Extension of Caltrain Commuter Service to Monterey County

Business Plan

Prepared for:

Transportation Agency for Monterey County

Prepared by:

PARSONS TRANSPORTATION GROUP, INC.

August 2000

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Table of Contents

Chapter	Page
Executive Summary	1
1. Introduction	1
Regional Rail Service Overview	1
History of Caltrain Service	1
Caltrain Extension to Salinas: Overview and Service Implementation Goals	3
2. Ridership Forecasts	6
Commute Basics	6
Job Balance and Growth	6
MTC Estimates of Commute Patterns	7
Recent Housing Trends	9
Existing Use Of Caltrain	10
Caltrain Extension Ridership Forecast	17
3. Operating Plan	22
Number of Trains	22
Proposed Schedule	23
Fares 24	
Feeder Bus Service	26
Marketing 26	
Community Involvement	27
4. Capital Plan	28
Track Improvements	28
Station Improvements	33
Right of Way	39
Escalation 39	
5. Financial Plan	40
Operation and Maintenance Cost Estimates	40
Passenger Revenues	42
Capital Cost Summary	44
Funding Sources	45
6. Implementation Plan	47
APPENDIX	52

List of Figures

Figure	Page
Figure 1: Existing and Proposed Regional (Non-Urban) Rail Network	2
Figure 2 Median House Prices (February 2000) and Percent Change (1998 – 2000)	12
Figure 3 Caltrain Weekday Passenger Boardings (South Santa Clara County Stations)	15
Figure 4 Gilroy Yard Improvements	29
Figure 5 Chittenden Pass Track Realignment Opportunities	31
Figure 6 Pajaro Yard and Station Improvements	32
Figure 7 Salinas Yard Improvements	34
Figure 8 Pajaro Station Area Concept Plan	36
Figure 9 Castroville Station Site Plan	37
Figure 10 Salinas Amtrak Station	38

List of Tables

Table	Page
Table 1 Job Balance by County - Surplus (Deficit)	7
Table 2 Inter- and Intra-County Travel Patterns	8
Table 3 County of Residence to Santa Clara County Commuters, 1990 - 2000	9
Table 4 February Median House Prices	11
Table 5 Caltrain Weekday Passenger Boardings	13
Table 6 Survey of Caltrain Passengers Boarding at Gilroy	16
Table 7 Origin of Passengers Boarding at Gilroy & San Martin	18
Table 8 Destination of Passengers Boarding at Gilroy & San Martin (Percentage)	19
Table 9 Commuter Rail Corridor Assessment	20
Table 10 Existing Caltrain Schedule - Gilroy to Mountain View	23
Table 11 Preliminary Schedule with Current Operating Speed Restrictions	24
Table 12 Potential Schedule with Improved Operating Speeds	24
Table 13 Prototypical Fare Structure: San Francisco – San Jose - Salinas	25
Table 14 Caltrain Operating Costs (FY99)	40
Table 15 Estimated Operating & Maintenance Cost ($1999) Caltrain Extension to Salinas	43
Table 16 Estimated Short-Range Capital Costs ($2000) Caltrain Extension to Salinas	44
Table 17 Net Public Cost (1,000) Caltrain Extension to Salinas	45

Executive Summary

Extension of Caltrain Commuter Rail Service to Salinas Executive Summary

Introduction

Passenger rail service is being expanded throughout Northern California to address long distance commuting needs in support of the region's robust and growing economy. The illustration below shows the existing and proposed regional (non-urban) rail network including Amtrak's Capitol service to Sacramento, the Altamont Commuter Express service to Stockton, and the Caltrain commuter rail service between San Francisco and Gilroy. Extensions of this Caltrain line are proposed to Hollister in San Benito County, and to Salinas in Monterey County. This business plan specifically addresses the Caltrain service extension to Salinas.

This project proposes to extend the existing Caltrain service from Gilroy to Salinas to relieve congestion for commuters traveling between Monterey County and southern Santa Cruz County to the San Francisco Bay Area. This service would initially consist of two round trips per day (two northbound trains in the morning and two southbound trains in the afternoon). The project would require construction of commuter parking and a layover facility in Salinas; rights to greater track access; right-of-way acquisition; construction of a new station in Castroville; and rehabilitation of the Pajaro Station to serve northern Monterey County and southern Santa Cruz County.

Benefits of the Proposed Service

Today residents of Monterey County who work in Santa Clara County must use private vehicles to travel between home and work. Route 101 is the only viable route for these commuter trips. The proposed extension of Caltrain to Salinas would provide an alternative means to travel between Monterrey, Santa Cruz, Santa Clara, San Mateo and San Francisco counties. By providing an attractive alternative commuter mode, there would be a reduction in private vehicle trips and the potential for improved air quality.

Anticipated Patronage

Jobs are distributed throughout the region, but not necessarily in proportion to where workers live. Table 1 summarizes the job balance by county based on Metropolitan Transportation Commission (MTC) estimates of the number of workers by place of work, minus the number of workers by place of residence. Positive numbers indicate job surpluses where there are more jobs than workers. Negative numbers indicate counties that have more workers than available jobs (job deficits).

Table 1
Job Balance by County - Surplus (Deficit)

LOCATION	1990	2000	2020
San Francisco	179,426	184,407	206,992
San Mateo	(32,365)	(14,704)	(14,995)
Santa Clara	73,180	130,325	176,790
Alameda	(3,711)	23,515	41,655
Contra Costa	(78,010)	(98,613)	(94,953)
Solano	(37,620)	(39,109)	(76,056)
Napa	(3,406)	135	10,624
Sonoma	(24,081)	(19,745)	(18,295)
Marin	(19,329)	(6,053)	(3,980)
Total	*54,084*	*160,158*	*227,782*

Within the traditional nine county San Francisco Bay Area, San Francisco and Santa Clara counties have large job surpluses as of 2000. All other Bay Area counties, with the exception of Alameda and Napa, export workers to these employment centers. As of 2000, MTC estimates that the San Francisco Bay Area needs 160,000 commuters from counties outside its region (northern California) to fill the available jobs. This number is forecast to reach 228,000 by 2020, an increase of 68,000 (42%) over current levels.

The job surplus and deficits referenced above form a need for workers to commute from one county to another as well as internally within their county of residence. Some level of county to county commuting occurs naturally absent of a job surplus or deficit since commuters typically do not consider county jurisdictional boundaries when matching jobs with housing. However, the large surpluses of jobs in Santa Clara and San Francisco and deficits in outlying counties, generates a large county-to-county commute that now extends throughout the northern California region.

Insofar as Monterey County is concerned, estimates of out commuting and commuting to Santa Clara County, prepared by MTC in 1998, are regarded to be outdated, based on current housing trends. The California Association of Realtors (CAR) continuously monitors and reports housing affordability and median prices for counties and cities throughout the state. In April 2000, CAR reported that, housing affordability in California posted its sharpest decline in February (2000) in more than a decade, falling 11 percentage points to 32 percent. This eleven-point decline was the sharpest annual deterioration in the state's housing affordability since May 1989, when it dropped 12 percent.

What this means, in terms of commuting, is that Silicon Valley workers can better afford houses in neighboring Monterey Bay counties than houses in Santa Clara County; and that these same Silicon Valley workers can better afford these houses than local Monterey Bay county residents.

Santa Clara County, with its high paying and plentiful job market is obviously a strong attraction for current residents of Association of Monterey Bay Area Government (AMBAG) counties, as well as other northern California counties.

Table 2 reports estimates of passengers boarding at south Santa Clara, Monterey and San Benito county stations, assuming that Caltrain extension service was currently in place. These estimates of passengers boarding at Caltrain corridor listed stations total 1,995; including the extension of service to Salinas and a branch line to Hollister. The February 2000 boarding count at Morgan Hill, San Martin, and Gilroy totaled 1,055 by comparison.

Conventional wisdom indicates that the boarding levels indicated in Table 2 may be reached within three years of service initiation. The rapid buildup of patronage on ACE since service became operational on October 19, 1998, and the recent escalation of ridership generated by the South Santa Clara County stations may prove this past experience to be conservative.

Table 2
Year 2000 Ridership Estimates

Selected Caltrain Stations	2000 Ridership
Salinas	***524***
Castroville	***100***
Pajaro (Watsonville)	***274***
Hollister	***280***
Gilroy	**351**
San Martin	**83**
Morgan Hill	**383**
Total	**1995**

Italics = Forecast

Operating Plan

The extended Caltrain service would use an existing 38-mile segment of the Union Pacific Coast mainline. The extended service would include three stations located in Pajaro, Castroville, and Salinas.

For the purpose of this business plan, operation of two trains northbound in the morning peak period and southbound in the afternoon peak period is recommended for the initial service period. These trains would be extensions of Caltrain service currently operating to / from Gilroy. Ridership would dictate when additional services would be warranted; but within ten years, four trains per peak period could easily be needed. This conclusion is based on:

- the rapid escalation of housing prices in the Silicon Valley,
- the rapid and recent buildup of ridership on Caltrain and ACE, and
- recent proposals to add a significant number of new job opportunities in the North Coyote Valley and Edenvale redevelopment areas of south San Jose.

The future schedule of the Salinas to Gilroy service is highly dependent on the operating speeds on each track segment. The existing operating speed on the segments between Salinas and Pajaro is 50 to 70 mph. Due to speed restriction, maximum speeds on the segment from Pajaro to Gilroy is 35 to 60 mph.

Based on these operating speeds, Table 3 shows preliminary schedules for the Caltrain extension to Salinas that connect with existing morning and

evening peak service to and from Gilroy. The morning departure times from Salinas range from 4:36 AM to 6:21 AM. Return times range from 6:07 PM until 8:05 PM. Note that the scheduled running time between Pajaro and Gilroy is 29 minutes and the overall travel time between Salinas and Gilroy is 49 minutes.

The selection of which trains to extend to Salinas will be made in consultation with the Peninsula Commute Joint Powers Board (PCJPB), the Santa Clara Valley Transportation Authority (VTA), San Benito County, and the Union Pacific Railroad.

Table 3
Northbound Schedule

Salinas	Castroville	Pajaro	Gilroy	San Jose
4:36 AM	4:44 AM	4:56 AM	5:25 AM	6:10 AM
5:16 AM	5:24 AM	5:36 AM	6:05 AM	6:50 AM
5:39 AM	5:47 AM	5:59 AM	6:28 AM	7:15 AM
6:21 AM	6:29 AM	6:41 AM	7:10 AM	7:57 AM

Southbound Schedule

San Jose	Gilroy	Pajaro	Castroville	Salinas
4:34 PM	5:18 PM	5:47 PM	5:59 PM	6:07 PM
5:32 PM	6:16 PM	6:45 PM	6:57 PM	7:05 PM
6:06 PM	6:50 PM	7:19 PM	7:31 PM	7:39 PM
6:32 PM	7:16 PM	7:45 PM	7:57 PM	8:05 PM

Use of the Caltrain fare structure is proposed. This fare structure currently includes nine fare zones. A one-zone ride ranges in length from 3.2 miles to 9.7 miles. A two-zone ride can cover a distance as short as 1.2 miles, or as long as 25.5 miles. Based on this logic, a ride from Gilroy to Pajaro, covering a distance of 19.7 miles, is proposed as a three-zone fare. A ride from Gilroy to Castroville, a distance of 29.7 miles, is proposed as a four-zone fare; and a ride from Gilroy to Salinas, a distance of 37.5 miles, is proposed to require a five-zone fare.

Based on the proposed fare structure, a monthly ticket for riding between Salinas and San Jose (Diridon) would be $141.75 (seven zones). A monthly ticket for riding between Salinas and Palo Alto would be $177.25 (nine zones).

The train service would rely on existing local bus service providers in Monterey and Santa Cruz Counties to design and implement feeder bus service. Monterey-Salinas Transit (MST) would be requested to provide bus service for the Monterey County stations located in Castroville and Salinas. Additionally, the project sponsor would request that the Santa Cruz Metropolitan Transit District (SCMTD) provide bus service to the Pajaro station from Watsonville and points north.

Operating Costs

The operating and maintenance (O&M) cost experience of Caltrain and ACE has been used as the basis for estimating annual costs attributable to the Caltrain extension to Salinas. The total annual O&M cost is estimated to be $1.775 million, expressed in adjusted FY2000 dollars. Expressed on a per train trip basis, each train trip is estimated to add $1,740 to the operating cost of Caltrain service.

This equates to $45.79 per train mile (FY2000), slightly less than the overall average experienced for current Caltrain services. The reduced cost per train mile reflects the absence of "break time" expense attributable to the service extension.

It should be noted that this estimate of annual O&M cost does not include any allocation of expense for current PCJPB train operations north of Gilroy station (MP 80.7). Such allocation, if any, would be subject to negotiation between TAMC and PCJPB.

Passenger Revenues

The ridership forecasts indicate that just under 900 passengers per day are expected to board Caltrain at the Salinas, Castroville, and Pajaro Valley stations. Each of these riders is assumed to make two trips per day.

The average commute trip from Monterey County is assumed to be destined to the Sunnyvale-Santa Clara fare zone, based on VTA's 1998 survey of riders boarding Caltrain at the Gilroy and San Martin stations. This ride corresponds to a six zone trip for patrons boarding at Pajaro Valley, a seven zone trip for Castroville riders, and an eight zone trip for Salinas origins.

Revenue derived from a monthly ticket is assumed, spread over 44 weekday trips per month. This assumption is considered to be conservative based on the array of available fares, most of which are higher than the monthly pass averaged over 44 trips. Corresponding fares for passengers boarding at Monterey County stations are as follows:

- Pajaro Valley - $2.82
- Castroville - $3.22
- Salinas - $3.63

Passenger revenues generated from Monterey County riders, assuming the average fares as stated above, total $1,527,000 annually. Not all of this revenue is incrementally new, as 25 percent of the existing ridership boarding at Gilroy originates in Monterey County. Allowing a credit for this existing revenue ($120,000 annually), the net increment of passenger revenue attributable to the service extension to Salinas is estimated to be $1,407,000. The ridership and corresponding revenue should be realized within three years of service initiation, based on traveler response lag times observed for new transit systems.

Capital Improvements

In general, the existing trackage is in good condition and reputed to have a good ride quality compared to the section of track between San Jose and Gilroy. Hence improvements proposed for the mainline are specifically targeted to permit commuter rail operations and/or improve the operating characteristics of the proposed service. There are identified improvements in several of the rail yards that are required to facilitate daily passenger operations. Long term improvements in the Chittenden Pass area have been identified; however, the costs are not included within the plan.

Station improvements are required at all three proposed locations. These improvements vary from construction of new stations to the addition of parking to support anticipated ridership. The creation of a new Pajaro station requires the most construction.

The capital improvements identified by the Business Plan total $25.68 million, expressed in year 2003 dollars. These cost estimates are itemized in Table 4.

Table 4
Capital Improvement Costs

Category	Element	Estimated Cost
Trackwork & Signaling	Gilroy Yard	$1,160,000
	Pajaro/Watsonville Yard	$1,265,000
	Salinas Layover Facility	$3,760,000
Stations	Pajaro Valley	$8,310,000
	Castroville	$3,345,000
	Salinas	$7,840,000
Right-of-Way	All	Included
Escalation	Identified Projects	Included
	Total	**$25,680,000**

Funding Sources

The short-range capital investment plan totaling $25.68 million will be financed by State of California General Fund and Gasoline Sales Tax revenue as earmarked by the Traffic Congestion Relief Act of 2000; Proposition 116 – Clean Air Transportation Improvement Act funds; and anticipated contributions from the Santa Clara Valley Transportation Authority for a portion of the Gilroy yard improvement and both the Monterey County Redevelopment Agency and Santa Cruz County Regional Transportation Commission for a portion of the Pajaro Valley station.

The Congestion Relief Act dedicates over $5 billion of General Fund revenue surplus and the state's gasoline sales tax revenues for rail, mass transit and highway improvements throughout the state. Twenty million dollars of this expenditure plan is specifically earmarked for the extension of Caltrain service to Salinas. Three million dollars of Proposition 116 funds have been earmarked for the Caltrain extension as well. The Salinas layover facility will receive $2.5 million from this source while the Gilroy station track extension will receive $0.5 million. These funding commitments for capital improvements total $23.0 million. The residual funding needs total just over $2.5 million and construction may be phased to address funding availability.

Passenger revenues outlined above will be insufficient to completely offset operation and maintenance costs incurred by the service extension. Table 5 provides an estimate of net public costs forecast for the first three years of operation. The table indicates that as patronage builds over these initial years of operation, net public costs will decline from $826,000 for the first year of service to $531,000 forecast for year three. Thereafter, gradual increases in ridership, and resulting passenger revenues, should keep pace with rising O&M costs.

Table 5
Net Public Cost (1,000)
Caltrain Extension to Salinas

Cost / Revenue	Year 1	Year 2	Year 3
O&M Cost	$1,775	$1,855	$1,938
Passenger Revenue	949	1,178	1,407
Net Cost	$ 826	$ 677	$ 531

The net public cost of operations will be funded through a combination of revenue sources including the federal government's Congestion Mitigation and Air Quality Program (CMAQ), State of California Transportation Development Act (TDA) funds, and local transportation funds.

Implementation Steps

To implement the service outlined in this business plan, the Transportation Agency for Monterey County (TAMC) will undertake the following activities:

- Negotiate track access rights with Union Pacific Railroad.
- Establish a revenue/cost sharing agreement with PCJPB or member agencies to implement the initial service plan.
- Negotiate a purchase of service agreement with PCJPB for Caltrain extension of service to Salinas.
- Construct new passenger rail stations in Castroville and Pajaro; and expand parking supplies in Salinas.
- Construct a layover facility in Salinas.
- Initially, provide two round trips per day (four trains) as an extension of Caltrain service to Salinas.

- Encourage bicycle access through the provision of well-designed, secure storage, and access facilities.
- Secure a dedicated funding source for net public operating costs.

1. Introduction

Regional Rail Service Overview

Passenger rail service is being increased and expanded throughout Northern California to address longer distance commuting needs which support the region's robust and growing economy. Figure 1 illustrates the existing and proposed regional (non-urban) rail network which includes Amtrak's Capitol service to Sacramento, the Altamont Commuter Express service to Stockton, and the Caltrain commuter rail service between San Francisco and Gilroy. Extensions of this Caltrain line are proposed to Hollister in San Benito County, and to Salinas in Monterey County. This business plan specifically addresses the Caltrain service extension to Salinas.

History of Caltrain Service

Caltrain is a commuter rail system that has linked San Francisco peninsula communities with one another for more than 130 years. The rail service currently spans 77 miles and includes 34 stations in three counties: San Francisco, San Mateo, and Santa Clara.

Until July 1980, the Southern Pacific Transportation Company owned and operated the commuter rail service for profit. Commuter rail ridership peaked during World War II at around 32,000 passengers per day, and declined thereafter to a low point of 14,000 riders in 1977 as Southern Pacific petitioned the California Public Utilities Commission to discontinue service.

After substantial negotiation, the State of California through Caltrans entered into a purchase-of-service agreement with Southern Pacific in July 1980. The purpose of this agreement was to continue and improve commuter rail service between San Jose and San Francisco. This agreement continued until July 1992, at which time the administration and operation of Caltrain was transferred from the State of California to the Peninsula Corridor Joint Powers Board (PCJPB) – a three member agency comprised of the City and County of San Francisco, the San Mateo County Transit District, and the Santa Clara Valley Transportation Authority (SCVTA). By that point in time, ridership had recovered and stabilized at approximately 21,000 passengers per day.

Since 1992, PCJPB has operated the Caltrain service via a contract with the National Railroad Passenger Corporation, commonly known as Amtrak. Service frequencies have

Figure 1

Existing and Proposed Regional (Non-Urban) Rail Network

been increased and service extended to Gilroy. Ridership has increased to near World War II peak levels, with a count of 31,291 passengers recorded in February 2000.

The PCJPB is committed to further service improvements and has developed a 20-Year Strategic Plan to guide its initiatives. The proposed service extension to Salinas is intended to complement and support PCJPB's vision for moving Caltrain into the twenty-first century.

Caltrain Extension to Salinas: Overview and Service Implementation Goals

Project Overview

This project proposes to extend the existing Caltrain service from Gilroy to Salinas to relieve congestion for commuters traveling between Monterey County and the San Francisco Bay Area. This service would initially consist of two round trips per day. The project would require construction of a layover facility and additional commuter parking in Salinas; rights to greater track access; right of way acquisition; construction of a new station in Castroville; and rehabilitation of the Pajaro Station to serve northern Monterey County and southern Santa Cruz County.

There is strong local support for the proposed service extension due to the projected growth in the Bay Area where more workers for Bay Area businesses are finding their homes in San Benito, Santa Cruz, and Monterey counties. A multi-agency task force comprised of SCVTA, the Transportation Agency for Monterey County, Association of Monterey Bay Area Governments (AMBAG), Monterey-Salinas Transit, Caltrans, Santa Cruz County Regional Transportation Commission, San Benito County, and the cities of Salinas and Watsonville, have been meeting to discuss and plan the initial steps to creating this train service extension. This business plan is an outgrowth of this multi-agency coordination.

The Transportation Agency for Monterey County (TAMC) estimates that the total capital cost of the service extension to be approximately $26 million. No new rolling stock is included in this estimate as none will be needed to extend existing service to Salinas. This capital investment will be funded using State of California General Fund / Gasoline Sales Tax revenues, recently pledged to this project by Governor Davis as part of his Traffic Congestion Relief Plan; and Proposition 116 – Clean Air Transportation Improvement Act funds.

Service Implementation Goals

Goals for the extension of Caltrain service to Salinas are consistent with, and modeled on, those adopted for the overall system, as stated in the Caltrain 20-Year Strategic Plan.

Goal 1. **Provide a workable commute alternative for residents of Monterey, south Santa Cruz, and San Benito counties, who work in the Bay Area, thereby reducing traffic congestion on the Highway 101 corridor.**

Guiding Principals and Policies

1.1 Negotiate track access rights with Union Pacific Railroad.

1.2 Construct new passenger rail stations in Castroville and Pajaro; expand parking supplies in Salinas.

1.3 Construct a Caltrain layover facility in Salinas.

1.4 Initially provide two round trips per day (four trains) as an extension of Caltrain service to Salinas.

1.5 Improve train speeds and ride quality between Gilroy and Pajaro, through Chittenden Pass.

Goal 2 **Attain ridership growth by expanding and enhancing service, infrastructure and facilities.**

Guiding Principles and Policies

2.1 Increase service levels to eight trains per weekday by 2010.

2.2 Provide weekend service to Salinas, consistent with service frequencies being planned between San Jose and Gilroy.

2.3 Increase parking supplies at Pajaro, Castroville, and Salinas stations consistent with ridership growth and parking demand levels.

2.4 Increase shuttle bus routes serving Salinas, Castroville, and Pajaro Caltrain stations.

2.5 Encourage bicycle access through the provision of well-designed, secure storage, and access facilities.

Goal 3 **Achieve financial stability and funding commitment to the future.**

Guiding Principles and Policies

3.1 Achieve a minimum of 50 percent revenue recovery ratio, consistent with overall Caltrain performance levels.

3.2 Secure a dedicated funding source for net public operating costs.

3.3 Pursue alternative funding sources that allow capitalization of UPRR track access / use fees.

Goal 4 **Develop regional partnerships to establish multi-modal linkages with San Francisco Bay Area counties.**

Guiding Principles and Policies

4.1 Establish a revenue / cost sharing agreement with Peninsula Corridor Joint Powers Board (PCJPB) or member agencies to implement the initial service plan.

4.2 Negotiate purchase of service contract with PCJPB for Caltrain extension of service to Salinas.

4.3 Actively seek participation with PCJPB decision-making processes through Associate membership.

4.4 Pursue full PCJPB membership.

Goal 5 **Support livable communities by linking land use and transportation decisions.**

5.1 Support city / county efforts to encourage transit-oriented development in close proximity to commuter rail stations.

5.2 Pursue joint development opportunities for shared parking, child care, and higher density housing in conjunction with Caltrain station sites.

The remainder of this report outlines a business plan for addressing these goals, principles, and policies.

2.
Ridership Forecasts

This portion of the business plan documents the basis of the ridership forecast for the extension of Caltrain service to Salinas, in Monterey County. Where relevant, data is provided for San Benito and Santa Cruz counties for context.

Commute Basics

Commute travel patterns do not respect city and county jurisdictional boundaries, workers live and work where housing and employment opportunities coalesce. While transportation impedance (congestion, delays) is an important consideration, it is most often a remote or secondary factor when compared to family income, housing availability and cost, and quality of life considerations.

For these reasons, workers traverse the region, criss-crossing travel paths as multiple worker households attempt to balance complex housing and employment needs. While it would be optimal for employees to live close to work, they do not; and as the region grows numerically, economically and spatially, commuters will travel greater distances.

Job Balance and Growth

Jobs are distributed throughout the region, but not necessarily in proportion to where workers live. Table 1 summarizes the job balance by county based on Metropolitan Transportation Commission (MTC) estimates of the number of workers by place of work, minus the number of workers by place residence. Positive numbers indicate job surpluses where there are more jobs than workers. Negative numbers indicate counties that have more workers than available jobs (job deficits).

Within the traditional nine county San Francisco Bay Area, San Francisco and Santa Clara counties have large job surpluses as of 2000. All other Bay Area counties, with the exception of Alameda and Napa, export workers to these employment centers. As of 2000, MTC estimates that the San Francisco Bay Area needs 160,000 commuters from counties outside its region (northern California) to fill the available jobs. This number is forecast to reach 228,000 by 2020, an increase of 68,000 (42%) over current levels.

Table 1 also reports MTC's projections for neighboring counties. These neighboring counties have surplus workers based on California Department of Finance forecasts of population; and MTC staff estimates of employment and employed residents. These are not official estimates nor are they adopted by neighboring Metropolitan Planning Organizations (MPOs); but they are compiled by a single source.

Table 1
Job Balance by County - Surplus (Deficit)

LOCATION	1990	2000	2010	2020
San Francisco	179,426	184,407	185,205	206,992
San Mateo	(32,365)	(14,704)	(21,419)	(14,995)
Santa Clara	73,180	130,325	165,502	176,790
Alameda	(3,711)	23,515	26,615	41,655
Contra Costa	(78,010)	(98,613)	(95,938)	(94,953)
Solano	(37,620)	(39,109)	(51,285)	(76,056)
Napa	(3,406)	135	7,749	10,624
Sonoma	(24,081)	(19,745)	(25,604)	(18,295)
Marin	(19,329)	(6,053)	(5,675)	(3,980)
Total Bay Area	***54,084***	***160,158***	***185,150***	***227,782***
Mendocino	(300)	(2,066)	(3,119)	(5,513)
Lake	(1,765)	(2,642)	(3,031)	(3,577)
Colusa	(174)	(860)	(1,366)	(2,771)
Yolo	3,511	(3,523)	(4,294)	(4,959)
Sacramento	4,933	(5,817)	(5,495)	(5,109)
Placer	(13,650)	(22,751)	(25,685)	(29,945)
San Joaquin	(12,021)	(41,633)	(48,533)	(57,274)
Stanislaus	(10,115)	(24,948)	(30,211)	(37,151)
Merced	(4,329)	(13,792)	(17,074)	(21,974)
San Benito	(3,724)	(8,819)	(10,625)	(15,326)
Monterey	(3,959)	(13,076)	(13,656)	(18,224)
Santa Cruz	(12,491)	(20,231)	(22,061)	(25,959)
Neighbor Counties	***(54,084)***	***(160,158)***	***(185,150)***	***(227,782)***

Source: Metropolitan Transportation Commission, September 1998.

Based on these estimates, MTC expects the Monterey Bay counties (San Benito, Monterey and Santa Cruz) to fill approximately 25 percent of the San Francisco Bay Area worker shortfall by 2000, and a similar share (26%) in 2020 (approximately 60,000 workers).

MTC Estimates of Commute Patterns

The job surplus and deficits referenced above form a need for workers to commute from one county to another as well as internally within their county of residence. Some level of county to county commuting occurs naturally absent of a job surplus or deficit since commuters typically do not consider county jurisdictional boundaries when matching jobs with housing. However, the large surpluses of jobs in Santa Clara and San Francisco and deficits in outlying counties, generates a large county-to-county commute that now extends through out the northern California region.

Table 2 summarizes the results of MTC's analysis of commute travel patterns based on the 1990 Census journey to work data. The technique used to produce these estimates is

known as a fratar method that basically factors observed data (1990 Census data) to forecast data (jobs and employed resident estimates). Therefore, this methodology reflects the ease or difficulty of commutes and the housing market that existed in 1990.

Table 2 indicates that out of county commuting from Monterey County is forecast by MTC to increase from approximately 18,500 commuters in 2000 to 26,000 commuters in 2020, an increase of 40 percent in 20 years. The increase for Santa Cruz County (31%) is lower; however, the absolute increase in commuters is higher. San Benito County out of county commuting is forecast to increase by 70 percent over year 2000 levels.

Santa Clara County, with its high paying and plentiful job market is obviously a strong attraction for current residents of Association of Monterey Bay Area Government (AMBAG) counties, as well as other northern California counties. Table 3 reports MTC's estimates of the number of external commuters to Santa Clara County. These estimates are based on the 1990 journey-to-work data; the Association of Bay Area Governments' (ABAG) Projections '98 data; the State Department of Finance's county-level population projections; and MTC staff estimates of employed residents and employment in neighboring counties (to the Bay Area).

Table 2
Inter- and Intra-County Travel Patterns

LOCATION	1990		2000	2010	2020	
Monterey County						
Internal - Internal	140,476	89%	154,370	187,747	225,960	87%
Internal - External	10,657	7%	18,538	20,642	26,024	10%
External - Internal	6,697	4%	5,462	6,986	7,800	3%
County Total	157,830	100%	178,370	215,375	259,784	100%
Santa Cruz County						
Internal - Internal	87,841	71%	99,211	114,132	128,908	66%
Internal - External	24,548	20%	35,889	39,774	46,888	24%
External - Internal	12,057	10%	15,658	17,713	20,929	11%
County Total	124,446	100%	150,758	171,619	196,725	100%
San Benito County						
Internal - Internal	10,592	58%	12,134	17,445	22,135	51%
Internal - External	5,620	31%	10,667	13,155	18,165	42%
External - Internal	1,896	10%	1,848	2,530	2,839	7%
County Total	18,108	100%	24,649	33,130	43,139	100%
Santa Clara County						
Internal - Internal	710,582	76%	795,064	883,522	944,139	73%
Internal - External	73,098	8%	73,388	76,718	86,415	7%
External - Internal	146,278	16%	203,713	242,220	263,205	20%
County Total	929,958	100%	1,072,165	1,202,460	1,293,759	100%

Source: Metropolitan Transportation Commission, September 1998.

Table 3
County of Residence to Santa Clara County Commuters, 1990 - 2000

LOCATION	1990	2000	2010	2020
San Francisco	7,992	9,296	11,587	11,026
San Mateo	44,001	49,376	56,781	56,946
Contra Costa	6,010	8,813	10,518	10,800
Alameda	53,139	62,404	77,529	80,900
Other Bay Area	2,055	2,514	3,225	3,512
Subtotal	*113,197*	*132,403*	*159,640*	*163,184*
San Joaquin	3,380	9,860	11,747	13,296
Stanislaus	3,605	11,173	13,598	16,068
Merced	682	3,038	3,702	4,541
Subtotal	*7,667*	*24,071*	*29,047*	*33,905*
Santa Cruz	17,645	28,433	31,374	36,989
Monterey	2,402	5,591	6,221	8,093
San Benito	3,767	8,331	10,287	14,437
Subtotal	*23,814*	*42,355*	*47,882*	*59,519*
Other Counties	1,600	4,884	5,651	6,597
Total	146,278	203,713	242,220	263,205

Source: Metropolitan Transportation Commission, September 1998.

Recent Housing Trends

Insofar as Monterey and San Benito counties are concerned, the estimates of out commuting and commuting to Santa Clara County, prepared by MTC in 1998, are regarded to be outdated, based on current housing trends. The California Association of Realtors (CAR) continuously monitors and reports housing affordability and median prices for counties and cities throughout the state. In April 2000, CAR reported that,

> "Housing affordability in California posted its sharpest decline in February (2000) in more than a decade, falling 11 percentage points to 32 percent. The eleven-point decline was the sharpest annual deterioration in the state's housing affordability since May 1989, when it dropped 12 percent. C.A.R.'s monthly housing affordability index measures the percentage of households that can afford to purchase a median-priced home in California. ..."

One year earlier, (March 1999) G. U. Kruger, CAR's Deputy Chief Economist forecast,

> "Housing affordability is re-emerging as an issue of concern for everyone who wants to see the California economy expand into the next century. Below the surface, an affordability crisis is already brewing. The (San Francisco) Bay Area is already in crisis ..."

This is a far cry from 1996/97, when in February 1997, CAR reported that "California existing home sales surged during 1996, propelled by the best housing affordability conditions in more than a decade."

Housing affordability has both a direct and dramatic impact on the long distance commute market. As noted in CAR's press release of February 2000, the minimum incomes needed to qualify for a median-priced home were:

County	Income Required	Median Price	Qualifying Households
Santa Clara	$ 135,300	$ 391,000	20%
Santa Cruz	$ 116,940	$ 339,250	NR
Monterey	$ 111,800	$ 253,000	15%
San Benito	NR	$ 269,500	NR

The same press release noted that based on county income profiles, 20% of households resident to Santa Clara County could afford the median priced house of $391,000 while 15% of existing households resident to Monterey County could afford that county's median priced house of $253,000.

What this means, in terms of commuting, is that Silicon Valley workers can better afford houses in neighboring Monterey Bay counties, than houses in Santa Clara County; and that these same Silicon Valley workers can better afford these houses than local Monterey Bay county residents.

The surge in commuting from the San Joaquin Valley to San Francisco Bay Area job is now well recognized as is reflected by increases in housing prices observed over the past two years. Further east, in Manteca, Stockton, and Modesto, housing prices have been far more stable, even flat.

Table 4 provides year to year median house prices for selected cities. Besides Tracy, even more dramatic price increases were experienced in Hollister, Watsonville, Santa Cruz, and Marina. Housing demand and higher household incomes drive housing costs. In both cases, the economic engine of Silicon Valley, both from a wealth generation and job creation perspective is spreading outward, cascading from one city to the next.

Figure 2 illustrates median house prices for communities surrounding Silicon Valley and the percent increase in housing prices between February 1998 and February 2000. This graphic illustrates that workers have sought and found affordable housing toward the south (as well as San Joaquin County) while at the same time maintaining their higher paying jobs with technology industries in Santa Clara and other Bay Area counties. Anecdotal evidence of this linkage abounds. One survey of new (1998 – 1999) homebuyers in Hollister found 92 percent having jobs in the San Francisco Bay Area while the remaining 8 percent (6 of 74 homebuyers) had a job in Hollister. In Monterey County, similar surveys indicate that 25 to 50 percent of new home buyers have jobs in Silicon Valley. With over 8,000 new dwelling units approved and/or under construction as of 1999, and over 7,000 additional dwelling units pending approval, Monterey County could easily see a near term doubling of commuters to Santa Clara County compared to estimates prepared by MTC in 1998 (see Table 3).

Existing Use Of Caltrain

Table 5 lists Caltrain weekday passenger boardings by station, with year by year detail provided for 1992 through 2000. Passenger boarding counts for 1970 and 1980 are also presented for historical perspective. The table indicates declining patronage during the decade of the 1970's as Southern Pacific Railroad attempted to abandon service. During

Table 4
February Median House Prices

County / City	2000	1999	1998	1998 - 2000 % Increase
Monterey County	$253,000	$210,000	$198,000	28
Salinas	$195,500	$184,750	$183,000	7
Marina	$239,000	$185,000	$172,500	39
Seaside	$231,000	$160,000	$187,750	23
San Benito County	$269,500	$212,000	$200,500	34
Hollister	$269,500	$213,250	$200,000	35
Santa Cruz County	$339,250	$249,250	$240,500	41
Watsonville	$237,500	$170,000	$182,500	30
Santa Cruz	$347,000	$276,000	$247,250	40
Santa Clara County	$391,000	$310,000	$270,000	45
Gilroy	$331,250	$279,750	$247,500	34
Morgan Hill	$437,500	$350,000	$259,000	69
San Jose	$363,000	$283,750	$248,000	46
Santa Clara	$378,500	$290,000	$278,250	36
Mt. View	$400,000	$338,500	$282,000	42
Milpitas	$336,000	$289,500	$245,000	37
Cupertino	$584,250	$466,500	$465,000	26
Los Gatos	$625,000	$523,000	$444,000	41
San Mateo County	$415,750	$350,500	$307,000	35
Menlo Park	$640,000	$550,250	$526,000	22
Redwood City	$464,000	$391,000	$337,500	37
Alameda County	$284,000	$230,000	$215,000	
Fremont	$360,000	$287,500	$245,000	47
Union City	$334,000	$244,000	$223,000	50
Hayward	$240,000	$191,500	$168,500	42
Pleasanton	$401,000	$341,000	$290,000	38
Livermore	$277,000	$240,000	$210,000	32
San Joaquin County	$128,000	$118,000	$121,750	5
Tracy	$203,000	$185,500	$161,500	26
Manteca	$142,000	$140,000	$139,750	2
Stockton	$104,000	$88,000	$100,000	4
Stanislaus County	$115,000	$102,500	$104,000	11
Modesto	$117,500	$96,250	$100,000	18

Source: California Association of Realtors

Figure 2
Median House Prices (February 2000)
and Percent Change (1998-2000)

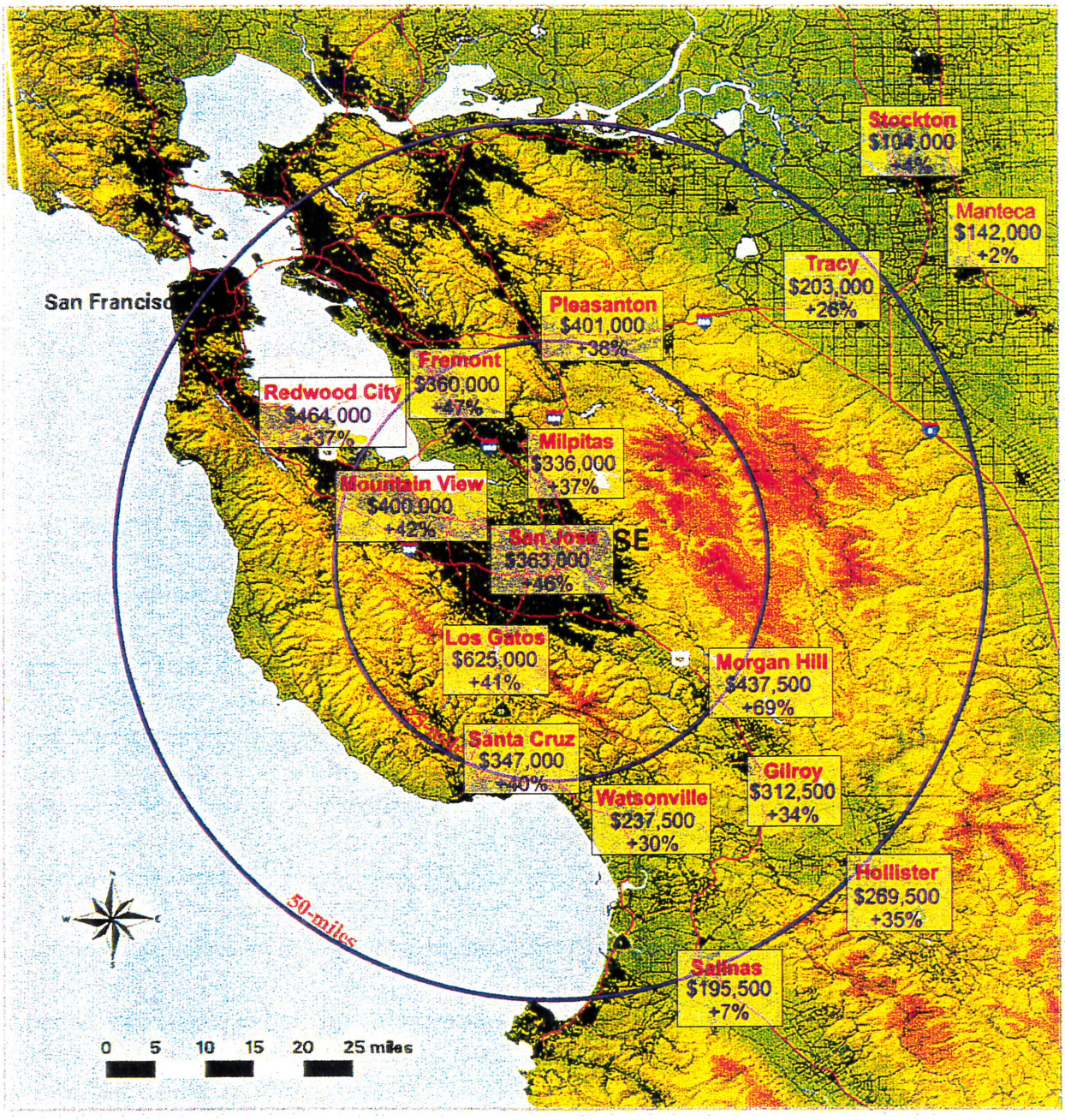


Table 5
Caltrain Weekday Passenger Boardings

STATION	1970	1980	OCT '92	APR '93	MAR '94	FEB '95	MAR '96	FEB '97	FEB '98	FEB '99	FEB '00
San Francisco	9,070	6,773	6,280	5,680	5,795	5,303	5,536	6,126	6,302	5,898	6,602
22nd Street	144	37	208	206	242	235	297	397	517	510	574
Paul Avenue	76	35	52	50	35	37	37	17	20	6	11
Bayshore	135	109	169	215	194	170	241	316	402	403	458
Butler Road	35	14	-	-	-	-	-	-	-	-	-
So. San Francisco	348	215	418	421	397	392	398	521	509	517	549
San Bruno	375	349	454	500	529	529	578	650	694	704	723
Millbrae	601	499	501	550	558	549	543	618	698	655	782
Broadway	344	344	336	377	378	392	377	430	464	423	495
Burlingame	536	496	546	581	566	618	638	674	686	755	842
San Mateo	819	598	589	623	648	633	719	845	905	957	1,105
Hayward Park	268	156	211	210	203	198	216	299	275	320	381
Bay Meadows	-	-	127	129	70	2	134	180	167	154	62
Hillsdale	839	620	920	917	918	961	1,038	1,156	1,193	1,163	1,278
Belmont	471	340	554	519	566	529	554	506	548	590	648
San Carlos	655	469	620	638	703	749	716	835	878	865	1,028
Redwood City	884	737	764	725	807	778	874	1,142	1,286	1,331	1,597
Atherton	517	294	299	275	243	240	230	250	206	225	266
Menlo Park	486	477	859	815	796	863	847	1,017	1,133	1,104	1,174
Palo Alto	782	759	1,020	991	1,075	1,162	1,242	1,610	1,706	1,693	1,960
Stanford	-	-	-	-	3	-	-	-	18	14	12
California Avenue	865	854	881	929	922	974	950	1,125	1,163	1,211	1,280
San Antonio	-	-	-	-	-	-	-	-	-	-	550
Castro	54	41	276	268	263	263	236	246	281	271	111
Mountain View	1,071	784	962	887	980	1,023	1,162	1,369	1,477	1,478	1,640
Sunnyvale	818	853	814	816	872	828	1,001	1,204	1,214	1,230	1,363
Lawrence	-	-	601	522	575	558	687	822	965	981	1,124
Santa Clara	422	369	558	587	570	579	554	770	809	863	1,031
College Park	206	186	161	132	169	150	154	167	197	178	206
San Jose Diridon	921	1,556	1,352	1,317	1,118	1,092	1,197	1,486	1,616	1,492	1,454
Tamien			287	332	359	382	468	492	531	526	676
Capitol			-	-	25	33	39	54	76	63	95
Blossom Hill			52	54	85	84	91	128	148	119	161
Morgan Hill			138	88	124	128	151	195	318	297	387
San Martin			-	46	51	63	51	95	170	175	200
Gilroy			112	90	143	198	182	300	394	420	468
TOTAL	***21,752***	***17,964***	***21,121***	***20,481***	***20,982***	***20,695***	***22,138***	***26,043***	***27,967***	***27,591***	***31,291***

Source: Caltrans and Peninsula Corridor Joint Powers Board

the 1980's, the State of California attempted to stabilize and reverse the degradation of service. By 1992, ridership levels returned to those seen in 1970, but remained flat until 1996. During the last half of the 1990's, ridership increased by 50 percent from that experienced during the previous 25 years.

Use of this historical ridership data, as a basis for forecasting is somewhat risky. If the analyst attempted to use 1970 through 1980 data, and combined this with population, employment and commuting increases on the peninsula corridor; ridership estimates would have been overstated through 1995. On the other hand, could the rapid increase in ridership, experienced from 1996 to 2000, have been accurately forecast based on pre-1996 ridership?

Further investigation is needed to understand the complexities of the Caltrain ridership market.

Figure 3 charts the trend in boardings observed at the three south Santa Clara County stations since 1992. Various plateaus and spikes in ridership are apparent, but the overall trend line is positive. This situation exists despite a deteriorating ride quality on the Union Pacific Railroad trackage, south of Tamien station.

The increase in south Santa Clara County station boardings may be attributable in part to the jump in housing prices discussed earlier, and Silicon Valley workers moving to south county communities and to San Benito and Monterey counties.

A survey of Caltrain riders boarding at the Gilroy station was conducted by TAMC in November, 1999. Table 6 reports the length of time riders have boarded at Gilroy, cross-tabulated by county of residence. The table indicated that 74 percent of the riders are relatively new to boarding Caltrain at Gilroy, and perhaps riding Caltrain at all. The table also indicates that overall, 42% of the riders have their place of residence in Santa Clara County, while 34 percent live in San Benito County, 17 percent live in Monterey County, and 4 percent live in Santa Cruz County.

This place of residence information is remarkable given the relatively short access distances which typify Park-and-Ride lot use. Access distances of 5 miles or less (the immediate market shed of Gilroy) typically account for 60 percent of Park-and-Ride lot uses. Corresponding capture rates for 10, 15, and 20 miles of access distance have been measured as 80, 90, and 94 percent respectively.[1] The end of the line nature of the Gilroy station undoubtedly contributes to its large market area.

Commuters who drive long distances to a Caltrain Park-and-Ride lot are obviously transit riders by choice, because their combined travel mode involves auto use. Their chosen mode of access affords no opportunity to avoid fixed costs of auto ownership, or to make the auto available to other family members, as would be possible by having a Caltrain station much closer to home. Thus, current Caltrain use by San Benito and Monterey County residents, while significant, most likely understates the market for service extensions by a wide margin.

[1] Traveler Response to Transportation System Changes, for U.S. Department of Transportation, by Barton-Aschman Associates, Inc., 1981

Figure 3
Caltrain Weekday Passenger Boardings
(South Santa Clara County Stations)

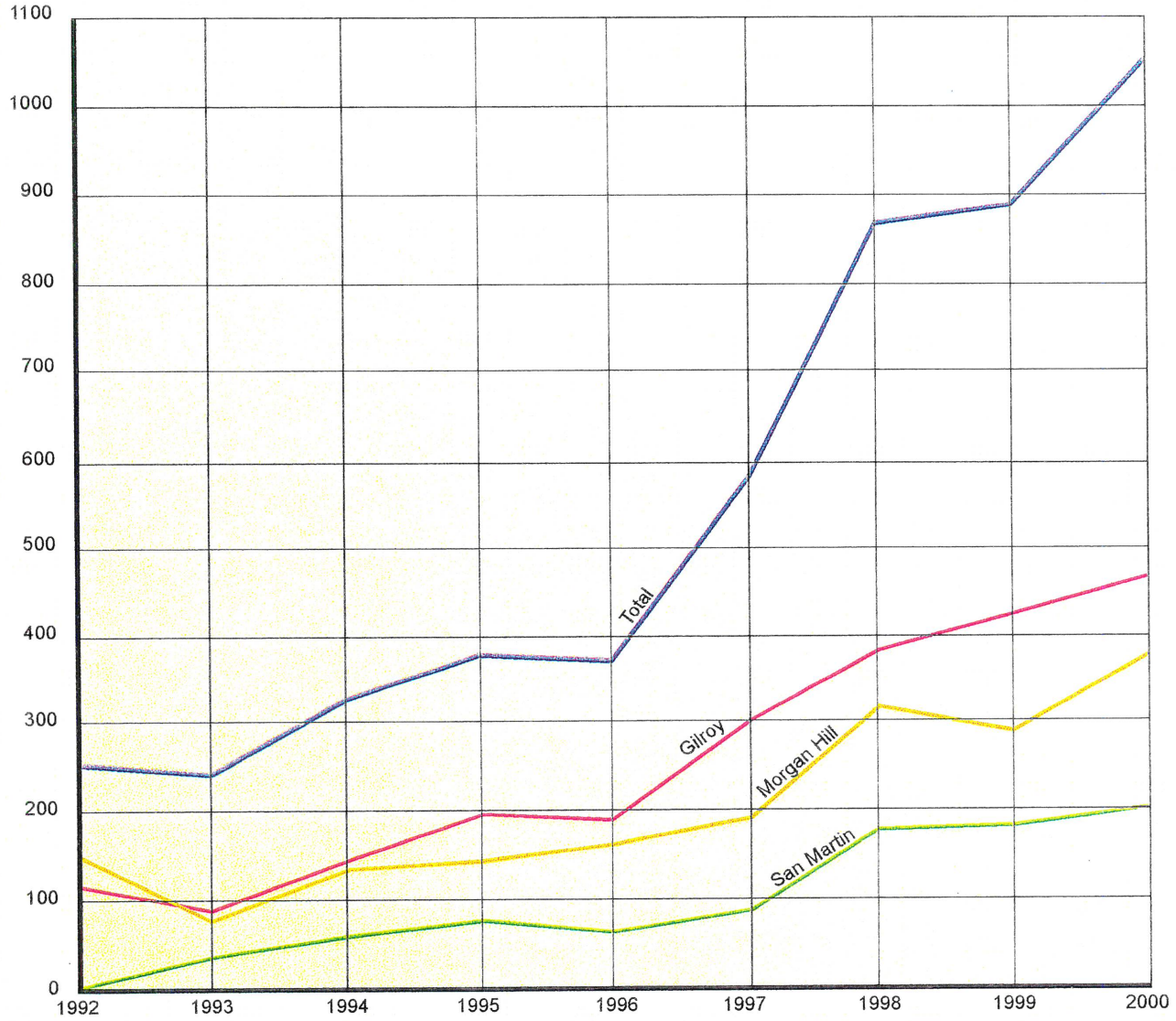


Table 6
Survey of Caltrain Passengers Boarding at Gilroy

How long have you been using this Station? (Years)

County	<1	1 – 3	> 3	NR	Total
Invalid		1	1	-	2
Merced	3	2	2	-	7
Monterey	19	27	9	1	56
San Benito	31	48	31	-	110
San Francisco			1	-	1
Santa Clara	37	67	31	1	136
Santa Cruz	1	5	6	1	13
Stanislaus		1		-	1
Total	**91**	**151**	**81**	**3**	**326**

County	<1	1 – 3	> 3	NR	Total
Invalid	0%	50%	50%	0%	100%
Merced	43%	29%	29%	0%	100%
Monterey	34%	48%	16%	2%	100%
San Benito	28%	44%	28%	0%	100%
San Francisco	0%	0%	100%	0%	100%
Santa Clara	27%	49%	23%	1%	100%
Santa Cruz	8%	38%	46%	8%	100%
Stanislaus	0%	100%	0%	0%	100%
Total	**28%**	**46%**	**25%**	**1%**	**100%**

Source: TAMC Rider Survey, November 1999

Caltrain Extension Ridership Forecast

To estimate ridership for the Caltrain extension of service to Salinas, it would be desirable to have an accurate picture of current commuting patterns and some basis to estimate mode split. Following this logic, Valley Transportation Authority staff made a preliminary estimate of ridership potential in November 1999, based on a survey of major employers, conducted in 1998 / 1997; and an estimate of mode shares, based on express bus data. In its analysis, VTA noted that their longest bus route was 40 miles, so mode split values for trips longer than 40 miles were extrapolations.

Using this procedure, which took into account approximately 44 percent of total Santa Clara County employment, VTA staff estimated a potential for about 700 passengers boarding trains extending to San Benito and Monterey counties. Of these riders, 40 percent (280 passengers) were expected to board in Hollister, while 60 percent (420) would board the line extending to Salinas. Daily ridership (to and from) would be twice these numbers.

VTA staff noted that "improvements to this analysis would include developing a relationship between distance and mode share using data from Caltrain or ACE, which have longer trips (if the data is available), or using a mode split equation that considers travel time and cost as well as other variables".

For this business plan, an attempt was made to follow VTA's forecasting improvement suggestions. Ridership data was gathered for ACE on a station by station basis, and correlated to the population served by each of these stations. Travel times on ACE were compared with auto travel times. ACE fares were also taken into consideration.

The same information was also collected and summarized for Caltrain stations serving south Santa Clara County: Morgan Hill, San Martin, and Gilroy. A VTA survey of Park-and-Ride lot users at San Martin and Gilroy, conducted in 1998, was used to sort between boarding station versus city of residence. (See Table 7).

With this observed information as a base, rail travel times and auto travel distances and times were computed from each of the proposed Monterey county stations to the primary (San Jose) and secondary (Sunnyvale/Lawrence) destination stations, observed in VTA's 1998 survey (see Table 8). Similar information for a potential station in Hollister was also computed for reference.

Using a cross classification technique, a "boardings per capita" rate was then assumed for each of the proposed stations, based on the array of available information and engineering judgement. This rate was applied to the station service area populations to estimate a stabilized current year ridership level if service was available. Results from the application of this methodology are presented in Table 9.

This methodology takes work origin-destination commuting patterns into account indirectly, with capture rates varying by distance from Silicon Valley employment opportunities. Note that rates used for the proposed stations in Monterey County are very similar to those observed on the ACE line. This is considered to be a reasonable assumption, as it attempts to balance differences in commute impedances and fare levels with differences in housing costs and MTC's "fratared" estimate of commute patterns.

Table 9 indicates that the year 2000 estimates of passengers boarding at Caltrain corridor listed stations total 1,995; including the extension of service to Salinas and a branch line to Hollister. The February 2000 boarding count at Morgan Hill, San Martin, and Gilroy totals 1,055 by comparison.

Table 7
Origin of Passengers Boarding at Gilroy & San Martin

City of Origin	Gilroy	San Martin
Gilroy	55%	52%
Hollister	19%	6%
San Martin		42%
Salinas	11%	
Watsonville	3%	
Prunedale	4%	
Carmel	2%	
Marina	2%	
Aromas	1%	
Monterey	1%	
Pacific Grove	1%	
Rural Santa Clara County	1%	
Total	100%	100%

Source: Valley Transportation Authority, 1998 Park-and-Ride Survey

Table 8
Destination of Passengers Boarding at Gilroy & San Martin (Percentage)

Origin	South of Tamien Zone 7	College Park – Tamien Zone 6	Sunnyvale – Santa Clara Zone 5	Palo Alto – Mt. View Zone 4	Other Zones SF - 3
Gilroy		20	21	9	2
Hollister		2	6	5	3
San Martin		7	3	2	
Salinas		3	2	2	3
Watsonville	1	1	2		
Prunedale		1	1	1	
Carmel					1
Marina		1		1	
Aromas		1			
Monterey				1	
Pacific Grove			1		
Rural Santa Clara County		1			
Total	1	36	36	21	9

Source: Valley Transportation Authority, 1998 Park-and-Ride Survey

Table 9
Commuter Rail Corridor Assessment

ACE Corridor	Population	Primary Destination - Great America Station					Secondary Destination - San Jose					2000 Ridership	Riders per Capita
		Monthly Fare	Commuter Rail		Highways		Monthly Fare	Commuter Rail		Highways			
			Minutes	Miles	Minutes	Miles		Minutes	Miles	Minutes	Miles		
Stockton	243,700	$ 279	126	77	126	76.8	$ 279	140	80	128	79.8	**100**	0.0004
Lathrop/Manteca	57,575	$ 235	104	69	114	65.1	$ 235	118	72	115	68.1	**242**	0.004
Tracy	50,300	$ 191	90	58	106	54.8	$ 191	104	61	108	57.8	**313**	0.006
Livermore (Vasco)	73,600	$ 147	55	32	83	28.3	$ 147	70	35	85	31.3	**298**	0.004
Pleasanton	64,300	$ 147	44	26	68	24.1	$ 147	58	29	69	27.1	**341**	0.005
Fremont	203,600	$ 103	22	13	55	16.4	$ 103	36	16	57	19.4	**128**	0.0006
											Total	**1422**	

Caltrain Corridor	Population	Primary Destination - San Jose					Secondary Destination - Sunnyvale					2000 Ridership	Riders per Capita
		Monthly Fare	Commuter Rail		Highways		Monthly Fare	Commuter Rail		Highways			
			Minutes	Miles	Minutes	Miles		Minutes	Miles	Minutes	Miles		
Salinas	131,100	$ 142	93	68	98	60.1	$ 160	103	79	107	68.3	***524***	*0.004*
Castroville*	20,000	$ 124	84	61	93	56.5	$ 142	94	72	101	60.8	***100***	*0.005*
Pajaro (Watsonville)	45,600	$ 106	72	50	81	47.4	$ 124	82	61	87	51.0	***274***	*0.006*
Hollister**	35,000	$ 89	68	44	77	47.0	$ 106	78	55	85	55.1	***280***	*0.008*
Gilroy	39,050	$ 71	47	30	55	32.4	$ 89	57	41	63	40.6	**351**	0.009
San Martin	4,600	$ 71	38	24	47	26.6	$ 89	48	35	56	34.7	**83**	0.018
Morgan Hill	31,900	$ 71	32	20	45	23.5	$ 89	42	31	53	31.7	**383**	0.012
											Total	**1995**	

Estimated

* – Includes portions of Prunedale and Monterey Peninsula

** – Includes portions of San Benito County

Source: Parsons Transportation Group

The ACE Corridor currently attracts 1,422 boarding passengers in the morning, for newly established but comparable service. Monthly fares are higher for the ACE service and Silicon Valley station stops are fewer in number. Also, Caltrain service from Gilroy north is more frequent than currently offered to ACE patrons.

All in all, the ridership estimate for the extension of Caltrain service appears reasonable, even though it is higher than VTA staff's preliminary estimate. The rapid increase in Silicon Valley housing prices over the past two years, and influx of valley workers to Monterey and San Benito counties could explain this difference.

Conventional wisdom indicates that the boarding levels indicated in Table 9 may be reached within three years of service initiation. The rapid buildup of patronage on ACE since service became operational on October 19, 1998, and the recent escalation of ridership generated by the South Santa Clara County stations may prove this past experience to be conservative however. As workers attempt to balance affordable housing with tolerable commuting, timing of ridership buildup may depend more on economic factors than transportation service.

3.
Operating Plan

Number of Trains

Caltrain currently operates four northbound trains during the morning peak period and four southbound trains in the afternoon peak period. Table 10 lists the scheduled times for three of the Caltrain stations including Gilroy (southern terminus), San Jose/Diridon (downtown), and the Mountain View Station (connecting to the Tasman Extension of the Guadalupe light rail line). The current Caltrain schedule shows a northbound travel time from Gilroy to Mountain View of 65 to 66 minutes. In the southbound direction, the travel time varies between 65 and 69 minutes.

The Peninsula Corridor Joint Powers Board (PCJPB) and VTA are looking to upgrade this existing service over the next four to six years. As part of the Santa Clara County Measure B Transportation Improvement Program, a ½-cent sales tax enacted by voters in November 1996, $80 million will be invested in upgrading Caltrain facilities and services within that county. A significant portion of this amount will be devoted to improvements south of Tamien Station. Governor Davis has also proposed adding $55 million for facility improvements between Gilroy and San Jose.

VTA is currently evaluating options for these investment funds. Under consideration are the addition of peak direction trains, reverse commute direction trains, station expansions, and track improvements to enhance ride quality. Proposals have been advanced to increase the number of daily trains operating between Gilroy and San Jose from eight to twenty. At a minimum, it appears that at least one northbound train will be added to the peak period in the morning and one southbound train in the evening. Ten additional weekday trains are also being considered for peak direction and/or reverse commute service. Resolution of these improvement plans will await negotiations with Union Pacific Railroad (UPRR) and their completion of a "capacity study" of rail lines feeding Silicon Valley.

For the purpose of this business plan, operation of two trains northbound in the morning peak period and southbound in the afternoon peak period is recommended for the initial service period. These trains would be extensions of Caltrain service currently operating to / from Gilroy. Ridership would dictate when additional services would be warranted; but within ten years, four trains per peak period could easily be needed. This conclusion is based on the rapid escalation of housing prices in the Silicon Valley, the rapid and recent buildup of ridership on Caltrain and ACE, and recent proposals to add a significant number

Table 10
Existing Caltrain Schedule - Gilroy to Mountain View

Northbound	Leave Gilroy	San Jose Diridon	Mountain View
33	5:23 AM	6:10 AM	6:28 AM
39	6:03 AM	6:50 AM	7:08 AM
43	6:28 AM	7:15 AM	7:34 AM
49	7:10 AM	7:57 AM	8:16 AM
Southbound	**Leave Mountain View**	**Leave San Jose Diridon**	**Arrive Gilroy**
54	4:09 PM	4:32 PM	5:16 PM
58	5:08 PM	5:32 PM	6:16 PM
64	5:43 PM	6:04 PM	6:48 PM
68	6:09 PM	6:30 PM	7:14 PM

Source: Caltrain Timetable, Effective February 6, 2000

of new job opportunities in the North Coyote Valley and Edenvale redevelopment areas of south San Jose.

Proposed Schedule

The only existing passenger train service between San Jose and Salinas is the Amtrak Coast Starlight which operates one northbound and one southbound train daily. The southbound train departs from San Jose at 10:31 AM and arrives in Salinas at 12:06 PM (a travel time of 95 minutes). The northbound train departs from Salinas at 6:17 PM and arrives in San Jose at 7:47 PM (a travel time of 90 minutes). Unlike the proposed Caltrain extension to Salinas, the Coast Starlight operates nonstop between San Jose and Salinas.

The future schedule of the Salinas to Gilroy service is highly dependent on the operating speeds on each track segment. The existing operating speed on the segments between Salinas and Pajaro is 50 to 70 mph. Due to speed restriction, maximum speeds on the segment from Pajaro to Gilroy is 35 to 60 mph. Based on these operating speeds, Table 11 shows preliminary schedules for the Caltrain extension to Salinas which connect with existing morning and evening peak service to and from Gilroy. The morning departure times from Salinas range from 4:36 AM to 6:21 AM. Return times range from 6:07 PM until 8:05 PM. Note that the scheduled running time between Pajaro and Gilroy is 29 minutes and the overall travel time between Salinas and Gilroy is 49 minutes.

Longer-range capital improvements are outlined in Chapter 4 that would permit speed restrictions to be eased, and operating speeds increased. Pending detailed design studies, travel times between Salinas and San Jose may be reduced to near Coast Starlight levels (approximately 90 minutes) including stops at all existing stations plus those on the extension to Salinas. A potential schedule for all existing train sets is provided as Table 12.

The selection of which trains to extend to Salinas will be made in consultation with JPB, VTA, San Benito County, and UPRR. Trains not extended to Salinas will be served by connecting bus routes operated by Monterey-Salinas Transit.

Overnight layover of the selected train sets is assumed to occur at a new storage yard to be constructed in Salinas, adjacent to the existing station.

Table 11
Preliminary Schedule with Current Operating Speed Restrictions

Northbound	Salinas	Castroville	Pajaro	Gilroy	San Jose
33	4:36 AM	4:44 AM	4:56 AM	5:25 AM	6:10 AM
39	5:16 AM	5:24 AM	5:36 AM	6:05 AM	6:50 AM
43	5:39 AM	5:47 AM	5:59 AM	6:28 AM	7:15 AM
49	6:21 AM	6:29 AM	6:41 AM	7:10 AM	7:57 AM
Southbound	**San Jose**	**Gilroy**	**Pajaro**	**Castroville**	**Salinas**
54	4:34 PM	5:18 PM	5:47 PM	5:59 PM	6:07 PM
58	5:32 PM	6:16 PM	6:45 PM	6:57 PM	7:05 PM
64	6:06 PM	6:50 PM	7:19 PM	7:31 PM	7:39 PM
68	6:32 PM	7:16 PM	7:45 PM	7:57 PM	8:05 PM

Table 12
Potential Schedule with Improved Operating Speeds

Northbound	Salinas	Castroville	Pajaro	Gilroy	San Jose
33	4:40 AM	4:48 AM	5:00 AM	5:25 AM	6:10 AM
39	5:20 AM	5:28 AM	5:40 AM	6:05 AM	6:50 AM
43	5:43 AM	5:51 AM	6:03 AM	6:28 AM	7:15 AM
49	6:25 AM	6:33 AM	6:45 AM	7:10 AM	7:57 AM
Southbound	**San Jose**	**Gilroy**	**Pajaro**	**Castroville**	**Salinas**
54	4:34 PM	5:18 PM	5:43 PM	5:55 PM	6:03 PM
58	5:32 PM	6:16 PM	6:41 PM	6:53 PM	7:01 PM
64	6:06 PM	6:50 PM	7:15 PM	7:27 PM	7:35 PM
68	6:32 PM	7:16 PM	7:41 PM	7:53 PM	8:01 PM

Fares

Use of the Caltrain fare structure is proposed. This fare structure currently includes nine fare zones. A one-zone ride ranges in length from 3.2 miles to 9.7 miles. A two-zone ride can cover a distance as short as 1.2 miles, or as long as 25.5 miles. Based on this logic, a ride from Gilroy to Pajaro, covering a distance of 19.7 miles, is proposed as a three-zone fare. A ride from Gilroy to Castroville, a distance of 29.7 miles, is proposed as a four-zone fare; and a ride from Gilroy to Salinas, a distance of 37.5 miles, is proposed to require a five-zone fare.

A prototypical fare structure is reported as Table 13. Fares for a 1 through 9 zone ride are effective as of February 6, 2000. Fares for zones 10 through 13 are extrapolations of the fare structure.

Based on the proposed fare structure, a monthly ticket for riding between Salinas and San Jose (Diridon) would be $141.75 (seven zones). A monthly ticket for riding between Salinas and Palo Alto would be $177.25 (nine zones).

Table 13
Prototypical Fare Structure: San Francisco – San Jose - Salinas

	1	2	3	4	5	6	7	8	9	10	11	12	13
One Way	$ 1.25	$ 2.00	$ 2.75	$ 3.25	$ 4.00	$ 4.75	$ 5.25	$ 6.00	$ 6.75	$ 7.25	$ 8.00	$ 8.75	$ 9.25
Senior/Disabled/ Children	$ 0.50	$ 1.00	$ 1.25	$ 1.50	$ 2.00	$ 2.25	$ 2.50	$ 3.00	$ 3.25	$ 3.50	$ 4.00	$ 4.25	$ 4.50
One Way Discount	$ 1.00	$ 1.50	$ 2.00	$ 2.50	$ 3.00	$ 3.50	$ 4.00	n/a	n/a	n/a	n/a	n/a	n/a
10-ride Ticket	$ 11.25	$ 17.00	$ 22.75	$ 28.50	$ 34.00	$ 39.75	$ 45.50	$ 51.25	$ 56.75	$ 62.50	$ 68.25	$ 73.75	$ 79.50
Monthly Ticket	$ 35.50	$ 53.25	$ 70.75	$ 88.50	$ 106.25	$ 124.00	$ 141.75	$ 159.50	$ 177.25	$ 195.00	$ 212.75	$ 230.50	$ 248.25
Ticket by Mail	$ 34.75	$ 52.25	$ 69.50	$ 87.00	$ 104.25	$ 121.75	$ 139.00	$ 156.50	$ 173.75	$ 191.00	$ 208.50	$ 225.75	$ 243.00
Discount Monthly	$ 26.75	$ 40.00	$ 53.50	$ 66.75	$ 80.25	$ 93.50	$ 107.00	$ 120.25	$ 133.75	$ 147.25	$ 160.50	$ 174.00	$ 187.50
Delta		$ 0.75	$ 0.75	$ 0.50	$ 0.75	$ 0.75	$ 0.50	$ 0.75	$ 0.75	$ 0.50	$ 0.75	$ 0.75	$ 0.50
		$ 0.50	$ 0.25	$ 0.25	$ 0.50	$ 0.25	$ 0.25	$ 0.50	$ 0.25	$ 0.25	$ 0.50	$ 0.25	$ 0.25
		$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50	n/a	n/a	n/a	n/a	n/a	n/a
		$ 5.75	$ 5.75	$ 5.75	$ 5.50	$ 5.75	$ 5.75	$ 5.75	$ 5.50	$ 5.75	$ 5.75	$ 5.50	$ 5.75
		$ 17.75	$ 17.50	$ 17.75	$ 17.75	$ 17.75	$ 17.75	$ 17.75	$ 17.75	$ 17.75	$ 17.75	$ 17.75	$ 17.75
		$ 17.50	$ 17.25	$ 17.50	$ 17.25	$ 17.50	$ 17.25	$ 17.50	$ 17.25	$ 17.25	$ 17.50	$ 17.25	$ 17.25
		$ 13.25	$ 13.50	$ 13.25	$ 13.50	$ 13.25	$ 13.50	$ 13.25	$ 13.50	$ 13.50	$ 13.25	$ 13.50	$ 13.50

Source: Parsons Transportation Group, Inc.

Feeder Bus Service

The train service would rely on existing local bus service providers in Monterey and Santa Cruz Counties to design and implement feeder bus service to the three proposed stations: Pajaro, Castroville, and Salinas. Monterey-Salinas Transit (MST) would be requested to provide bus service for the Monterey County stations located in Castroville and Salinas. MST Route 27 operates between the Marina Transit Exchange and the Watsonville Transit Center passing through Castroville. Similarly, MST Route 28 connects between the Salinas Transit Center, and the Watsonville Transit Center passing through Castroville. Additionally, the project sponsor would request that the Santa Cruz Metropolitan Transit District (SCMTD) provide bus service to the Pajaro station from Watsonville and points north. Currently, three SCMTD routes (71, 81, and 91) serve the Watsonville transit center.

North of Monterey County, Caltrans service is currently coordinated with MUNI in San Francisco, SamTrans for San Mateo County stops, and the Santa Clara Valley Transportation Authority (VTA) for Santa Clara County stops. A shuttle bus currently operates between the Millbrae station and San Francisco International Airport. A train connection with BART at the Millbrae station will occur when the BART Extension to the airport is completed. The San Jose Diridon station provides bus service to the San Jose International Airport, downtown San Jose, and other County destinations. Caltrain also connects with the VTA's Tasman Light Rail service at the Mountain View station and the Guadalupe Light Rail line at the Tamien station.

Marketing

The Caltrain extension to Salinas would be operated by Amtrak under contract with JPB. JPB, supported by the San Mateo Transit District, would implement the marketing program for the service extension as part of its ongoing promotional efforts for Caltrain.

Implementation of the service extension would entail updating printed and web-based public informational materials. This information base is extensive and includes:

- Printed public timetables and Caltrain's Interactive Web-based Schedule,
- System maps, printed and electronic,
- Web-based Caltrain shuttle descriptions, maps and schedules for new services in Monterey and Santa Cruz counties,
- Peninsula Getaway Guide modified to include Monterey Peninsula, Pajaro / Watsonville, Salinas and Elkhorn Slough recreational attractions,
- Plus Pass recruiting of Monterey County vendors.

It is anticipated that additional, non-routine promotional materials will be developed by JPB/Samtrans and its advertising agency to launch the Caltrain service extension to Salinas. These campaign materials will likely include press releases and media kits, fact sheets, press conferences, speaker notes, and news articles. Media targeted for involvement will include:

Television

- KSBW – Salinas – Monterey
- KCBA – Salinas
- KION – Salinas
- KSMS – Salinas / Monterey (Spanish)

Radio

- KBTU 101.7 – Salinas
- KCDU 93.5 – Salinas
- KTOM 100.7 and 1380 – Salinas
- KDON 102.5 – Salinas
- KBOQ 95.5 – Salinas/Monterey
- KSJO 92.3 – San Jose

Print

- Monterey County Herald
- Salinas Californian
- El Sol (Spanish)

To pique public awareness and interest, JPB/TAMC will sponsor pre-Caltrain service events such as station ribbon cuttings; special weekend train service to recreational activities such as the Monterey Bay Blues Festival, the AT&T Pebble Beach National Pro-Am golf Tournament, the Salinas Rodeo, the Salinas International Airshow, and perhaps Cherry's Jubilee at Laguna Seca; and special train service to sporting events in the San Francisco Bay Area.

A special marketing/advance planning unit will be established and budgeted within TAMC to coordinate the development and implementation of this marketing plan.

Community Involvement

The public participation process will be continuous throughout the pre-service initiation phase. To assure that all members of the communities have opportunity to provide input, the following outreach activities will be conducted by TAMC's marketing/advance planning unit.

Key Stakeholder Meetings will be conducted with public officials and key stakeholders to individually brief these constituents on the status of project development, service implementation schedule and expressed public concerns.

Community Meetings will be held with neighborhood, business, and civic organizations in Salinas, Castroville, and Pajaro/Watsonville. The goal of these meetings will be to gain specific feedback insofar as station development plans, concerns relative to traffic access and potential noise impacts, and suggestions for publicizing the Caltrain service extension to Salinas.

Open Houses will be held in each station community to view station development plans prior to their finalization. This opportunity for public input will reinforce the information program developed above to increase community awareness of the impending Caltrain service.

4.
Capital Plan

Track Improvements

The proposed service would utilize a 38-mile portion of UPRR's Coast mainline track running between San Jose and Los Angeles. This track is owned and maintained by UPRR. Hence any discussion of track improvements is subject to negotiation with the railroad.

In general, this trackage is in good condition and reputed to have a good ride quality compared to the section of track between San Jose and Gilroy. Hence improvements proposed for the mainline are specifically targeted to permit commuter rail operations and/or improve the operating characteristics of the proposed service. The following discussion covers the 38-mile section of UP Coast Line track, and identifies segments where investments appear to be warranted.

Gilroy Yard Improvements

Extension of service south of Gilroy will require a new track connection at the south end of the station track to permit passenger train flow-through while maintaining passenger boarding from the existing station platform. The cost of this track extension has been estimated by the Santa Clara VTA as $1.16 million to include demolition, track, ties, ballast, one new turnout, modifying railroad signal interlocking, and modifying motorist warning devices at 10th Street, immediately adjacent to the Gilroy station. This cost estimate includes a contingency allowance, design fees, and agency costs for project implementation and construction management. Figure 4 provides an aerial view of the missing track section, just south of the Gilroy station.

Chittenden Pass Improvements

South of the Gilroy yard, permitted speeds increase to 60 miles per hour over dual track for a distance of 4.5 miles before reducing to 50 mph in advance of "Betabel" curve. This curve (No. 109 at MP 88.8), just south of the Betabel Road interchange with Highway 101,has a curvature of 7 degrees and makes a right angle (90°) turn, and speeds are restricted to 35 mph. This speed restriction is maintained for four miles as the mainline passes through the Santa Cruz Mountains following the Pajaro River bed. Chittenden Pass, at the west end of

Figure 4
Gilroy Yard Improvements

the river gorge, defines this stretch of track. Just west of Chittenden Pass, permitted track speeds drop to 30 mph for a one-mile section (MP 92 to MP 93) leading to the Logan Rock Quarry. Reverse 8 degree curves (No. 118 and No. 119) accommodate a turn in excess of 90°, which characterizes this segment opposite the "Pajaro Gap".

Overall train speeds through Chittenden Pass average under 33 miles per hour including deceleration and acceleration. To address this constraint, two significant "cuts" or tunnels could be constructed to ameliorate the sharp curves at each end of the pass. These cuts would allow significant increases in speed, potentially reducing travel times by up to four minutes in each direction. Figure 5 conceptually illustrates the location of these track improvements.

Curve No. 109 can be realigned with a 3 degree curve. This would allow speeds of 50 to 60 mph, depending on how much actual superelevation the UPRR would allow. The realignment would require about 3,000 feet of track, 1,300 feet of which would be in a cut of up to 120 feet. This could either be an excavated cut or a tunnel. Based on USGS contour elevations, the cost of an open excavation is estimated to be approximately $10.5 million, and the cost of a tunnel would be $13 million. The track would cost an additional $0.5 million to relocate.

Realigning the two curves at the west end of the pass is potentially a more challenging situation. The track crosses the Pajaro River on a short tangent bridge, in advance of curve No. 118. If this tangent was extended, the track could be realigned with a 3 degree curve (allowing 50 to 60 mph speeds) as illustrated on Figure 5. This realignment would conflict with the existing quarry track siding as well as quarry conveyor belt operations. Additionally, it appears to cross the San Andreas Fault, thereby limiting design options. A preliminary cost estimate for this curve realignment has not yet been determined.

Given the expense associated with these Chittenden Pass improvements, neither project is included in the short-range capital plan for the Caltrain extension to Salinas.

Pajaro Yard Improvements

Once past the Pajaro Gap right angle turn, speed restrictions are immediately eased and trains can accelerate to 50 and then 60 mph leading up to the Pajaro yard. The mainline is doubled tracked from Logan to Lewis Road, a distance of over 7.5 miles. The last 0.7 miles of this stretch contains a speed restriction of 25 mph as trains pass "Watsonville Junction", site of the proposed Caltrain Station at Pajaro. Lateral shifting of the yard lead track will be required to accommodate a new station platform. Some minor turnout, signaling, and upgrading of motorist warning devices at Lewis Road, immediately south of the station, are also required to facilitate construction of the Caltrain passenger station. These improvements are estimated to cost $1.27 million, subject to further engineering definition. Figure 6 illustrates the relationship of the mainline tracks with the station platforms and relocated yard lead track.

Pajaro to Castroville

This 10-mile segment consists of FRA Class 3 & 4 single track with a siding at Moss Landing and one at Castroville. The northerly 7-mile stretch has a speed restriction of 50 mph as it includes a four-mile section of the Elkhorn Slough Reserve through its midsection. The Coast Line tracks pass through the reserve on rock fill and numerous small wooden pier

Figure 5
Chittenden Pass Track Realignment Opportunities

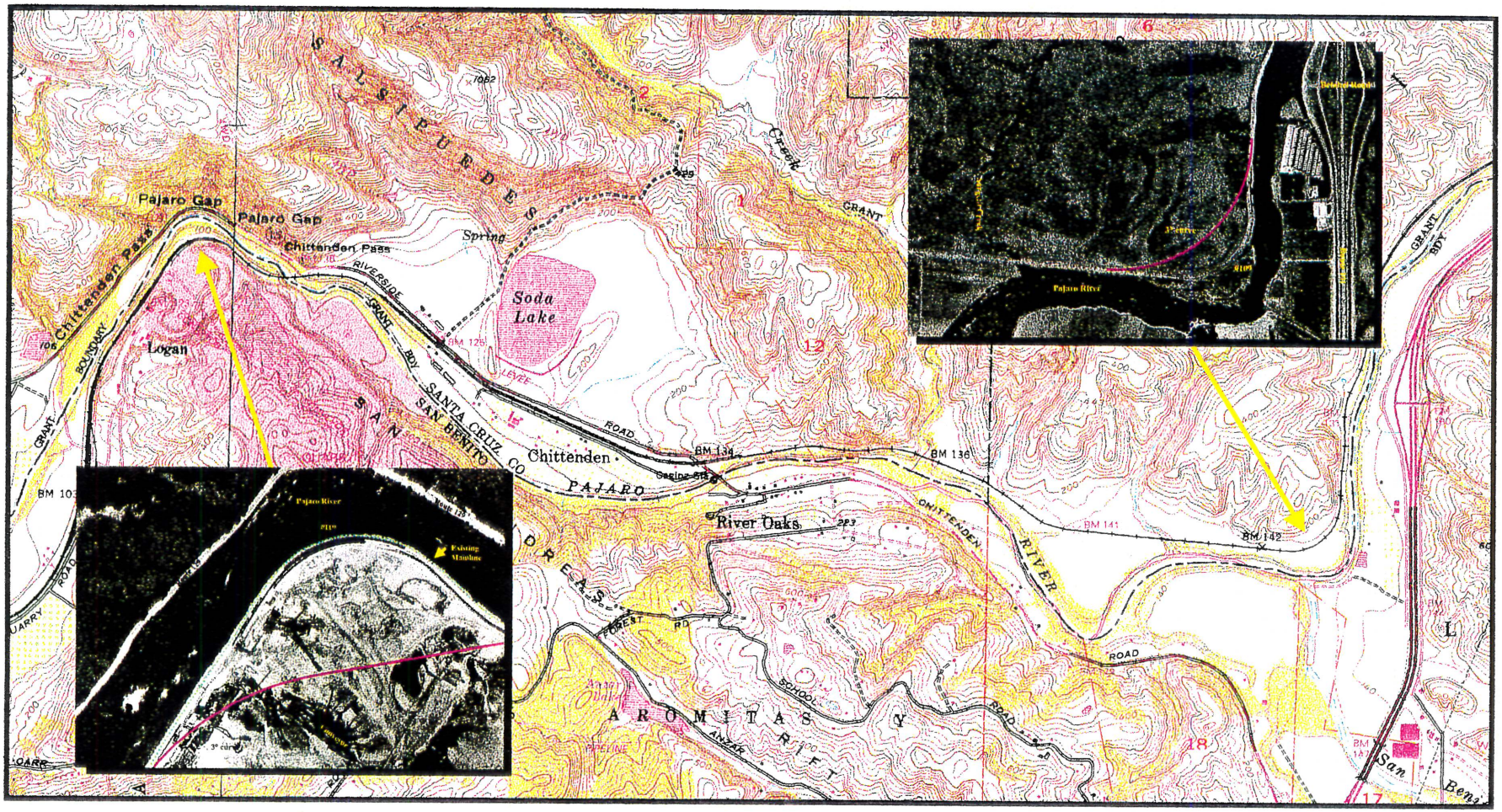
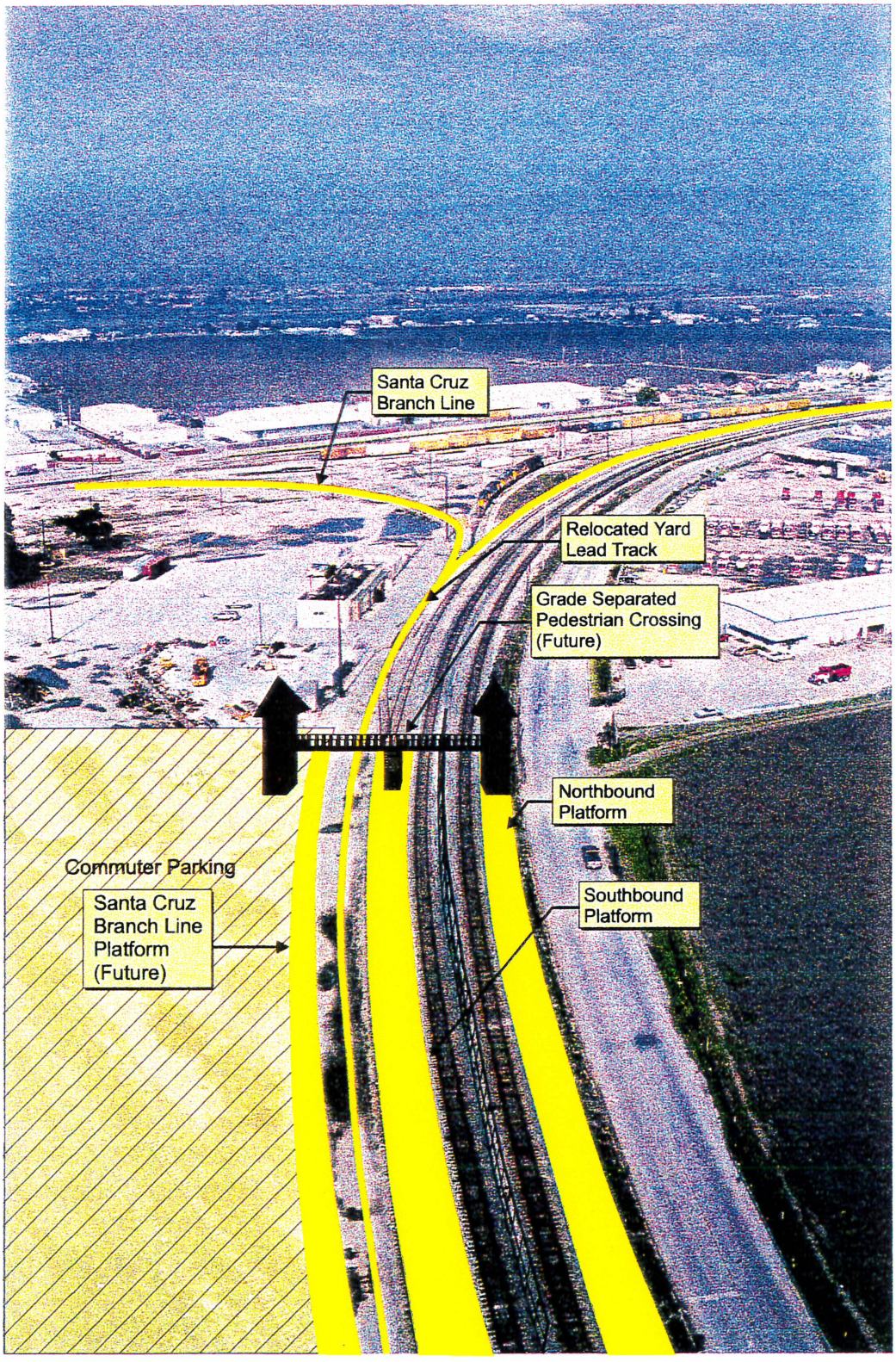


Figure 6
Pajaro Yard and Station Improvements



bridges. During winter months, water approaches the toe of the ballast on both sides of the single-track bed. This rail bed is considered to be part of the adapted and managed ecological system of the Slough. While specifically constructed openings in the ballast have been cut to equalize water levels on each side of the trackway, the trackbed remains subject to flooding potential.

Castroville to Salinas

This 8-mile single track segment meets FRA Class 4 safety standards which permit a maximum passenger train speed of 79 mph, all other conditions permitting. The Southern Pacific Transportation Company (SP), the owner of the Coast Line prior to its merger with UPRR, did not permit passenger train operating speeds on this route to exceed 70 mph under any conditions. This speed restriction has been retained by UPRR management. No investment in track or signaling is warranted; however a long-range investment strategy should consider double tracking the line between Moss Landing and Salinas.

Salinas Yard Improvements

The existing UPRR yard at Salinas is extensive, and capable of supporting a Caltrain layover facility given track and turnout reconstruction plus the addition of numerous non-track items needed to support overnight train layovers and minor repairs. These facility requirements include:

- Perimeter fencing.
- Security lighting.
- A diesel fuel storage tank or a spill containment pad for fueling trucks.
- Drip pans for each locomotive fueling position.
- 480 volt, 400 amp standby power for 4-6 car trains.
- A locomotive jump start unit.
- A potable water system and non-potable water hydrants.
- A small building for storage of brake shoes, tools, and supplies.

Storage for up to four train sets is envisioned, similar to the existing layover facility at Gilroy. A conceptual siting and layout plan for this facility is illustrated as Figure 7. The estimated cost of such a facility is $3.76 million.

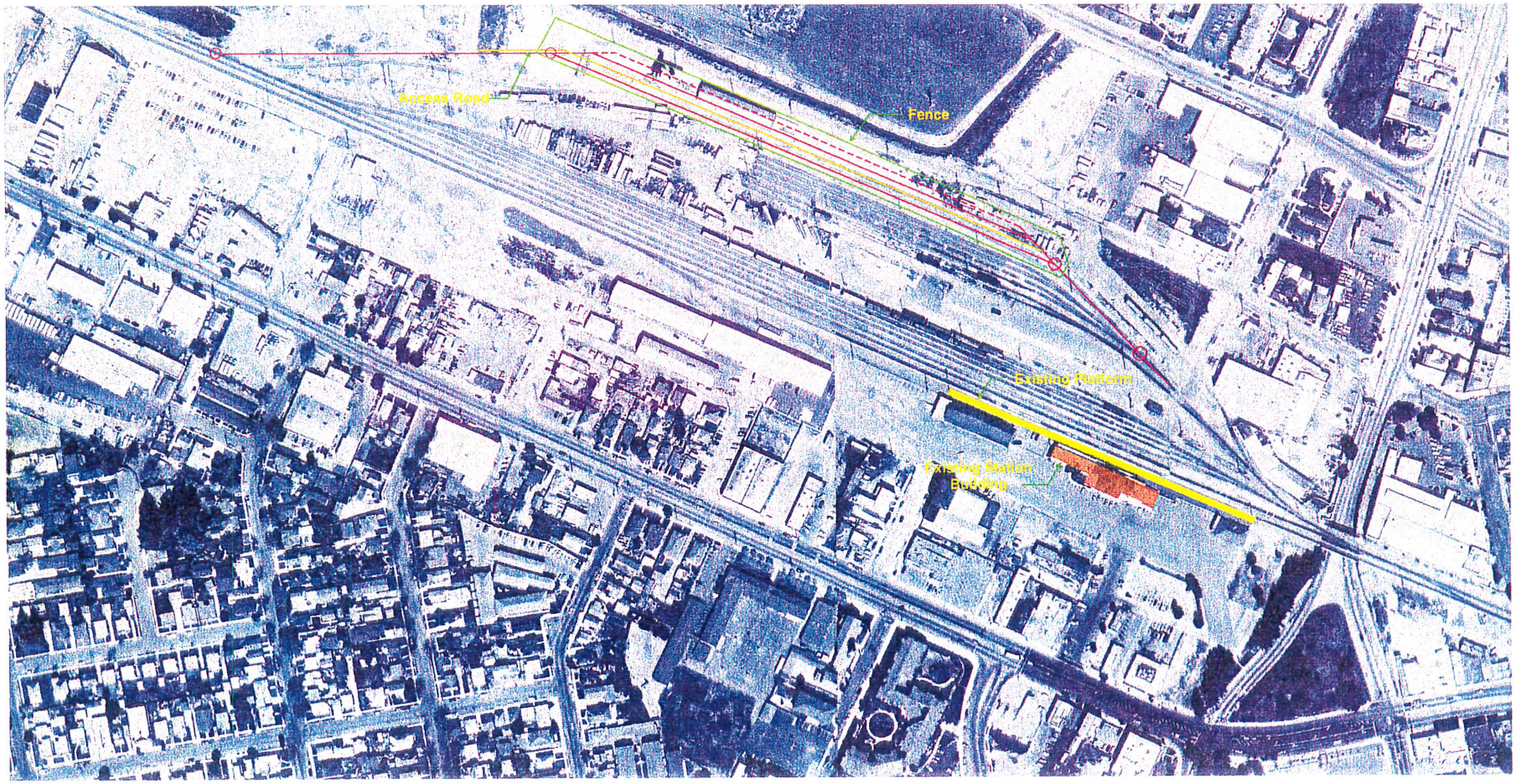
Station Improvements

Pajaro Valley Station

The existing Pajaro Station, located at the Watsonville Junction, was constructed in 1948 and consists of a 7,600 square foot wood/stucco building and an asphalt concrete platform. The existing platform is adjacent to the Santa Cruz branch line tracks. There is no platform adjacent to the Coast Line tracks that could be used for the proposed passenger service. There is also a 40,000 s.f. asphalt concrete parking area at the station.

A draft Project Study Report (PSR) was completed in 1997 for upgrading the station and adding new platforms to serve both the Santa Cruz and Coast Line tracks. The proposed station improvements included:

Figure 7
Salinas Yard Improvements



- Construction of two 20-foot wide platforms totaling 1200 feet in length.
- Installation of three passenger shelters.
- Reconfiguration of the Santa Cruz branch line connection to the yard lead track.
- Rehabilitation of existing parking areas and site circulation roadways plus the addition of twenty parking spaces (125 total).
- Construction of a bus stop with shelter on Salinas Road; provision of bicycle lanes and storage lockers; construction of pedestrian sidewalks.
- Installation of security fencing, lighting, and landscaping.

These improvements were estimated to cost $2.26 million expressed in 1997 dollars.

In addition to the program outlined by the draft PSR, this business plan identified the need to construct outside boarding platforms for the Caltrain service, consistent with PCJPB design standards; and to construct a grade separated pedestrian crossing to access the two platforms. Obtaining UPRR and CPUC approvals for new, at-grade pedestrian crossings is both time-consuming and problematic. An additional impediment is the position of the yard lead track, situated between the station parking area and the Coast mainline tracks. The estimated cost of a grade separated pedestrian crossing for this station is $1.4 million. As an interim condition, access to the platforms could be provided via the existing Lewis Road at-grade roadway crossing.

In addition to these modifications, additional parking appears to be warranted in light of the demand estimates provided in Chapter 2. The addition of this parking; updating the cost estimates to the year of construction; constructing a new Pajaro station building; installing a traffic signal; and upgrading finishes, fixtures, and features to Caltrain design standards will increase the cost of this station to $8.3 million, exclusive of trackwork and the grade-separated pedestrian crossing. Figure 8 illustrates a conceptual site plan for this facility integrated with adjacent land reuse potentials.

Castroville

A new station will need to be constructed in Castroville to serve the future commuter rail passengers. Currently, there are no station facilities in Castroville. At a minimum, one platform serving bidirectional trains, shelters, parking for 100 vehicles with room for expansion, and a transit stop will need to be provided. A conceptual site plan for this station development is illustrated as Figure 9.

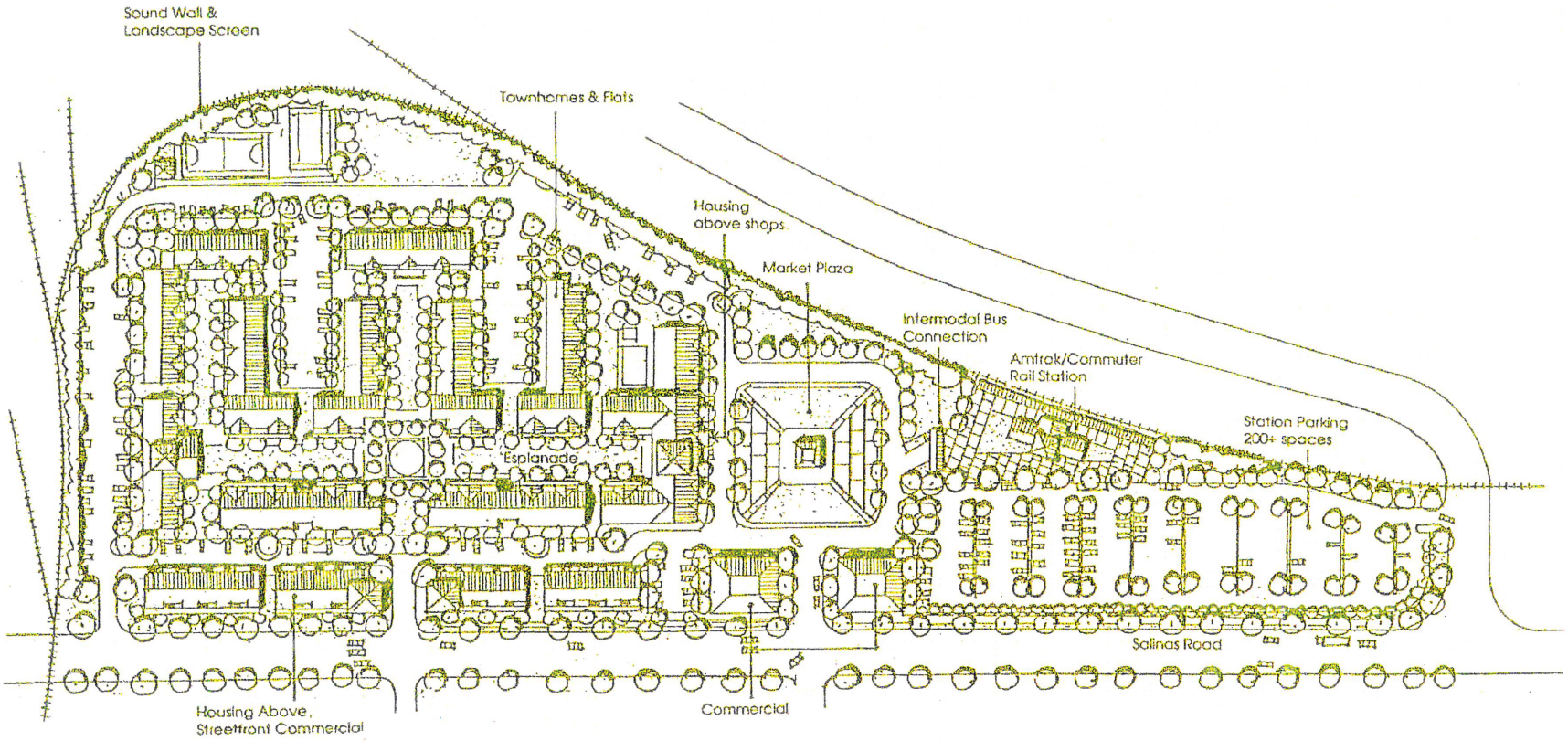
The estimated cost to develop a station at Castroville is $3.3 million.

Salinas

The existing Amtrak Station in Salinas has recently been refurbished and expanded. The facility currently includes the equivalent of a Type 150B station building with adjacent administrative space used for UPRR operations; a ten (10) bus berth / circulation and passenger dropoff / pickup roadway; 132 parking spaces available for overnight and commuter passenger use; two rail side boarding platforms; pedestrian scale and security lighting; and landscaping. Figure 10 provides several photographic views of this facility

In addition to the layover trackage discussed earlier, several additional improvements will be needed to accommodate Caltrain service. These include the addition of 300 parking spaces, bicycle lockers and bicycle racks to accommodate passenger forecasts; reconstruction of the passenger loading platform, and the installation of a public address system, benches, trash receptacles, and shelters on the passenger loading platform; and

Figure 8
Pajaro Station Area Concept Plan



Pajaro Railyards Area Feasibility Study
7-19-99

Figure 9
Castroville Station Site Plan

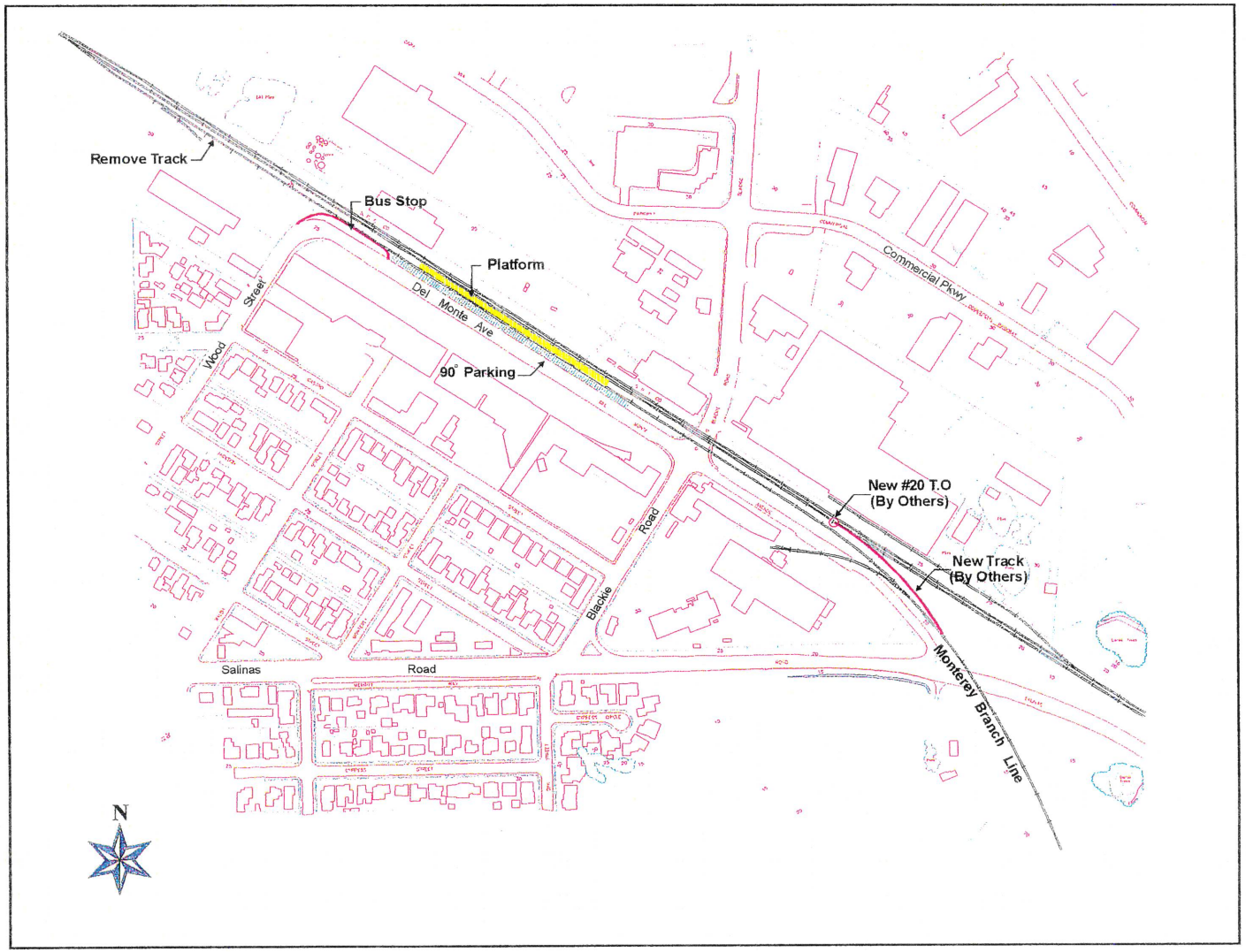
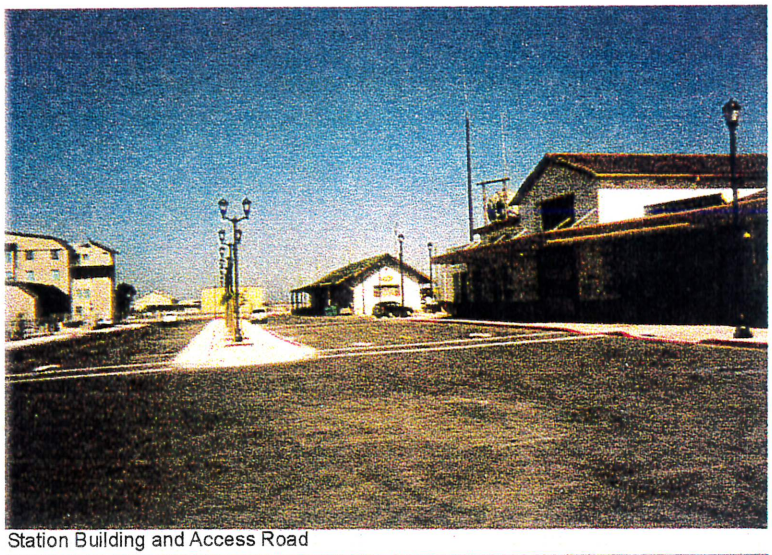


Figure 10
Salinas Amtrak Station



Station Building and Access Road

Station Platforms

Commuter and Long Term Parking Lot

the installation of an electronic message sign consistent with Caltrain Rapid Rail improvement plans.

The cost of these additional parking spaces, access, and platform improvements are estimated to be $7.8 million.

Right of Way

Right of way requirements for the proposed Caltrain service include space for platforms, a station building and parking at the Pajaro Valley station; a platform and Park-and-Ride lot at the Castroville station; expanded parking supplies and a Caltrain layover yard at Salinas.

The cost of the right of way required for these facilities is included in the above estimates of cost.

Escalation

This business plan includes a ten percent (10%) escalation for capital construction and right-of-way acquisition to account for inflation.

Rolling Stock

Caltrain ridership has risen dramatically over the past four years as documented in Chapter 2 of this Business Plan. To respond to this ridership increase and expand its frequency of service, the PCJPB is rehabilitating its existing fleet of locomotives and rail passenger cars and is purchasing additional rolling stock. Expansions of service from 68 weekday trains to 86 and then 106 trains are identified in the Caltrain 20-Year Strategic Plan. These expansions will necessitate the purchase of seven locomotives and 35 cars beyond current requirements.

Acquisition of rolling stock to accommodate the initial service plan for extending Caltrain to Salinas is not identified as a near term requirement by this Business Plan. At some time in the future, however, TAMC may need to participate in PCJPB's rolling stock acquisition program.

5.
Financial Plan

Operation and Maintenance Cost Estimates

The operating and maintenance (O&M) cost experience of Caltrain and ACE has been used as the basis for estimating annual costs attributable to the Caltrain extension to Salinas.[1]

Table 14 summarizes operating costs associated with the current Amtrak/JPB contract and expresses the various items in terms of per-train mile rates for the total Caltrain system, including service to Gilroy. Operating costs exclude shuttle bus program expenses but include administrative expenses and contributions to the capital contingency fund.

Table 14
Caltrain Operating Costs (FY99)

Category	Operating Cost Item	Total Cost	Cost Per Train Mile
Train Operations	• Train Operations (Crew)	$ 12,600,000	$ 12.49
	• Fuel	3,000,000	2.98
	• Train Dispatching	900,000	0.89
Equipment and Facilities	• Equipment Maintenance	7,700,000	7.63
	• Track / Facilities Maintenance	5,500,000	5.45
	• Revenue Collection (Station)	2,000,000	1.98
	• Station Maintenance	900,000	0.89
Other Items	• General Manager Staff	1,600,000	1.59
	• Police	1.100,000	1.09
	• Revenue Accounting	400,000	0.40
	• Materials Control, Leases, Insurance, Marketing	400,000	0.40
	• Budget and Finance	400,000	0.40
	Totals without Agency Overhead	**$36,500,000**	**$ 36.19**
Agency Overhead	Approximately 31.5% of above items	11,500,000	11.40
Track Use Charge		-	-
	Total Agency Cost	**$48,000,000**	**$ 47.59**

Total cost excludes shuttle program expense. Per train mile rates based on 1,008,654 train miles.

Source: Woodside Consultants, July 1999.

[1] TAMC may negotiate some other cost sharing agreement with JPB and VTA. The estimates provided in this document provide a reference point for negotiation.

The per train mile rates listed in Table 14 reflect economies of scale associated with using a large labor pool and existing facilities to operate and service a large number of trains. Therefore, some adjustments are necessary to reflect the lower level of service (frequency of trains) associated with the extension of service to Salinas. Cost categories and operating cost items listed in Table 14 are individually discussed below.

Train Operations. Crew costs are the largest component of train operations. All Caltrain crews are at least three persons, typically including following:

- An engineer paid at approximately $37.50 per hour.
- One conductor at $30.00 per hour.
- An assistant conductor paid approximately $22.50 to $30.00 per hour.

If an average rate of $26.325 is used for the assistant conductor, the cumulative direct labor cost of the three person train crew is just under $94.00 per hour.

This cost of $94.00 per crew hour is applicable to all "active time". Active time includes preparatory time before the start of a run, the train run, and the final tie-up and coach walk-through (cursory car cleaning) at the end of a run. Preparatory time and final tie-up and coach walk-through occurs regardless of whether the southern terminus of service occurs in Gilroy or Salinas. Hence that time is not included in the estimate of incremental, additional crew hours.

For Caltrain crews, break time (time off between daily service periods) is paid at one-half of the above rate, or about $47.00 per crew hour. The extension of Caltrain service to Salinas will not impact break time as active time will be added to the beginning and end of the service day, leaving midday operations unchanged.

Fringe benefits and contractor overhead and profit are estimated at 150 percent of the direct labor cost. Adding this markup to the unburdened $94 per crew hour yields a fully burdened cost of $235 per hour for incremental active time.

Fuel. The average cost per train mile for FY99 Caltrain operations has been increased by 50% to reflect rapid escalation of fuel prices experienced during 1999/2000.

Train Dispatching. Train dispatching would be provided by UPRR rather than Amtrak. The cost for this service is included under the "track use charge" described below.

Equipment Maintenance. The average cost per train mile for Caltrain operations is assumed. A surcharge of $100,000 has been assumed to reflect costs of car cleaning and minor running repairs performed at one additional satellite facility (Salinas).

Track / Facilities Maintenance. Provided by UPRR and included under track use charge.

Revenue Collection (Station) and Station Maintenance. As part of its' contract responsibilities, Amtrak is responsible for maintenance of stations, including typically janitorial services inside station buildings, landscaping and exterior trash removal, parking lot maintenance, and revenue collection. In certain cases, cities also provide assistance in operating and maintaining station complexes. Although Amtrak also provides some security services, this is usually reinforced indirectly by the local municipal police as part of other routine duties. JPB Real Estate staff have suggested that it would be reasonable to assume that annual station maintenance costs will average approximately $40,000 per station. Stations on the Caltrain extension to Salinas are not assumed to be staffed by Amtrak personnel, over and above existing levels (at Salinas).

Other Items. The average cost per train mile for current Caltrain operations is assumed.

Agency Overhead. PCJPB costs for insurance, marketing materials, administrative expenses and its capital contingency fund amounts to approximately 31.5 percent of O&M costs. This rate was assumed for the extension of service to Salinas.

Track Use Charge. PCJPB owns the Caltrain trackage and right-of-way between San Francisco and Tamien station and does not include an annualized capital cost for this investment in its operating budget.

The October 1, 1998 *Caltrain Rapid Rail Study* discussed trackage rights for operating commuter rail service in the Dumbarton corridor, and, based on an industry comparison, assumed trackage rights would cost approximately $5.76 per train mile. It is understood that ACE pays UPRR $6.00 per train mile for their trackage fees. For this business plan, $7.00 per train mile is assumed for budgeting to account for cost escalation. The actual rate will need to be negotiated with the UPRR. Payment of a track use charge will provide PCJPB Caltrain access to the UPRR tracks between Salinas and Gilroy for a specified number of trains and operating windows. UPRR maintains its right-of-way and includes a proportional cost for this maintenance within the track use charge.

The above unit costs have been applied to the proposed service plan as reported in Table 15. Two hundred fifty-five (255) days of service with four trains to Salinas per day (two northbound and two southbound) are reflected in the calculations.

The total annual O&M cost is estimated to be $1.7 million, expressed in adjusted FY99 dollars. Current FY2000 costs might be four to five percent higher, equaling $1.775 million. Expressed on a per train trip basis, each train trip is estimated to add $1,740 to the operating cost of Caltrain service.

This equates to $45.79 per train mile (FY2000), slightly less than the overall average experienced for current Caltrain services. The reduced cost per train mile reflects the absence of "break time" expense attributable to the service extension.

It should be noted that this estimate of annual O&M cost does not include any allocation of expense for current PCJPB train operations north of Gilroy station (MP 80.7). Such allocation, if any, would be subject to negotiation between TAMC and PCJPB.

Passenger Revenues

The ridership forecast reported in Chapter 2 indicated that just under 900 passengers per day are expected to board Caltrain at the Salinas, Castroville, and Pajaro Valley stations. Each of these riders are assumed to make two trips per day.

The average commute trip from Monterey County is assumed to be destined to the Sunnyvale-Santa Clara fare zone, based on VTA's 1998 survey of riders boarding Caltrain at the Gilroy and San Martin stations. This ride corresponds to a six zone trip for patrons boarding at Pajaro Valley, a seven zone trip for Castroville riders, and an eight zone trip for Salinas origins.

Revenue derived from a monthly ticket is assumed, spread over 44 weekday trips per month. This assumption is considered to be conservative based on the array of available fares, most of which are higher than the monthly pass averaged over 44 trips. Corresponding fares for passengers boarding Monterey County stations are as follows:

- Pajaro Valley - $2.82
- Castroville - $3.22
- Salinas - $3.63

Table 15
Estimated Operating & Maintenance Cost ($1999)
Caltrain Extension to Salinas

Category	Operating Cost Item	Unit	$ / Unit	Quantity	Total
Train Operations	• Train Operations (Crew)	Crew Hours	235.00	1,020	$ 239,700
	• Fuel	Train Miles	4.47	38,760	173,260
	• Train Dispatching	Train Miles	Track Use	38,760	Excluded[1]
Equipment and Facilities	• Equipment Maintenance	Train Miles	7.63	38,760	295,740
	• Equipment Maintenance Surcharge	Lump Sum	100,000	1	100,000
	• Track / Facilities Maintenance	Train Miles		38,760	Excluded[1]
	• Revenue Collection (Station) and Station Maintenance	Stations	40,000	3	120,000
Other Items	• All	Train Miles	3.88	38,760	150,390
	Totals without Agency Overhead				1,079,090
Agency Overhead	Approximately 31.5% of above items				339,910
Track Use Charge		Train Miles	7.00	38,760	271,320
	Total Agency Cost				$1,690,320

[1] Excluded from O&M cost line item. Included under Track Use Charge

Source: Parsons Transportation Group, Inc.

Passenger revenues generated from Monterey County riders, assuming the average fares as stated above, total $1,527,000 annually. Not all of this revenue is incrementally new, as 25 percent of the existing ridership boarding at Gilroy originates in Monterey County (see Table 7). Allowing a credit for this existing revenue ($120,000 annually), the net increment of passenger revenue attributable to the service extension to Salinas is estimated to be $1,407,000.

The ridership and corresponding revenue cited above should be realized within three years of service initiation, based on traveler response lag times observed for new transit systems.[2] Net revenue for the first three years of operation is estimated to be as follows, assuming no change to Caltrain's fare structure.

Year 1 Net Revenue	$949,000
Year 2 Net Revenue	$1,178,000
Year 3 Net Revenue	$1,407,000

Patronage and revenue could escalate at a more rapid rate if the migration of Silicon Valley workers to outlying county residences continues at its current pace.

Capital Cost Summary

The capital costs elements addressed in Chapter 4 of this Business Plan are summarized below in Table 16. These costs do not include longer-range track upgrades for the Chittenden Pass section of Coast Line, nor do they include grade separated pedestrian crossings for the Pajaro Valley and other Monterey County stations. Identified short-range (five year) capital development costs are estimated to total $25.68 million, expressed in year 2003 dollars.

Table 16
Estimated Short-Range Capital Costs (Y2003 $)
Caltrain Extension to Salinas

Category	Element	Estimated Cost
Trackwork & Signaling	Gilroy Yard	$1,160,000
	Pajaro / Watsonville Yard	$1,265,000
	Salinas Layover Facility	$3,760,000
Stations	Pajaro Valley	$8,310,000
	Castroville	$3,345,000
	Salinas	$7,840,000
Right-of-Way	All	Included
Escalation	Identified Projects	Included
	Total	$25,680,000

Source: Parsons Transportation Group, Inc.

[2] Traveler Response to Transportation System Changes, Barton-Aschman Associates, Inc., 1981

Funding Sources

A short-range capital investment plan totaling $25.68 million has been detailed in Chapter 4 and summarized in Table 16. This investment will be financed by State of California General Fund and Gasoline Sales Tax revenue as earmarked by the Traffic Congestion Relief Act of 2000; and Proposition 116 – Clean Air Transportation Improvement Act funds.

The Congestion Relief Act dedicates over $5 billion of General Fund revenue surplus and the state's gasoline sales tax revenues for rail, mass transit and highway improvements throughout the state. Twenty million dollars of this expenditure plan is specifically earmarked for the extension of Caltrain service to Salinas. Three million dollars of Proposition 116 funds have been earmarked for the Caltrain extension as well. The Salinas layover facility will receive $2.5 million from this source while the Gilroy station track extension will receive $0.5 million. These funding commitments for capital improvements total $23.0 million.

To address residual capital funding needs, the business plan anticipates a contribution from the Santa Clara Valley Transportation Authority for the identified Gilroy Yard improvement; and a contribution from both the Monterey County Redevelopment Agency and the Santa Cruz County Regional Transportation Commission for the Pajaro Valley station development. Alternatively, construction may be phased commensurate with funding availability.

Passenger revenues outlined above will be insufficient to completely offset operation and maintenance costs incurred by the service extension. Table 17 provides an estimate of net public costs forecast for the first three years of operation. O&M costs are escalated by 4.5 percent per year to account for inflation. The table indicates that as patronage builds over these initial years of operation, net public costs will decline from $826,000 for the first year of service to $531,000 forecast for year three. Thereafter, gradual increases in ridership, and resulting passenger revenues, should keep pace with rising O&M costs.

A dramatic increase in commuting via Caltrain from Monterey and South Santa Cruz counties to Silicon Valley could alter this financial forecast as discussed in Chapter 2. This market condition cannot be reliably forecast at this point in time.

Table 17
Net Public Cost (1,000)
Caltrain Extension to Salinas

Cost / Revenue	Year 1	Year 2	Year 3
O&M Cost	$1,775	$1,855	$1,938
Passenger Revenue	949	1,178	1,407
Net Cost	$ 826	$ 677	$ 531

Source: Parsons Transportation Group, Inc.

The net public cost of operations will be funded through a combination of revenue sources. These sources are outlined below.

Congestion Mitigation and Air Quality Program (CMAQ)

The federal CMAQ program provides funds for projects which contribute to the attainment or maintenance of federal air quality standards. Monterey County currently receives an annual

allocation of approximately $1.3 million, the majority of which is dedicated for capital projects. TAMC has earmarked $400,000 for start-up of new rail services.

Tobacco Settlement Funds

Monterey County and its incorporated cities are slated to receive approximately $3.8 million per year over the next ten years from the State of California's class action lawsuit settlement with the tobacco industry. The use of these funds is unrestricted and they can be utilized to support transportation programs.

AB 2766 Grant Program

Monterey Bay Unified Air Pollution Control District administers a grant program financed by a $4 per vehicle registration surcharge. The Air District awards grants to programs aimed at reducing mobile sources of air pollution. By policy, the Air District limits the use of these funds to $200,000 per project.

Transportation Development Act (TDA)

The Transportation Development Act fund is derived from a ¼ cent state sales tax that is returned to the county of origin and distributed to jurisdictions based on their population. In Monterey County, TDA revenues amount to approximately $10 million annually. Typically, about 75 to 80 percent of these revenues are allocated to meet transit service needs while the remainder is available for streets and road use. This distribution of revenue use fluctuates from year to year based on the identification of unmet transit needs.

6.
Implementation Plan

The "service implementation goals" set forth in Chapter 1 provide the framework for TAMC activities following Board review and endorsement of this business plan. Pre-service work activities are listed below, accompanied by discussion of implementation strategies. Principle and policy reference numbers match those employed in Chapter 1; only near-term activities are addressed.

1.1 Negotiate track access rights with Union Pacific Railroad.

The Transportation Agency for Monterey County and the Union Pacific Railroad Company have been meeting to develop a trackage rights agreement for the San Francisco-Seaside / Monterey Intercity Rail Service and for additional trackage rights to and through Salinas for future service. The extension of Caltrain from Gilroy to Salinas constitutes such future service.

Santa Clara Valley Transportation Authority has also been meeting with Union Pacific to negotiate trackage rights and potential track investments for increasing the number of trains operating between Gilroy and Tamien Station from eight to twenty per day.

The UPRR-VTA negotiation process will be complex, as multiple corridors and rights-of-way are being addressed. Negotiating track access rights to the Coast Line south of Gilroy will be relatively straightforward by comparison. TAMC may seek to join VTA in its negotiations with UPRR or pursue an independent path. Under either scenario, meaningful negotiations will await the completion of a sub-regional freight rail system capacity study to be undertaken by UPRR during the summer of 2000.

1.2 Construct new passenger rail stations in Castroville and Pajaro; expand parking supplies in Salinas.

The State of California has designated TAMC as the lead agency for planning and implementing intercity passenger rail service to, from, and within Monterey County. As such, TAMC will contract for engineering design, environmental studies, and construction specified in the adopted Capital Plan.

Insofar as environmental studies required by the California Environmental Quality Act (CEQA), in 1978, the State Legislature amended CEQA to provide an exemption from CEQA for "the institution or increase of passenger or commuter service on rail lines already in use, including

the modernization of existing station and parking facilities." In 1982, the Legislature amended this exemption by deleting the term "rail lines" and substituting the phrase "rail or highway rights-of-way" (Section 21080 (b) (11) of the Public Resources Code).

State law now states that the provisions of CEQA shall not apply to:

> "A project for the institution or increase of passenger or commuter service on rail or highway rights-of-way already in use, including the modernization of existing stations and parking facilities."

Subdivision (a) of Section 15275 (State CEQA guidelines), title 14 of the California Code of Regulations, restates the statutory exemption as follows:

> "CEQA does not apply to the following mass transit projects: (a) The institution or increase of passenger or commuter service on rail lines or high occupancy vehicle lanes already in use, including the modernization of existing stations and parking facilities."

The Southern California Regional Rail Authority (SCRRA) applied the CEQA exemption when it instituted commuter rail service (Metrolink) in southern California, but it required that cities with proposed stations provide their own CEQA clearance (i.e., exemptions, negative declarations, mitigated negative declarations, or environmental impact reports) and actually develop the stations.

For the Coaster Line passenger service in San Diego County, the CEQA exemption was used for the passenger rail service implemented along the existing freight rail corridor, and a separate Environmental Impact Report (EIR) was prepared for all of the Coaster Line stations.

Review of the statutes, regulations, case law, and actual application suggests that the extent to which the proposed passenger rail service and its stations and facilities (new or expansion of existing) are within existing railroad right-of-way will, in part, determine the type of CEQA clearance required.

In *Napa Valley Wine Train, Inc. v. Public Utilities Commission (PUC)*, the State Supreme Court found that the project was exempt from CEQA (under the passenger service exemption) even though the project included a station that was a converted office building located outside of the existing right-of-way. Thus, the Supreme Court did not consider "the modernization of existing stations and parking facilities" to be an exclusive list of allowable development under the exemption.

The Supreme Court also held that projects fully within the right-of-way are presumed to be exempt, even if the project may have significant environmental effects. The Court stated (*Wine Train*):

> "It defeats the very purpose of the exemption to apply it only to projects that will not have significant environmental effects. The determination that 'a project may have significant effect on the environment' is the finding that, absent an exemption, ordinarily triggers the environmental review process. It is precisely to avoid that burden that the Legislature has enacted the exemption."

Based on these regulations, statutes, and case law, it appears that virtually all of the Capital Plan projects will be exempt from CEQA, as construction will occur on lands currently owned by

UPRR and used for passenger and freight rail purposes. The only exception to this generalization may be the parking expansion project at Salinas.

Apart from CEQA clearances, TAMC will develop a program to monitor construction activities to detect the presence of potentially hazardous materials / wastes, archaeological resources, and endangered species of plants and animals. Visual inspection of surface features, structures, and land uses associated with the trackwork and station sites has not identified the presence of these sensitive materials. No subsurface investigation, borings or excavations have been undertaken; nor have reviews of historical records. As with the reuse of any railroad lands however, the potential exists to uncover hazardous materials / waste along the track beds when excavated. Construction bid documents will therefore include provisions for the removal and disposition of hazardous materials or wastes and the safeguarding of archaeological resources and endangered plant and animal species.

As state funds will be utilized for acquisition of right-of-way and station development projects, TAMC will take reasonable steps to assure full due diligence, site cleanup as appropriate, and indemnification of the state for future cleanup liability or damages; and will not seek state funds for cleanup, damage or liability costs associated with hazardous wastes.

1.3 Construct a Caltrain layover facility in Salinas.

Implementation activities identified for item 1.2 above apply equally to this project. To provide an interim layover facility, TAMC may negotiate with UPRR for use of existing Salinas yard trackage.

1.4 Initially provide two round trips per day (four trains) as an extension of Caltrain service to Salinas.

TAMC will continue to work with PCJPB and the multi-agency task force comprised of TAMC, SCVTA, AMBAG, MST, Caltrans. SCCRTC, San Benito County, and the cities of Salinas and Watsonville to identify which trains will serve the Salinas extension versus the passenger rail service contemplated for the Hollister branch line. This schedule refinement will necessarily reflect UPRR track capacity and constraints as negotiated under Implementation Step 1.1.

2.4 Encourage bicycle access through the provision of well-designed, secure storage, and access facilities.

The capital plan includes cost allowances for the purchase and installation of bicycle lockers and bicycle racks at each of the proposed Caltrain extension stations. TAMC will work with the cities of Salinas and Watsonville, and Monterey County to plan, designate, and implement bicycle routes and facilities which connect the Caltrain station sites with adjacent and nearby neighborhoods. Connecting bus service can also accommodate bicycles, as Monterey-Salinas Transit and SCCRTC buses are equipped with bike racks.

3.2 Secure a dedicated funding source for net public operating costs.

The financial plan identified in this report outlines a five year funding commitment for net public operating costs using a combination of Transportation Development Act allocations, AB 2766 funds (administered by the Monterey Bay Unified Air Pollution Control District), Tobacco Settlement Funds, Monterey County Congestion Mitigation and Air Quality (CMAQ) federal grant funds and contributions from participating governmental entities.

Beyond these "temporary" resources, TAMC is continuing to pursue a sales tax for transportation through a general election ballot initiative.

4.1 Establish a revenue / cost sharing agreement with Peninsula Corridor Joint Powers Board (PCJPB) or member agencies to implement the initial service plan.

Passenger revenues will be generated through advance ticket sales and cash receipts to be collected by PCJPB through its contract services provider, Amtrak. An accounting mechanism will be needed to trace revenue attributable to the Monterey County extension of services.

To simplify its accounting responsibilities, PCJPB regularly conducts passenger boarding counts, and allocates net operating costs (operating costs less passenger revenues) to its member agencies based on these counts. No allowances are made for different mixes of fare types or trip lengths —as collecting and tabulating this information would be time-consuming for the overall Caltrain operation.

For the extension of service to Salinas, application of the passenger count basis for revenue / cost sharing may understate revenues and overstate costs attributable to Monterey County operations. To address this possible shortfall, TAMC will work with PCJPB staff to devise an appropriate revenue allocation methodology and a purchase of service agreement.

Insofar as passenger revenues, all riders are issued tickets or passes by mail, from station agents, from ticket vending machines, or by on-board train conductors. All of these fare receipts indicate zone of origin and zone of destination along with fare type (senior / disabled / child, discount off-peak, 10-ride ticket, discount monthly, or monthly ticket). Ticket by mail receipts attributable to Monterey County residents can be easily traced and should not present a burden for PCJPB accounting staff. Likewise, tickets purchased from agents manning Monterey County stations (i.e., Salinas) and ticket vending machines can be easily traced to Monterey County boardings and de-boardings. Tickets purchased from train conductors would present a burdensome challenge to account for on a daily basis. However, random audits conducted by PCJPB / Amtrak to match cash collections against ticket receipts could provide a mechanism for allocating these revenues to the appropriate origin. Again, the details of this or some other revenue allocation scheme will need to be negotiated with PCJPB and formalized in the purchase of service agreement.

4.2 Negotiate purchase of service agreement with PCJPB for Caltrain extension of service to Salinas.

Following adoption of this business plan, TAMC anticipates entering into negotiations with PCJPB for a purchase of Caltrain service to Salinas. This purchase of service agreement will likely be formalized through a Memorandum of Understanding (MOU) or a Joint Exercise of Powers Agreement, similar to the arrangement between the PCJPB member entities for the existing Caltrain service; and/or the agreement between the San Joaquin Regional Rail Commission, the Alameda County Congestion Management Agency, and the Santa Clara Valley Transportation Authority which created the Altamont Commuter Express Joint Powers Authority.

The negotiated agreement will stipulate TAMC / PCJPB rights and powers, financial commitments, service parameters and details of administrative procedures.

Additional service implementation principles and policies, listed in Chapter 1 but omitted above, will be undertaken after the immediate action items are accomplished.

APPENDIX

Capital Improvement Cost Estimate

Location: Gilroy Yard (MP 81.0)

Item	Quantity	Unit	Unit Cost	Amount	Totals
Trackwork / Yardwork					
Construction Cost					
New Track, 136#, wood ties, ballast	900	LF	$ 170	$ 153,000	
New Turnout, #10 to #14		EA	$ 115,000	$	
New Turnout, #15 to #20	1	EA	$ 165,000	$ 165,000	
Relocate Track		LF	$ 60	$	
Relocate Turnout		EA	$ 50,000	$	
Remove Track	150	LF	$ 20	$ 3,000	
Remove Turnout		EA	$ 10,000	$	
New Railroad Signaling, CTC		Trk Mile	$ 800,000	$	
New CTC Interlocking		EA	$ 500,000	$	
Remove / Relocate Wayside Signal		EA	$ 50,000	$	
Modify Railroad Interlocking	1	EA	$ 250,000	$ 250,000	
New Highway / Railroad Crossing		LS	$ 125,000	$	
Modify / Upgrade Crossing Equipmt.	1	EA	$ 60,000	$ 60,000	
Grading	900	LF	$ 75	$ 67,500	
Excavation / Fill		CY	$ 10	$	
Chainlink Fence, 8' height		LF	$ 10	$	
Chainlink Gate, 8' height		EA	$ 200	$	
Service Aisle, asphalt, 10'width		LF	$ 40	$	
Locomotive Drip Pan/HEP Receptacle		EA	$ 25,000	$	
Storage Building		SF	$ 75	$	
Coach Watering Hydrants		EA	$ 10,000	$	
Standby Electrical Power		EA	$ 30,000	$	
Site Lighting		LS	$ 50,000	$	
Subtotal Construction				$ 698,500	
Non Construction Cost					
Right-of-Way				$	
Construction Easement		LS		$	
Access Easement		LS		$	
Land Purchase		SF		$	
Engineering & Management (20%)				$ 139,700	
Management (3% of construction, ROW, E&M)				$ 25,146	
Community Design (2% of construction, ROW, E&M)				$ 16,764	
Contingency (25% of construction)				$ 174,625	
Subtotal Non-construction				$ 356,235	
Escalation (10%)				$ 105,474	
Total Project					$ 1,160,209

Capital Improvement Cost Estimate

Location: Watsonville Junction / Pajaro Yard (MP 100.4)

Item	Quantity	Unit	Unit Cost	Amount	Totals
Trackwork / Yardwork					
Construction Cost					
New Track, 136#, wood ties, ballast		LF	$ 170	$	
New Turnout, #10 to #14		EA	$ 115,000	$	
New Turnout, #15 to #20		EA	$ 165,000	$	
Relocate Track	3700	LF	$ 60	$ 222,000	
Relocate Turnout	3	EA	$ 50,000	$ 150,000	
Remove Track	2000	LF	$ 20	$ 40,000	
Remove Turnout	1	EA	$ 10,000	$ 10,000	
New Railroad Signaling, CTC		Trk Mile	$ 800,000	$	
New CTC Interlocking		EA	$ 500,000	$	
Remove / Relocate Wayside Signal		EA	$ 50,000	$	
Modify Railroad Interlocking		EA	$ 250,000	$	
New Highway / Railroad Crossing		LS	$ 125,000	$	
Modify / Upgrade Crossing Equipmt.	1	EA	$ 60,000	$ 60,000	
Grading	3800	LF	$ 75	$ 285,000	
Excavation / Fill		CY	$ 10	$	
Chainlink Fence, 8' height		LF	$ 10	$	
Chainlink Gate, 8' height		EA	$ 200	$	
Service Aisle, asphalt, 10'width		LF	$ 40	$	
Locomotive Drip Pan/HEP Receptacle		EA	$ 25,000	$	
Storage Building		SF	$ 75	$	
Coach Watering Hydrants		EA	$ 10,000	$	
Standby Electrical Power		EA	$ 30,000	$	
Site Lighting		LS	$ 50,000	$	
Subtotal Construction				$ 767,000	
Non Construction Cost					
Right-of-Way				$	
Construction Easement		LS		$	
Access Easement		LS		$	
Land Purchase		SF		$	
Engineering & Management (25% of construction)				$ 191,750	
Contingency (25% of construction)				$ 191,750	
Subtotal Non-construction				$ 372,762	
Escalation (10%)				$ 115,050	
Total Project					$ 1,265,550

Capital Improvement Cost Estimate

Station Name: Pajaro Valley

Item	Quantity	Unit	Unit Cost	Amount	Totals
Platform					
Construction Cost					
Station Platform, 15' width		LF	$ 750	$	
Station Platform, 25' width NB	800	LF	$ 1,250	$ 1,000,000	
Station Platform, 25' width SB	800	LF	$ 1,250	$ 1,000,000	
Pedestrian Crossing, rubber surface		EA	$ 24,000	$	
Pedestrian Crossing, warning devices		Pair	$ 50,000	$	
Intertrack Fence	800	LF	$ 60	$ 48,000	
Remove existing platform	400	LF	$ 125	$ 50,000	
Platform shelter	3	EA	$ 20,600	$ 61,800	
Platform lighting	2	LS	$ 52,500	$ 105,000	
Trash receptacle	6	EA	$ 720	$ 4,320	
Platform bench	6	EA	$ 1,550	$ 9,300	
Platform landscaping	2	LS	$ 37,000	$ 74,000	
Platform schedule / info panels	2	EA	$ 10,300	$ 20,600	
Platform PA system	1	EA	$ 61,800	$ 61,800	
Platform electronic message sign	1	EA	$ 9,270	$ 9,270	
Grading	1800	LF	$ 75	$ 135,000	
Excavation / Fill		LF	$ 150	$	
Subtotal				$ 2,579,090	
Station Building					
Construction Cost					
Site preparation	8500	SF	$ 2	$ 17,000	
A/C pavement		SF	$ 2	$	
A/C resurfacing		SF	$ 0.5	$	
PCC pavement	2400	SF	$ 10	$ 24,000	
Curb & Gutter	200	LF	$ 20	$ 4,000	
Shelter	3000	SF	$ 100	$ 300,000	
Bench	10	EA	$ 1,500	$ 15,000	
Trash receptacle	6	EA	$ 1,000	$ 6,000	
Sidewalk	2400	SF	$ 10	$ 24,000	
Landscaping	1	LS	$ 105,000	$ 105,000	
Drainage	1	LS	$ 20,000	$ 20,000	
Lighting	1	LS	$ 85,000	$ 85,000	
Signage (all types)	1	SET	$ 20,600	$ 20,600	
Bicycle locker	1	SET	$ 5,150	$ 5,150	
Bicycle rack	1	EA	$ 520	$ 520	
Subtotal				$ 626,270	

Station Name: Pajaro Valley

Item	Quantity	Unit	Unit Cost	Amount	Totals
Grade Separated Pedestrian Crossing – Elevators & Stairs					
Construction Cost					
Span		SF	$ 125	$	
Stair		SF	$ 125	$	
Elevator		EA	$ 120,000	$	
Subtotal				$	
Parking					
Construction Cost					
Site preparation	118,000	SF	$ 2	$ 236,000	
A/C pavement	78,750	SF	$ 2	$ 157,500	
Curb & gutter	4,500	LF	$ 20	$ 90,000	
Sidewalk	8,000	SF	$ 10	$ 80,000	
Drainage	1	LS	$ 56,000	$ 56,000	
Lighting	1	LS	$ 220,000	$ 220,000	
Striping & Signing	1	LS	$ 118,000	$ 118,000	
Subtotal			$	$ 957,500	
Subtotal Construction			$	$ 4,162,860	
Non Construction Cost					
Right-of-Way					
Construction Easement		LS	$	$	
Access Easement		LS	$	$	
Land Purchase	166,570	SF	$ 5	$ 832,850	
Engineering & Management (25% of construction)				$ 1,040,715	
ROW Appraisals (7.5% of ROW)				$ 62,465	
Contingency (25% of construction, 50% of ROW)				$ 1,457,140	
Subtotal Non-construction				$ 3,393,170	
Escalation (10%)				$ 755,603	
Total Project					$ 8,311,633

Capital Improvement Cost Estimate

Station Name: Castroville

Item	Quantity	Unit	Unit Cost	Amount		Totals
Platform						
Construction Cost						
Station Platform, 15' width		LF	$ 750	$		
Station Platform, 25' width	800	LF	$ 1,250	$ 1,000,000		
Pedestrian Crossing, rubber surface		EA	$ 24,000	$		
Pedestrian Crossing, warning devices		Pair	$ 50,000	$		
Intertrack Fence		LF	$ 60	$		
Remove existing platform		LF	$ 125	$		
Platform shelter	2	EA	$ 20,600	$ 41,200		
Platform lighting	1	LS	$ 52,500	$ 52,500		
Trash receptacle	2	EA	$ 720	$ 1,440		
Platform bench	2	EA	$ 1,550	$ 3,100		
Platform landscaping	1	LS	$ 37,000	$ 37,000		
Platform schedule / info panels	1	EA	$ 10,300	$ 10,300		
Platform PA system		EA	$ 61,800	$		
Platform electronic message sign	1	EA	$ 9,270	$ 9,270		
Grading	900	LF	$ 75	$ 67,500		
Excavation / Fill		LF	$ 150	$		
Subtotal				$ 1,222,310		
Station Building						
Construction Cost						
Site preparation		SF	$ 2	$		
A/C pavement		SF	$ 2	$		
A/C resurfacing		SF	$ 0.5	$		
PCC pavement		SF	$ 10	$		
Curb & Gutter		LF	$ 20	$		
Shelter		SF	$ 100	$		
Bench		EA	$ 1,500	$		
Trash receptacle		EA	$ 1,000	$		
Sidewalk		SF	$ 10	$		
Landscaping		LS	$ 105,000	$		
Drainage		LS	$ 20,000	$		
Lighting		LS	$ 85,000	$		
Signage (all types)		SET	$ 20,600	$		
Bicycle locker		SET	$ 5,150	$		
Bicycle rack		EA	$ 520	$		
Subtotal				$		

Station Name: Castroville

Item	Quantity	Unit	Unit Cost	Amount	Totals
Grade Separated Pedestrian Crossing – Elevators & Stairs					
Construction Cost					
Span		SF	$ 125	$	
Stair		SF	$ 125	$	
Elevator		EA	$ 120,000	$	
Subtotal				$	
Parking					
Construction Cost					
Site preparation	52,500	SF	$ 2	$ 105,000	
A/C pavement	35,000	SF	$ 2	$ 70,000	
Curb & gutter	2,000	LF	$ 20	$ 40,000	
Sidewalk	3,500	SF	$ 10	$ 35,000	
Drainage	1	LS	$ 25,000	$ 25,000	
Lighting	1	LS	$ 96,000	$ 96,000	
Striping & Signing	1	LS	$ 52,000	$ 52,000	
Subtotal			$	$ 423,000	
Subtotal Construction			$	$ 1,645,310	
Non Construction Cost					
Right-of-Way					
Construction Easement		LS	$	$	
Access Easement		LS	$	$	
Land Purchase	72,500	SF	$ 5	$ 362,500	
Engineering & Management (25% of construction)				$ 411,330	
ROW Appraisals (7.5% of ROW)				$ 27,190	
Contingency (25% of construction, 50% of ROW)				$ 592,580	
Subtotal Non-construction				$ 1,393,600	
Escalation (10%)				$ 303,890	
Total Project					$ 3,342,800

Capital Improvement Cost Estimate

Location: Salinas Yard (MP 118.2)

Item	Quantity	Unit	Unit Cost	Amount	Totals
Trackwork / Yardwork					
Construction Cost					
New Track, 136#, wood ties, ballast	3800	LF	$ 170	$ 646,000	
New Turnout, #10 to #14	4	EA	$ 115,000	$ 460,000	
New Turnout, #15 to #20		EA	$ 165,000	$	
Relocate Track		LF	$ 60	$	
Relocate Turnout		EA	$ 50,000	$	
Remove Track	3445	LF	$ 20	$ 68,900	
Remove Turnout	2	EA	$ 10,000	$ 20,000	
New Railroad Signaling, CTC		Trk Mile	$ 800,000	$	
New CTC Interlocking		EA	$ 500,000	$	
Remove / Relocate Wayside Signal		EA	$ 50,000	$	
Modify Railroad Interlocking	1	EA	$ 250,000	$ 250,000	
New Highway / Railroad Crossing	1	LS	$ 125,000	$ 37,000	
Modify / Upgrade Crossing Equipmt.		EA	$ 60,000	$	
Grading	700	LF	$ 75	$ 52,500	
Excavation / Fill		CY	$ 10	$	
Chainlink Fence, 8' height	2600	LF	$ 10	$ 26,000	
Chainlink Gate, 8' height	2	EA	$ 200	$ 400	
Service Aisle, asphalt, 10'width	1440	LF	$ 40	$ 57,600	
Locomotive Drip Pan/HEP Receptacle	4	EA	$ 25,000	$ 100,000	
Storage Building	150	SF	$ 75	$ 11,250	
Coach Watering Hydrants	4	EA	$ 10,000	$ 40,000	
Standby Electrical Power	4	EA	$ 30,000	$ 120,000	
Site Lighting	1	LS	$ 50,000	$ 50,000	
Subtotal Construction				$ 1,939,650	
Non Construction Cost					
Right-of-Way				$	
Construction Easement	1	LS	$ 510,000	$ 510,000	
Access Easement		LS		$	
Land Purchase		SF		$	
Engineering & Management (25% of construction)				$ 484,913	
Contingency (25% of construction)				$ 484,913	
Subtotal Non-construction				$ 1,479,825	
Escalation (10%)				$ 341,948	
Total Project					$ 3,761,423

Capital Improvement Cost Estimate

Station Name: Salinas

Item	Quantity	Unit	Unit Cost	Amount	Totals
Platform					
Construction Cost					
Station Platform, 15' width		LF	$ 750	$	
Station Platform, 25' width NB / SB	800	LF	$ 1,250	$ 1,000,000	
Station Platform, 25' width SB		LF	$ 1,250	$	
Pedestrian Crossing, rubber surface		EA	$ 24,000	$	
Pedestrian Crossing, warning devices		Pair	$ 50,000	$	
Intertrack Fence		LF	$ 60	$	
Remove existing platform	800	LF	$ 125	$ 100,000	
Platform shelter	2	EA	$ 20,600	$ 41,200	
Platform lighting	1	LS	$ 52,500	$ 52,500	
Trash receptacle	4	EA	$ 720	$ 2,880	
Platform bench	4	EA	$ 1,550	$ 6,200	
Platform landscaping	1	LS	$ 37,000	$ 37,000	
Platform schedule / info panels	1	EA	$ 10,300	$ 10,300	
Platform PA system	1	EA	$ 61,800	$ 61,800	
Platform electronic message sign	1	EA	$ 9,270	$ 9,270	
Grading		LF	$ 75	$	
Excavation / Fill		LF	$ 150	$	
Subtotal				$ 1,321,150	
Station Building					
Construction Cost					
Site preparation		SF	$ 2	$	
A/C pavement		SF	$ 2	$	
A/C resurfacing		SF	$ 0.5	$	
PCC pavement		SF	$ 10	$	
Curb & Gutter		LF	$ 20	$	
Shelter		SF	$ 100	$	
Bench		EA	$ 1,500	$	
Trash receptacle		EA	$ 1,000	$	
Sidewalk		SF	$ 10	$	
Landscaping		LS	$ 105,000	$	
Drainage		LS	$ 20,000	$	
Lighting		LS	$ 85,000	$	
Signage (all types)	1	SET	$ 20,600	$ 20,600	
Bicycle locker	1	SET	$ 5,150	$ 5,150	
Bicycle rack	2	EA	$ 520	$ 1,040	
Subtotal				$ 26,790	

Station Name: Salinas

Item	Quantity	Unit	Unit Cost	Amount	Totals
Grade Separated Pedestrian Crossing – Elevators & Stairs					
Construction Cost					
Span		SF	$ 125	$	
Stair		SF	$ 125	$	
Elevator		EA	$ 120,000	$	
Subtotal				$	
Parking					
Construction Cost					
Site preparation	137,500	SF	$ 2	$ 275,000	
A/C pavement	105,000	SF	$ 2	$ 210,000	
Curb & gutter	6,000	LF	$ 20	$ 120,000	
Sidewalk	10,700	SF	$ 10	$ 107,000	
Drainage	1	LS	$ 75,000	$ 75,000	
Lighting	1	LS	$ 293,000	$ 293,000	
Striping & Signing	1	LS	$ 157,000	$ 157,000	
Subtotal			$	$ 1,277,000	
Subtotal Construction			$	$ 2,584,940	
Non Construction Cost					
Right-of-Way					
Construction Easement		LS	$	$	
Access Easement		LS	$	$	
Land Purchase	137,500	SF	$ 15	$ 2,062,500	
Engineering & Management (25% of construction)				$ 646,235	
ROW Appraisals (7.5% of ROW)				$ 154,690	
Contingency (25% of construction, 50% of ROW)				$ 1,677,485	
Subtotal Non-construction				$ 4,540,910	
Escalation (10%)				$ 712,585	
Total Project					$ 7,838,435