5,866,900	\$768,718	\$6,635,618
Peninsula	Harbor Bay to So. San Francisco	122,941	300,950	\$9,604	310,554
	Harbor Bay to Redwood City	21,084	55,770	\$3,539	59,309
	Harbor Bay to Moffett Field	10,130	34,580	\$1,187	35,767
	Harbor Bay to Hunters Pt	108,398	260,000	\$16,494	276,494
	Harbor Bay to Coyote pt	14,109	31,850	\$5,135	36,985
	Harbor Bay to Foster City	20,616	47,450	\$6,135	53,585
	Harbor Bay to East Palo Alto	31,132	88,140	\$8,324	96,464
	Subtotal	154,155	\$391,300	\$14,330	\$405,630
Marin	Sausalito to San Francisco	1,447,250	2,773,680	\$151,024	2,924,704
	Tiburon to San Francisco	755,467	1,467,440	\$76,113	1,543,553
	Larkspur to San Francisco	2,095,070	5,490,342	\$184,829	5,675,171
	Subtotal	4,297,786	\$9,731,462	\$411,966	\$10,143,428
Sonoma	Port Sonoma to San Francisco	384,592	1,324,050	\$36,177	1,360,227
	Subtotal	384,592	\$1,324,050	\$36,177	\$1,360,227

Table 20. 2025 Revenue for Alternative 1 – Comprehensive Service (continued)

Corridor	Ferry Route	Annual Ridership	Revenues		
			Weekday	Weekend	Total
San Mateo	South San Francisco to San Francisco	470,330	1,189,045	\$113,850	1,302,895
	Redwood City to San Francisco	297,984	995,540	\$60,948	1,056,488
	Coyote Pt to San Francisco	410,844	1,173,120	\$74,265	1,247,385
	Foster City to San Francisco	218,288	674,310	\$48,634	722,944
	Subtotal	768,314	\$2,184,585	\$174,798	\$2,359,383
Santa Clara	Moffett Field to San Francisco	142,277	525,200	\$60,372	585,572
	E Palo Alto to San Francisco	177,781	626,925	\$58,304	685,229
	Subtotal	142,277	\$525,200	\$60,372	\$585,572
Treasure Island	Berkeley to Treasure Island	153,193	212,550	\$31,607	244,157
	Oakland to Treasure Island	166,116	225,420	\$43,549	268,969
	San Francisco to Treasure Island	1,144,365	933,400	\$263,706	1,197,106
	Subtotal	1,463,674	\$1,371,370	\$338,862	\$1,710,232
Total		13,677,076	\$32,930,880	\$2,908,250	\$35,839,129

Table 21. 2025 Revenues for Alternative 2 – Expanded Service

Corridor	Ferry Route	Annual Ridership	Revenues (1990 \$)		
			Weekday	Weekend	Total
Solano	Vallejo to San Francisco	1,132,433	\$3,960,892	\$295,955	\$4,256,847
	Benicia/Martinez to San Francisco	39,476	\$95,238	\$102,993	\$198,231
	Subtotal	1,171,909	\$4,056,130	\$398,948	\$4,455,078
Contra Costa	Antioch/Pittsburg to San Francisco	274,342	\$1,300,000	\$120,472	\$1,420,472
	Hercules/Rodeo to San Francisco	249,472	\$704,340	\$110,157	\$814,497
	Richmond-San Francisco	519,476	\$1,205,100	\$219,059	\$1,424,159
	Subtotal	768,947	\$1,909,440	\$329,217	\$2,238,657
Alameda	Berkeley-SF-Mission Bay	792,741	\$1,587,872	\$237,787	\$1,825,659
	Alameda Point-Mission Bay-SF	617,709	\$1,110,200	\$172,176	\$1,282,376
	Oakland to San Francisco	717,372	\$1,320,800	\$156,673	\$1,477,473
	Harbor Bay to San Francisco	411,873	\$943,150	\$103,840	\$1,046,990
	San Leandro to San Francisco	392,474	\$1,074,840	\$128,229	\$1,203,069
Subtotal	2,932,170	\$6,036,862	\$798,704	\$6,835,566	

Table 21. 2025 Revenues for Alternative 2 – Expanded Service (continued)

Corridor	Ferry Route	Annual Ridership	Revenues (1990 \$)		
			Weekday	Weekend	Total
Peninsula	Harbor Bay to So. San Francisco	123,411	\$302,250	\$9,415	\$311,665
	Harbor Bay to Redwood City	26,383	\$70,070	\$3,973	\$74,043
	Harbor Bay to Moffett Field	14,374	\$49,140	\$1,586	\$50,726
	Subtotal	164,167	\$421,460	\$14,974	\$436,434
Marin	Sausalito to San Francisco	1,445,859	\$2,771,080	\$150,798	\$2,921,878
	Tiburon to San Francisco	755,938	\$1,467,960	\$76,852	\$1,544,812
	Larkspur to San Francisco	2,094,599	\$5,489,640	\$184,196	\$5,673,836
	Subtotal	4,296,396	\$9,728,680	\$411,846	\$10,140,526
Sonoma	Port Sonoma to San Francisco	368,145	\$1,266,720	\$35,796	\$1,302,516
	Subtotal	368,145	\$1,266,720	\$35,796	\$1,302,516
San Mateo	South San Francisco to San Francisco	610,246	\$1,563,705	\$124,879	\$1,688,584
	Redwood City to San Francisco	403,022	\$1,344,070	\$85,508	\$1,429,578
	Subtotal	1,013,268	\$2,907,775	\$210,387	\$3,118,162
Santa Clara	Moffett Field to San Francisco	148,909	\$550,160	\$62,532	\$612,692
	Subtotal	148,909	\$550,160	\$62,532	\$612,692
Treasure Island	Berkeley to Treasure Island	134,589	\$186,030	\$29,066	\$215,096
	Oakland to Treasure Island	155,437	\$210,210	\$42,068	\$252,278
	San Francisco to Treasure Island	1,143,482	\$932,620	\$263,578	\$1,196,198
	Subtotal	1,433,509	\$1,328,860	\$334,711	\$1,663,571
Total		12,571,763	\$29,506,087	\$2,717,587	\$32,223,674

Table 22. 2025 Revenues for Alternative 3 – Enhanced Existing Service

Corridor	Ferry Route	Ridership			Annual % Growth (1998-2025)
		Existing (1998)	Future (2025) No Project	Future (2025) Alternative 3	
Solano	Vallejo to San Francisco	\$1,323,553	\$4,631,991	\$339,808	\$4,971,799
	Subtotal	\$1,323,553	\$4,631,991	\$339,808	\$4,971,799
Alameda	Oakland to San Francisco	\$772,793	\$1,443,520	\$140,341	\$1,583,861
	Harbor Bay to San Francisco	\$453,053	\$1,034,150	\$118,179	\$1,152,329
	Subtotal	\$1,225,846	\$2,477,670	\$258,520	\$2,736,190
Marin	Sausalito to San Francisco	\$1,463,056	\$2,802,800	\$154,140	\$2,956,940
	Tiburon to San Francisco	\$755,507	\$1,466,400	\$78,075	\$1,544,475
	Larkspur to San Francisco	\$2,110,009	\$5,526,846	\$189,088	\$5,715,934
	Subtotal	\$4,328,573	\$9,796,046	\$421,304	\$10,217,350
Total		\$6,877,972	\$16,905,707	\$1,019,631	\$17,925,338

■ Modal Diversion

Table 23 presents a list of the ferry routes that are combined into screenlines for an analysis of modal diversion. Some routes are not included in a screenline, but are noted here for reference purposes. The ferry ridership is combined with auto, rail, and bus trips from the WTA forecasting model to produce estimates of person and vehicle trips across major screenlines in the Bay Area, developed for the purposes of this study. Tables 24 and 25 present these data for person and vehicle trips, respectively. These are minor differences in total person trips crossing each screenline for each alternative due to changes in mode or route that are not captured in this analysis.

In both the Comprehensive and Expanded Service alternatives, ferry services divert more trips from highway than from other transit (54 and 33 percent more highway trips diverted than transit trips, respectively). In the two rail corridors (San Francisco/San Mateo county line and Bay Bridge), the majority of diversion from other transit is from rail and not bus services. Not surprisingly, the screenlines with the most modal diversion to ferry are the Golden Gate Bridge, Bay Bridge, and the San Francisco/San Mateo county line.

Table 23. Ferry Routes in each Screenline

Corridor	Ferry Route	Screenline
Solano	Vallejo to San Francisco	Carq/Ben Bridges
	Benicia/Martinez to San Francisco	Carq/Ben Bridges
Contra Costa	Antioch/Pittsburg to San Francisco	Bay Bridge
	Hercules/Rodeo to San Francisco	Bay Bridge
	Richmond-San Francisco	Bay Bridge
Alameda	Berkeley-SF-Mission Bay	Bay Bridge
	Alameda Point-Mission Bay-SF	Bay Bridge
	Oakland to San Francisco	Bay Bridge
	Harbor Bay to San Francisco	Bay Bridge
	San Leandro to San Francisco	Bay Bridge
	Oakland Army Base to San Francisco	Bay Bridge
Peninsula	Harbor Bay to So. San Francisco	SM Bridge
	Harbor Bay to Redwood City	SM Bridge
	Harbor Bay to Moffett Field	SM Bridge
	Harbor Bay to Hunters Pt	SM Bridge
	Harbor Bay to Coyote pt	SM Bridge
	Harbor Bay to Foster City	SM Bridge
	Harbor Bay to East Palo Alto	SM Bridge
Marin	Sausalito to San Francisco	Golden Gate
	Tiburon to San Francisco	Golden Gate
	Larkspur to San Francisco	Golden Gate
Sonoma	Port Sonoma to San Francisco	Golden Gate
San Mateo	South San Francisco to San Francisco	none
	Redwood City to San Francisco	SF/SM County
	Coyote Pt to San Francisco	SF/SM County
	Foster City to San Francisco	SF/SM County
Santa Clara	Moffett Field to San Francisco	SF/SM County
	E Palo Alto to San Francisco	SF/SM County
Treasure Island	Berkeley to Treasure Island	Bay Bridge
	Oakland to Treasure Island	Bay Bridge
	San Francisco to Treasure Island	None

Table 24. Person Trips by Mode Across Screenlines

Screenline	1998	2025 No-Project	Difference from 1998	Percent Change from Total	2025 Alt 1	Difference from No-Project	Percent Change from Total	2025 Alt 2	Difference from No-Project	Percent Change from Total	2025 Alt 3	Difference from No-Project	Percent Change from Total
Bay Bridge													
BART	143,958	262,671	118,713	16.5%	256,073	-6,598	-0.9%	256,073	-6,598	-0.9%	256,073	-6,598	-0.9%
AC Transit	2,089	3,812	1,723	0.2%	3,682	-130	0.0%	3,682	-130	0.0%	3,682	-130	0.0%
Ferry Transit	1,801	3,058	1,257	0.2%	15,212	12,154	1.7%	15,053	11,995	1.7%	4,367	1,309	0.2%
Highway	408,851	451,521	42,670	5.9%	446,498	-5,023	-0.7%	446,168	-5,353	-0.7%	451,659	137	0.0%
Subtotal	556,699	721,062	164,363	22.8%	721,465	403	0.1%	720,976	-86	0.0%	715,781	-5,282	-0.7%
Golden Gate													
Golden Gate Transit	9,298	14,055	4,757	2.4%	13,471	-584	-0.3%	13,471	-584	-0.3%	13,471	-584	-0.3%
Ferry Transit	8,118	14,247	6,129	3.1%	17,432	3,185	1.6%	17,364	3,117	1.6%	16,083	1,836	0.9%
Highway	151,926	168,637	16,712	8.5%	166,476	-2,162	-1.1%	166,307	-2,331	-1.2%	167,720	-917	-0.5%
Subtotal	169,342	196,939	27,598	14.0%	197,379	439	0.2%	197,142	202	0.1%	197,274	335	0.2%
San Francisco/San Mateo County Line													
SamTrans		5099			4998	-101	0.0%	4998	-101	0.0%	4998	-101	0.0%
Caltrain		8049			8092	43	0.0%	8092	43	0.0%	8092	43	0.0%
BART		85891			85009	-972	-0.2%	85009	-972	-0.2%	85009	-972	-0.2%
Caltrain, BART, and Samtrans	48,204	99,129	50,925	10.6%	98,099	-1,030	-0.2%	98,099	-1,030	-0.2%	98,099	-1,030	-0.2%
Ferry Transit	0	0	0	0.0%	4,544	4,544	0.9%	2,006	2,006	0.4%	-	0	0.0%
Highway	318,955	380,252	61,297	12.8%	375,745	-4,507	-0.9%	377,223	-3,029	-0.6%	379,788	-464	-0.1%
Subtotal	367,159	479,381	112,222	23.4%	478,388	-993	-0.2%	477,328	-2,053	-0.4%	477,887	-1,494	-0.3%

Table 24. Person Trips by Mode Across Screenlines (continued)

Screenline	1998	2025 No-Project	Difference from 1998	Percent Change from Total	2025 Alt 1	Difference from No Project	Percent Change from Total	2025 Alt 2	Difference from No Project	Percent Change from Total	2025 Alt 3	Difference from No Project	Percent Change from Total
San Mateo Bridge													
Ferry Transit	0	0	0	0.0%	1,214	1,214	0.0%	617	617	0.0%	-	0	0.0%
Highway	145,258	161,611	16,352	10.1%	161,208	-403	-0.2%	161,271	-340	-0.2%	161,590	-21	0.0%
Subtotal	145,258	161,611	16,352	10.1%	162,422	811	0.5%	161,888	277	0.2%	161,590	-21	0.0%
Dumbarton Bridge													
Highway	129,638	161,796	32,158	19.9%	161,643	-153	-0.1%	161,765	-30	0.0%	161,912	117	0.1%
Subtotal	129,638	161,796	32,158	19.9%	161,643	-153	-0.1%	161,765	-30	0.0%	161,912	117	0.1%
Richmond-San Rafael Bridge													
Highway	78,058	90,986	12,928	14.2%	90,579	-407	-0.4%	91,103	117	0.1%	90,941	-44	0.0%
Subtotal	78,058	90,986	12,928	14.2%	90,579	-407	-0.4%	91,103	117	0.1%	90,941	-44	0.0%
Carquinez/Benicia Bridges													
Ferry Transit	1,990	5,933	3,943	2.2%	5,555	-378	-0.2%	4,319	-1,614	-0.9%	4,935	-998	-0.6%
Highway	157,224	176,634	19,410	12.3%	176,484	-151	-0.1%	176,471	-163	-0.1%	176,667	33	0.0%
Subtotal	159,214	182,567	23,353	12.8%	182,039	-529	-0.3%	180,790	-1,777	-1.0%	181,602	-965	-0.5%
Total	1,605,368	1,994,342	388,974	19.5%	1,992,700	-1,642	-0.1%	1,990,375	-3,967	-0.2%	1,986,987	-7,355	-0.4%

Table 25. Vehicle Trips by Mode Across Screenlines

Screenline	1998	2025 No-Project	Difference from 1998	Percent Change from Total	2025 Alt 1	Difference from No-Project	Percent Change from Total	2025 Alt 2	Difference from No-Project	Percent Change from Total	2025 Alt 3	Difference from No-Project	Percent Change from Total
Bay Bridge													
Vehicle Trips	355,028	383,245	48,217	14.4%	379,296	-3,950	-1.0%	379,009	-4,236	-1.1%	383,430	185	0.0%
Vehicle Occupancy	1.22	1.18			1.18			1.18			1.18		
Golden Gate													
Vehicle Trips	127,735	143,510	15,775	12.3%	141,626	-1,884	-1.3%	141,493	-2,017	-1.4%	142,646	-864	-0.6%
Vehicle Occupancy	1.19	1.18			1.18			1.18			1.18		
SE/SM County Line													
Vehicle Trips	263,196	327,759	64,563	24.5%	324,050	-3,709	-1.1%	325,264	-2,496	-0.8%	327,359	-400	-0.1%
Vehicle Occupancy	1.21	1.16			1.16			1.16			1.16		
San Mateo Bridge													
Vehicle Trips	118,161	137,838	19,677	16.7%	137,495	-343	-0.2%	137,547	-291	-0.2%	137,808	-30	0.0%
Vehicle Occupancy	1.23	1.17			1.17			1.17			1.17		
Dumbarton Bridge													
Vehicle Trips	104,642	133,989	29,347	28.0%	133,857	-132	-0.1%	133,971	-18	0.0%	134,073	84	0.1%
Vehicle Occupancy	1.24	1.21			1.21			1.21			1.21		
Richmond-San Rafael Bridge													
Vehicle Trips	65,189	78,984	13,795	21.2%	78,640	-344	-0.4%	79,101	117	0.1%	78,960	-24	0.0%
Vehicle Occupancy	1.20	1.15			1.15			1.15			1.15		
Carquinez/Benicia Bridges													
Vehicle Trips	125,339	157,122	31,783	25.4%	156,994	-129	-0.1%	156,975	-147	-0.1%	157,161	39	0.0%
Vehicle Occupancy	1.25	1.12			1.12			1.12			1.12		
Total Vehicle Trips	1,139,291	1,362,447	223,156	16.4%	1,351,958	-10,490	-0.8%	1,353,359	-9,088	-0.7%	1,361,438	-1,010	-0.1%
Total Vehicle Occupancy	1.22	1.17	(0.05)	-4.4%	1.17	(0.00)	0.0%	1.17	(0.00)	0.0%	1.17	0.00	0.0%

■ Vehicle Miles Traveled

Table 26 presents the vehicle miles traveled (VMT) for the five scenarios: 1998 existing, 2025 no-project, and the three 2025 alternatives. VMT is presented by county and vehicle type (auto and trucks by class). VMT is calculated as the traffic volume (output from a traffic assignment) multiplied by the distance (in miles) for every link in the MTC regional highway network.

Intrazonal VMT and transit drive access VMT are reported separately, because these are calculated as a post-process to the WTA ridership forecasting model. Intrazonal VMT represents the trips within a traffic analysis zone multiplied by the average trip length (in miles) for intrazonal trips. These are calculated separately, because intrazonal trips are not assigned to the highway network during the traffic assignment process. Transit drive access trips are calculated as the number of vehicles that drive to access transit services multiplied by the trip distance for each of these trips (in miles). These are also calculated separately, because transit drive access trips are not assigned to the highway network during the traffic assignment process.

Table 26. VMT for Each Alternative

County	Vehicle Miles Traveled				
	1998	2025 No-Project	2025 Alternative 1	2025 Alternative 2	2025 Alternative 3
San Francisco	8,017,759	9,075,385	9,008,509	9,015,828	9,066,584
San Mateo	18,458,290	20,838,110	20,704,505	20,733,300	20,793,944
Santa Clara	33,671,029	45,696,564	45,675,552	45,677,089	45,683,006
Alameda	30,534,137	40,021,231	39,981,340	39,975,671	40,013,094
Contra Costa	17,249,251	23,702,339	23,680,594	23,693,740	23,706,802
Solano	9,320,419	16,317,037	16,320,101	16,320,363	16,322,159
Napa	3,085,129	5,038,273	5,036,882	5,038,031	5,037,252
Sonoma	7,785,717	11,045,667	11,034,889	11,033,789	11,050,163
Marin	7,335,401	8,539,503	8,480,530	8,480,453	8,535,238
Intrazonal VMT	1,347,897	2,112,613	2,112,531	2,112,544	2,112,558
Transit Drive Access VMT	984,344	1,892,977	1,966,608	1,965,901	1,918,770
Bus VMT	268,239	323,225	333,497	333,497	329,050
Total	138,057,611	184,602,925	184,335,538	184,380,207	184,568,619

Table 26. VMT for Each Alternative (continued)

County	Vehicle Miles Traveled				
	1998	2025 No-Project	2025 Alternative 1	2025 Alternative 2	2025 Alternative 3
Percent Change from 2025 No-Project					
San Francisco			-0.7%	-0.7%	-0.1%
San Mateo			-0.6%	-0.5%	-0.2%
Santa Clara			0.0%	0.0%	0.0%
Alameda			-0.1%	-0.1%	0.0%
Contra Costa			-0.1%	0.0%	0.0%
Solano			0.0%	0.0%	0.0%
Napa			0.0%	0.0%	0.0%
Sonoma			-0.1%	-0.1%	0.0%
Marin			-0.7%	-0.7%	0.0%
Intrazonal VMT			0.0%	0.0%	0.0%
Transit Drive Access VMT			3.9%	3.9%	1.4%
Bus VMT			3.2%	3.2%	1.8%
Total			-0.1%	-0.1%	0.0%

■ User Benefits

Average weekday daily user benefits are calculated using the Federal Transit Administration (FTA) procedures, which also are implemented by the MTC for regional planning studies. This method provides a means to compare alternatives across multiple modes. Values of time used in this analysis to convert travel time for existing and new users are derived from the mode choice model and weighted across trip purposes. Table 27 presents a summary of these results for the three alternatives. As expected, the Expanded Service alternative provides the highest user benefits, with the majority of these benefits for auto users.

Table 27. Average Weekday Daily User Benefits

	Alternative		
	Comprehensive Service	Expanded Service	Enhanced Existing Service
Travel Time			
Auto Person Trips, Daily	\$84,008	\$145,484	\$42,043
Transit Person Trips, Daily	\$6,223	\$9,111	\$5,593
Ferry Person Trips, Daily	\$43,192	\$38,807	\$22,065
Truck Trips, Daily	\$3,880	\$4,363	\$294
Total	\$137,303	\$197,765	\$69,995
Out-of-Pocket Costs			
Auto Person Trips, Daily	\$(2,769)	\$7,042	\$473
Transit Person Trips, Daily	\$5,038	\$1,960	\$6,545
Ferry Person Trips, Daily	\$(6,328)	\$(8,059)	\$(16,673)
Truck Trips, Daily	\$(0)	\$(7)	\$(1)
Total	\$(4,060)	\$935	\$(9,656)
Total			
Auto Person Trips, Daily	\$81,239	\$152,525	\$42,516
Transit Person Trips, Daily	\$11,261	\$11,070	\$12,138
Ferry Person Trips, Daily	\$36,864	\$30,748	\$5,393
Truck Trips, Daily	\$3,880	\$4,357	\$292
Total	\$133,243	\$198,700	\$60,339
Percent of Total			
Auto Person Trips, Daily	61%	77%	70%
Transit Person Trips, Daily	8%	6%	20%
Ferry Person Trips, Daily	28%	15%	9%
Truck Trips, Daily	3%	2%	0%
Total	100%	100%	100%