То	ТАМС	Memo	
From	Caltrans		
СС	Steer		
Date	22 March 2021		
Project	TAMC Ridership Forecasts	Project No.	23085010

TAMC: Monterey Bay Regional Rail Ridership Forecasts

Background

In November-December 2020, Steer prepared ridership forecasts for Caltrans for various TAMC scenarios using the Caltrans Mode-Share Model. These were prepared for three model forecast years corresponding to the California State Rail Plan time horizons:

- Initial Service (2027);
- Phased Service (2032); and
- Vision Service (2050).

This memorandum presents demand forecasts for the following two corridors:

- An extension to the existing Caltrain San Francisco-San Jose-Gilroy corridor, to form a San Francisco -Salinas - San Luis Obispo connection. The Salinas-San Luis Obispo section will initially be served by a bus before being upgraded to an all-rail service by 2050; and
- A new service between Monterey and Santa Cruz which will initially be served by a bus before being upgraded to an all-rail service by 2050.

Structure of this document

This memorandum is organized as follows:

- Model Structure: providing an overview of the model and relevant assumptions;
- Model Inputs: presenting an overview of schedule frequencies, fare, and growth assumptions;
- Forecast Demand: discussing the forecast demand for the three forecast years and for the two corridors;
- Validation: explaining the reasonableness of the forecast demand as it relates to standard benchmarking sources (e.g., Journey-to-Work data) and other regional studies; and
- Bus services: supporting evidence for the bus forecasts.

Memo update

Note that this is an update of a memo originally prepared on December 23, 2020. Since then, we have included the impact of "through" ridership for the Coast route in our reporting. "Through" ridership includes:

- Connecting passengers from the Coast route who transfer at San Jose north along the Capitol Corridor route to Sacramento; and
- Connecting passengers from the Coast route who transfer at San Luis Obispo south along the Pacific Surfliner route to San Diego.
- We did not model ridership from passengers undertaking two transfers (e.g. Capitol Corridor -> transfer to Coast route at San Jose -> transfer to Pacific Surfliner at San Luis Obispo) as we expect the



ridership demand in this market segment to be low given the journey times involved. For example, driving from Sacramento to San Luis Obispo takes about 4h30min (compared to 7h30min via rail), and driving from Sacramento to Los Angeles takes about 6-8 hours (compared to 12h50min via rail and just over an hour by plane), and where rail fares tend to be higher than advanced-purchase air fares or marginal costs of driving.

• Connecting passengers in 2027 are assumed to not use the bus service between Salinas and San Luis Obispo, as that would involve two connections (i.e., rail to bus to rail).

"Non-through" trips are those who only use the Coast route and do not undertake transfers at San Jose or San Luis Obispo.

Table 1 presents ridership forecast for the above markets:

Table 1: Summary of changes

Year	Total ridership [A]	Ridership excluding "through" trips (presented in December 2020 memo version) [B]	"Through" trips [C]
2027	188,800	160,300	28,500
2032	506,300	383,300	123,000
2050	616,800	474,400	142,400

Note: A = B + C

COVID-19 disclaimer

Please note that these forecasts were prepared using pre-COVID data on ridership patterns, trip tables, and socioeconomic forecasts; they do not include any adjustments for COVID impacts. Amtrak's market research of past customers in California suggest that there will be a significant decline in rail travel, especially commute-related rail travel, even after the pandemic is over. However, this research focuses on the Capitol Corridor, San Joaquin, and Pacific Surfliner corridors and has limited sampling of customers in Monterey, San Benito, and San Luis Obispo counties. If available through AMBAG or other area agencies, we suggest applying locally appropriate adjustments surrounding changes in teleworking, peak shifting, or modal preferences towards/away from public transit.



Model Structure

The Mode-Share Model, developed for Caltrans in 2016, forecasts Amtrak California rail ridership at the zone pair level (using a system of 337 zones within the state), across three trip purposes (business, leisure, commute) and four time periods (AM Peak, Midday, PM Peak, Nighttime). The model considers the distance, travel time (including congestion), cost, and existing travel volume via automobile between each zone pair, and calculates the probability of diversion from auto to Amtrak based on a given level of rail service, including: schedule, fare, availability of direct rail service versus connecting rail-Thruway bus service, access and egress characteristics between the rail station and the ultimate origin or destination.

The mode-share model was originally created for detailed ridership forecasting along state-supported corridors for the Capitol Corridor, Pacific Surfliner, and San Joaquins. As such, the granularity of the 337-zone model zone system in the TAMC corridor is not of sufficient detail. Therefore, a more detailed trip table was developed by splitting the model zones and re-processing the trip table data (originally developed based on AirSage data), baseline auto journey time/cost data, station access/egress data, etc. to generate data for the revised zone structure. This resulted in a zone structure of 348 model zones.

While this updated trip table provides additional geographic granularity in the corridor, please note the following caveats as well as characteristics of the model forecasts:

- The model's mode choice parameters (e.g., modal constants, value of time) were calibrated against
 observed market behavioral patterns on Amtrak's state-supported services. Using this model implies that
 users of the new rail services will have similar characteristics to existing Amtrak services, which may not
 necessarily be the case.
- Caltrain ridership data at the origin-destination level were not available. As many of these proposed services represent extensions to the Caltrain corridor and travel within existing Caltrain stations, this level of granularity is needed to properly calibrate the model and forecast ridership. As such, we did not model any ridership between two existing Caltrain stations (e.g., San Jose to Gilroy), even though those stations overlap with the forecast alternatives.
- We do have station-level boardings/alightings for Caltrain (which is publicly available)¹. However, given
 the high density of Caltrain stations and Caltrain having its own forecasting tools, it is not appropriate to
 model trips where both ends are within existing Caltrain stations (such as San Francisco-San Jose-Gilroy)
 as these are better addressed through Caltrain-specific modeling tools. Caltrain station-level ridership was
 used to inform assumptions about the distribution of destinations for passengers originating from points
 south of Gilroy.
- These forecasts are operator-agnostic; at the time of writing, no decisions have been made regarding the
 operator of this route. As such, the model does not estimate impacts from changes in on-board amenities
 (such as café cars). We suggest referring to either industry literature² or more preferably to any Caltrainspecific market research to address this topic.
- Connections to the Capitol Corridor at San Jose and connections to the Pacific Surfliner at San Luis Obispo are explicitly considered in the modeling. The data are based on existing connections and ridership distribution by station.

² For instance, the UK Passenger Demand Forecasting Handbook (v5.1) provides 'recommended values' for changes to rolling stock provisions.



¹ Caltrain, 2019 Annual Key Findings Report (https://www.caltrain.com/Assets/Stats+and+Reports/2019+Annual+Key+Findings+Report.pdf)

The model does not estimate impacts of connections to proposed rail services where the operating alignment, routing, journey time, frequency, level of service, and indeed service availability are rather uncertain at this point (for example, California High Speed Rail). It should be noted that detailed development of a dedicated model with corridor-specific data collection would be more desirable from the level of accuracy of forecasts perspective. However, it would also be significantly more costly and time-consuming.

Key model assumptions

The key model assumptions are summarized here:

- Capacity constraints were not considered.
- Connections at San Luis Obispo to the Pacific Surfliner were modeled involving a transfer.
- Connections at San Jose to the Capitol Corridor were modeled involving a transfer.
- A direct, one-seat service to San Francisco through San Jose was assumed.
- Connections from the Capitol Corridor to the Pacific Surfliner via the Salinas corridor were not modeled.
- Connections were considered for all model years, including 2027.
- Service was assumed to run daily (i.e., on both weekdays and weekends) with an approximately 75% weekday/25% weekend split along the Monterey-Santa Cruz corridor (based on the auto trips tables for this segment).
- Connections were included based on existing (pre-COVID) connections data on the Pacific Surfliner and Capitol Corridor. The exact impact of the transfer will depend on the nature of the transfer (e.g., cross-platform, guaranteed, timed, on-time-performance of trains, etc.).

Model Inputs

Service Frequencies

Detailed timetables are an input into the model. Timetables were provided by AECOM and are attached at the end of this memo.

The rail service from San Francisco to Salinas and San Luis Obispo is assumed to be a direct service, and therefore there is no transfer penalty applied to these forecasts.

Stations	2027	2032	2050
San Luis Obispo	1	4 + 4	8
Paso Robles	1	4 🕇 4	8
King City	1	4 🕇 4	8
Soledad	1	4 🕇 4	8
Salinas	3	17	17
Castroville	3	17	17
Pajaro	3	17	17
Hollister	3	17	17
Gilroy	3	17	17
San Jose	3	17	17
San Francisco	3	17	17

Table 2: Northbound Frequency Summary: San Francisco – Salinas – San Luis Obispo segment



Table 3: Northbound Frequency Summary: Monterey – Santa Cruz segment

Stations	2027	2032	2050
Monterey		17	17
Seaside		17	17
Marina	n/a	17	17
Castroville		17	17
Pajaro		17	17
Watsonville		17	17
Aptos		17	17
Capitola		17	17
Santa Cruz		17	17

	Mode Bus		Rail
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Fares

It was agreed with AECOM to use different fare structures for different parts of the corridors:

Extension from Gilroy to Salinas

For the extension from Gilroy to Salinas, the assumption was to extend the Caltrain fare structure. Caltrain currently uses zone-based fares. We assumed that the stations in the extension to Salinas (Pajaro, Castroville, and Salinas) would be in a "Zone 7" and that the incremental fare difference between Zone 6 and Zone 7 would be \$2.25 (which is the same incremental fare difference between all the existing zones). For example, the fare from San Francisco to Salinas would cost \$17.25 (existing fare of \$15 for 6 zones, plus \$2.25 to Zone 7). Caltrain zones are larger farther away from San Francisco. Specifically, the distance from Blossom Hill (last station in zone 5) and Gilroy (last station in zone 6) is 24 miles whereas the distance from San Francisco to Millbrae (first station in Zone 1 and first station in Zone 2) is only 14 miles. The distance from Gilroy (last station in zone 6) to Salinas (last station in hypothetical new zone) is 27 miles. We therefore felt that placing Pajaro, Castroville, and Salinas into one zone aligns most closely with the Caltrain's zone 6 (Morgan Hill, San Martin, and Gilroy) which they are most similar to both geographically and demographically.

Figure 1: Caltrain zone system and fares

Ticket	How to	Travel within					
Туре*	Buy	1 Zone	2 Zones	3 Zones	4 Zones	5 Zones	6 Zones
One Way	<u>Ticket</u> <u>Machine</u>	\$3.75	\$6.00	\$8.25	\$10.50	\$12.75	\$15.00
	<u>Clipper</u> <u>Card</u>	\$3.20	\$5.45	\$7.70	\$9.95	\$12.20	\$14.45
Day Pass+	<u>Ticket</u> <u>Machine</u>	\$7.50	\$12.00	\$16.50	\$21.00	\$25.50	\$30.00
Zone Upgrade	<u>Ticket</u> <u>Machine</u>	\$2.25 per zone					
Monthly Pass++	<u>Clipper</u> <u>Card</u>	\$96.00	\$163.50	\$231.00	\$298.50	\$366.00	\$433.50



Adult Full Fare

Source: Caltrain

Extension to San Luis Obispo

For all trips along the extension to San Luis Obispo, we assumed the Pacific Surfliner fare structure. The Pacific Surfliner effective fares can be derived from observed ridership and ticket revenue data. The fare was calculated using a "boarding fare" and "per-mile fare" combination, by performing a regression on the observed data. The "constant" represents the boarding fare and the distance coefficient represents the per-mile fare. This is consistent with our work for previous fare analysis.

The regression resulted in a boarding fare of 9.51 and a per-mile fare of 0.20. Thus, the fare for a 10-mile trip would be $11.51 = 9.51 + 0.20 \times 10$ miles.



Santa Cruz – Monterey regional service

For the Santa Cruz – Monterey regional service, we used the Sonoma-Marin Area Rail Transit (SMART) fare structure as a model. The SMART fare system is a zone-based fare system. We used the same fares as shown below and assigned the proposed stations into three zone groups. For example, the fare for a trip from Monterey to Marina would be \$3.50.



*Discount fares available for seniors, youth and passengers with disabilities using a valid Clipper discount card. All fares listed are one-way fares.

Source: SMART



Table 4: Monterey-Santa Cruz assumed zone groupings

Zone	Station	
	Monterey	
Zone 1	Sand City	
	Marina	
Zone 2	Castroville	
	Pajaro	
	Watsonville	
	Aptos	
Zone 3	Capitola	
	Santa Cruz	

Source: Steer analysis of SMART zone system and location of Monterey-Santa Cruz stations

The ticket revenue and ridership impacts are potentially subject to change due to future fare policy changes, including a potentially uniform fare structure for the region.

Growth

Future year growth rates in the model are determined based on Moody's demographic forecasts and the model's pre-existing demographic growth elasticity factors. The Moody's growth rates (Table 5) benchmark well against trip growth data from the AMBAG model (Table 6). Given this consistency, combined with Moody's data having more datapoints which cover the entire range of the milestone years, we decided to use Moody's data for the growth rates. Note that Moody's data also forecasts a more conservative outlook in farther out years, which is consistent with industry practice.

Table 5: Caltrans Mode-Share Model Growth Rates

	2017	2027	2032	2050
CAGR		1.59%	1.54%	1.28%
Growth Factor	1.00	1.16	1.23	1.42

Source: Mode Share Model, based on Moody's Economy.com forecasts

Table 6: AMBAG Model Trip Implied Growth Rates

	2015	2040
CAGR		1.49%
Growth Factor	1.00	1.49

Source: AMBAG model (permission received August 11, 2020)



Forecast Demand

Forecast summaries for each model year are presented below. The increases between 2027, 2032, and 2050 are driven by: frequency increase, upgrade from bus service to rail service, and forecast economic and demographic growth in the corridor More detailed discussion on each model year's forecasts follows. The ridership results in Table 7 are mainly driven by frequency changes that will be implemented in the proposed service plans as outlined in Table 2 and Table 3 and any associated other rail level-of-service characteristics (such as travel time and departure/arrival times) and their changes.

Direct Service through San Jose

Note that these forecasts assume that trains will be able to run through service without a transfer between San Luis Obispo, Salinas, and San Francisco. However, passenger may have to transfer to/from Caltrain at San Jose Diridon in some or all future years. If a transfer at San Jose was necessary, then ridership would decrease from the levels outlined in Table 7 and Table 8 as data show passengers prefer direct service over a trip with a transfer. The exact volume of the ridership decrease would depend on the nature of the transfer (e.g., cross-platform, guaranteed, timed, on-time-performance of trains, etc.).

There is limited revealed preference data in California comparing rail-to-rail direct service and rail-to-rail service with a transfer within an intercity rail context. The most relevant analysis involves a case on the Pacific Surfliner in January 2012, where Amtrak began operating direct trains from San Luis Obispo to San Diego through Los Angeles instead of requiring a transfer for passengers traveling from SLO/Santa Barbara/Ventura counties to Orange and San Diego counties. Over the course of two years, the number of rail trips that involved traveling "through" Los Angeles, (i.e. where a transfer was removed after this service change) on these trains increased by 16-23%. We would likely expect a similar impact of transfers vs. direct service at San Jose, all else being equal in terms of trip patterns, trip distance, corridor on-time performance and reliability, and service class.

Summary

Where services are operated on a mix of bus and rail, we have color-coded the forecasts as follows. Please note that all ticket revenues in this section are shown in 2020 dollars.

Mode	Bus	Rail

San Francisco – Salinas – San Luis Obispo

Table 7: Results Summary: San Francisco – Salinas – San Luis Obispo segment (rail only; excludes buses), annual demand

Year	Ridership	Ticket Revenue	Passenger Miles
2027	160,300	\$ 2,443,000	11,359,000
2032	383,300	\$ 7,980,000	37,395,000
2050	474,400	\$ 11,520,000	49,629,000



Table 8: Station-level Summary: San Francisco – Salinas – San Luis Obispo segment, annual boardings / alightings

Stations	2027	20	2050	
San Luis Obispo	6,000	15,500	8,800	31,600
Paso Robles	2,200	19,800	10,600	40,300
King City	300	3,700	1,900	7,400
Soledad	800	5,900	5,000	11,900
Salinas	63,300	116,600		135,100
Castroville	41,700	86,	100,000	
Pajaro	60,200	145	169,500	
Gilroy	7,400	26,	34,300	
San Jose	65,000	169	197,300	
[through San Jose]*	28,100	102	121,800	
San Francisco	54,800	85,	99,600	
Total Rail On/Offs	320,600	776	948,800	
Total Rail Ridership	160,300	388	,300	474,400

*[through San Jose] includes all intermediate stations between San Jose and San Francisco.

Monterey – Santa Cruz

Table 9A: Results Summary: Monterey – Santa Cruz segment (rail only), annual demand

Year	Ridership	Ticket Revenue	Passenger Miles
2027	n/a	n/a	n/a
2032	n/a	n/a	n/a
2050	924,100	\$ 5,340,000	24,139,000

Table 9B: Results Summary: Monterey – Santa Cruz segment (bus only), annual demand

Year	Ridership	Ticket Revenue	Passenger Miles
2027	n/a	n/a	n/a
2032	506,300	n/a	13,338,000
2050	n/a	n/a	n/a

Table 10: Station-level Summary: Monterey – Santa Cruz segment

Stations	2027	2032	2050
Monterey		108,100	195,800
Seaside		109,000	195,200
Marina		116,600	212,900
Castroville		47,400	88,000
Pajaro	n/a	89,900	166,700
Watsonville		214,100	397,000
Aptos		143,500	250,300
Capitola		67,200	124,600
Santa Cruz		116,800	217,700
Total Rail On/Offs	n/a	n/a	1,848,200
Total Ridership	n/a	n/a	924,100



Bus Modeling

Please note that some of these forecasts are for trips where the entire journey is on bus (as opposed to rail). The mode-share model was only calibrated to model rail ridership and connecting rail-bus ridership where train passengers transfer onto buses. In order to model bus ridership, a bus factor was applied in post-processing. Based on wider guidance and research (discussed in Appendix C: Bus Services), a bus factor of 2/3 (compared to rail service all else being equal) was used to model people's inherent preference for rail services over bus services. Upon implementation, this factor could vary depending on a variety of to-be-determined factors such as quality, perception, and reliability of the bus service, as well as if a future price differential between the train and bus services are introduced.

Below we discuss the forecasts in more detail for each forecast year and corridor. An overview of validation efforts is included here; more detailed descriptions are available in Appendix A: Forecast Validation. A forecast summary is presented at the end of this section in Table 21.

Initial Service: 2027 Forecasts

The forecasts for this model year are summarized as follows (rail services in **bold**). The 2027 service is peak-hour focused.

San Francisco – Salinas – San Luis Obispo

Table 11: 2027 demand forecasts

Segment	Forecast Ridership (Annual)	Summary of Validation Notes
3 peak-hour rail roundtrips extending from Gilroy to Salinas	160,300	This implies a 2.03% rail capture rate compared to the CTPP data for Monterey County to Santa Clara, San Mateo, and San Francisco counties of 2.411 million commuter trips a year as of 2015 (before growing the forecasts). While this service can also be used by non-commuters, we consider this a reasonable approximation since the service is operating during peak hours (where travelers are more likely to be commuters) and most of the available data for computing benchmark capture rates relate to commute travel.
3 peak-hour bus connections from Salinas to San Luis Obispo	9,300	This validates well against 10,000 existing journeys for 4 roundtrip bus connections between San Jose and cities in this corridor from 2016 Amtrak thruway bus data.
3 peak-hour bus connections from Gilroy to Hollister	n/a	Please note that there is an existing San Benito County Express Intercounty bus service between Gilroy and Hollister, which connects to Caltrain at Gilroy.

Monterey – Santa Cruz service

This corridor has no service in 2027.



Phased Service: 2032 Forecasts

The forecasts for this model year are summarized as follows (rail services in **bold**). The 2032 service has hourly departures (17 round trips a day from Salinas) compared to the 2027 timetable which is peak-hour focused (three round trips a day from Salinas).

San Francisco – Salinas – San Luis Obispo

Table 12: 2032 demand forecasts – San Francisco-Salinas-San Luis Obispo

Segment	Forecast Ridership (Annual)	Summary of Validation Notes
13 hourly rail roundtrips extending from Gilroy to Salinas, plus 4 rail roundtrips extending from Gilroy to San Luis Obispo via Salinas	388,300 which is split into 365,800 riders wholly north of Salinas (inclusive) + 22,500 riders with at least one endpoint south of Salinas	This implies a 4.2% rail capture rate compared to the CTPP data for San Luis Obispo County to Monterey, Santa Clara, San Mateo, and San Francisco counties of 3.197 million commuter trips a year as of 2015 (before growing the forecasts). This is higher than the 2.03% rail capture rate in 2027, which is consistent with the increase in frequencies from 3 to 13 trips. While this service can also be used by non-commuters, given that most of the available data for computing benchmark capture rates relate to commute travel, we consider this a reasonable approximation.
4 bus connections from Salinas to San Luis Obispo*	14,200	We assumed a rail service for modeling and then applied the aforementioned 2/3 bus factor to the forecasts. This validates well against 10,000 existing connections for 4 roundtrip bus connections between San Jose and cities in this corridor based on 2016 Amtrak thruway bus data.
17 hourly bus connections from Gilroy to Hollister	n/a	Please note that there is an existing San Benito County Express Intercounty bus service between Gilroy and Hollister.

*These 4 bus connections are in addition to the 4 rail roundtrips in this segment.

The phased service forecasts including more service in the San Francisco – Salinas – San Luis Obispo corridor. There are 17 roundtrip trains, a transformational increase from the 3 services of the initial service forecasts. The implied frequency elasticity between these two sets of forecasts is 0.25. Since the 2027 timetable focuses on serving commuter hours – traditionally the times of day where transit have the highest load factor and greatest demand – it is reasonable to have a lower frequency elasticity in this case.

Monterey – Santa Cruz bus

Table 13: 2032 demand forecasts – Monterey-Santa Cruz bus

Segment	Forecast Ridership (Annual)	Summary of Validation Notes
17 hourly bus roundtrips between Monterey and Santa Cruz	506,300	We assumed a rail service for modeling and then applied a 2/3 bus factor to the forecasts. This service forecasts about 50 daily passengers per bus (about 40 before applying growth). This benchmarks well against a similar study for Santa Cruz rail feasibility which operates 12 frequencies over a shorter distance and forecasts a similar average daily passengers per train, after accounting for growth.



The Monterey – Santa Cruz phased service forecasts model 17 bus roundtrips between Monterey and Santa Cruz and has a lower level of rail capture rate which is reasonable given the more rural nature of this corridor.

Vision Service: 2050 Forecasts

The forecasts for this model year are summarized as follows (rail services in **bold**):

San Francisco – Salinas – San Luis Obispo

Table 14: 2050 demand forecasts – San Francisco-Salinas-San Luis Obispo

Segment	Ridership (Annual)	Summary of Validation Notes
9 hourly rail roundtrips extending from Gilroy to Salinas, plus 8 rail roundtrips extending from Gilroy to San Luis Obispo via Salinas	474,400	This implies a 4.4% rail capture rate compared to the CTPP data for San Luis Obispo County to Monterey, Santa Clara, San Mateo, and San Francisco counties of 3.197 million commuter trips a year as of 2015 (before growing the forecasts). While this service can also be used by non-commuters, given that most of the available data for computing benchmark capture rates relate to commute travel, we consider this a reasonable approximation.
17 hourly bus connections from Gilroy to Hollister	n/a	Please note that there is an existing San Benito County Express Intercounty bus service between Gilroy and Hollister.

These vision service forecasts for San Francisco – Salinas – San Luis Obispo are 15% higher than the 2032 Phased Service Forecasts. The difference is due to:

- **Rail vs. Bus mode:** Rail is considered to be a more attractive mode of transport compared to rail, all else being equal (see Appendix C: Bus for more details).
- 18 additional years of growth, to 2050
- Minor travel time and schedule differences: In addition to modal constants, the rail and bus schedules differed slightly. Note that the travel times are higher in 2050 compared to 2032 for certain station pairs which dampens the impacts of growth. For example, the travel time between San Luis Obispo and Salinas increases from 2 hours, 45 minutes in 2032 to 3 hours in 2050. If the journey time is longer, then the train will be less time-competitive against other modes (such as car) and fewer riders will be attracted to the train all else being equal.

Monterey – Santa Cruz rail

Table 15: 2050 demand forecasts – Monterey-Santa Cruz

Segment	Ridership (Annual)	Summary of Validation Notes
17 hourly rail roundtrips between Monterey and Santa Cruz	924,100	This service forecasts about 90 daily passengers per train in 2050 ³ . This benchmarks well against a 2015 study for Santa Cruz rail feasibility which operates 12 frequencies over a shorter distance and forecasts 33-46 daily passengers per train in 2032, given the increase in frequencies and growth.

³ 90 daily passengers is calculated as: 924,100 annual passengers divided by (300 days in a year annualization factor, 17 trains a day, 2 directions)



The 2050 forecasts for this corridor are similar to the 2032 forecasts when adjusting for the impacts of:

- **Rail vs. Bus mode:** Rail is considered to be a more attractive mode of transport compared to rail, all else being equal (see Appendix C: Bus for more details).
- Growth to 2050
- **Minor travel time and schedule differences:** In addition to modal constants, the rail and bus schedules differed slightly.

Connecting Passengers

Assuming an integrated rail network is in place for each of the milestone years, then there would be connections benefits to the San Francisco-Salinas-San Luis Obispo corridor at:

- San Jose (to/from the Capitol Corridor extending to Oakland and Sacramento); and
- San Luis Obispo (to/from the Pacific Surfliner extending to Los Angeles and San Diego).

The impact of connecting passengers was calculated as follows:

- Obtain existing (pre-COVID-19) bus ridership in San Francisco-Salinas-San Luis Obispo corridor from transfer OD data.
- Estimate what this base bus ridership would be for new stations (e.g., Pajaro) based on the ridership distribution in our forecasts. (e.g., If Pajaro rail forecasts are 74% of Salinas rail forecasts, then we assume that Pajaro base ridership would be 74% of Salinas base ridership. This is likely a somewhat optimistic assumption, as some existing bus riders would shift to Pajaro from Salinas if both had service.)
 - Therefore, this assumes that there is a transfer penalty at San Jose and at San Luis Obispo involved in switching from the San Francisco-Salinas-San Luis Obispo train to either Capitol Corridor or Pacific Surfliner.⁴
- Apply a rail factor to reflect the improved attractiveness of rail-rail transfers over rail-bus transfers (use same 2/3 factor from forecasting).
- Apply a frequency elasticity (use the same ones from the model). Note that the frequencies may differ through the corridor (e.g., 17 frequencies from SJC to Salinas, but only 8 frequencies from SLO to Salinas in 2050).
- Apply same growth factors that we used for non-connecting passengers.

Table 16: Process for estimating connecting passengers

Methodology	Ridership
Existing bus ridership (pre-COVID-19)	4,600
Add assumed ridership for new stations	16,400
Apply adjustment factor for the upgrade to a	
rail service, over a bus service	24,500
Grown to milestone year of 2027	28,500

⁴ Note that this does not include any potential transfers at San Jose for service to San Francisco; it only involves transfers at San Jose for Capitol Corridor service to Sacramento.



Note that this estimation process is based off existing (pre-COVID-19) bus ridership and may vary based on the type of connection (e.g., guaranteed, cross-platform) offered. Please note that the forecast above of +28,400 connecting riders is not necessarily a 'net' increment over the forecasts presented in Table 7. This is because some of these passengers would be those who would have been willing to use a rail-bus transfer between Gilroy/Salinas/San Luis Obispo even if direct rail service was not available.

Table 17: Connections	compared	against other	metrics
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Route	Year	Ridership
Capitol Corridor (observed ridership)	2019	1,777,100
Pacific Surfliner (observed ridership)	2019	2,776,700
Non-connecting passengers* (SF – Salinas – SLO)	2027	160,300
Connecting passengers^ (SF – Salinas – SLO, who switch to either Capitol Corridor or Pacific Surfliner)	2027	28,500
Total SF – Salinas – SLO	2027	188,800

* Non-connecting passengers have both ends of their trip wholly within the San Francisco – Salinas – San Luis Obispo segment. ^ Connecting passengers have one end of their trip north of San Jose to Sacramento or south of San Luis Obispo to Los Angeles/San Diego. These passengers include those who currently make train-bus trips today across corridors AND the additional impact of new service (in essence, assuming those connecting bus services no longer operate in 2027 and beyond).

Table 18: Results Summary: Estimated incremental impacts of connecting passengers on the San Francisco – Salinas – San Luis Obispo segment, annual demand

Year	Ridership	Ticket Revenue (TAMC portion)	Passenger Miles (TAMC portion)
2027	28,500	\$ 295,000	1,534,000
2032	123,000	\$ 3,427,000	12,405,000
2050	142,400	\$ 3,966,000	14,354,000

These connections will also have impacts beyond the San Francisco-Salinas-San Luis Obispo corridor, to the Capitol Corridor and Pacific Surfliner. For example, passengers who travel Gilroy-Salinas-San Luis Obispo, and then transfer to the Pacific Surfliner at SLO. Out of the 28,500 connecting passengers in 2027, we assume that 40,400 of them connect to the Capitol Corridor at San Jose and 31,000 of them connect to the Pacific Surfliner at San Luis Obispo. Ticket revenue and passenger miles for each connection are allocated to each portion of the route based on the fares and distance from San Jose to each Capitol Corridor station and from San Luis Obispo to each Pacific Surfliner station. The distribution of ridership by station on the Capitol Corridor and Pacific Surfliner is the same as the distribution for existing transfers to these routes.

Table 19: Results Summary: Estimated impacts of connecting passengers on the Capitol Corridor, annual demand

Year	Ridership	Ticket Revenue (Capitol Corridor portion)	Passenger Miles (Capitol Corridor portion)
2027	28,500	\$ 698,000	2,230,000
2032	73,700	\$ 1,805,000	5,766,000
2050	85,300	\$ 2,089,000	6,674,000

Table 20: Results Summary: Estimated impacts of connecting passengers on the Pacific Surfliner, annual demand

Year	Ridership	Ticket Revenue (Pacific Surfliner portion)	Passenger Miles (Pacific Surfliner portion)
2027	0	\$ O	0
2032	49,300	\$ 2,133,000	8,320,000
2050	57,000	\$ 2,466,000	9,620,000



Summary of Forecasts

This section summarizes the forecasts presented above in Tables Table 11, Table 12Table 13, Table 14, Table 15, Table 18, Table 19, and Table 20. They are incremental to the 'no action' (without San Francisco-Salinas-San Luis Obispo project) level of demand.

Table 21: Summary of forecasts (rail demand only)

Route	Year	Ridership (unlinked passenger trips)*
San Francisco-Salinas-San Luis Obispo (non-connecting trips)	2027	160,300
Capitol Corridor (connecting trips)	2027	28,500
Pacific Surfliner (connecting trips)	2027	0
San Francisco-Salinas-San Luis Obispo (Total)	2027	188,800
San Francisco-Salinas-San Luis Obispo (non-connecting trips)	2032	383,300
Capitol Corridor (connecting trips)	2032	73,700
Pacific Surfliner (connecting trips)	2032	49,300
San Francisco-Salinas-San Luis Obispo (Total)	2032	506,300
San Francisco-Salinas-San Luis Obispo (non-connecting trips)	2050	474,100
Capitol Corridor (connecting trips)	2050	85,300
Pacific Surfliner (connecting trips)	2050	57,000
San Francisco-Salinas-San Luis Obispo (Total)	2050	616,800

*Unlinked passenger trips mean that each connecting passenger is represented twice in this table. For example, someone traveling from Salinas to Sacramento via San Jose, would be included under both San Francisco-Salinas-San Luis Obispo and Capitol Corridor ridership.

Note: Totals may not sum due to rounding.



Appendix A: Forecast Validation

Validation and benchmarking were undertaken to explain the reasonableness of the forecast demand as it relates to standard benchmarking sources and other regional studies. The validation efforts for each forecast year and corridor are presented below. We benchmarked forecasts against the following sources to check their reasonableness:

- Observed ridership patterns and mode shares on comparable transit systems;
- Previous demand forecasting studies in the study area;
- Commonly used benchmarks such as frequency elasticity; and
- Census Journey-to-Work data.

Initial Service: 2027 Forecasts

San Francisco – Salinas – San Luis Obispo

We benchmarked the rail capture rate against what is observed on the existing Caltrain and Capitol Corridor services, which are both intercity rail services that connect to San Jose and/or San Francisco. Specifically, through using Census Transportation Planning Package (CTPP) commuting data (see Appendix B: Journey-to-Work data section for more details).

Based on CTPP data, ridership (all days) on existing Caltrain service between San Francisco and Gilroy form 5.0% of the total commute-related demand between these counties. While Caltrain is also used by noncommuters (just as the extension to Salinas and beyond can also serve non-commuters), this is a good benchmark for determining what can reasonably be achieved by a high-quality transit service connecting to the bay area. Indeed, 5% should be considered a ceiling for the potential rail capture rate of the extension to Salinas; this is because the existing Caltrain service has high service frequencies and operates in a corridor with a dense population and jobs, high traffic congestion which encourages rail usage, and where transit is well-established within the community.

The equivalent metric for the existing Capitol Corridor service is between 1.3%-1.7%, depending on the corridor segment (Sacramento-Oakland versus Oakland-San Jose). The Capitol Corridor also interacts with BART along the east bay. This corridor serves a mix of both intercity and commuter traffic. As the TAMC corridor extends from the Caltrain corridor to less populous areas than the Capitol Corridor serves, it is likely that the TAMC corridor rail capture rates would be between that of the Capitol Corridor and Caltrain. Therefore, the rail capture rate for Capitol Corridor could potentially be considered a floor on Initial Service potential rail capture rate.

The initial service forecasts have an implied rail capture rate of 2.03%, which is between the range of rail capture rates discussed above.

Rail Service	Weekday Roundtrips*	Rail Capture Rate	Average Daily Ridership per Train
Altamont Corridor Express (ACE)	4	3.6%	~650
Caltrain	43-46	5.0%	~600
Capitol Corridor (Amtrak)	7-15	1.3% - 1.7%	~125-150
SLO – Salinas – San Francisco (2027 forecast)	3	2.03%	~90

Table 22: Average Daily Ridership per Train

Source: Steer analysis of each agency's ridership and frequency data (based on pre-COVID services).



In addition to the rail capture rate, the forecast of 160,300 annual trips due to the three peak-hour roundtrip extensions to Salinas were also benchmarked against:

- TAMC Salinas Kick Start Project: In March 2020, forecasts were released for two rail peak-hour roundtrips in 2022, there is 112,000 estimated annual ridership.⁵ When compared to the 2027 TAMC forecasts for three round trips (excluding impacts from growth), that implies an approximate 0.47 frequency elasticity, which is reasonable.
- Salinas Rail Extension Project: In 2018, early estimates of the Gilroy-Salinas extension "predict 95,000 riders in the first year, or about 1,800 per week, 365 per day and about 180 per train. Long-term estimates suggest up to 525,000 riders per year once additional stations are added and service is expanded."⁶ The forecast of 95,000 passengers is similar to the TAMC Kick Start project forecasts and likely that the lower forecasts are due to an earlier assumed forecast year.

The bus connections mirror the four existing Thruway bus connections (spread throughout the day) at San Jose which extend to San Luis Obispo. That service currently has about 10,000 connections between rail and bus which are spread throughout the day and are timed to connect with Amtrak Capitol Corridor service to Oakland and Sacramento. Therefore, we expect and see the 9,300 forecast bus trips for three peak-hour frequencies to be in the same ballpark as 10,000.

Monterey – Santa Cruz service

This corridor has no service in 2027.

⁶ Monterey Herald (<u>https://www.montereyherald.com/2018/08/03/salinas-rail-extension-project-set-for-groundbreaking-ceremony/</u>)



⁵ TAMC Salinas Kick Start Project Fact Sheet (March 2020) (https://www.tamcmonterey.org/files/76261e4de/TAMC_Salinas-Kick-Start-Project_Fact-sheet_March-2020.pdf)

Phased Service: 2032 Forecasts

San Francisco – Salinas – San Luis Obispo

In addition to frequency elasticity (discussed in the 'Forecast Demand' section), we also calculated the implied rail capture rate using the same method described above. The rail capture rate here is 4.03%, which is still within the reasonable range of rail capture rates (1.7% - 5.0%). It is much closer to Caltrain's 5.0% rail capture rate, which would be expected given the higher level of frequencies and expected increases in congestion given the additional years of growth.

Indeed, the forecasts of significant incremental ridership once the service is expanded outside of the traditional peak hours is consistent with traffic count data from Caltrans' PeMS website. Below are time-of-day profiles for the US101-S corridor between Gilroy and Salinas which show that auto travel in the corridor is not insignificant between the two peak periods on weekdays and the main driver of travel on weekends.



Figure 3: April time-of-day profile for Auto Travel US101-S (Gilroy – Salinas segment), thousands of daily trips

Source: Caltrans PeMS (Performance Measurement System)

Monterey – Santa Cruz service

The forecasts were also benchmarked against:

Santa Cruz Rail Feasibility Study: This 2015 Santa Cruz County Regional Transportation Commission (SCCRTC) study⁷ looked at a variety of higher frequency alternatives (ranging from 6-30 roundtrips per day) between Santa Cruz and Watsonville, which is approximately half of the proposed Monterey – Santa Cruz corridor. The routing assumed in the 2015 study had significantly more stations over the same corridors (see specific alternatives forecasts on the next page). Of the scenarios within the 2015 study, the most similar scenario to the 2032 TAMC schedule is Scenario D (12 roundtrips between Santa Cruz and Watsonville with limited stops). Scenario D forecasts imply about 33-46 daily passengers per train. By comparison, the 2032 phased service forecasts imply about 50 daily passengers per bus. This higher number is reasonable due to:

⁷ Santa Cruz County Regional Transportation Commission (SCCRTC), Santa Cruz Branch Rail Line Rail Transit Feasibility Study (<u>https://sccrtc.org/wp-content/uploads/2016/02/RailTransitStudy_FullDoc.pdf</u>)



- Almost double the area served (Monterey Santa Cruz is about double the length of Santa Cruz Watsonville)
- 17 years of additional growth between 2015 and 2032

Figure 4: Santa Cruz Rail Feasibility Study Forecasts

ID	Scenario	Weekday Operating Period ¹	Trips per Day per Direction	Number of Stations	Base Conditio Board Estin	eline ons Daily dings nates	2035 Co Daily Bo Estin	nditions bardings nates
					Low	High	Low	High
в	Santa Cruz ←→ Capitola (Limited)	Full service hours (6:00 a.m. to 9:00 p.m.)	30	6	2,800	3,400	3,700	4,300
D	Santa Cruz ←→ Watsonville (Peak Express)	AM Peak (6:00 a.m. to 9:00 a.m. P.M. Peak (4:00 p.m. to 7:00 p.m.)	12	6	1,100	1,350	1,300	1,600
E	Santa Cruz ←→ Aptos (Local)	Full service hours (6:00 a.m. to 9:00 p.m.)	30	9	4,700	5,150	5,900	6,400
G	Santa Cruz ←→ Watsonville (Expanded Local)	Full service hours (6:00 a.m. to 9:00 p.m.)	30	10	5,000	5,500	6,150	6,800
G1	Santa Cruz ←→ Watsonville (Expanded Local with locomotive)	Full service hours (6:00 a.m. to 9:00 p.m.)	30	10	5,000	5,500	6,150	6,800
ſ	Santa Cruz ←→ Pajaro (Expanded Local)	Limited service (6 round trips per day from 6:00 a.m. to 9:00 p.m.	6	10	1,750	1,950	2,250	2,500
s	Santa Cruz/Bay St $\leftarrow \rightarrow$ Seacliff	Full service hours (approx. 6:00 a.m. to 9:00 p.m.)	19	5	1,400	1,600	2,000	2,200

TABLE 6-11: WEEKDAY BOARDINGS, BY SCENARIO

Source: Fehr & Peers, 2015

¹ Daily Ridership is presented as weekday passenger boardings, defined as the number of passengers who board a rail vehicle at any given station in either direction within the extent of a service scenario. As explained in the Section 5, the AMBAG model, like most regional models, cannot estimate weekend ridership. As a result, ridership modeling captures weekday trips only. However, for the purposes of this study, based on Santa Cruz Metropolitan Transit District (METRO) weekend ridership levels, weekend ridership can be assumed to be 50 percent of weekday ridership. Weekend ridership is not reflected in Table 6-11.

Source: SCCRTC



Vision Service: 2050 Forecasts

San Francisco – Salinas – San Luis Obispo

These vision service forecasts for San Francisco – Salinas – San Luis Obispo are 15% higher than the 2032 Phased Service Forecasts. The difference is due to:

- **Rail vs. Bus mode:** In 2032, there are 4 trains to San Luis Obispo and 4 buses to San Luis Obispo (so, 8 total services). In 2050, there are still 8 total services to San Luis Obispo, which would yield higher ridership as the rail mode is more attractive than the bus mode. (see Appendix C: Bus for more details).
- 18 additional years of growth, to 2050
- Minor travel time and schedule differences: In addition to modal preferences between rail and bus, the rail and bus schedules differed slightly. Note that the 2032 Phased Service timetables to San Luis Obispo have faster travel times than the 2050 Phased Service timetables. For example, the Phased Service timetable has a train departing San Francisco at 10:19am and arriving at San Luis Obispo at 3:45pm via a bus connection at Salinas. However, the Vision Service timetable has direct rail service departing San Francisco but arriving at San Luis Obispo at 3:52pm. This is atypical of most rail vs. bus services, as rail services tend to operate at higher speeds and are not subject to traffic congestion.

Monterey – Santa Cruz service

The 2050 forecasts for this corridor are similar to the 2032 forecasts when adjusting for the impacts of:

- **Rail vs. Bus mode:** Rail is considered to be a more attractive mode of transport compared to rail, all else being equal (see Appendix C: Bus for more details).
- Growth to 2050
- **Minor travel time and schedule differences:** In addition to modal constants, the rail and bus schedules differed slightly.



Appendix B: Journey-to-Work data

As shown in the above sections, Journey-to-Work data were used to calculate implied rail capture rates which we used to benchmark and validate the forecasts.

Steer conducted a comparative analysis using American Community Survey (ACS) Journey-to-Work (JTW) commuting data. This is a Census-produced source for county-level commuter trips which is commonly used for benchmarking and validation in demand forecasting studies. The most recently available 5-Year data sample is from 2011 to 2015. When information about workers' residence location and workplace location are coupled, a commuting flow is generated.⁸

From/To	San Luis Obispo County	San Benito County	Monterey County	Santa Cruz County	Santa Clara County	San Mateo County	San Francisco County
San Luis Obispo County	110,495	13	1,567	-	165	107	137
San Benito County	6	11,928	2,545	1,038	9,030	114	83
Monterey County	695	1,949	159,094	9,640	5,200	461	156
Santa Cruz County	-	700	6,583	99,105	17,458	1,242	714
Santa Clara County	105	1,333	2,727	4,249	774,477	45,818	14,241
San Mateo County	-	25	72	475	58,936	218,287	81,943
San Francisco County	33	-	-	389	27,100	48,768	353,484

Table 23: Journey-to-Work Flows

Source: Steer summary of (Census Transportation Planning Package (CTPP) data

For other intercity rail services in the region, Steer benchmarked the existing rail capture rates by comparing the ridership on rail services against the number of commuting trips. Technically, this is not a true calculation of the capture rate because we are using 'total rail ridership' divided by 'commute-related travel' – even though rail ridership includes both commute and non-commute travel (although typically weighted towards the former). However, since we are using a consistent methodology in all test cases, then the error from including the 'non-commute rail travel' in the numerator should cancel out between points of comparison.



⁸ US Census, US Census website

Appendix C: Bus Services

Attractiveness of Bus vs. Rail

As discussed in the above sections, part of the reason why 2050 Forecasts are higher than 2032 Forecasts (even after adjusting for growth) is because half of the San Luis Obispo-Salinas connections in 2032 are by bus, whereas they are entirely replaced with trains in 2050.

Amtrak experience, industry guidance and demand forecasting studies within California, and academic literature generally support that customers prefer rail over bus all else being equal – especially customers who would be driving otherwise. This is likely due to a mix of genuine improvements in service quality and also of people's inherent preferences (such as real or perceived upgrades in reliability or comfort).

Below we document some sources supporting the above point:

- Victoria Transport Policy Institute (VTPI), which states that "rail tends to provide a superior service quality (speed, comfort, and convenience) and social status and so tends to attract more riders, particularly discretionary riders (travelers who would otherwise drive, also called choice riders)."⁹
- A Journal article of a **literature review of over 20 transit studies in the USA, Europe, and Australia** which found that "rail demand is less elastic (or stickier) to changes in bus than bus demand is to changes in rail", suggesting that people more easily switch to rail when they can, and stay with rail.¹⁰
- **European case studies** in Germany and Switzerland, which showed people had strong preferences for rail over buses, even when both had identical service levels. They also noted much of this preference was psychological and "even very high-quality bus systems were not immune from the emotional effect."¹¹
- the Amtrak California incremental ridership model, developed between Amtrak and AECOM, assumes a **1/3 penalty** on bus travel times when compared to rail travel times all else being equal.
- LA Metro purple line extension alternatives analysis (extending a metro line as an HRT vs. operating a high-quality BRT) which predicts 3-3.5 times more new transit users if the service was operated as rail rather than BRT.¹² While this is in the context of urban transit, it speaks to the preferences of customers in Southern California, a market that is served by the Pacific Surfliner route.

PERFORMANCE MEASURES			4	ALTERNAT	IVES		
	p		BRT	Wilshire	HRT	Combin	ned HRT
	Buil	~					
Criteria	No	TSA	17	1	14	11	16
Daily New Transit Trips (Change from No Build) in thousands	N.A.	1.7	13.8	39.3	37.0	47.8	44.9
Change in Urban Rail Boardings (Change from No Build) in thousands	N.A.	-0.8	13.3	95.5	88.3	117.0	109.0
"New Stations" Urban Rail Boardings in thousands	0	0	0	61.5	59.9	80.0	77.1

Table 7-7. Transit Ridership

Source: Page 9 of LA Metro January 2009 Alternatives Analysis Study

¹² LA Metro (<u>http://media.metro.net/projects_studies/westside/images/Chapter%207-</u> Comparative%20Analysis%20of%20Alternatives.pdf)



⁹ Victoria Transport Policy Institute (VTPI), Comparing rail and bus (<u>https://www.vtpi.org/bus_rail.pdf</u>)

¹⁰ Research in Transportation Economics, *Competition and substitution between public transport modes* (<u>https://www.sciencedirect.com/science/article/pii/S0739885917302147</u>)

¹¹ Streetsblog, *Explaining the psychological appeal of rail over buses* (<u>https://usa.streetsblog.org/2012/06/21/explaining-the-psychological-appeal-of-rail-over-buses</u>)

Alternatives Analysis for the Monterey Peninsula, a 2012 study of the peninsula transit system has ridership by rail as being about **one-third** higher than bus for otherwise similar levels of service.¹³

	Overview of Projected Ridership, 2015														
	2015 2015 ENHANCED 2015 2015 2015 NO-BUILD BUS BRT-1 BRT-2 LRT-1 L														
Total boardings on the alternative ¹	2,385	3,154	4,288	4,383	4,443	4,426									
Total daily transit system boardings	16,645	17,417	19,645	19,739	19,649	19,642									
Total daily transit trips ²	13,698	14,249	15,616	15,699	15,343	15,422									

¹ Boardings on all services included in the alternative definition, including any fixed-guideway and feeder bus service, and existing

or modified Route 20. 2 Daily "linked" transit trips made on all modes in the MST service area

Source: Parsons

Source: Table 5-4 of TAMC Alternatives Analysis for the Monterey Peninsula Fixed Guideway Corridor Study

These sources show that it is reasonable to assume that switching from a bus to a train (or vice versa) will have a meaningful impact on demand for the transit service as a whole. The specific magnitude of this impact will depend on the nature of service provided, such as comfort, journey time reliability, convenience of connection between bus and train at Salinas, and the extent to which local perceptions of bus services are less favorable than that of train. Depending on the level of investment involved in deploying the service and the mechanisms proposed for achieving project funding, it may be appropriate or even necessary to conduct targeted market research within the local populations to understand the attractiveness or lack thereof for a bus service versus a train service.

Gilrov – Hollister Bus

The San Benito County Express bus system operates an Intercounty bus service from Hollister to Gilroy which is timed to meet Caltrain services. This bus service appears to be of a high quality, with 9 weekday trips (pre-COVID bus schedule)¹⁴ and low fares at less than \$2 per trip. Given that this existing service connects to existing Gilroy Caltrain service, the ridership at Gilroy would already include any uplift from a Hollister bus so it seems that modeling this service separately should not produce an uplift. Please recall that we are not modeling any impacts to existing Caltrain pairs (e.g., San Francisco – Gilroy – Hollister).

Fare Type	Regular Fare	Discount Fare
One way	\$2.00	\$1.25
10-ride tokens	\$18	\$11
Monthly pass	\$60	\$40

Table 24: Gilroy - Hollister Bus Fares

Source: San Benito County Express

¹⁴ San Benito COG, San Benito Local Transportation Performance (http://sanbenitocog.org/wpcontent/uploads/2018/03/San-Benito-Local-Transportation-Authority-Triennial-Performance-Audit-Fiscal-Year-2013-2015.pdf)



¹³ TAMC, Alternatives analysis for the Monterey Peninsula Fixed Guideway Corridor Study (https://www.tamcmonterey.org/files/aca47119d/TAMC MLB AltAnalysis ExecSummary.pdf)

Appendix D: Timetables

The following pages contain the timetables provided by AECOM on October 15, 2020.





Initial Service Conceptual Schedule

Northbound	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC
San Luis Obispo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paso Robles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
King City	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soledad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salinas	-	5:10	-	5:32	-	6:10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monterey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seaside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castroville	-	5:20	-	5:42	-	6:20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pajaro	-	5:35	-	5:57	-	6:35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Watsonville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aptos	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capitola	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Santa Cruz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gilroy	-	6:06	-	6:28	-	7:06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose	-	6:58	-	7:22	-	7:58	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Francisco**	-	7:59	-	8:23	-	8:59	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Initial Service Conceptual Schedule

Southbound	IC	REG	IC	REG	IC	REG	IC	REG																										
San Francisco**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:43	-	16:40	-	17:30	-
San Jose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16:44	-	17:41	-	18:31	-
Gilroy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17:38	-	18:36	-	19:19	-
Santa Cruz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capitola	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-	-	-
Aptos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Watsonville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	-	-		-
Pajaro	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	18:10	-	19:08	-	19:51	-
Castroville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18:24	-	19:22	-	20:05	-
Marina	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-		-
Seaside	÷	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	-	-	-	-	-	-
Monterey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Salinas	÷	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	÷	-	18:33	-	19:31	-	20:14	-
Soledad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
King City	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	÷	-	-	-	-	-	-	-
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San Luis Obispo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Phased Service Conceptual Schedule

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San Luis Obispo	-	-	-	-	-	-	-	-	-	6:07	-	-	-	-	-	-	-	10:07	-	-	-	-	-	-	-	14:07	-	-	-	-	-	-	-	18:07
Paso Robles	-	-	-	-	-	-	-	-	-	7:15	-	-	-	-	-	-	-	11:15	-	-	-	-	-	-	-	15:15	-	-	-	-	-	-	-	19:15
King City	-	-	-	-	-	-	-	-	-	8:17	-	-	-	-	-	-	-	12:17	-	-	-	-	-	-	-	16:17	-	-	-	-	-	-	-	20:17
Soledad	-	-	-	-	-	-	-	-	-	8:41	-	-	-	-	-	-	-	12:41	-	-	-	-	-	-	-	16:41	-	-	-	-	-	-	-	20:41
Salinas	-	5:07	-	6:07	-	7:07	-	8:07	-	9:07	-	10:07	-	11:07	-	12:07	-	13:07	-	14:07	-	15:07	-	16:07	-	17:07	-	18:07	-	19:07	-	20:07	-	21:07
Monterey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-
Seaside	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Marina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Castroville*	-	5:16	-	6:16	-	7:16	-	8:16	-	9:16	-	1 0 :16	-	11:16	-	12:16	-	13:16	-	14:16	-	15:16	-	16:16	-	17:16	-	-	-	19:16	-	20:16	-	21:16
Pajaro*	-	5:30	-	6:30	-	7:30	-	8:30	-	9:30	-	10:30	-	11:30	-	12:30	-	13:30	-	14:30	-	15:30	-	16:30	-	17:30	-	-	-	19:30	-	20:30	-	21:30
Watsonville	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aptos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capitola	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Santa Cruz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gilroy	-	6:10	-	7:10	-	8:10	-	9:10	-	10:10	-	11:10	-	12:10	-	13:10	-	14:10	-	15:10	-	16:10	-	17:10	-	18:10	-	-	-	20:10	-	21:10	-	22:10
San Jose	-	6:40	-	7:40	-	8:40	-	9:40	-	10:40	-	11:40	-	12:40	-	13:40	-	14:40	-	15:40	-	16:40	-	17:40	-	18:40	-	19:40	-	20:40	-	21:40	-	22:40
San Francisco**	-	7:41	-	8:41	-	9:41	-	10:41	-	11:41	-	12:41	-	13:41	-	14:41	-	15:51	-	16:41	-	17:41	-	18:41	-	19:41	-	20:41	-	21:41	-	22:41	-	23:41



Phased Service Conceptual Schedule

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Vision Service Conceptual Schedule

Northbound	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC
San Luis Obispo	-	-	-	-	-	4:07	-	-	-	6:07	-	-	-	8:07	-	-	-	10:07	-	-	-	12:07	-	-	-	14:07	-	-	-	16:07	-	-	-	18:07
Paso Robles	-	-	-	-	-	5:15	-	-	-	7:15	-	-	-	9:15	-	-	-	11:15	-	-	-	13:15	-	-	-	15:15	-	-	-	17:15	-	-	-	19:15
King City	-	-	-	-	-	6:17	-	-	-	8:17	-	-	-	10:17	-	-	-	12:17	-	-	-	14:17	-	-	-	16:17	-	-	-	18:17	-	-	-	20:17
Soledad	-	-	-	-	-	6:41	-	-	-	8:41	-	-	-	10:41	-	-	-	12:41	-	-	-	14:41	-	-	-	16:41	-	-	-	18:41	-	-	-	20:41
Salinas	-	5:07	-	6:07	-	7:07	-	8:07	-	9:07	-	10:07	-	11:07	-	12:07	-	13:07	-	14:07	-	15:07	-	16:07	-	17:07	-	18:07	-	19:07	-	20:07	-	21:07
Monterey	4:41	-	5:41	-	6:41	-	7:41	-	8:41	-	9:41	-	10:41	-	11:41	-	12:41	-	13:41	-	14:41	-	15:41	-	16:41	-	17:41	-	18:41		19:41	-	20:41	-
Seaside	4:47	-	5:47	-	6:47	-	7:47	-	8:47	-	9:47	-	10:47	-	11:47	-	12:47	-	13:47	-	14:47	-	15:47	-	16:47	-	17:47	-	18:47	-	19:47	-	20:47	-
Marina	4:58	-	5:58	-	6:58	-	7:58	-	8:58	-	9:58	-	10:58	-	11:58	-	12:58	-	13:58	-	14:58	-	15:58	-	16:58	-	17:58	-	18:58	-	19:58	-	20:58	-
Castroville*	5:10	5:16	6:10	6:16	7:10	7:16	8:10	8:16	9:10	9:16	1010	1 0 :16	11:10	11:16	12:10	12:16	13:10	13:16	14:10	14:16	15:10	15:16	16:10	16:16	17:10	17:16	18:10	18:16	19:10	19:16	20:10	20:16	21:10	21:16
Pajaro*	5:30	5:30	6:30	6:30	7:30	7:30	8:30	8:30	9:30	9:30	10:30	10:30	11:30	11:30	12:30	12:30	13:30	13:30	14:30	14:30	15:30	15:30	16:30	16:30	17:30	17:30	18:30	18:30	19:30	19:30	20:30	20:30	21:30	21:30
Watsonville	5:36	-	6:36	-	7:36	-	8:36	-	9:36	-	10:36	-	11:36	-	12:36	-	13:36	-	14:36	-	15:36	-	16:36	-	17:36	-	18:36	-	19:36	-	20:36	-	21:36	-
Aptos	5:54	-	6:54	-	7:54	-	8:54	-	9:54	-	10:54	-	11:54	-	12:54	-	13:54	-	14:54	-	15:54	-	16:54	-	17:54	-	18:54	-	19:54	-	20:54	-	21:54	-
Capitola	6:00	-	7:00	-	8:00	-	9:00	-	10:00	-	11:00	-	12:00	-	13:00	-	14:00	-	15:00	-	16:00	-	17:00	-	18:00	-	19:00	-	20:00	-	21:00	-	22:00	-
Santa Cruz	6:09	-	7:09	-	8:09	-	9:09	-	10:09	-	11:09	-	12:09	-	13:09	-	14:09	-	15:09	-	16:09	-	17:09	-	18:09	-	19:09	-	20:09	-	21:09	-	22:09	-
Gilroy	-	6:10	-	7:10	-	8:10	-	9:10	-	10:10	-	11:10	-	12:10	-	13:10	-	14:10	-	15:10	-	16:10	-	17:10	-	18:10	-	19:10	-	20:10	-	21:10	-	22:10
San Jose	-	6:40	-	7:40	-	8:40	-	9:40	-	10:40	-	11:40	-	12:40	-	13:40	-	14:40	-	15:40	-	16:40	-	17:40	-	18:40	-	19:40	-	20:40	-	21:40	-	22:40
San Francisco**	-	7:41	-	8:41	-	9:41	-	10:41	-	11:41	-	12:41	-	13:41	-	14:41	-	15:51	-	16:41	-	17:41	-	18:41	-	19:41	-	20:41	-	21:41	-	22:41	-	23:41

* pulse transfers



Vision Service Conceptual Schedule

Southbound IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG	IC	REG
San Francisco** 3:19	-	4:19	-	5:19	-	6:19	-	7:19	-	8:19	-	9:19	-	10:19	-	11:19	-	12:19	-	13:19	-	14:19	-	15:19	-	16:19	-	17:19	-	18:19	-	19:19	-
San Jose 4:20	-	5:20	-	6:20	-	7:20	-	8:20	-	9:20	-	10:20	-	11:20	-	12:20	-	13:20	-	14:20	-	15:20	-	16:20	-	17:20	-	18:20	-	19:20	-	20:20	-
Gilroy 4:51	-	5:51	-	6:51	-	7:51	-	8:51	-	9:51	-	10:51	-	11:51	-	12:51	-	13:51	-	14:51	-	15:51	-	16:51	-	17:51	-	18:51	-	19:51	-	20:51	-
Santa Cruz	4:50	-	5:50	-	6:50	-	7:50	-	8:50	-	9:50	-	10:50	-	11:50	-	12:50	-	13:50	-	14:50	-	15:50	-	16:50	-	17:50	-	18:50	-	19:50	-	20:50
Capitola -	5:00	-	6:00	-	7:00	-	8:00	-	9:00	-	10:00	-	11:00	-	12:00	-	13:00	-	14:00	-	15:00	-	16:00	-	17:00	-	18:00	-	19:00	-	20:00	-	21:00
Aptos -	5:06	-	6:06	-	7:06	-	8:06	-	9:06	-	10:06	-	11:06	-	12:06	-	13:06	-	14:06	-	15:06	-	16:06	-	17:06	-	18:06	-	19:06	-	20:06	-	21:06
Watsonville -	5:24	-	6:24	-	7:24	-	8:24	-	9:24	-	10:24	-	11:24	-	12:24	-	13:24	-	14:24	-	15:24	-	16:24	-	17:24	-	18:24	-	19:24	-	20:24	-	21:24
Pajaro* <mark>5:30</mark>	5:30	6:30	6:30	7:30	7:30	8:30	8:30	9:30	9:30	10:30	10:30	11:30	11:30	12:30	12:30	13:30	13:30	14:30	14:30	15:30	15:30	16:30	16:30	17:30	17:30	18:30	18:30	19:30	19:30	20:30	20:30	21:30	21:30
Castroville [*] 5:44	5:50	6:44	6:50	7:44	7:50	8:44	8:50	9:44	9:50	10:44	10:50	11:44	11:50	12:44	12:50	13:44	13:50	14:44	14:50	15:44	15:50	16:44	16:50	17:44	17:50	18:44	18:50	19:44	19:50	20:44	20:50	21:44	21:50
Marina -	6:02	-	7:02	-	8:02	-	9:02	-	10:02	-	11:02	-	12:02	-	13:02	-	14:02	-	15:02	-	16:02	-	17:02	-	18:02	-	19:02	-	20:02	-	21:02	-	22:02
																															4		
Seaside -	6:11	-	7:11	-	8:11	-	9:11	-	10:11	-	11:11	-	12:11	-	13:11	-	14:11	-	15:11	-	16:11	-	17:11	-	18:11	-	19:11	-	20:11	-	21:11	-	22:11
Seaside - Monterey -	6:11 6:17	-	7:11 7:17	-	8:11 8:17	-	9:11 9:17	-	10:11 10:17	-	11:11 11:17	-	12:11 12:17	-	13:11 13:17	-	14:11 14:17	-	15:11 15:17	-	16:11 16:17	-	17:11 17:17	-	18:11 18:17	-	19:11 19:17	-	20:11 20:17	-	21:11 21:17	-	22:11 22:17
Seaside - Monterey - Salinas 5:52	6:11 6:17 -	- - 6:52	7:11 7:17 -	- - 7:52	8:11 8:17 -	- - 8:52	9:11 9:17 -	- - 9:52	10:11 10:17 -	- - 10:52	11:11 11:17 -	- - 11:52	12:11 12:17 -	- - 12:52	13:11 13:17 -	- - 13:52	14:11 14:17 -	- - 14:52	15:11 15:17 -	- - 15:52	16:11 16:17 -	- - 16:52	17:11 17:17 -	- - 17:52	18:11 18:17 -	- - 18:52	19:11 19:17 -	- - 19:52	20:11 20:17 -	- - 20:52	21:11 21:17 -	- - 21:52	22:11 22:17 -
Seaside - Monterey - Salinas 5:52 Soledad -	6:11 6:17 - -	- 6:52 7:19	7:11 7:17 - -	- - 7:52 -	8:11 8:17 - -	- 8:52 9:19	9:11 9:17 - -	- - 9:52 -	10:11 10:17 - -	- - 10:52 11:19	11:11 11:17 - -	- - 11:52 -	12:11 12:17 - -	- 12:52 13:19	13:11 13:17 - -	- - 13:52 -	14:11 14:17 - -	- - 14:52 15:19	15:11 15:17 - -	- - 15:52 -	16:11 16:17 - -	- - 16:52 17:19	17:11 17:17 - -	- - 17:52 -	18:11 18:17 - -	- 18:52 19:19	19:11 19:17 - -	- - 19:52 -	20:11 20:17 - -	- - 20:52 21:19	21:11 21:17 - -	- - 21:52 -	22:11 22:17 -
Seaside - Monterey - Salinas 5:52 Soledad - King City -	6:11 6:17 - -	- 6:52 7:19 7:44	7:11 7:17 - -	- 7:52 -	8:11 8:17 - - -	- 8:52 9:19 9:44	9:11 9:17 - - -	- - 9:52 - -	10:11 10:17 - - -	- - 10:52 11:19 11:44	11:11 11:17 - - -	- - 11:52 -	12:11 12:17 - -	- 12:52 13:19 13:44	13:11 13:17 - -	- - 13:52 - -	14:11 14:17 - - -	- - 14:52 15:19 15:44	15:11 15:17 - -	- - 15:52 - -	16:11 16:17 - - -	- - 16:52 17:19 17:44	17:11 17:17 - - -	- - 17:52 - -	18:11 18:17 - - -	- 18:52 19:19 19:44	19:11 19:17 - -	- 19:52 -	20:11 20:17 - -	- 20:52 21:19 21:44	21:11 21:17 - - -	- 21:52 -	22:11 22:17 - - -
Seaside-Monterey-Salinas5:52Soledad-King City-Paso Robles-	6:11 6:17 - - -	- 6:52 7:19 7:44 8:45	7:11 7:17 - - -	- 7:52 - -	8:11 8:17 - - - -	- 8:52 9:19 9:44	9:11 9:17 - - - -	- 9:52 - -	10:11 10:17 - - - -	- 10:52 11:19 11:44 12:45	11:11 11:17 - - - -	- - 11:52 - -	12:11 12:17 - - - -	- 12:52 13:19 13:44 14:45	13:11 13:17 - - - -	- 13:52 - - -	14:11 14:17 - - - -	- 14:52 15:19 15:44 16:45	15:11 15:17 - - -	- 15:52 - -	16:11 16:17 - - - -	- 16:52 17:19 17:44 18:45	17:11 17:17 - - - -	- 17:52 - - -	18:11 18:17 - - - -	- 18:52 19:19 19:44 20:45	19:11 19:17 - - - -	- 19:52 - -	20:11 20:17 - - - -	- 20:52 21:19 21:44 22:45	21:11 21:17 - - - -	- 21:52 - - -	22:11 22:17 - - -
Seaside-Monterey-Salinas5:52Soledad-King City-Paso Robles-San Luis Obispo-	6:11 6:17 - - - -	- 6:52 7:19 7:44 8:45 9:52	7:11 7:17 - - - -	- 7:52 - - -	8:11 8:17 - - - -	- 3:52 9:19 9:44 10:45	9:11 9:17 - - - - -	- 9:52 - - - -	10:11 10:17 - - - - - -	- 10:52 11:19 11:44 12:45 13:52	11:11 11:17 - - - - - -	- 11:52 - - -	12:11 12:17 - - - - -	- 12:52 13:19 13:44 14:45 15:52	13:11 13:17 - - - - -	- 13:52 - - - -	14:11 14:17 - - - - - -	- 14:52 15:19 15:44 16:45 17:52	15:11 15:17 - - - - -	- - 15:52 - - - -	16:11 16:17 - - - - - -	- 16:52 17:19 17:44 18:45 19:52	17:11 17:17 - - - - - - -	- 17:52 - - - -	18:11 18:17 - - - - - -	- 18:52 19:19 19:44 20:45 21:52	19:11 19:17 - - - -	- 19:52 - - -	20:11 20:17 - - - -	- 20:52 21:19 21:44 22:45 23:52	21:11 21:17 - - - - -	- 21:52 - - - -	22:11 22:17 - - - -

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Initial Bus Service**

Northbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
San Luis Obispo) -	3:25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paso Robles	-	4:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
King City	-	5:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soledad	-	5:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salinas*	-	6:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Salinas*	-	-	-	-	-	-	-	-	-	-	-	-	-	19:00	-	-	-
Soledad	-	-	-	-	-	-	-	-	-	-	-	-	-	19:30	-	-	-
King City	-	-	-	-	-	-	-	-	-	-	-	-	-	20:00	-	-	-
Paso Robles	-	-	-	-	-	-	-	-	-	-	-	-	-	21:00	-	-	-
San Luis Obispo) -	-	-	-	-	-	-	-	-	-	-	-	-	21:45	-	-	-
Narthbaund	ID	ID	חו	ID	ID	ID	ID	ID	UD.	UD.	ID	ID	UD.	ID	ID	ID	П
Northbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IR
Hollister	6:00	6:15	6:30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gilroy*	6:30	6:45	7:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15	15				15	15						15		15	
Southbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Gilroy*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18:45	19:45	20:30
Hollister	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19:15	20:15	21:00

* pulse transfers

** Does not preclude additional, existing thruway, or local services



Phased Bus Service

Northbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Monterey	5:40	6:40	7:40	8:40	9:40	10:40	11:40	12:40	13:40	14:40	15:40	16:40	17:40	18:40	19:40	20:40	21:40
Seaside	5:50	6:50	7:50	8:50	9:50	10:50	11:50	12:50	13:50	14:50	15:50	16:50	17:50	18:50	19:50	20:50	21:50
Marina	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00
Castroville	6:15	7:15	8:15	9:15	10:15	11:15	12:15	13:15	14:15	15:15	16:15	17:15	18:15	19:15	20:15	21:15	22:15
Pajaro*	6:30	7:30	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30	18:30	19:30	20:30	21:30	22:30
Watsonville	6:35	7:35	8:35	9:35	10:35	11:35	12:35	13:35	14:35	15:35	16:35	17:35	18:35	19:35	20:35	21:35	22:35
Aptos	6:50	7:50	8:50	9:50	10:50	11:50	12:50	13:50	14:50	15:50	16:50	17:50	18:50	19:50	20:50	21:50	22:50
Capitola	7:05	8:05	9:05	10:05	11:05	12:05	13:05	14:05	15:05	16:05	17:05	18:05	19:05	20:05	21:05	22:05	23:05
Santa Cruz	7:20	8:20	9:20	10:20	11:20	12:20	13:20	14:20	15:20	16:20	17:20	18:20	19:20	20:20	21:20	22:20	23:20

Southbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Santa Cruz	5:40	6:40	7:40	8:40	9:40	10:40	11:40	12:40	13:40	14:40	15:40	16:40	17:40	18:40	19:40	20:40	21:40
Capitola	5:55	6:55	7:55	8:55	9:55	10:55	11:55	12:55	13:55	14:55	15:55	16:55	17:55	18:55	19:55	20:55	21:55
Aptos	6:10	7:10	8:10	9:10	10:10	11:10	12:10	13:10	14:10	15:10	16:10	17:10	18:10	19:10	20:10	21:10	22:10
Watsonville	6:25	7:25	8:25	9:25	10:25	11:25	12:25	13:25	14:25	15:25	16:25	17:25	18:25	19:25	20:25	21:25	22:25
Pajaro*	6:30	7:30	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30	18:30	19:30	20:30	21:30	22:30
Castroville	6:45	7:45	8:45	9:45	10:45	11:45	12:45	13:45	14:45	15:45	16:45	17:45	18:45	19:45	20:45	21:45	22:45
Marina	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Seaside	7:10	8:10	9:10	10:10	11:10	12:10	13:10	14:10	15:10	16:10	17:10	18:10	19:10	20:10	21:10	22:10	23:10
Monterey	7:20	8:20	9:20	10:20	11:20	12:20	13:20	14:20	15:20	16:20	17:20	18:20	19:20	20:20	21:20	22:20	23:20



Phased Bus Service**

Northbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
San Luis Obispo	-	-	4:15	-	-	-	8:15	-	-	-	12:15	-	-	-	16:15	-	-
Paso Robles	-	-	5:00	-	-	-	9:00	-	-	-	13:00	-	-	-	17:00	-	-
King City	-	-	6:00	-	-	-	10:00	-	-	-	14:00	-	-	-	18:00	-	-
Soledad	-	-	6:30	-	-	-	10:30	-	-	-	14:30	-	-	-	18:30	-	-
Salinas*	-	-	7:00	-	-	-	11:00	-	-	-	15:00	-	-	-	19:00	-	-
Southbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Salinas*	-	-	-	9:00	-	-	-	13:00	-	-	-	17:00	-	-	-	21:00	-
Soledad	-	-	-	9:30	-	-	-	13:30	-	-	-	17:30	-	-	-	21:30	-
King City	-	-	-	10:00	-	-	-	14:00	-	-	-	18:00	-	-	-	22:00	-
Paso Robles	-	-	-	11:00	-	-	-	15:00	-	-	-	19:00	-	-	-	23:00	-
San Luis Obispo	-	-	-	11:45	-	-	-	15:45	-	-	-	19:45	-	-	-	23:45	-
Northbound	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR	IR
Northbound																	
Hollister	5:30	6:30	7:30	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30	18:30	19:30	20:30	21:30
Gilroy*	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00
Southbound	IR	IR	IR	IB	IR	IR	IR	IB	IR	IR	IR						
Southbound	ID	ID	ID	ID	ID		ID								ID	ID	ID
Gilroy*	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00
Hollister	5:30	6:30	7:30	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30	18:30	19:30	20:30	21:30

* pulse transfers

** Does not preclude additional, existing thruway, or local services



Vision Bus Service**

Northbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Hollister	5:30	6:30	7:30	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30	18:30	19:30	20:30	21:30
Gilroy*	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00
Southbound	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB	IB
Gilroy*	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00
Hollister	5:30	6:30	7:30	8:30	9:30	10:30	11:30	12:30	13:30	14:30	15:30	16:30	17:30	18:30	19:30	20:30	21:30