SERVICE DEVELOPMENT PLAN for FRA Grant Applications

2010

SERVICE DEVELOPMENT PLAN - CAPITOL CORRIDOR:

Oakland to San Jose and Sacramento to Auburn

Capitol Corridor Joint Powers Authority

August 5, 2010

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2 PURPOSE AND NEED

Before describing the content of this service development plan (SDP), a working knowledge of the Capitol Corridor Intercity Passenger Rail service (Capitol Corridor) and its history will better establish the nature of this existing intercity passenger rail service as well as that of its managing agency, the Capitol Corridor Joint Powers Authority (CCJPA) which is making application for the use of FY 2010 HSIPR Service Development Program grant funds to fulfill service objectives explained in this document. For the purposes of this document, the term for the Capitol Corridor Service Expansion Plan (CCSEP) will be used throughout the document. At various locations throughout the document the phrase "implementing the SDP" is utilized- it is also referring to implementing CCSEP. The SDP is organized towards the goal of achieving service improvements for the Capitol Corridor service however, these service improvements will not all be achieved in just one or even two funding cycles. Pertinent to the FY 2010 funding cycle, there are two elements in the initiation of the CCSEP. These projects explained in detail in subsequent sections, are referenced throughout the document and are the two projects to be implemented as part of this FY2010 HSIPR application. The phasing of other, future projects is unknown at this time due to uncertainties with funding availability and funding awards. The CCJPA will continue to work with the FRA, the Capitol Corridor service delivery partners and other interested parties to carry on with its phased implementation of projects until the eventual service plan goals are achieved. For purposes of orienting the reader to the Capitol Corridor, a graphic depicting the existing service territory is shown in Figure 1-1.

The CCJPA is seeking design, environmental and construction funding as a significant supplement to existing/programmed state and local funds to implement CCSEP from the FY 2010 HSIPR Service Development Program grant funds.

2.1 BACKGROUND – THE CAPITOL CORRIDOR SERVICE

On December 12, 1991, the State of California Department of Transportation (Caltrans) and the National Railroad Passenger Corporation (Amtrak®) initiated the Capitol Corridor with six daily trains between San Jose and Sacramento. In 1996, legislation was enacted to establish the CCJPA, a partnership among six local transportation agencies to share in the administration and management of the Capitol Corridor® intercity passenger train service.

In July 1998, an Interagency Transfer Agreement (ITA) transferred the operation of the Capitol Corridor service to the CCJPA for an initial three-year term. As of October 1998 the CCJPA has managed the Capitol Corridor service through an operating agreement with Amtrak. In July 2001 the ITA was extended for another three-year term through June 2004. In September 2003, legislation was enacted that eliminated the sunset date in the ITA and established the current, permanent governance structure for the CCJPA. CCJPA is staffed by San Francisco Bay Area Rapid Transit District (BART) employees who work full time for the CCJPA with additional BART staff who provide administrative, accounting and legal support. CCJPA works very closely with the California Department of Transportation (Caltrans) staff in the Division of Rail who develop and update the California State Rail Plan. Both the current State Rail Plan and the CCJPA Board's Vision Plan (adopted April 2005) outline a program of service frequency increases for the Capitol Corridor to even better meet the people's travel demand needs in Northern California.

In response to growing demand, the CCJPA expanded service in October 2002, January 2003 and April 2003 to achieve a schedule of 24 weekday trains between Sacramento and Oakland, using the same state budget allocated for 18 daily trains. In August 2006, with another flat budget allocation, the CCJPA increased service to 32 weekday (22 weekend day) trains between Sacramento and Oakland, and 14 daily trains between Oakland and San Jose.

This expansion was made possible with the completion of Phase 1 of the Oakland-to-San Jose track improvements and the Yolo Causeway second main track, which were completed in February 2004. These improvements were funded by CCJPA (using state funds) and implemented by Union Pacific Railroad (UPRR), the owner of the right-of-way for the Capitol Corridor's 171-mile route (with the exception of the southern 2.5 miles of the route which is owned by Caltrain). Together, these projects contributed to a 10-minute reduction in travel time between Sacramento and Oakland, in addition to a 33% increase in frequency in service.

This service expansion, which initiated hourly service between Sacramento and Oakland, represented a major milestone in the CCJPA's management of the Capitol Corridor. Since August 2006 under this service plan, ridership had increased over time without any increases in frequency--until the present economic downturn. The rising trend in ridership was in part aided by high gas prices, a jobs-to-housing imbalance across the region, a still booming economy, and, improvements to the Capitol Corridor service--notably a greater than 90 percent on-time performance, which Capitol Corridor began to regularly achieve.

The benefits of these service expansions, corresponding track capacity improvements and train equipment acquisitions have enabled the Capitol Corridor to increase market share and sustain significant growth in ridership (+245%) and revenues (+276%) during the past 11 years. Today, the Capitol Corridor is the third busiest route in the Amtrak national system. Each service expansion has increased ridership, revenues and gradually improved farebox operating ratios over time while continuing to operate via a steady and stable supply of operating funds from the State of California.

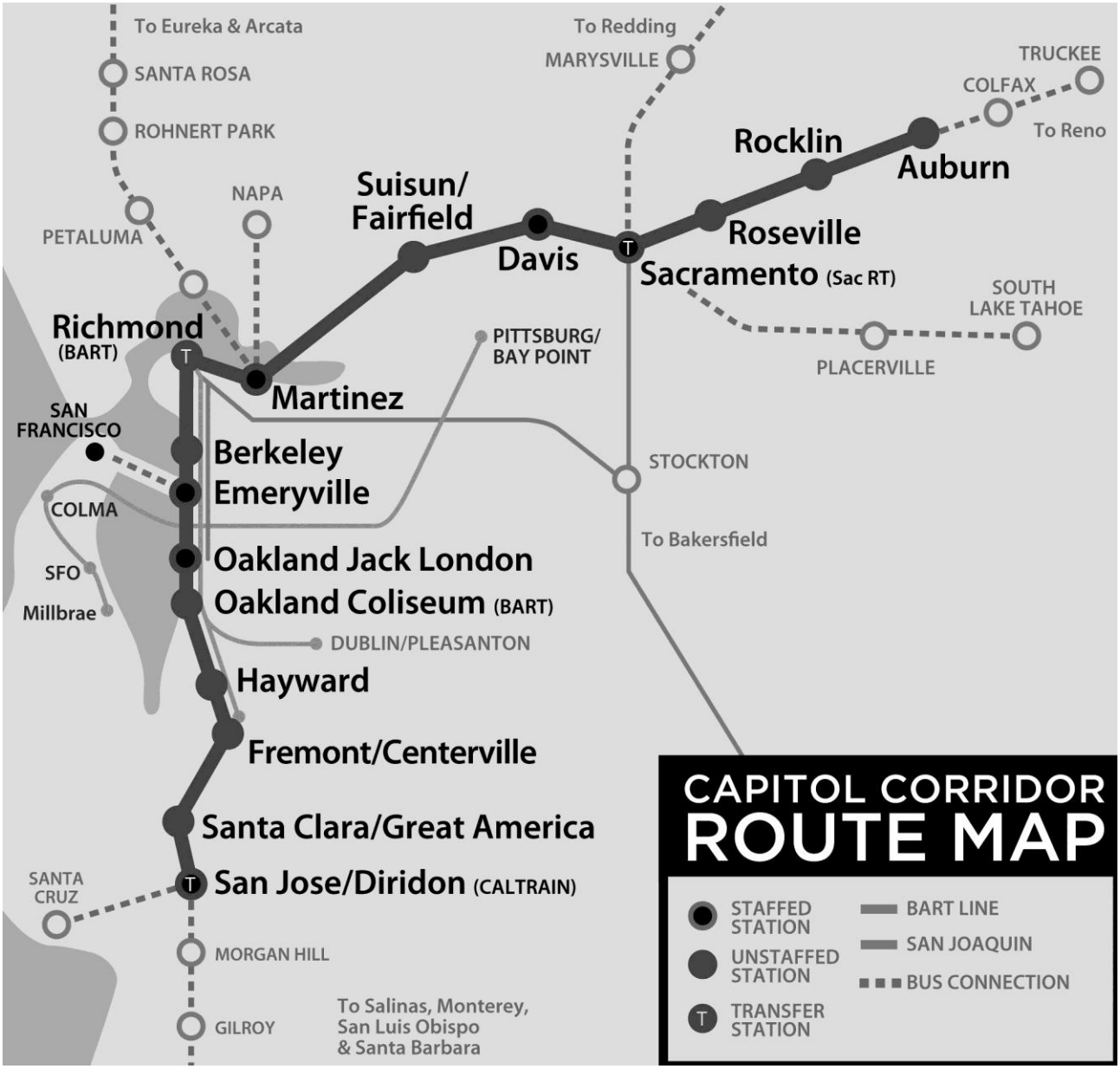


FIGURE 2-1: CAPITOL CORRIDOR ROUTE MAP

2.2 PURPOSE AND NEED

The present day level of service is robust in the core Sacramento to Oakland portion of the route with 32 weekday trains and 22 weekend trains. A limited number of these extend beyond the core Sacramento to Oakland market and serve the Oakland to San Jose and Auburn to Sacramento portions of the route. The ability to add more service frequency in these northern and southern portions of the Capitol Corridor route is constrained, at present, by track capacity. At fourteen daily (or seven round trip) trains, with the planned incremental increase to 22 (or eleven round trip) trains, the Oakland-San Jose service corridor can become incrementally closer to the Sacramento-Oakland hourly service and better serve the peak travel market. In the rapidly growing Placer County area

northeast of Sacramento, due to highway congestion there is strong demand in the peak hours for an additional round trip train (beyond the currently daily round trip train) between those foothill communities and Sacramento and Bay Area metropolitan areas. Without expanding these service frequencies to cover more travel times throughout the day, many travelers can't utilize the train as a travel mode choice and are generally left with the option of driving their vehicles on congested highways for their intercity travel. This SDP outlines a series of projects, which when implemented in their entirety, will present travelers more options to make those journeys via intercity passenger rail.

The Capitol Corridor parallels the congested I-80, I-680 and I-880 highway corridors which are still used to convey the vast majority of travelers between the greater Sacramento and Bay Area regions. In 1990, existing and projected travel conditions along this highway corridor were enough for California voters to pass transportation bond measures which not only established the three California Intercity Passenger Rail (IPR) services but also to provide annual operating support for these services through the State's Public Transportation Account (PTA). The purpose of the PTA is to promote the development of a public transportation infrastructure by providing a source of funds to local and state transportation agencies primarily for transit (including bus and rail) purposes. Based on recently enacted legislation in March 2010, the PTA derives its revenues solely from sales tax of 6.50% on diesel fuel, an increase of 1.75% from the prior sales tax rate of 4.75%.

Using entirely State of California funding, Caltrans (prior to October 1998) and CCJPA (since October 1998) have been able to successfully work with the host freight railroads, Southern Pacific (prior to 1996) and UPRR (after when the line was purchased from Southern Pacific in 1996), to complete capital funding projects. These projects allowed Capitol Corridor to incrementally increase service frequencies. Because the priority of previous capital investments was focused on achieving hourly service frequencies in the core Sacramento to Oakland market; the northern and southern portions of the Capitol Corridor route have remained underserved. Now that the core service is well established, the California State Rail Plan and the CCJPA's Vision Plan recognize where the next round of investment will be implemented.

The purpose of this SDP is to outline to the Federal Railroad Administration (FRA) the opportunities presented in these underserved markets and present the capital improvement projects required to implement the proposed service changes to the Capitol Corridor to address the needs of travelers in Northern California. By presenting this SDP, the CCJPA will convey the rationale, identify alternatives and explain the planning methodology, demand and revenue forecasts, operations modeling, conceptual engineering and capital programming, operating and maintenance costs, capital replacement forecast, and lastly, the public benefits analysis so that the FRA can make an informed decision in awarding FY 2010 HSIPR Service Development Program grant funding to CCJPA to meet the public transport needs in Northern California. Specifically, this SDP describes the first two phases of implementing several subsequent phases, which will serve as the foundations for future FRA funding applications—all with the purpose to improve existing Capitol Corridor service and expand service frequency as follows:

Auburn to Sacramento: from one to two round trips (described as SDP^{1}).

Oakland to San Jose: from seven to 11 round trips plus a new station stop at Union City, CA adjacent to the Union City BART station and Transit-Oriented Development (TOD) already underway (described as SDP^{FINAL}). This will require increments of additional rolling stock in SDP^{FINAL}. It is not feasible to apply for or expect funding to fully realize SDP^{FINAL} at this time therefore the CCJPA is taking a phased approach concurrent with this SDP to accompany the CCJPA's FY 2010 HSIPR application. Therefore, the two projects involving the Oakland to San Jose

improvements, which are included as part of this application will be referred to as SDP^2. In subsequent years, CCJPA will anticipate applying for SDP^3, SDP^4, and so on, until SDP^{FINAL} can be achieved.

For purposes of orienting the reader to the Capitol Corridor route, a map depicting the rail subdivision in the CCJPA service territory is included as Figure 2-2. These subdivisions will be referred to throughout the SDP. From North to South, the Subdivisions (all subdivisions depicted are owned by UPRR) utilized by the CCJPA today are as follows:

- Roseville Subdivision
- Martinez Subdivision
- Niles Subdivision
- Coast Subdivision
- Caltrain (southern 2.5 miles of the Capitol Corridor route

FIGURE 2-2: RAIL SUBDIVISIONS IN THE CAPITOL CORRIDOR SERVICE TERRITORY

3 RATIONALE

The Capitol Corridor as well as the entire State Intercity Passenger service (the San Joaquins and Pacific Surfliners) has proven to be one of California's transportation success stories. Among the various travel options within the state, Intercity Passenger Rail in California now represents 20 percent of all Amtrak travel in the nation. The Capitol Corridor, as the third busiest service in the Amtrak system and the second busiest outside of the Amtrak Northeast Corridor (behind the Pacific Surfliners which operates in Southern California), has experienced some of the highest ridership growth percentages of any Amtrak service in the nation with the various service frequency increases (discussed above) undertaken since CCJPA assumed management of the service. These past service increases completed entirely with state funds are a testament to the viability of the Northern Californian's to respond to the increased travel options provided by these service increases. Notwithstanding the recent economic downturn, as shown in Figure 3-1, ridership rose with each service frequency increase while California operating support stayed relatively stable over time. As stated above, however, these service increases have not been completed to meet the public transit needs in markets in the northern and southern portions of the Capitol Corridor route.

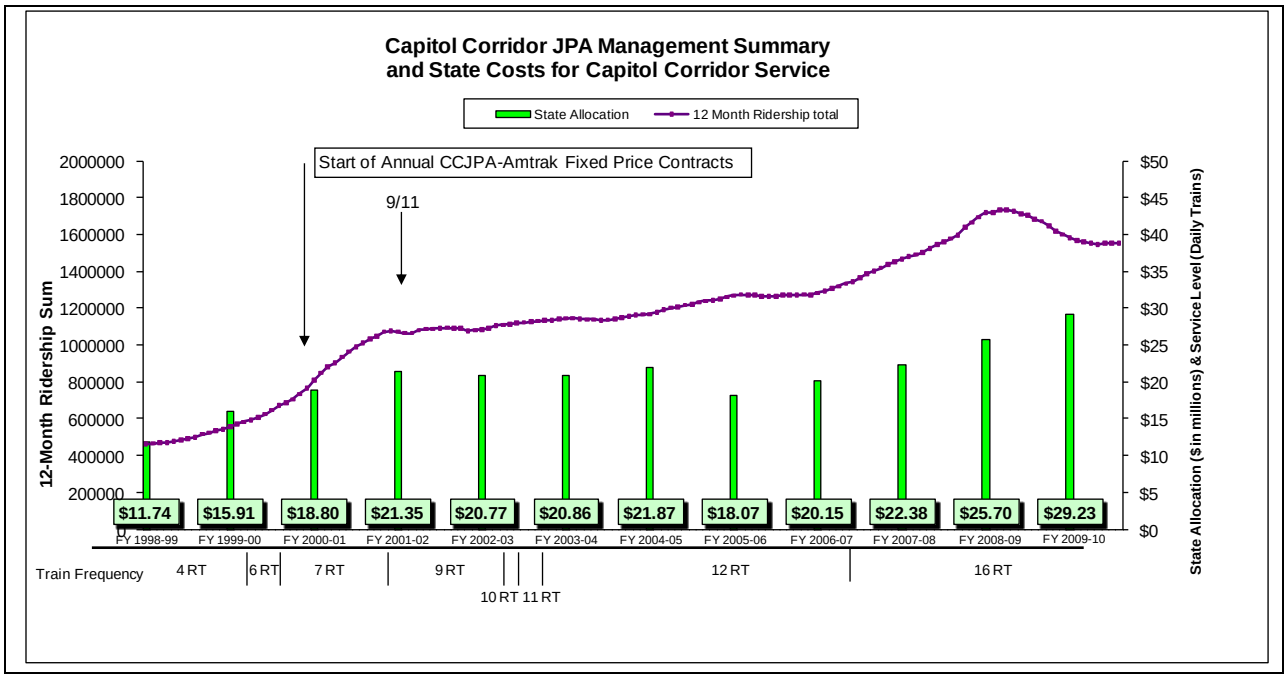


FIGURE 3-1: HISTORY OF ANNUAL RIDERSHIP, ROUND TRIPS, AND STATE COSTS

3.1 CAPITOL CORRIDOR'S ROLE IN REGIONAL TRANSPORTATION/LAND USE

The 2035 Regional Transportation Plans (RTPs) developed by the respective Metropolitan Transportation Planning Agencies for the Bay Area and Sacramento region are comprehensive plans across all modes, and include the large scale goals and development plans for the Capitol Corridor service. At their best, the RTPs are guides to attain future desired conditions however, their ability to control and direct change is limited to funding and policy realities. The two plans are the best means to incorporate major demographic information, land use plans, funding and transportation air quality impacts to devise strategies to reduce the negative environmental and economic impacts of existing and future planned mobility choices. The plans themselves are each developed according to

their jurisdictional boundaries even as it is becoming more useful to refer to the Bay Area and Sacramento as a megaregion with the Bay Area as the dominant economic center of activity.

Capitol Corridor's success and the increasing congestion of Interstate 80 demonstrate how these regions are economically merged. In some sense, the high pay of Bay Area professional jobs coupled with the high cost of housing has created a 'drive until you qualify' approach to home purchasing. The profiles of Capitol Corridor passengers with their monthly/10-ride tickets, their higher than average incomes and origin-destination pairings all suggest there is a very strong trend in households adopting this housing strategy. Those who make discretionary trips within the Bay Area megaregion are often faced with a travel choice based on traffic congestion at one or more locations depending on the time of day. The Capitol Corridor, with its current frequency and competitive travel time, is an option for many travelers who wish to avoid the inevitable congestion points and make a more rapid journey. However, when the Capitol Corridor service is not frequent enough in some areas, it cannot be a viable option for many of the travelling public and thus, they are often times relegated to completing their journey via automobile. Expanding Capitol Corridor service frequencies as outlined in this SDP is a further incremental step in relieving the pressure on the megaregional highway network for intercity travel as well documented in the Bay Area's Metropolitan Transportation Commission (MTC) and Sacramento Area Council of Governments (SACOG) 2035RTPs..

Forecast data as presented in MTC's Travel Forecasts Data Summary, December 2008 demonstrates that measures of delay for the Bay Area's highway system will increase regardless of land-use strategies that emphasize a shift towards greater density to accommodate a 26 percent increase in population by 2035 or the application of any number of various scenarios modeled which designed to mitigate the effects congestion and gridlock. MTC's 2035 Regional Transportation Plan, when comparing the "2035 no-plan" alternative to 2006 values, indicates a daunting future.

The metrics of mobility are dominated by how fast (or not) one may travel within or through a particular urban area in an automobile for most regional transportation planning agencies and are measured by Vehicles Miles Traveled (VMT). In the Bay Area's Metropolitan Transportation Commission (MTC) 2035 Regional Transportation Plan it measures the future of transportation indicating:

> *"Travel activity as reflected by daily auto trips would increase by 32 percent and the amount of vehicle miles traveled would grow by 33 percent. Both are slightly higher than the rate of population increase, but lower than the expected rate of employment growth. Daily hours of vehicle delay would increase by 135 percent, which would boost average daily delay per vehicle to 4.6 minutes (from 2.7 minutes today)."*

If the Transportation 2035 Plan scenarios are implemented and are successful, the Plan goes on to say:

> *"…it (the 2035 Plan) will help reduce freeway delay per person from a projected 72 hours a year to 47 hours a year...The Transportation 2035 Plan makes only a negligible difference in this area (daily vehicle miles traveled), reducing daily vehicle miles traveled per person from 21.3 to 21.2. This is not within the reach of the objective of 18.2 vehicle miles per person. This result would seem to show the limitations of infrastructure improvements as a means to attain this particular objective."*

MTC's counterpart in the Sacramento area is the Sacramento Area Council of Governments (SACOG). In their 2035 Metropolitan Transportation Plan the conclusions are even more daunting than in MTC's region primarily due to embedded land use differences (generally, less density and more urban sprawl):

> *"Even with all of the investments in the MTP2025 (a prior MTP), roadway congestion experienced by the average household was expected to increase by 58 percent. Total region-wide VMT on heavily congested roadways was expected to increase by 230 percent."*

Likewise, with implementation of scenarios designed to improve congestion in MTP2035 and with a focus on VMT in already congested conditions, SACOG goes on to say:

> *"Congested VMT was estimated to increase from 3.1 million daily miles in 2005 to 7 million in 2035 with MTP2035. This is a total increase of 127 percent, and an average annual increase of 2.8 percent over the same time period…The performance of MTP2035 is also dramatically better than the No Project alternative. By 2035 with the No Project alternative, total congestion nearly quadruples to over 12.1 million miles per day. This is a growth rate of 4.7 percent per year, a continuation of the recent growth in congestion."*

The CCJPA shared Capitol Corridor's existing service and planned service frequency increases with both MTC and SACOG staff who embedded CCJPA's objectives into their respective 2035 projections. Thus, all entities use CCJPA's solution among many modal solutions, each designed to at least try to achieve various transportation and air quality goals. The expansion of Capitol Corridor service as outlined in this SDP, with the stations as intermodal hubs, are integrated into MTC and SACOG's respective land use goals where there is a renewed emphasis to direct more housing and jobs closer to transit centers and to use alternative modes of travel. While Capitol Corridor ridership is a relatively small portion of the overall net travel across both regions, on the whole, for travel between the regions, and especially in the peak hours, the importance of Capitol Corridor as an alternative mode choice and a measure to reduce congestion is best summarized in this quote from the SACOG 2035MTP:

> *"…a roadway operating near capacity experiences little or no congestion or delay, but addition of a few more vehicles and VMT leads to congestion and delay, not just for the new vehicles, but also for all other vehicles using the road."*

SACOG describes Capitol Corridor service and the investment to expand service in the northern and southern portions of the route as a solution that directly helps solve these roadway capacity effects as described by SACOG. Each vehicle removed from the highway does its part in cost effectively buying capacity on the highway system as well for the traveler who may not be able to utilize Capitol Corridor as a travel option. Please see Figure 3-2 which depicts the estimated monthly VMT reduction (based on prior/projected ridership, automobile occupancy, travel distance, and other CCJPA survey data) for the Capitol Corridor service since October 1998 and projected if implementation of the CCSEP were able to be funded in its entirety from FY 2010. This projection allows for several years of construction and includes operation; however, funding limitations will constrain the realization of the VMT reductions shown in this table and extend the time it takes until the entire CCSEP or SDP^{FINAL} is in full operation.

Incrementally increasing service frequencies requires that a program of capital improvement projects are implemented, which will create the track capacity needed to attain CCJPA's service goals. The HSIPR grant funding program is one of several capital funding sources needed to implement track capacity improvement projects which

will, as projects are completed over time, allow frequencies to incrementally increase as various operational milestones are achieved (as supported by railroad capacity models).

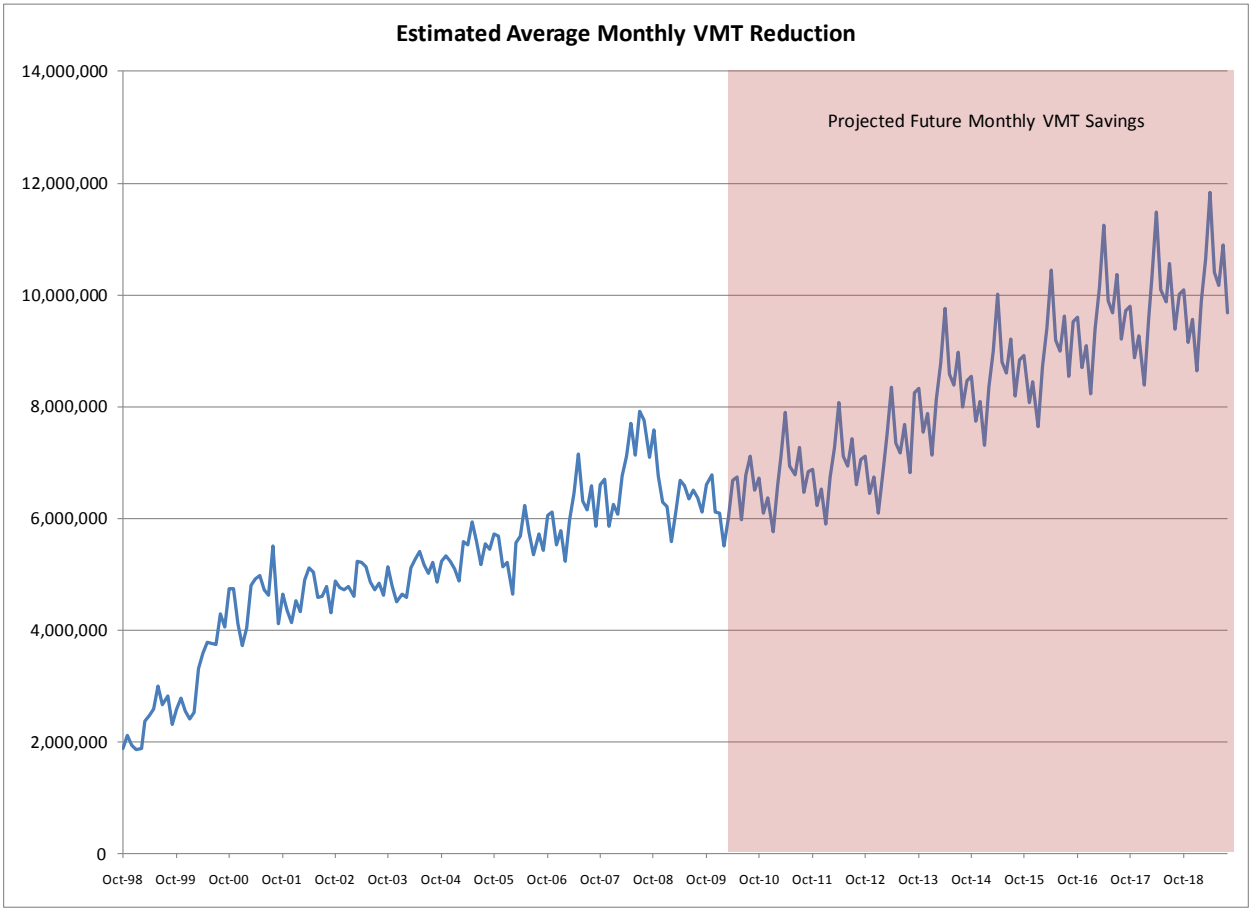


FIGURE 3-2: ESTIMATED MONTHLY VMT REDUCTION FOR CCSEP IMPLEMENTATION (FULLY FUNDED BY FY 2010 HSIPR)

3.2 THE CALIFORNIA STATE RAIL PLAN AND CCJPA'S VISION PLAN

The incremental approach to increase service frequencies (as well as reduce travel times and maintain the current high on-time performance), is guided by both the CCJPA Vision Plan (2005) and State Rail Plan, both of which outline a much longer term guide for service expansion than this SDP. This SDP is consistent with the Capitol Corridor's Tier II Strategies for 2009 to 2023 identified in the CCJPA Board adopted Vision Plan to continue improving operational facilities, implement regional rail services, build new regional rail and intercity stations, extend intercity rail service and develop integrated service plans compatible with the planned California High Speed Rail service. The core objectives identified in the Vision Plan include:

- Improve reliability
- Increase service frequency
- Reduce travel times
- Improve intermodal connectivity and ensure easy transfer to local transit
- Enhance safety and security

The service improvements documented herein reflect the Vision Plan goals to incrementally meet the Capitol Corridor's core objectives by improving reliability, decreasing travel times and adding additional Capitol Corridor trains to and from San Jose as well as Auburn.

The following Vision Statements lifted from the CCJPA Board adopted Vision Plan (2005) serve as the foundation for growth and continued success of the Capitol Corridor:

- Provide high quality passenger rail and connecting bus service that is safe, fast, frequent and reliable.
- Develop rail service as the preferred means of travel along the Northern California San Jose – Oakland/San Francisco – Sacramento – Auburn route.
- Deliver cost-effective expansion of superior passenger rail service.
- Build on constructive working partnerships with riders, local communities, Amtrak, the Union Pacific Railroad and the State of California.
- Accomplish this vision in a manner that both recognizes and respects the interests of each of the partners.
- Build on partnerships and support Capitol Corridor member agencies to advocate for the Capitol Corridor and interrelated services.

To gauge success of the Capitol Corridor vision, achievement of objectives is measured over time. Core service objectives serve as the primary focal point for improving the performance of the service in the short-term.

- **Frequency**: Expanding service incrementally to the below daily round-trip trains by 2007 as outlined in the Vision Plan was not achieved. Based on the capital improvements outlined above, the following service frequency goals for the Capitol Corridor service remain.
    - Auburn – Sacramento: Four round trips (currently 1)
    - Roseville – Sacramento: 10 round trips (currently 1)
    - Oakland – Sacramento: 18 round trips (currently 16)
    - San Jose – Sacramento: 16 round trips (currently 7)
- **Travel Time**: Reduce average travel time by 12 percent. *Status*: Improved Yolo Causeway and expedited boarding reduced travel times by eight percent from 2002 to 2004. Last year's FY 2009 HSIPR award as well as several other State funded projects are collectively presenting CCJPA an opportunity to reduce travel time again, which will be negotiated with the CCJPA's host railroads. Federal funding (during future HSIPR rounds) can also support additional travel time reductions.
- **Reliability**: Current On-Time Performance (OTP) is above the 90 percent standard set by the CCJPA. At present, the OTP is at 92.4 percent. This is largely due to working with UPRR to eliminate slow orders and maintain the rail infrastructure to Class V standards while operating at Class IV standards. CCJPA along with UPRR and Amtrak have paid particular attention to OTP (see Table 2.B.-1 where green cells demonstrate greater than 90% OTP, yellow, between 80-90 percent OTP, and red, below 80 percent OTP) and as a result have the best OTP of a multi-frequency intercity passenger rail service in the nation. CCJPA has been running

the same essential level of service since September 2006 and Table 3-1 depicts a steady trend in improved OTP where high levels of reliability over time have become a common normal state of operation for Capitol Corridor passengers (recent instances of "red" demonstrate scheduled tie replacement track work where trains were knowingly going to be delayed).

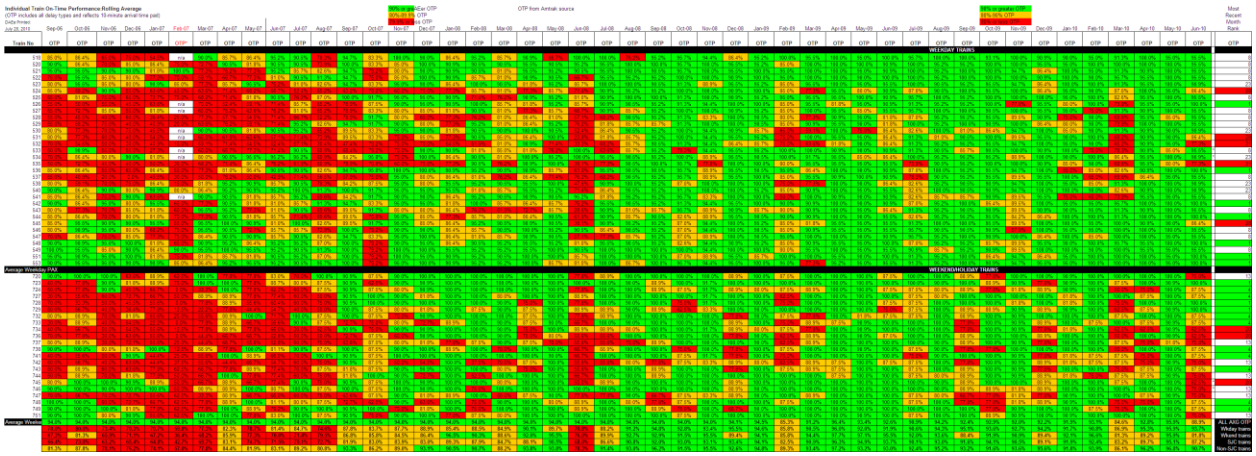


TABLE 3-1: HISTORY OF INDIVIDUAL TRAIN OTP BY MONTH SINCE AUGUST 28, 2006 SCHEDULE

These service goals are consistent with the State Rail Plan adopted by the Governor of California. The State Rail Plan (2007/08 to 2017/18) is a ten-year plan for all statewide rail operators. The State Rail Plan may be found at the following website address:

http://capitolcorridor.org/hsipr/docs/CARailPlan07FINAL_Apprvd.pdf.

3.3 Sorting Through Choices and Making Sound Decisions

Many regions across the United States are faced with the decision of how best to provide transportation choices (across highway, rail, air or waterborne transit) within and through their regions. California as a whole and the communities in Northern California are no different. Tough choices with limited public funding must be made. However, programmatically, national and state transportation funding policy may constrain the flexibility to share between the modes. Thus it is difficult to have investment discretion among the major modal categories but within each mode there are a variety of decisions for public transportation policy-makers to consider. Cost effectiveness is a common measure within each mode of transportation and, in practice, from the national, state, regional, and local level, each mode (highway/road, rail, air and waterborne transportation) is each, cost effective in delivering their next level of marginal investments. Within the MTC and SACOG regions, over the next 25 years approximately $10.1 billion and $11.3 billion will be spent respectively, for the highway mode to increase roadway capacity via a variety of measures as outlined in their respective 2035RTPs. Roadway maintenance (including highways and roads) in these same plans will cost $41 billion and $12.4 billion. In contrast, the entire capital cost (including rolling stock, station and track projects) over the nearly nineteen year life of the Capitol Corridor service since its inception in 1991 is approximately $873 million (this includes rolling stock, station and track improvements).

The different level of investment in the modes represents, perhaps, broader national and state policies. However, in California, the 1990 decision by the voters to fund investment in Intercity Passenger Rail represented a departure from business as usual and by all measures, the state has successfully entered the passenger rail business and now commands 20 percent of the national Amtrak passenger activity. Despite establishing

California's passenger rail services, these expenditure differences between the highway and rail modes still reflect various national and state transportation policies. In one sense, the highway/freeway mode is now a victim of its success (and history); yet it still remains the overwhelming mode choice, but its an investment choice that is running out of effective capacity-increasing options. In and between the Bay Area and Sacramento regions the incremental public investment in Capitol Corridor passenger rail service capacity, as demonstrated below, is a more cost effective, and a more socially acceptable means to move people than attempting to create the equivalent capacity by adding a lane of travel in each direction to the freeways that parallel the Capitol Corridor route.

It is a challenge to present data to demonstrate that a passenger rail investment can be more effective at creating movement capacity versus an equivalent freeway investment because the metrics are different. In California, there is no gathered survey/operational data to identify what modal percentage of travel takes place in the intercity passenger rail trains as compared to their parallel freeways since the rail travel often involves through travel and these metrics are not captured with highway surveys used in either regional or state travel forecasting. Since Capitol Corridor trains operate in the core Sacramento to Oakland service area with approximately four trains (two in each direction) for each morning and evening peak hour, there are about 700 seats provided in each direction per peak hour. By contrast, a lane of highway travel has a peak capacity of about 1,500 vehicles per hour. As related to highway capacity, the Capitol Corridor service is worth, on a daily basis, the capacity of at least a half of lane of travel in each direction but at average speeds which exceed congested highway conditions. The current service level between Auburn and Sacramento is just one train in the morning and evening peak direction. In the Oakland to San Jose corridor due to track capacity and rolling stock constraints, there is one peak train in each direction with one other slightly off-peak train in each direction in the morning and evening periods. Therefore, in the northern and southern portions of the corridor an investment in track infrastructure and rolling stock necessary to gain capacity in the peak hour as well as offer expanded service in other hours of the day is feasible and warranted. This investment, especially in the Oakland to San Jose market, makes Capitol Corridor a viable option on other times of the day.

With an option to add capacity to these underserved markets for passenger rail, the next step is to compare the cost effectiveness of intercity passenger rail to highway modes. Such a comparison is difficult from the start, yet for the purposes of demonstrating cost effectiveness at an order of magnitude level, a conceptual 'Capitol Corridor highway' could be estimated and those costs compared to the $873 million spent thus far for the Capitol Corridor. The costs of new lanes of travel and interchanges vary immensely based on local conditions. The Federal Highway Administration (FHWA) conducted a survey in 2003 of per lane mile costs. In regards to adding a lane to existing highways comparable to the construction situation which may be found in the Bay Area and Sacramento areas, adjusted to 2006 dollars, FHWA reports:

> *"… where widening might be especially difficult or costly, such as densely developed urban areas or environmentally sensitive rural areas. These are termed "high cost lanes" and can range from $7.3 million to $15.4 million per lane-mile for construction in urban areas to $5.8 million to $9.9 million per lane-mile in rural areas."*

In 2002 Washington Department of Transportation conducted a survey of diamond-style highway interchange costs across various states. Adjusting for local conditions, the cost for California is approximately $10 million per interchange. Making the assumption that these capital cost values to be representative, and selecting a mid range cost of $10 million per lane mile (a full lane mile is required; it is not appropriate to compare the ½ a lane mile of equivalent seating capacity as discussed above) and a diamond interchange as a surrogate for each of the sixteen

stations, the total cost to provide via a highway comparable to what the Capitol Corridor provides would be $1.86 billion (170 miles x $10M/mile + 16 stations x $10M/interchange). Under this order of magnitude exercise, continued operational and capital investment in the Capitol Corridor service is cost effective when compared to other transportation system alternatives. This measure of cost effectiveness does not account for the social benefits of reducing air pollution and eliminating the personal stress and lost productivity costs of creeping along on a congested freeway.

If it is clear that investment in additional Capitol Corridor service for Northern California can provide the same benefits at less cost than creating the same capacity on the highway system, the remaining question to be answered is, "Is investing in CCSEP a good use of these HSIPR funds in this particular region as opposed another region?" Not only is expansion of Capitol Corridor service integrated into the two Regional Transportation Plans (MTC and SACOG), the expansion must be in place so that on day one, Capitol Corridor's level of service supports California's investment in High Speed Rail service between Northern and Southern California.

Capitol Corridor service is in the unique position of becoming a distributor/feeder for the planned California High Speed Rail system once the High Speed connection in San Jose and eventual link to Sacramento are established. High-speed rail systems throughout the world rely upon the presence and viability of the feeder/distributor systems to drive ridership to the high-speed rail system. They simply would not be successful without these supporting passenger rail services. Capitol Corridor's service connection in San Jose will create, like a watershed, a "ridership-shed" drawn from all the East Bay communities as well as the communities surrounding Sacramento in all directions, including up to the Sierra foothills where the additional round trip to Auburn is crucial. While the goal is eventually to get to hourly service (16 round trips) to San Jose, making project by project strides in incremental service expansion to San Jose (increasing from seven, to nine, to eleven round trips) will begin to ensure peak hour and sufficient off-peak travel options are established, at a minimum to serve California High Speed Rail in San Jose. It is unclear when resources will be available to complete the additional track capacity work to truly achieve hourly service (16 round trips) so it is crucial that CCJPA make steady progress towards the projects in this SDP, starting with SDP^2, followed in future years with the next phases. This progression will eventually establish the level of Capitol Corridor service in San Jose such that its schedule is 'pulsed' and linked via one purchase so that transfers between the future California High Speed Rail and Capitol Corridor are seamless.

Another reason for investment in the CCSEP now is that Capitol Corridor is already well integrated into the local transit system environment, whether it is in the San Jose/Silicon Valley area or in the Sacramento-Auburn region. The Auburn, Rocklin and Roseville stations are served with local transportation services but mainly serve as "bedroom" communities for jobs in Sacramento and beyond. Together with the free on-board transit transfer passes good on the Sacramento Regional Transit (Sacramento RT) buses and light rail, both of which connect right at the station platform side, increasing frequency between Auburn and Sacramento already has a built in modal connection and support service. This makes for an easy commute for those whose jobs in Sacramento are in easy walking distance of the station.

Eventually, when additional round trips are provided in the southern end of the Capitol Corridor route, workers commuting to Silicon Valley will have the same ease of travel as there are also existing local transit connections and relationships already established in the South Bay. The Silicon Valley is a world famous destination of innovation with several technology industry leaders with campus-style headquarters. The Great America/Santa Clara station, one stop north of San Jose, is already a hub of activity for arriving passenger trains. Sorting out the transportation options is astounding.; There are a mixture of employer and Altamont Commuter Express (ACE) rail passenger shuttles and Santa Clara Valley Transportation Authority (VTA) light-rail connections within a brief

walking distance (the free transit transfer pass on Capitol Corridor trains is valid on that system). Finally, there are passengers who leave a second 'junker' automobile in the ample station parking lot or ride their bicycle to get to/from their place of employment or residence. These connectivity relationships are already embedded and provide yet another reason why Capitol Corridor service is poised ahead of other locations throughout the United States as a service ready for its expansion plans to come to fruition.

3.4 Summary – the Complete Package

Clearly, in the San Francisco and Sacramento regions, if the goal is to move people within and through the regions as demonstrated in the two regional transportation plans, investment in increased Capitol Corridor service in the Auburn to Sacramento and the Oakland to San Jose corridors is far more cost effective than considering the massive investments which would be required to add lanes and create highway infrastructure. This highway vs. passenger rail investment conditions may be found in similar areas throughout the country, however, the following conditions that apply to the Capitol Corridor are harder to find:

- A strong public investment history and commitment by the State for Intercity Passenger Rail service
- A proven record of performance and customer satisfaction for the passenger rail service
- Local, already well established transit connections supported by shuttle programs, free transit transfer passes, and discounted BART tickets
- A partnership between the Capitol Corridor and the freight rail host which has already delivered on "within-budget" delivery using public dollars for capital improvements
- A direct feeder/distributor connection with the planned California High Speed Rail network in San Jose

Altogether these factors are the compelling reasons to support the CCJPA in its service expansion goals. The CCJPA is prepared for these passenger rail investments and can build upon existing partnerships with UPRR, our host freight rail, and Caltrain commuter rail (for the southern 2.5 miles of our service route) to deliver service frequencies the service Northern California communities are depending upon.

4 Identification of Alternatives

The guidance provided by the FRA to develop a service development plan encourages the identification, consideration and discussion of alternatives to the proposed action. Largely because the Capitol Corridor service already exists and the expansion proposed is not outside the scope of what is already provided, there are not many practical modal or routing alternatives for the region to better achieve the service expansion goals the CCJPA is seeking to provide. The benefits of implementing the incremental Capitol Corridor service frequencies as outlined in this document encompass reduced travel congestion, reduced delays, improved air quality, and improved travel options within the Bay Area/Sacramento megaregion. To the extent that the added service frequencies in the Oakland to San Jose and Sacramento to Auburn markets are layered atop the existing service in these areas, it allows the Capitol Corridor to serve a greater base of travelers on any given day and there are no other modal alternatives at this time that provide a cost effective or socially acceptable alternative.

4.1 No-Action Alternative

If the existing Capitol Corridor service remained as is at both the regional and State level, the planned Capitol Corridor service increases would not be in place as a modal offset to highway travel. This would negatively affect the implementation of the respective transportation plans for the Bay Area and Sacramento regions. In those transportation plans there are no planned highway improvements in either the Sacramento or Bay Area region which are substantial enough to provide the additional peak hour capacity solution that adding more Capitol Corridor service could accomplish.

4.2 Other Modes as Alternatives

With the highway mode unable to be a viable alternative, there are no other mode alternatives available in the general corridor area able to cost effectively or environmentally be implemented. While there are plans to expand BART to San Jose, BART is a different travel experience—its route travels only in the Bay Area and does not offer the same amenities as Capitol Corridor. Air travel is not a viable option between the sixteen city pairs involved as there are no airports in the majority of the communities, and for those larger communities with airports, connecting between the cities served by Capitol Corridor (the ones with domestic airports) there would be such severe travel time penalties with travelling to the airport, flight check-in, the flight, and getting from the destination airport to the desired location that a traveler would be potentially done with their Capitol Corridor journey before their plane left the ground. More significantly, the air carriers are hardly providing service between these markets and when they are (e.g., Sacramento to San Francisco) it is often to make connecting flights, thus making those journeys impractical for the carriers and travelers as an alternative. The provision of an additional rail service paralleling serving the communities Capitol Corridor already serves is not cost effective or a socially acceptable option given the Capital Corridor is already playing a major role as a modal alternative in this corridor. The proposed California High Speed Rail system is planned to eventually serve Sacramento and San Jose, both stations Capitol Corridor already serves. As opposed to being a viable alternative, since many city pairs along the Capitol Corridor route would not be served, the Capitol Corridor service is instead a vital component of ensuring the planned High Speed Rail service is viable in its own. Across the world where high-speed service exists, services such as the Capitol Corridor are used as feeders and distributors for the high-speed rail systems. The objective to increase round trip service to San Jose as outlined in this SDP is precisely oriented towards ensuring Capitol Corridor is ready with hourly service to meet future California High Speed Rail in Sacramento and San Jose.

4.3 Alternatives Summary

Given the existing Capitol Corridor service, the examination of alternative modal solutions was not likely to be practical. The Capitol Corridor service characteristics (route alignment, station locations, ease of utilizing the service, connections to local/regional transit) are already established to serve and, once frequencies are increased, better serve the expansion in the identified markets. There are no known risks associated with the implementation of this SDP. The increased service frequencies create more hours of revenue service and thus better offset the expenses incurred today with trains and crews 'trapped', for instance, at the San Jose station because there is no authorized capacity to put that train and crew back into revenue service. The increased service frequencies in the identified markets will also allow subtle schedule changes which will do a better job of serving passengers during peak travel times.

5 Planning Methodology

The goal to incrementally increase service frequency on the Capitol Corridor has been discussed above as consistent with long range plans adopted by the State of California via the State Rail Plan and by the CCJPA Board

with the adoption of the Vision Plan in 2005 along with the RTPs for the service area. That the service expansions would take place along the existing route (as discussed in the assumptions section above) was inherently deemed the practical planning objective for both the State and CCJPA. Both entities sought public comment in the development and adoption of both of these plans. There were no comments suggesting the realignment of the Capitol Corridor route in either case and as such, the service plan for Capitol Corridor involves maintaining and expanding service in the existing corridor. The State Rail Plan, in every two-year update, projects ten-year ridership and revenue forecast horizons. These ridership and revenue data are developed by the Caltrans and the CCJPA in conjunction with Amtrak based on the service levels shown. As a result, the ridership and revenue projection developed by the Rail Ridership/Revenue Forecasting Model was used as a planning tool by the State/CCJPA/Amtrak (this model is explained more fully in Section 6.1.4).

The history of successful service expansions by the CCJPA provided the basis for continuing to implement service frequency increases with the host railroads. The ridership and revenue objectives from each service frequency have regularly exceeded the results predicted by the Rail Ridership/Revenue Forecasting Model yet for the ridership calculations based on this SDP; this remains the ridership/revenue tool accepted by CCJPA, Caltrans, and Amtrak. Not only were the past projects to increase service frequencies implemented with UPRR and Caltrain, these projects as well as other reliability improvements and travel time reduction projects were built within budget and on time using the established contracting and service agreements between all partners (CCJPA, UPRR, Caltrain, Caltrans, and MTC) involved with the capital projects. This track record of success confirms that an expansive planning exercise need not be conducted with respect to examining significantly altered alignments, different rail equipment or any other miscellaneous service options. In short, the planning objectives built upon the already established success. Because the existing route was the basis of all planning activity, the planning focus was upon the projects within the program which could achieve service frequency objectives and could be completed in a phased approach, taking in account the realities of funding cycles.

To reiterate, implementation of CCSEP (or SDP^{FINAL}) would increase service frequency between Sacramento and Auburn and service between Oakland and San Jose. As physical improvements are completed with the host railroads, CCJPA will increase service frequency in steps on the host railroads once several projects collectively provide the capacity to do so. Working with the host railroads, the CCJPA has prioritized a series of projects pursuant to the guidelines issued in FRA's NOFA for the FY 2010 HSIPR program. These projects are organized into two priority levels for the FY 2010 funding cycle using the "A" and "A+B" approach. Also, as already been presented and will continue to be presented, these projects are part of the overall CCSEP presented in this SDP. Broken down in this way, this SDP covers three levels of service:

- the existing base case service, or SDP^0
- the increase of one round trip between Auburn and Sacramento, or SDP^1
- the implementation of two projects between Oakland and San Jose which, in the interim, will reduce minutes of delay (as modeled) and provide track capacity (not enough capacity to equate to an additional round trip), and reduce the extent of trains meeting on single track territory. These projects will be analyzed and presented as SDP^2

The known impediment to frequency increases is constrained railroad capacity in both the SDP^1 and SDP^2 service areas. In the SDP^1 case, capacity constraints in the Auburn to Reno corridor, east of CCJPA's service area boundary in Auburn, constrain freight rail service as well as the ability of CCJPA to provide even one additional round trip

between Sacramento and Auburn. This is due to congestion in the UPRR's Roseville Freight Yard and eastward toward Reno. UPRR has funded and completed Phase One which focused on improvements on one of the main tracks between Auburn to Reno which free up some of the congestion in the Roseville Yard. Phase Two will focus on improvements and upgrades the second main track between Auburn to Reno in order to allow the additional round trip Capitol Corridor train to expand east of Sacramento to Auburn.

Similarly, SDP^2 sets the stage for a future round of projects (SDP^3, SDP^4, …, SDP^{FINAL}) which will allow for frequency increases. CCJPA worked with both UPRR and Caltrain to complete what CCJPA has termed the Phase One of the Oakland to San Jose Improvements (funded entirely by the State of California). Similar to how FRA has guided applicants for its HSIPR program applications (a railroad capacity modeling effort with UPRR and Caltrain); all parties were able to identify the capacity improvements which provided for service frequency to increase from four to seven daily round trips. The CCJPA obtained the state and local funds necessary to complete those improvements, the host railroads completed the construction of those improvements and CCJPA increased service frequencies in August 2006 to the seven round trips provided today. CCJPA, UPRR and Caltrain have completed the modeling efforts to implement SDP^{FINAL}. In other words, were funding for completing the projects not to be an issue, the projects necessary to reach the 11 round trips to/from San Jose could be completed. However, the reality is that funding constraints limit the ability to accomplish this task limited by a one-year funding allocation (FY 2010, for instance).

One additional nuance included in CCSEP is the inclusion of a new station stop at Union City. This proposed Capitol Corridor station would be adjacent to the recently modified Union City BART Station, which is associated with BART and Union City's transit-oriented development redevelopment program underway). Capitol Corridor would implement a slight re- service from the existing Niles Subdivision alignment on to the Oakland Subdivision via a new alignment (termed the Shinn Connection), back to the Niles Subdivision (as shown in Figure 5-1). The projects linked to this improvement could not be implemented at this time due to funding constraints; however, the CCJPA includes explanation of these projects as they represent an important component the CCSEP and improve the integration of Capitol Corridor service to BART in the southern East Bay.

FIGURE 5-1: UNION CITY INTERMODAL STATION SHOWING OAKLAND SUBDIVISION AND SHINN CONNECTION

This Union City re-alignment option was the subject of California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) with significant public involvement. The EIR covered impacts in creating an alignment and increase in Capitol Corridor service to Union City using the Oakland Subdivision and new Shinn Connection to allow the Capitol Corridor to serve the Union City Intermodal Transit Center (this is the collective term for the Capitol Corridor, future Dumbarton Commuter Rail, BART, and local transit facility which would house these services). The CCJPA anticipates that a new round of public involvement associated with adoption of a National Environmental Policy Act (NEPA) Environmental Assessment will be required when funding is available and awarded.

6 DEMAND AND REVENUE FORECASTS

For all the California Intercity Passenger Rail services demand and revenue forecast needs there is the California Intercity Rail Ridership/Revenue Forecasting Model (Model). It is designed to provide as accurate as possible,

consistent ridership and ticket revenue forecasts in support of short and long term route planning. Amtrak and Caltrans provide funding and oversight of the Model, perform the original data collection and Model development, and ongoing program of Model updates/revisions and survey research. An outside consulting firm, AECOM, is responsible for developing, maintaining, and applying the Model.

Key Model development was provided by over 100,000 completed rail and auto surveys with data on trip origin/destination, departure/arrival times, trip purpose, and traveler demographics. Data on departure/arrival times and trip lengths from thousands of rail trips in California as well as throughout the Amtrak system are reflected in the Model's parameters. Forecasts are based on consumer travel choices, historical data of actual rail travel, and travel market size/composition (business/leisure).

6.1 Demand Forecasts

The following discussion covers the methodology for the Model, the Model's study area, data sources,, the travel model itself and its structure, mode choice, and the calibration/validation stages of the Model.

6.1.1 Methodology

CCJPA worked with Amtrak to establish all aspects of the operational analyses for this SDP. CCJPA contracts with Amtrak for operations thus making Amtrak's involvement in assessing the planned service expansions invaluable. CCJPA, working with Amtrak, has already established an overall schedule/service plan for the Sacramento to Auburn (SDP[1]) and then, built on that schedule, a second overall schedule incorporating an Oakland to San Jose service frequency increase from seven to .nine round trips, and then from nine to 11 round trips. As well, these train schedules have been used as the basis for scheduling crews, estimating ridership, revenue, costs and expenses. This information is presented in this SDP to match the SDP[1] and SDP[2] applications to be made in FY 2010. Because much of the work has been accomplished for future rounds of funding, the CCJPA with Amtrak are well poised and organized to update this SDP over time to align it with future HSIPR applications.

The ridership/revenue Model is responsive to all of the following parameters:

- Station stop locations
- Train travel times
- Train departure/arrival times/time-of-day
- Frequency (number of trains)
- Rail fares/yields
- Competing auto travel time & cost
- Future growth rates

6.1.2 Study Area Definition

The Model study area to analyze the ridership and revenue effects of implementing CCSEP encompass Northern and Central California. This area covers the San Joaquins (Bay Area / Sacramento – Bakersfield) and the Capitol Corridor (there is also a Southern California study area). There also is a modeling link between Northern and Southern California. Also, the Model includes major thruway bus connections. The Model includes modes from intercity passenger rail, auto (private vehicle) and air (relevant for the Northern – Southern California market).

6.1.3 Data Sources

The key Model inputs are provided by Amtrak/Caltrans/CCJPA train timetables and fares. As well, the statewide highway network with for access to/from stations and for competing auto travel plays a vital role. Also, population data and forecasts from State of California are incorporated.

Variables in the travel market growth include population, income, and employment. Variables in the travel market share include travel time, line haul, access/egress, travel cost and frequency (number of trains and departure/arrival times-of-day). The Model also accounts for trip purpose market segments across commute, business, recreation and other categories. As a matter of practice, each origin-destination market is analyzed with a separate set of calculations by trip purpose.

To obtain the highway traveler data, both license plate surveys and rest area surveys were conducted. The license plate survey technique involved videotaping license plates, reducing that data and entering in observed plates, obtaining addresses from California Department of Motor Vehicles and mailing surveys. Completed surveys were returned by mail and key-entered or the respondent had an option to complete survey by internet. The rest area survey technique involved direct interview with travelers in a rest area. Data was collected and entered during the interview. These interviews were best suited for lower volume semi-rural locations where local traffic was not as significant. In total there were over 100,000 completed surveys of auto travelers from the locations as depicted in Figure 6-1.

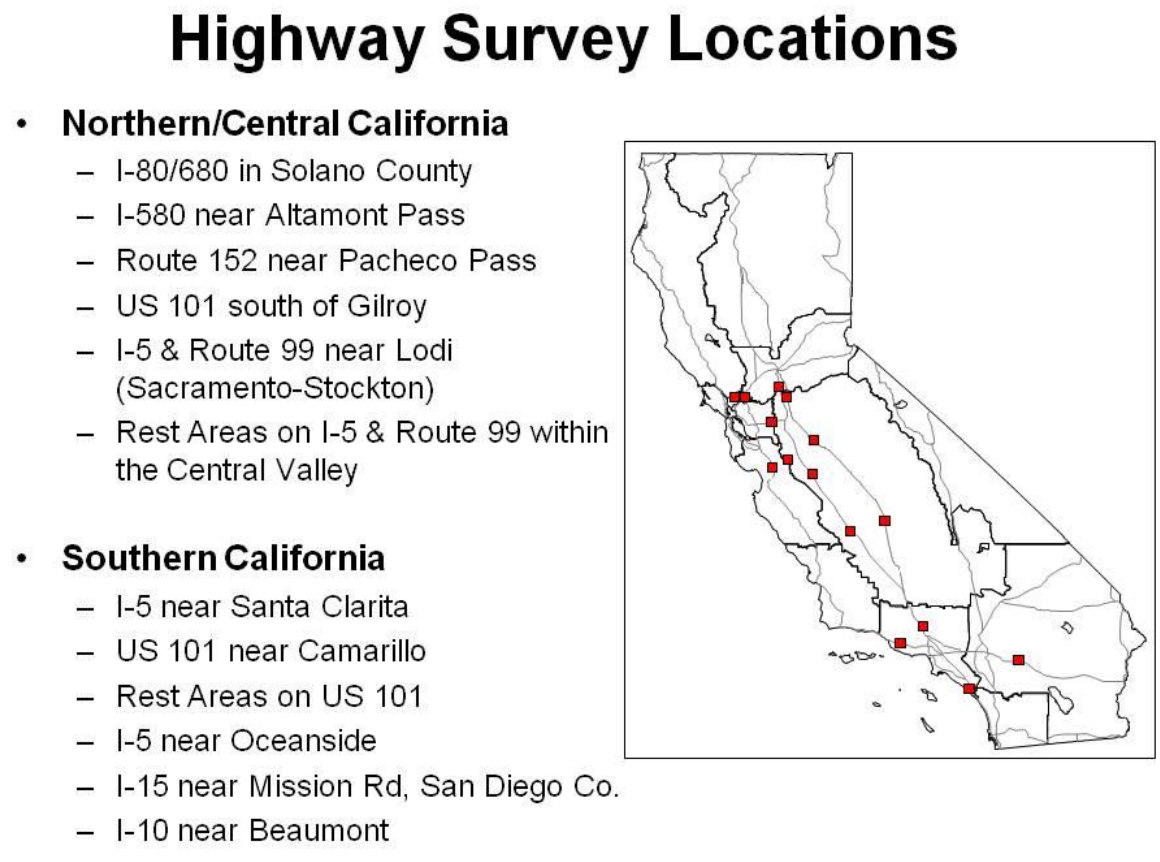


FIGURE 6-1: CALIFORNIA RIDERSHIP/REVENUE MODEL – HIGHWAY SURVEY LOCATIONS

For train traveler surveys, self-administered survey forms were distributed to passengers on-board Amtrak California Trains. These were collected and completed surveys were key-entered. Over 25,000 completed surveys were received from rail travelers.

Survey content for both the highway and rail surveys consisted of the following categories of data:

- Origin & Destination
- Location (5-digit zip code)
- Type/trip purpose
- Departure/arrival times
- Group Size / Vehicle Occupancy
- Trip Frequency
- Traveler Characteristics
- Age & gender
- Household Characteristics
- Size
- Number of vehicles
- Annual income

Beyond the surveys, other Amtrak market research and analysis was conducted. There was analysis of historical demand elasticity of price and frequency changes in California as well as nationwide and a study of parking, on-time performance and of business class on the Pacific Surfliner. Also Amtrak ridership and ticket revenue by station pair, train and route including connecting train and thruway bus riders. Lastly, air passenger data was incorporated.

An initial model which was not sensitive to changes in train departure/arrival times was developed and later a revision to include these changes revised the Model. This incorporated new time-of-day factors, departure time from origin station, arrival time at destination station, train spacing/coverage, and replacing the initial daily train frequency variable. It did not require changes to the initial travel time and fare sensitivities. The revised Model was also made to adjust to thruway bus service schedule change.

6.1.4 Travel Model

The basic model development steps required input from conducted travel surveys, socio-economic data and survey data, and the development of service parameters/assumptions. From this the travel demand models were ran with key Inputs being rail service characteristics, train schedules, travel time, frequency (departure/arrival times-of-day), revenue yield/fares, station access (highway time and cost), competing auto and air service characteristics, and socio-economic data and forecasts. Population data from California Department of Finance and employment and income from various local and state sources was also incorporated.

6.1.4.1 Travel Demand Model Structure

The structure of the model is best illustrated as shown in Figure 6-2. The model inputs described above are maintained, updated, and the parameters which change (in the case of CCSEP, frequencies, station stops, and scheduled travel locations, and future years) are input and the model structure or relationships calculate the changes to revenues and ridership.

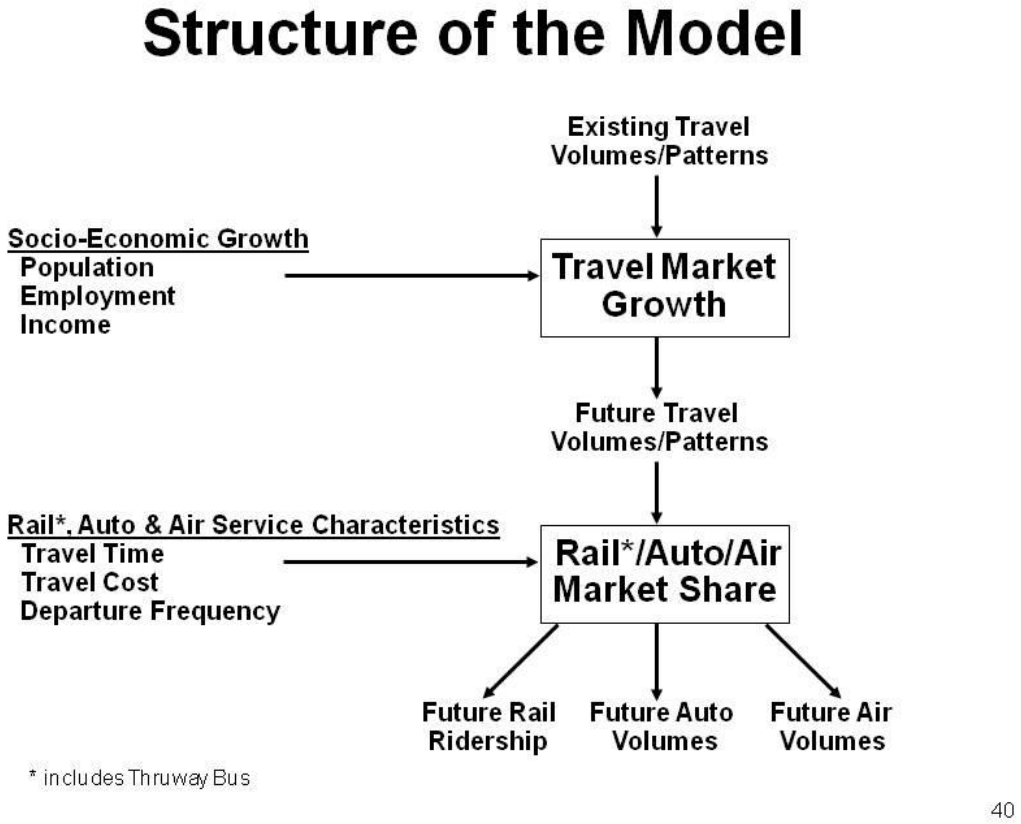


FIGURE 6-2: CALIFORNIA RIDERSHIP/REVENUE MODEL STRUCTURE

6.1.4.2 MODE CHOICE MODEL STRUCTURE

The mode choice model structure uses a nested choice model where automobile, air, and finally rail mode choices are made. It makes use of the data parameters mentioned above in selecting the mode of travel.

6.1.4.3 MODEL CALIBRATION AND VALIDATION

This model was calibrated to match observed shares for selected city pairs and then the results were validated for the respective California corridor markets included in the model. The travel market drivers include the variables of:

- Travel Time (weighted by component)
- Travel Cost
- Line Haul
- Frequency (departure/arrival time-of-day)
- Access/Egress

The drivers for trip purpose segments included commute, business, recreation, and 'other.' Overall, Table 6-1 discloses what the travel market growth drivers are for the California corridors. As mentioned throughout this document, prior CCJPA service frequency increases have exceed ridership and revenue model predictions.

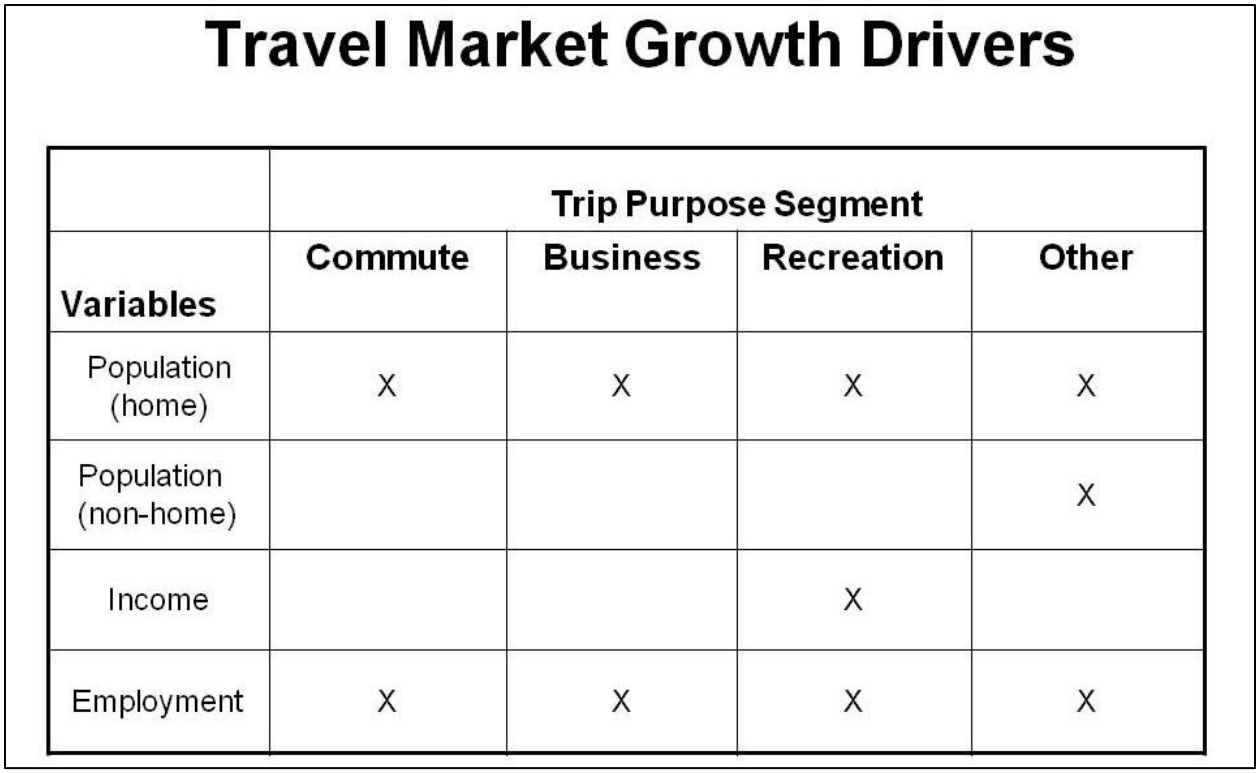


TABLE 6-1: CALIFORNIA RIDERSHIP/REVENUE MODEL TRIP PURPOSE AND VARIABLE BUSINESS DRIVERS

6.1.4.4 BASE AND FUTURE YEAR MODELS

The base year model was run for Capitol Corridor service as it presented today in FY 2010. Future year models were run after one completed fiscal year to simulate the effects of implementing SDP[1] which is presented as FY 2011. There was no model run for SDP[2] as the schedules in effect do not change from SDP[1] (i.e., the benefit of the projects does not result in schedule modification). Because the FRA application requires the data for the application, the model runs for both five years (2016) and ten years (2021) after full SDP[1] implementation is complete were also run for ridership and revenue calculations.

6.1.4.4.1 FINANCIAL SUMMARY

Table 6-2 demonstrates the summary information provided by Amtrak for implementation of SDP[1] and by default SDP[2]. What follows the table is a discussion of the Model data which was included as well as assumptions.

Incremental Financial Impact (1)	Existing Service (SDP[0]) (2)	SDP[1] (also SDP[1]+SDP[2])		
		Year 2011	Year 2016 (4)	Year 2021 (4)
Total Riders	1,644,700	1,687,800	1,868,300	2,068,103
Total Revenue (3)	$ 26,500,000	$ 27,100,000	$ 33,600,000	$ 41,720,000
Total Direct Costs	$ 51,720,000	$ 51,900,000	$ 62,500,000	$ 75,270,000
Net Impact (Rev. – Direct Costs)	- $ 25,220,000	- $ 24,800,000	- $ 28,900,000	- $ 33,560,000

1) 2010 Dollars
2) For the 12 months ending on March 31, 2010, APT fully allocated costs less G&A.
3) Does not include state revenues
4) Includes implementation of SDP2 which will has no impact on ridership/revenue/costs

TABLE 6-2: OPERATING AND FINANCIAL PERFORMANCE SUMMARY

6.1.4.4.2 Schedule Modifications

CCJPA worked with Amtrak staff to devise a schedule which will ideally serve the expansion needs of Capitol Corridor service. The schedule utilized creates an additional morning and afternoon/evening peak hour train and which directly goes toward the rationale and benefits discussed above. The schedule is shown in Table 6.B.-1. The schedule modifications to the existing schedule are as follows:

<u>One less weekday roundtrip between Oakland and Sacramento:</u>

- **The discontinuance of Train 518** (departs Oakland at 4:30 am, arrives Sacramento 6:28 am)
- **The discontinuance of Train 551** (departs Sacramento at 7:40 pm, arrives Oakland at 9:38 pm)
- **Change to Train 549's schedule:**
    - Currently departs Sacramento at 6:40 pm;
    - Proposed to depart at 7:10 pm.

<u>The extension of one daily roundtrip between Sacramento and Auburn, increasing the daily roundtrips at Auburn from one to two.</u>

- **The extension of Train 538 to Auburn**:
    - On the pre-summer 2010 schedule Train 538 terminated at Sacramento at 6:10 pm;
    - Would continue to Auburn, arriving at 7:15 pm.
- **The extension of Train 527 to Auburn:**
    - Currently originates at Sacramento at 7:00 am;
    - Would originate at Auburn at 5:55 am.
- **The extension of Train 738 to Auburn**:
    - Currently terminates at Sacramento at 6:23 pm;
    - Would continue to Auburn, arriving at 7:29 pm.
- **The extension of Train 733 to Auburn:**
    - Currently originates at Sacramento at 10:40 am;
    - Would originate at Auburn at 9:35 am.

6.1.4.4.3 Important Assumptions/Qualifications

The following assumptions and qualifications to the model results were made:

Schedule: None of the proposed schedules have been submitted to the host railroads for approval, so they are subject to change.

Equipment: Although there would be a 1.6% reduction in train miles (from 1,172,685 to 1,154,100) we do not anticipate any change to the active fleet.

T&E and OBS staffing: Even with the reduction in train miles, T&E and On-Board Services (OBS – the lounge service attendant) costs are expected to rise due to the additional Auburn service. Amtrak expect these costs to be higher for two reasons.

- The Auburn assignment is less efficient (daily hours required for Auburn will be less than the eight-hour minimum), and
- The Auburn assignment would require additional hotel and meal costs.

Unit trip related costs – The proposed changes would reduce unit trips for the Capitol Corridor route by 4.9 percent (due to one less weekday roundtrip between Oakland and Sacramento). This schedule modification is expected to reduce some of the Capitol Corridor route costs allocated by unit trips. They costs include: Yard, Operations Management, some of the Mechanical costs (see the Mechanical note below), and Police/Environment and Safety.

Mechanical costs:

Layover and turnaround costs: We are assuming no change in layover or turnaround costs based on the following.

- The contractor charge to provide three layovers at Sacramento and two layovers at Auburn would not change from the current charge for four layovers at Sacramento and one layover at Auburn.
- The reduction of one layover at Oakland and one turn at Sacramento would not materially reduce the total turnaround costs.

Maintenance costs: The proposed changes would reduce unit trips for the Capitol Corridor route by 4.9 percent (due to one less weekday roundtrip between Oakland and Sacramento), reducing Capitol Corridor route maintenance costs, which are allocated by unit trips.

Train mile related costs – The 1.6 percent reduction in train miles will likely result in a similar reduction in Fuel and Host Railroad related costs.

Passenger related costs - The proposed changes would increase passengers by 2.7 percent, increasing the Capitol Corridor route costs for: Commissions, Insurance, Sales and Marketing and Passenger Inconvenience.

Impact to other routes – Amtrak does not anticipate any actual reduction in mechanical and yard costs due to the small reduction in unit trips. Therefore, the reduction of allocated costs to the CCJPA due to the decrease in unit trips will likely result in a transfer of those costs to other routes using the Oakland maintenance facility.

Incremental Headcount - Amtrak anticipates an increase in one OBS position for the Auburn/Sacramento (SDP[1]) scenario.

One Time Costs - We have not determined or reviewed any one time costs required for laying over an additional set at Auburn.

Ticket Revenues and Ridership - Amtrak used the California Intercity Rail Ridership/Revenue Forecasting Model to forecast ridership and ticket revenue. This was discussed in greater detail above.

Food and Beverage Revenues - Amtrak estimated food and beverage revenues based on the average food and beverage revenues-per-rider on the Capitol Corridor Route for the last 12 months.

Host Railroad Costs - Amtrak based host railroad costs on the current, route specific, and cost per train mile.

Fuel Costs - Amtrak estimated fuel costs based on the average fuel costs per train mile on the Capitol Corridor Route for the last 12 months.

Train Crew Costs - T&E and OBS labor cost estimates were provided by Amtrak crew management staff.

6.1.5 MODEL FORECASTS – EXPLANATION

Amtrak with AECOM consulting have run the model based on the SDP[1] schedule, crew turns, and assumptions discussed above. The resulting ridership and ticketing revenues are processed by Amtrak and additional revenue and breakdowns of expenses are identified. Finally, the net results are tabulated and service performance metrics can be shown. These details are shown in Table 6-3 below.

OPERATING AND FINANCIAL PERFORMANCE	Existing Service (SDP[0])	SDP[1] (also SDP[1]+SDP[2])			
Performance/Financials	2011	2011 - incremental	2011	2016	2021
Riders	1,644,700	43,100	1,687,800	1,868,300	2,068,103
% Change			3%	11%	11%
Pass-miles	103,030,000	2,699,941	105,729,941	117,037,119	129,553,530
Train-miles	1,201,305	(58,864)	1,142,441	1,142,441	1,142,441
% Change			-5%	0%	0%
in millions					
Revenue					
Ticket Revenue	$24.80	$0.60	$25.40	$31.80	$39.81
Food and Beverage Revenue	$1.70	$0.00	$1.70	$1.80	$1.91
Total Revenue (2)	$26.50	$0.60	$27.10	$33.60	$41.72
% Change			2%	24%	24%
in millions					
Expenses					
Host Railroad / MoW	$2.50	($0.10)	$2.40	$2.90	$3.50
Sub - Transp	$25.86	$0.10	$25.90	$31.30	$37.83
Operations Mgmt./Crew base/Transportation	$7.33	($0.10)	$7.20	$8.70	$10.51
Yard Ops. Trans. Mgmt & Training		$0.00			
Fuel	$4.20	($0.10)	$4.10	$4.90	$5.86
T&E Labor	$10.99	$0.10	$11.10	$13.40	$16.18
OBS Labor	$2.05	$0.20	$2.20	$2.70	$3.31
Commissary / Supplies	$1.29	$0.00	$1.30	$1.60	$1.97
Station Costs	$4.09	$0.10	$4.20	$5.10	$6.19
Mechanical	$13.36	($0.10)	$13.30	$16.00	$19.25
Amtrak Maintenance of Way	$0.00	$0.00	$0.00	$0.00	$0.00
Sub-Sales/marketing	$1.29	$0.10	$1.40	$1.60	$1.83
Sales and Marketing	$0.75	$0.10	$0.90	$1.00	$1.11
Commissions	$0.54	$0.00	$0.50	$0.60	$0.72
Police, Environmental, and Safety	$0.50	$0.00	$0.50	$0.60	$0.72
Sub - G&A	$4.12	$0.00	$4.20	$5.00	$5.95
Passenger Inconvenience		$0.00			
Insurance	$0.97	$0.00	$1.00	$1.20	$1.44
General Support	$3.15	$0.00	$3.20	$3.80	$4.51
Sub-total Direct Operating Costs	$51.72	$0.10	$51.90	$62.50	$75.27
Net (Rev. – Dir. Op. Costs)	($25.22)	$0.50	($24.80)	($28.90)	($33.56)
% Change			-2%	17%	16%
Cost Recovery (Rev./Dir. Costs)	51%	n/a	52%	54%	55%

TABLE 6-3: OPERATING AND FINANCIAL PERFORMANCE

6.2 Revenue Forecasts

To provide more information about the revenue forecasts, a details of what elements comprise and have influence over ticketing and food/beverage service revenue are discussed below:,

6.2.1 Ticket Revenue Forecasts

The CCJPA develops fares in conjunction with Amtrak to ensure the Capitol Corridor service is attractive and competitive with other transportation options, including the automobile. Ticket types include standard one-way and roundtrip fares, as well as monthly passes and 10-ride tickets valid for 45 days. These discounted multi-ride fares are competitive with other transportation modes and have become increasingly popular due to the high number of repeat riders who use the Capitol Corridor trains as their primary means of travel along the corridor. The monthly and multi-ride tickets can be used year-round for all regularly scheduled train service. Reservations are unnecessary for any of the trains.

The current fare structure is based on a one-way tariff, with the roundtrip tariff equal to double the one-way tariff. Discount fares are available to seniors, students, military personnel, and children under age 15. Amtrak also provides reduced fares for certain national partners, such as AAA members. Fare modifications are used selectively to maximize revenue and ridership, while still working toward the state's farebox return goal of 50 percent.

A recent AAA study estimates the cost of driving a car at 45-71 cents per mile, not including tolls and parking. The average cost of a full-fare Capitol Corridor ticket is about 35 cents per mile traveled, and can be as low as 11 cents per mile with a frequently used multi-ride ticket.

During the past 10 years, the CCJPA has incrementally increased fares based on service improvements such as added trains, reduced travel times and new stations. In FY 2007-08 the CCJPA implemented a simplified fare structure that discontinued seasonal and holiday pricing and recalibrated city-pair and multi-ride ticket prices to provide equitable fare tariffs among ticket types. This revised fare structure provides consistency to passengers by eliminating ticket price fluctuation and also enables the CCJPA to better manage revenue, leading to revenue growth that exceeds ridership growth. The CCJPA and Amtrak support strategic fare increases but implementation in FY 2009-10 will be based on various factors including ridership, revenue levels, and overall economic conditions along communities in the corridor. As well, the planned two fare adjustments for FY 2010-11 will be evaluated in a similar fashion but must consider Amtrak's anticipated increases in operating expenses.

In conjunction with marketing efforts, the CCJPA develops a variety of fare promotions designed to increase customer satisfaction and ridership. Opportunities include:

- Customer loyalty and referral programs to attract new riders
- Promoting ticket purchases online and through the Ticket Vending Machines (TVMs) installed at all Capitol Corridor stations
- Testing and launch of the Automated Ticket Validation (ATV) pilot program with Amtrak, which will enable real-time validation and ticket sales onboard trains. Benefits include customer convenience, real time information on ridership and revenue and operating cost efficiencies

- Expanding awareness of the transit connectivity programs such as the Transit Transfer Program, joint ticketing, and transfer of motorcoach bus routes to parallel local transit services to help increase overall ridership and revenues

All of these measures contribute toward meeting the State's farebox return goal of 50%.

The description of the ticketing revenue program above will remain in effect; there are no major changes to be implemented as a result of implementing SDP^1 or SDP^2.

6.2.2 Auxiliary Revenue Forecasts

Auxiliary revenue for the Capitol Corridor service consists of food/beverage service sales. The café/lounge cars provide the location for food and beverage sales. The CCJPA, working with Caltrans, has taken steps to improve the food and beverage selections and are reaping benefits in customer satisfaction and increased sales of menu items. Steps have been taken to reduce food spoilage, as well. The CCJPA mechanical management team and Amtrak continually improve the efficiency and operation of the refrigerated "chiller" units on the café cars. Also in fall 2009, CCJPA, Caltrans, and Amtrak began plans to upgrade the point-of-sale process with a rollout planned for late 2010. This upgrade will improve the efficiency and back-office management of the food and beverage service, including the reduction in food spoilage. The CCJPA works with its partners to see that food and beverage service exceeds customer expectations while contributing effectively to the services' revenues. Other than striving to continually reduce the costs of offering food/beverage service without degrading the quality offered, there are no substantial auxiliary revenues which would be changed as a result of implementing SDP^1 or SDP^2.

7 Operations Modeling

The CCJPA works with each of its host railroads (UPRR and Caltrain) staff who use network simulation models as tools for evaluating schedules, track capacity investments and general operations. The CCJPA worked with UPRR to model the results of the track improvements required for SDP^1 and SDP^2 as SDP^1 and SDP^2 involve proposed track projects on UPRR-owned property.. What follows is a discussion of the UPRR's model, CCJPA's schedule inputs, the train consists utilized, the rail infrastructure, and finally the results of the network simulations as relates to the SDP^1 and SDP^2 applications.

7.1 Modeling Methodologies

Rail Traffic Controller (RTC) is a comprehensive rail network computer simulation model developed by Berkeley Simulation Software (BSS). RTC is a sophisticated program designed to realistically simulate both freight and passenger rail operations. The characteristic that sets RTC apart from all other rail modeling instruments is that it resolves complex multi-train conflicts in realistic ways. It has proven to be fully capable of handling any level of train or track complexity. It does not simply resolve conflicts between pairs of trains, but rather looks globally at multi-train conflicts in much the same way as a dispatcher in a control center would.

The logic is cost based. As the model dispatches, each train's cost and performance are constantly recomputed to ensure the overall best solution for all trains in moving them to their destinations based on train priorities and track network configuration. It is the dynamic costing and multi-train view that enables RTC to replicate the performance of train dispatchers. In addition, RTC contains a complete interface for specifying signals with up to 32 aspects.

There is no other simulation model that provides this portfolio of functionality. The history of successful capacity planning projects using this system is well documented over the past several years. RTC is now the standard among freight railroads and is becoming the standard for passenger operations. The majority of the Class I Railroads, including the UPRR, BNSF, CSX, NS, Amtrak, KCS and TFM (Mexico), have selected RTC for operations planning and capacity analysis. RTC is also now the accepted rail capacity analytical standard during judicial, governmental and regulatory review.

Other features of RTC that are particularly valuable include the ways in which it displays simulation results. While timetables and time-distance charts are useful for analysis on simple networks, they do not show conflict resolutions at a sufficient level of detail. RTC solutions are displayed in all the traditional ways, but it is the animation with its multitude of color modes that brings the solution to life. Railroad operators can view everything from train costs and schedule adherence to train lengths on one screen. The integrity of solutions is verifiable and presentable without spending hours examining abstract reports.

Traditional event-based simulations may be adequate at modeling simple mainline track configurations, but they have not proven to be very responsive to large, complex networks with high train volumes. This is especially important in shared-use corridors, such as the UPRR Northern California Rail network, where the density and dynamics of passenger and freight trains require a dispatching logic that effectively addresses meet, pass, overtake, and intensive interlocking routing issues. In summary, RTC is the only model that has a proven track record in being able to accurately simulate large, robust networks.

Evaluating Train Performance: RTC contains a user-friendly train performance calculator (TPC – see Figure 7-1). This tool is used for computing minimum run times for trains running from one specified point to another over a network without interference from other trains. Experimentation with various stopping patterns, routing configurations, dwell times and locomotive and train-set types provides the ability to identify the most effective scheduling/dispatching solution for a particular train type with its associated specific physical characteristics.

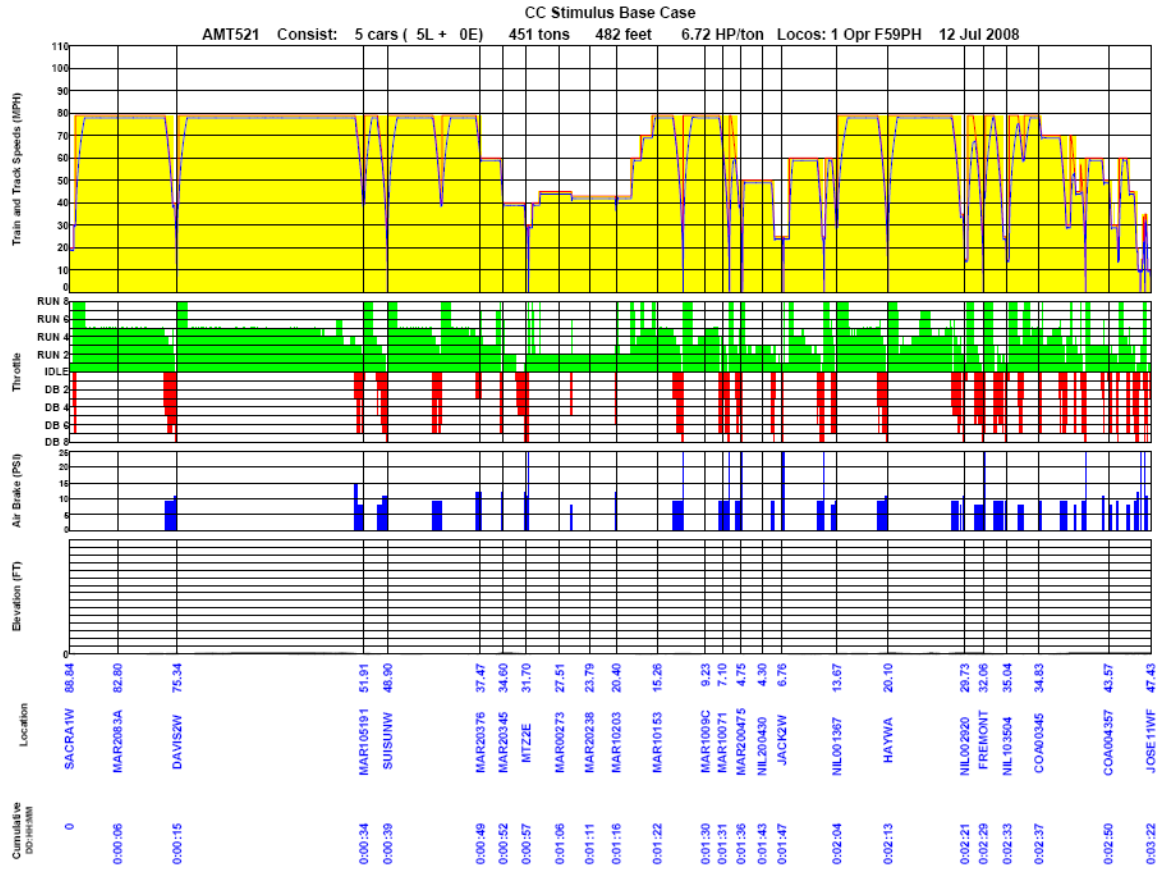


FIGURE 7-1: TRAIN PERFORMANCE CALCULATOR EXAMPLE FROM RTC MODEL

Developing Realistic Operating Plans: RTC eliminates the traditional practice of developing schedules and train movement alternatives based on average run times--an oversimplification that can lead to unachievable operating plans.

Arrival, departure times and other parameters are modified using RTC to improve schedules and craft the most fluid train dispatching scenarios. Furthermore, as traffic density increases, the potential for conflicting train movements increases as well, resulting in potential delays. This is precisely where RTC offers unprecedented, effective functionality.

RTC simulates train movements with the goal of achieving a cost-effective, overall system solution. When an excessive number of trains are specified to operate on the network, the model will delay trains as needed (at either terminals or en route) until clear routes become available. This characteristic provides the ability to vary departure times, dwell times, and the dynamics of train-set turns in order to test the vigor of schedules, the effectiveness of train dispatching and the capacity of the physical plant.

In summary, the RTC model replicates and predicts actual train movements; accurately identifying train dispatching and routing conflicts (see Figure 7-2). Each simulation case analysis delivers precise comparisons of capacity and train delay at specific and varied levels of train service within a specified definition of infrastructure and physical characteristics.

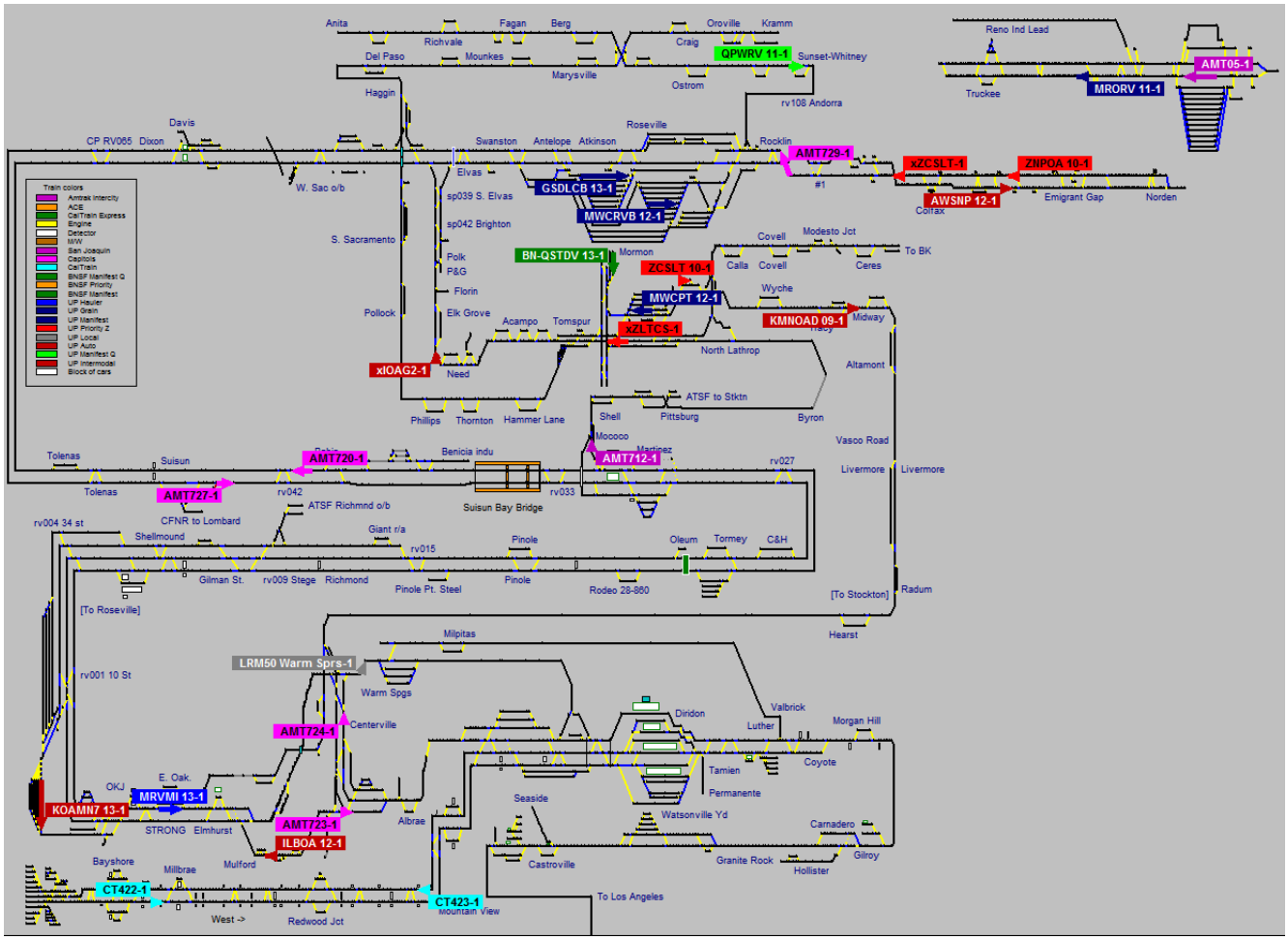


FIGURE 7-2: NETWORK SIMULATION MODEL

Adding New Service: The effects of adding new trains to a congested corridor are comprehensively evaluated using the RTC model. The simulation measures the delay and performance resulting from new service by specific train as well as at the more aggregated levels of train class or the overall system network. These simulations are defined with sufficient duration to encompass all days of the week so that both "light" and "heavy" days, with peak and off-peak periods, can be duplicated and observed.

Interlockings: RTC is utilized to evaluate the benefits and costs of adding, modifying, eliminating, or networking interlockings, either in mainline road territory or within a complicated terminal area or district. The model (output) simulates delays associated with separate or segmented interlockings. This simulation is then repeated with a modification in the physical plant criteria assuring an efficient, unified network control system.

Construction Staging and Maintenance-Of-Way Windows: RTC provides the ability to develop realistic construction staging plans and to schedule the most effective maintenance-of-way (MOW) time slots on busy main tracks and terminals. RTC displays the effects of track impedances and speed restrictions on train movements with explicit graphics. The model offers the capability of experimenting with various staging scenarios and/or MOW windows to determine the best train schedules, physical plant configurations and timeframes to plan capital improvement construction or perform maintenance activities.

Evaluating Various Switch Types: RTC distinguishes the performance between controlled, electrically locked, self-restoring, and spring and manual switches. The effects of each type of switch are easily evaluated by simply changing the switch type at a node.

Establishing or Moving Crossover Locations: Placement of crossovers can have dramatic effects on capacity utilization and train performance in multiple-track territories. RTC provides the ability to move crossovers around on the rail network model and test different assumptions on speeds for diverging train movements, a significant advantage in identifying locations that are best suited for a given set of train types and schedules. This modeling of a variety of crossover configurations also contributes to developing the most effective solutions to congestion issues as they are observed in the simulation.

Adding, Extending or Removing Passing Sidings: The utility of passing sidings or long segments of main track in multiple track territory is determined by their size and location. The ideal location for a passing siding or additional main track segment for 30 MPH track can be quite different than for 50 MPH, 80 MPH or 110 MPH track. The RTC simulation model enables the user to determine whether siding or additional main track segments are of appropriate length and location for the size and speed of the trains being operated, or to identify the best train sizes and operating speeds to match a specific track configuration.

Signals and Signal Blocks: Up to 32 aspects are available to create signal blocks for both Diverging and Non-diverging movements to accurately reflect signal restrictions. Interactive signal logic spaces trains at safe following distances based on specified signal blocks to represent signal system constraints on train operations.

Stringlines and Track Occupancy Charts: In addition to producing traditional stringline graphs (time/distance plots), RTC generates track occupancy charts that display which trains occupy specific tracks at any time through the simulation. This is very useful for identifying "slots" at station platforms, and for evaluating track utilization in yards and intermodal facilities. The times displayed for a train are from head-end arrival to rear-end departure.

Operating Costs and Train Delay: RTC resolves conflicts by choosing the lowest cost solutions that are practicable. The coefficients applied by RTC's cost function are user defined. The simulation logic seeks multiple solutions to problems and chooses the least expensive one, leading to a high degree of flexibility. For example, depending on the cost coefficients, a passenger train that is ahead of schedule might be held for several minutes to allow a freight train to pass if the freight train's crew is close to their hours-of-service limit. This solution protects the on-time arrival of the passenger train at its final terminal while maintaining a cost-effective fluid operation for the freight train. When such events occur, users can see that trains need to be rescheduled or that the overall system is at capacity and additional infrastructure is needed.

Output Statistics and Measures: RTC produces summaries of dispatch results by train types and segments that include velocity, travel time, delay, conflicts, miles traveled, and fuel consumed. These statistics are compared between case iterations to measure the impact of changes to operating procedures and network modifications between case iterations.

7.2 Operating Timetables

CCJPA worked both with Amtrak and UPRR in developing the operating timetables for SDP[1]. In practice, CCJPA works with these entities and other service partners such as ACE, Caltrain, and Caltrans whenever timetables are updated throughout the year. This is the process which has resulted in the existing time table which is included in Appendix 1 which, for purposes of this SDP is termed SDP[0]. Included in this section as Table 7-1 is the operating

weekday timetable for SDP[1]. As stated above, SDD[2] does not include any service changes from SDP[1]. The SDP[1] timetable reflects the best turn of trains, train meets and travel times which could be developed at present. They have been used to establish the modeling results discussed above. They are the basis for the crew and train turns and they form the foundation of the operational results for ridership and revenue.

WEEKDAYS

WWD STAS		ACE 1 MO-FR EX HOL AM	521 MO-FR EX HOL AM	ACE 3 MO-FR EX HOL AM	523 MO-FR EX HOL AM	ACE 5 MO-FR EX HOL AM	525 MO-FR EX HOL AM	11 DAILY AM	527 MO-FR EX HOL AM	529 MO-FR EX HOL AM	ACE 7 MO-FR EX HOL AM	531 MO-FR EX HOL AM	711 DAILY AM	533 MO-FR EX HOL AM	535 MO-FR EX HOL AM	537 MO-FR EX HOL PM	541 MO-FR EX HOL PM	713 DAILY AM	543 MO-FR EX HOL PM	5 DAILY PM	545 MO-FR EX HOL PM	715 DAILY PM	547 MO-FR EX HOL PM		551 MO-FR EX HOL PM	717 DAILY PM	553 MO-FR EX HOL PM
COX	DP																			1.46					new		
ARN	DP								5.55	6.35										---					times		
RLN	DP								6.18	6.58										---					for		
RSV	DP								6.28	7.08										2.55					train		
SAC	AR							6.15	6.57	7.37															#551		
SAC	DP		4.30		5.30		6.20	6.35	7.00	7.40		8.30		9.20	10.10	12.10	2.10		3.35	D 4.11	4.40		5.40	existing	7.15		9.10
DAV	DP		4.45		5.45		6.35	6.50	7.15	7.55		8.45		9.35	10.25	12.25	2.25		3.50	D 4.42	4.55		5.55	train	7.30		9.25
SUI	DP		5.09		6.09		6.59	---	7.39	8.19		9.09		9.59	10.49	12.49	2.49		4.14	---	5.19		6.19	#549	7.54		9.49
MTZ	AR		5.28		6.28		7.18	7.28	7.58	8.38		9.28	10.00	10.18	11.08	1.08	3.08	3.31	4.33		5.38	6.25	6.38	no	8.13	8.58	10.08
MTZ	DP		5.30		6.30		7.20	7.34	8.00	8.40		9.30	10.03	10.20	11.10	1.10	3.10	3.34	4.35	D 5.24	5.40	6.28	6.40	longer	8.15	9.01	10.10
RIC	DP		5.55		6.55		7.45	---	8.25	9.05		9.55	10.28	10.45	11.35	1.35	3.35	3.59	5.00	---	6.05	6.53	7.05	operates	8.40	9.27	10.35
BKY	DP		6.02		7.02		7.52	---	8.32	9.12		10.02	---	10.52	11.42	1.42	3.42	---	5.07	---	6.12	---	7.12		8.47	---	10.42
EMY	AR		6.08		7.08		7.58	8.10	8.38	9.18		10.08	---	10.58	11.48	1.48	3.48	---	5.13	A 6.10	6.18	---	7.18		8.53	---	10.48
EMY	DP		6.10		7.10		8.00	8.20	8.40	9.20		10.10	D 10.48	11.00	11.50	1.50	3.50	D 4.18	5.15		6.20	D 7.13	7.20		8.55	D 9.48	10.50
OKJ	AR		6.21		7.21		D 8.18	8.35	8.51	D 9.38		D 10.28	11.00	D 11.18	12.01	2.01	4.08	4.30	5.26		6.38	7.25	7.31		9.13	10.00	11.08
OKJ	DP		6.23		7.23		---	8.50	8.53	---		---		---	12.03	2.03			5.28				7.33				
OAC	DP		6.32		7.32		A 8.25	---	9.02	A 9.45		A 10.35		A 11.25	12.12	2.12			5.40				7.44				
HAY	DP		6.43		7.43			---	9.13						12.23	2.23			5.52				** 7.56				
FMT	DP	5.57	6.59	7.12	7.59	8.17		---	9.29		11.07				12.39	2.39			6.07				8.15				
GAC	DP	6.16	L 7.16	7.31	L 8.16	8.36		---	9.46		11.26				12.56	2.56			6.27				8.33				
SJC	AR	6.30	7.35	7.50	8.35	8.50		9.55	10.10		11.40				1.15	3.15			6.45				8.55				
		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM		PM	PM	PM	PM	PM	PM	PM	PM	PM		PM	PM	PM
TURN TO			542		528		526		532	536		716	718	534	538	544	540	OMF	546		OMF	OMF	SJC		OMF	OMF	OMF
TIME TO TURN			8'50		35"		38"		2'15"	OMF		2'42"	OMF	2'13"	1'50"	2'35"	40"		30"								

Capitol Corridor 2nd ARN train Andrews/Hanrahan — WEEKDAYS

WEEKDAYS

EWD STAS			520 MO-FR EX HOL AM	522 MO-FR EX HOL AM	712 DAILY AM	524 MO-FR EX HOL AM	6 DAILY AM	526 MO-FR EX HOL AM	714 DAILY AM	528 MO-FR EX HOL AM	530 MO-FR EX HOL PM	716 DAILY PM	ACE 2 MO-FR EX HOL AM	532 MO-FR EX HOL PM	534 MO-FR EX HOL PM	536 MO-FR EX HOL PM	538 MO-FR EX HOL PM	ACE 4 MO-FR EX HOL PM	540 MO-FR EX HOL PM	542 MO-FR EX HOL PM	ACE 6 MO-FR EX HOL PM	718 DAILY PM	ACE 8 MO-FR EX HOL PM	544 MO-FR EX HOL PM	546 MO-FR EX HOL PM	548 MO-FR EX HOL PM	14 DAILY * PM
SJC	DP					6.40				9.05			12.05	12.20			3.00	3.35		4.20	4.35		5.35	5.50	7.15		8.39
GAC	DP					6.52				9.19			12.16	12.32			3.14	3.46		4.32	4.46		5.46	6.02	7.27		---
FMT	DP					7.09				9.38			12.34	12.49			3.33	4.04		4.49	5.04		6.04	6.19	7.43		---
HAY	DP					7.24				9.54				1.04			3.49			5.04				6.34	** 7.59		---
OAC	DP					7.34		8.55		10.04				1.14			3.59			5.14				6.44	8.10		---
OKJ	AR					7.43		9.03		10.13				1.23			4.08			5.23				6.53	8.18		9.32
OKJ	DP	existing	5.40	6.30	7.30	7.45		9.15	10.05	10.15	12.15	1.05		1.25	2.50	3.30	4.10		4.50	5.30		5.50		6.55	8.20	9.20	9.47
EMY	AR	train	5.48	6.38	7.38	7.53		9.23	10.13	10.23	12.23	1.13		1.33	2.58	3.38	4.18		4.58	5.38		5.58		7.03	8.28	9.28	10.02
EMY	DP	#518	5.50	6.40	7.40	7.55	8.10	9.25	10.15	10.25	12.25	1.15		1.35	3.00	3.40	4.20		5.00	5.45		6.00		7.05	8.30	9.30	10.12
BKY	DP	no	5.54	6.44	---	7.59	---	9.29	---	10.29	12.29	---		1.39	3.04	3.44	4.24		5.04	5.49		---		7.09	8.34	9.34	---
RIC	DP	longer	6.02	6.52	7.50	8.07	---	9.37	10.25	10.37	12.37	1.25		1.47	3.12	3.52	4.32		5.12	5.57		6.10		7.17	8.42	9.42	---
MTZ	AR	operates	6.27	7.17	8.16	8.32	8.45	10.02	10.51	11.02	1.02	1.51		2.12	3.37	4.17	4.57		5.37	6.22		6.36		7.42	9.07	10.07	10.48
MTZ	DP		6.29	7.19	8.19	8.34	8.49	10.04	10.54	11.04	1.04	1.54		2.14	3.39	4.19	4.59		5.39	6.24		6.39		7.44	9.09	10.09	10.54
SUI	DP		6.48	7.38		8.53	---	10.23		11.23	1.23			2.33	3.58	4.38	5.18		5.58	6.42				8.03	9.27	10.28	---
DAV	DP		7.12	8.02		9.17	9.31	10.47		11.47	1.47			2.57	4.22	5.02	5.42		6.22	7.07				8.27	9.52	10.52	11.33
SAC	AR		7.38	8.28		9.45	10.00	11.13		12.15	2.13			3.25	4.48	5.22	6.02		6.48	7.35				8.55	10.25	11.18	11.59
SAC	DP						10.09									5.25	6.05										12.19
RSV	DP						10.35									L 5.48	L 6.28										
RLN	DP						---									L 5.56	L 6.36										
ARN	DP						---									6.30	7.10										
COX	AR						11.21																				
			AM	AM	PM	AM	PM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	AM
TURN TO			531	533	717	535		537	703	541	543	BFD		545	547	ARN	ARN		551	553		BFD		SAC	SAC	SAC	
TIME TO TURN			50"	50"		25"		55"		1'55"	1'10"			1'15"	50"				27"	1' 35"							

* TRAIN 14 DP FROM SAC WILL SHOW 11:59P FOR ARROW ONLY.

** 546 meets 547 at Hayward

BLUE BACKGROUND INDICATES SAN JOAQUINS

TABLE 7-1: OPERATING TIMETABLE FOR SDP[1] – ADDITIONAL SERVICE TO/FROM AUBURN

7.3 EQUIPMENT CONSISTS

The equipment (see Table 7-2) used in the Capitol Corridor service is shared as part of a pooled fleet with the San Joaquins Intercity Passenger Rail service. This fleet, termed the Northern California Fleet, is utilized in a manner where train consists do not stay coupled together on a long-term basis. With that interchangeability, a typical trainsets comprises a locomotive, one café car, one coach cab car, and, typically, three coach cars (the number of coach cars can vary). All rolling stock accessible to the public and currently in revenue service has two levels. No modifications to the makeup of the typical train consists, the Northern California Fleet, are expected as a result of implementing the SDP.

General vehicle information	Northern California Fleet
Number of Cars	84 in revenue service
Vehicle dimensions (exterior)	10'2" wide, 85'0" long, 16.1" high
Battery voltage	74 Vdc-72 Vdc
Hotel Voltage	110 vac-480 vac
Floor system	Ply-aluminum phenolic
Vehicle weight (average)	Approx. 157,000 lbs.
Seats	Varies per car (44-90 seats)
Passenger load (180 lbs./passenger)	15,480 lbs.
AW1 weight load	165,000 lbs.
Slide Control System:	E-7 Wabco
Exterior Finish	Stainless Steel & Paint

TABLE 7-2: NORTHERN CALIFORNIA PASSENGER RAIL FLEET GENERAL VEHICLE INFORMATION

There are a variety of car types comprising the Northern California Fleet including 66 coach cars and 18 café cars (see Table 7-3). Morrison Knudsen built 66 California Cars passenger rail cars for California These cars began service in 1994. They are bi-level cars with four different configurations that include a Cab Car, Trailer/Coach Car, Café Car and a Baggage Coach Car configuration. Alstom Transportation built the twelve Surfliner cars , and were put in service beginning in 2001. These are bi-level cars with three different configurations that include a Cab Baggage Car, Trailer Coach Car, and a Café Car configuration. Six Superliners cars owned by Amtrak also operate in the Northern California Fleet. These are bi-level cars built by Pullman-Standard, with 4 coach cars and 2 café cars.

Existing Car Type	Quantity	Car Numbers	Brand
Cab Cars	14 each	8301-8314	California Cars
Baggage/Coach Car	6 each	8201-8206	California Cars
Café Cars	14 each	8801-8814	California Cars
Trailer/Coach Cars	32 each	8001-8032	California Cars
Cab/ Baggage Cars	5 each	6961-6965	Surfliner
Trailer/Coach Cars	5 each	6461-6465	Surfliner
Café Cars	2 each	6361-6362	Surfliner
Coach Cars (owned by Amtrak)	3 each	34943, 34953, 34981	Superliner
Coach/Baggage Cars (owned by Amtrak)	1 each	31934	Superliner
Café Cars (owned by Amtrak)	2 each	35003, 35010	Superliner
Total fleet	**84 Cars**		

TABLE 7-3: NORTHERN CALIFORNIA FLEET CAR TYPES AND QUANTITY

SDP[1] does not require additional trainsets and can be run with the 8.5 trainsets used today in existing service according to the schedule shown in Table 6.B.-1.

7.4 Rail Infrastructure Characteristics

The Capitol Corridor route extends from North to South, utilizing UPRR's Roseville, Martinez, Niles and Coast Subdivisions as well as a short segment of the Peninsula Corridor Joint Powers Board's Caltrain line from CP Coast to San Jose. UPRR operates freight trains over the entire route, with major operating hubs at Oakland and Roseville. The route is part of the General System of Railroad Transportation, and the track is standard gauge. The majority of the route has multiple main tracks, and the entire route is dispatched using Centralized Traffic Control (CTC). Most of the route is classified as FRA Class V, which permits maximum freight train speeds of 70 MPH and maximum passenger train speeds of 79 MPH. Along the route are numerous CTC-controlled crossovers as well as various yard tracks, 119 public grade crossings and two movable-span bridges (crossing the Sacramento River near Sacramento and crossing the Suisun Bay near Martinez), in addition to numerous fixed bridges to crossing waterways, roads, and other railroads. The UPRR and Caltrain have both begun work to design and implement Positive Train Control (PTC) for their respective tracks, which is a mandated train control system that will be applicable to this route by 2015. Because the majority of the route has multiple main tracks, those sections of single track have been identified by CCJPA and UPRR as locations where additional railroad capacity can be achieved by constructing additional main tracks. The projects identified for SDP[1], SDP[2], and the remaining projects for the Oakland to San Jose Track Improvement Program (Phase 2) are designed to increase the route's capacity by constructing additional main tracks.

7.5 Outputs

The UPRR utilized the UPRR Northern California Rail network RTC model (as previously described) to evaluate the effect of the service plan schedule coupled with the improvements associated with SDP[1] and SDP[2]. With every model simulation, the base-case is run first (run "A"). This models existing operations and current levels of freight and passenger rail service which provides performance characteristics including transit hours per train, velocity, and delay minutes per 100 train miles. The next simulation (Run "B") is to load the expanded freight operations, if there are any, and document what degradation, if any, occurs. The next simulation (Run "C") is to add the passenger rail service changes (typically an increase in frequency or a change to the schedule), if there are any, and again view the performance characteristics. If there are no new service changes to the freight or passenger rail service, that simulation is skipped and the next simulation is selected. Finally, one or more track improvements which are thought to restore the performance characteristics to Run A conditions or better are loaded into the model as Run "D". Particular track improvements can be taken out or added in to test the sensitivity of the performance characteristics against the expanded freight and/or passenger service levels. In this way, UPRR utilized the Northern California Rail network RTC model to demonstrate the performance characteristics of the series of improvements and service frequency changes.

For SDP[1], the approach did not include any change to the existing freight service levels so the model runs were Run A, Run B and Run C. The results of the model runs are summarized in Table 7-4.

Auburn / Donner RTC Summary

7/26/2010

Sacramento - Auburn CCJPA Train Pairs

	1 Pair	2 Pairs →			
	A		B		C
Improvements & Measurements	**TODAY Donner Ph 1 Complete**		**"A" + Add'l CCJPA Auburn Pair**		**"B" + Donner Ph 2**	
Improvements Included						
1. CTC Track 2: Bowman to Colfax (10 mi)	N		N		Y	
2. Clear Track 2 Tunnels: Bowman to Colfax	N		N		Y	
3. Construct 2MT: Switch 9 to Shed 10 (7 mi)	N		N		Y	
4. Install crossover at West Reno (MP 239.1)	N		N		Y	
Total Cost ($MM)					**$51.1**	
Roseville Sub Daily Trains	**Actl**		**Actl**	**vs Base**	**Actl**	**vs Base**
Capitol Corridor	**2**		**4**		**4**	
California Zephyr	2		2		2	
All Freight	19		19		19	
Velocity (MPH)						
Capitol Corridor	32.5		31.2	(4%)	32.5	0%
All Freight	21.8		21.6	(1%)	22.2	2%
Stop Delay Min per 100 TM						
Capitol Corridor	0.8		2.2	(169%)	0.3	65%
All Freight	9.5		12.1	(26%)	6.7	30%
Stop Delay Min per 10,000 TM						
Capitol Corridor	81.6		219.9	(169%)	28.6	65%

TABLE 7-4: SDP[1] RTC MODEL RESULTS SUMMARY

UPRR has already spent $22 million to notch tunnels in the Donner Summit area in what can be termed Phase One. Phase One work included installation of CTC signaling along a portion of the line, a crossover at Colfax, and notching of tunnels in the Donner Pass area to allow double-stack containers. Previously, all double-stack container traffic was routed toward the Feather River Canyon route which could allow double stack container traffic and less train miles for double stacked trains. Now, with the completion of Phase One, the nature of freight traffic and capacity has changed. The Feather River route has seen a marked decrease in freight traffic. The Phase One work increased capacity, allowed for longer double-stacked trains over Donner Summit, and resulted in a net reduction of train starts (more double stack trains but less single stack trains, for a net reduction in trains). This work, completed in 2009, was the foundation for creating capacity for completing the Phase Two work. In the interim period between Phases One and Two, the one daily round trip train between Auburn and Sacramento has been well above the 90% on-time performance standard. Unfortunately for future HSIPR applications, FRA has indicated that these non-Federal expenditures may not count against matching funding required of the FY 2010 HSIPR program. This policy directly undercuts the available non-federal funds CCJPA has available to utilize to complete future track capacity enhancements to achieve the 11-round trip goal to San Jose. As well, the policy

jeopardizes long-term goals to also serve Union City with an intermodal passenger rail station. Aside from the obvious policy implications, from a modeling perspective the UPRR's model now reflects the Phase One improvement in the Base Case (Run A) which is far easier to convey and understand for its benefits than prior to Phase One being included in the model.

As per the above methodology, Run B loads the additional Capitol Corridor train service to/from Auburn. And finally, Run C includes the package of four sub-improvements included in Project 1 which demonstrate that the performance characteristics are restored to at least match or improve upon the base case. If any one or more of the four sub-improvements were removed, the performance characteristics would result in a net degradation from the base case conditions.

SDP^2 does not involve anything other than modeling base case conditions of freight and passenger rail service and "turning on" the project improvements for Newark-Albrae Siding Connections (Project 4) and the Fremont Platform Extension (Project 8). Since there are no frequency increases inherent to those projects, the benefits are only in the reduction stop delay minutes per 100 train miles. UPRR has modeled an entire package of track improvements on their territory between Oakland and San Jose as shown in Figure 7-3 (for purposes of the graphic which UPRR provided, UPRR's projects 5, 6, and 10 are included as Project 4 in this SDP; UPRR's projects 1 and 2 are included as Project 3 in this SDP; UPRR projects 4 and 9 are included as Project 9A in the SDP – see Table 8.A.-1). These improvements, collectively, will provide capacity for 11 round trip trains to/from San Jose; however it is not feasible with funding constraints to apply for all of these projects at this time. Thus, SDP^2 only includes these two projects. The performance characteristics for implementing SDP2 are provided in Table 7-5.

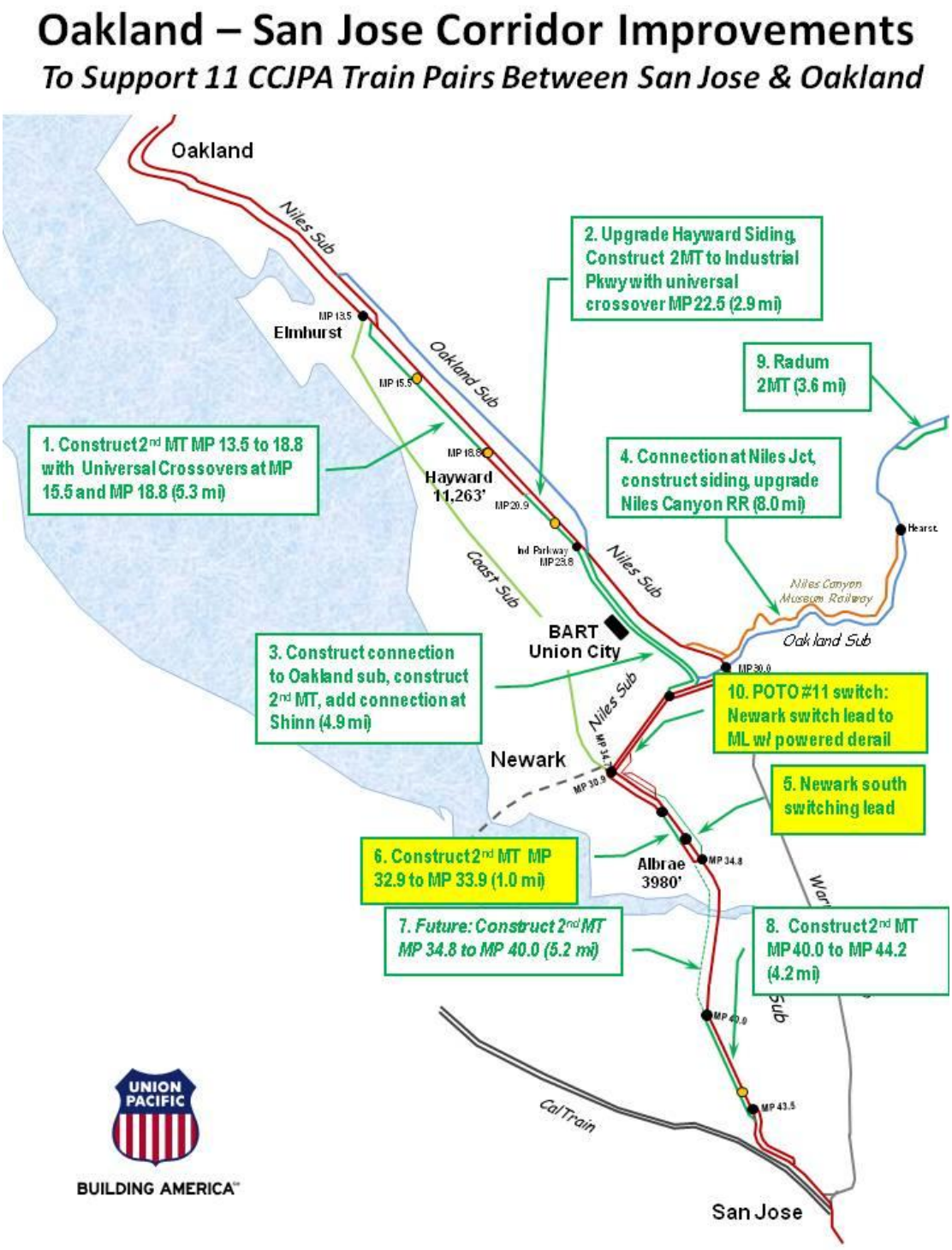
Capitol Corridor: Oakland to San Jose

Realiability Project Matrix for HSIPR SDP [2]

Improvements & Measurements	Norm Base	+ Project 4 (or UPRR Projects 5, 6, 10)[1]	
5. Newark South Switching Lead (& ML TO removal)	N	Y	
6. Newark - Albrae 2MT (1.0 mi), *(incl ML TO removal)*	N	Y	
10. Power Operate North Newark Switch	N	Y	
Velocity (MPH)			
Capitol Corridor	39.1	39.5	1%
Amtrak - Coast Starlight	35.0	35.5	1%
Delay Min per Train			
Capitol Corridor	3.1	2.6	15%
Amtrak - Coast Starlight	1.4	0.9	36%
Delay Min Savings per Day			
Capitol Corridor *(14 trains/day)*		6.6	
Amtrak - Coast Starlight *(2 trains/day)*		1.0	
Delay Min per 10,000 TM			
Capitol Corridor	787.5	667.5	15%
Amtrak - Coast Starlight	390.8	251.1	36%

[1] Project 8 is not modeled for rail operations but does provide track flexibilty since both platforms will be available to dispatchers for passenger trains

TABLE 7-5: SDP2 RTC MODEL RESULTS SUMMARY



UPRR's projects 5, 6 and 10 are included as Project 4 in this SDP; UPRR's projects 1 and 2 are included as Project 3 in this SDP; UPRR projects 4 and 9 are included as Project 9A in the SDP

FIGURE 7-3: IMPROVEMENTS ON UPRR TRACKS TO SUPPORT 11 ROUND TRIPS (SDP[2] PROJECT ELEMENTS HIGHLIGHTED)

7.6 Equipment and Train Crew Scheduling

SDP[1] will utilize the existing rolling stock. This fleet of equipment will continue to be shared with the San Joaquin service with consists assembled to conform to the respective service plan needs of the Capitol Corridor or San Joaquins. Baring incident, Capitol Corridor consists will continue to be on a three and four day maintenance cycle with each consist including one café/diner car, one cab car, and then between two and four coach cars with the typical consist length being five cars long.

The current weekday service is broken in to the following service categories which utilize a total of eight and a half trainsets (the half is split with the San Joaquin service):

- Auburn – Sacramento: one round trip
- Oakland – Sacramento: 16 round trips
- San Jose – Sacramento: seven round trips

7.6.1 SDP[1] and SDP[2] Trainset and Crew Turns

Upon implementation of the Auburn to Sacramento Program, the CCJPA will the same number of trainsets (eight and a half) but will eliminate an early morning train toward Sacramento (slotted first as a train move but put into revenue service) and combine two evening trains from Sacramento, which can support the expansion of Auburn service. Combined, these two scheduling moves will improve equipment utilization and generate more ridership, more revenue and lowered operational costs over the existing schedule. These turns will remain throughout through SDP[2] or until a change in frequency requires modification. Overall, with implementation of SDP[1] the service frequency would be revised as follows:

- Auburn – Sacramento: two round trips
- Oakland – Sacramento: 15 round trips
- San Jose – Sacramento: seven round trips

The equipment rotation cycle for SDP[1] (and by default, SDP[2]) are included below in Table 7-6 by reference to their station origins and destinations (see Appendix 2 for Station abbreviations):

Equipment turns for SDP[1]/SDP[2]
Weekdays
Day 1 - Set A - OKJ Yards – 522 – 533 – 534 – 547 – SJC
Day 2 - Set B - SJC – 524 – (Fuel SAC) -535 – 538 – ARN
Day 3 – Set C - ARN – 527 – 532 – 545 – 548 – SAC (Fuel)
Day 4 – Set D - SAC – 523 – 542 – 553 – OKJ (Yard)
Day 1 – Set E - OKJ – 530 – 543 – 546- SAC (Fuel)
Day 2 – Set F - SAC – 525 – 526 – 537 – 544 – SAC (Fuel)
Day 3 – Set G - SAC – 521 – 528 – 541 – 540 – 551 – OKJ (Yard)
Shared - Set OKJ – 520- -531 – 716 (San Joaquins):

Stand Alone Set 529 – 536 ARN – OKJ Yard Mon – Fri
Weekend Equipment Cycles Friday Night to Monday
Friday 544 – SAC (Sat.) – 723 – 728 – 741 – 744 – SAC (Fuel)
Sunday - SAC – 727 – 734 – 749 – OKJ (Yard)
Monday – OKJ (Yard) – 530
Friday 546 – SAC (Sat.) – 737 – 742 – ARN
Sunday – ARN – 729 OKJ (Yard) – 738 – ARN
Monday – ARN – 529
Friday 548 – SAC (Sat.) – 727 – 734 – 749 – OKJ (Yard)
Sunday – OKJ (Yard) – 720 – 747 – SJC
Monday – SJC – 524
Friday 536 – ARN (Sat.) – 733 – 736 – 751 – OKJ (Yard)
Sunday – OKJ (Yard) – 732 - 743 – 748 –SAC (Fuel)
Monday – SAC – 525
Friday 538 – ARN (Sat.) – 729 OKJ (Yard) – 738 – ARN
Sunday – ARN – 733 – 736 – 751 – OKJ (Yard)
Monday – OKJ (Yard) – 522
Friday 551 – OKJ (Yard) (Sat.) – 720 – 747 – SJC
Sunday – SJC – 724 – 745 – 746 – SAC (Fuel)
Monday – SAC – 521
Friday 553 – OKJ (Yard) (Sat.) – 732 – 743 – 748 – SAC (Fuel)
Sunday – SAC – 723- 728 – 741 – 744 – SAC (Fuel)
Monday – SAC – 523
Friday 547 – SJC – (Sat.) 724 SAC (Fuel) 745 – 746 – SAC (Fuel)
Sunday – SAC – 737 – 742 – ARN
Monday – ARN – 529

TABLE 7-6: SDP[1]/SDP[2] EQUIPMENT TURNS

Crew turns for SDP[1] and SDP[2] are as shown in Table 7-7.

T&E COUPLETS FOR PROPOSED
2nd ARN Turn
(CAPITOLS)
WEEKDAYS

LOC.	TURN	ON DUTY	OFF DUTY	HRS	ST HRS	OT HRS	O/D	REMARKS
SAC	521-528	3:35	13:00	9:25	8:00	1:25	SAC-SJC-SAC	
SAC	523-542	4:35	20:20	16:00	16:00	0:00	SAC-SJC-SAC	
SAC	525-530	5:25	14:58	9:33	8:00	1:33	SAC-OAC-OKJ_SAC	OAC back to OMF
SAC	527-532	6:05	16:15	10:10	8:00	2:10	SAC-SJC-SAC	
SAC	535-538	9:15	18:30	9:15	8:00	1:15	SAC-SJC-SAC	Crew Step Off Sacramento
SAC	537-544	11:15	21:40	10:25	8:00	2:25	SAC-SJC-SAC	
SAC	543-546	14:40	23:10	8:30	8:00	0:30	SAC-SJC-SAC	
SAC	545-548	13:35	0:18	8:43	8:00	0:43	SAC-SAC	
SAC	547	16:45	21:35	4:50	8:00	0:00	SAC-SJC	Layover SJC to 522/724 next day
SJC	524	5:40	10:30	4:50	8:00	0:00	SJC-SAC	FROM 547 PREV DAY
OAK	520-531	4:20	11:35	7:15	8:00	0:00	OAK-SAC-OAC-OMF	
OAK	522-533	5:10	12:25	7:15	8:00	0:00	OAK-SAC-OAC-OMF	
OAK	526-541	8:00	16:53	8:53	8:00	0:53	OKJ-SAC-OKJ	Crew van back to OMF off 541
OAK	536	13:50	19:30	5:40	8:00	0:00	OAC-ARN	Layover Auburn
OAK	534-551	13:20	21:53	8:33	8:00	0:33	OAK-SAC-OAK	
OAK	540-553	15:30	23:53	8:23	8:00	0:23	OAK-SAC-OAK	Crew van OMF to OKJ for train
OAK	538	14:50	20:15	5:25	8:00	0:00	OKJ-ARN	Layover Auburn
ARN	527	4:35	9:53	5:18	8:00	0:00	ARN-OKJ	From 538 Prev Day
ARN	529	5:15	10:45	5:30	8:00	0:00	ARN-OAC	From 536 Prev Day
					160	11:50		

WEEKENDS / HOLIDAYS

LOC.	TURN	ON DUTY	OFF DUTY	HRS	ST HRS	OT HRS	O/D	REMARKS
OAK	720-733-736	6:00	16:08	10:08	8:00	2:08	OAK-SAC-SJC-OKJ	Crew officially takes over 733 - OKJ-SJC-OKJ
OAK	732-749	11:05	21:53	8:48	8:00	0:48	OAK-SAC-OAK	
OAK	736-751	14:05	23:53	9:48	8:00	1:48	OAK-SAC-OAK	OKJ-SAC
OAK	742	16:10	9:30	5:20	8:00	0:00	OKJ-ARN	Layover Auburn
OAK	738	14:50	20:25	5:35	8:00	0:00	OJK-ARN	Layover Auburn
ARN	729	6:45	12:15	5:30	8:00	0:00	ARN-OAC-OMF	From 538 Friday and 742 Saturday
ARN	733	8:15	13:33	5:18	8:00	0:00	ARN-OKJ	From 536 Friday and 738 Saturday
SAC	723-728	4:45	13:40	8:55	8:00	0:55	SAC-SJC-SAC	
SAC	727-734	6:45	16:40	9:55	8:00	1:55	SAC-SJC-SAC	
SAC	737-742	11:15	19:45	8:30	8:00	0:30	SAC-SJC-SAC	SJC-SAC
SAC	741-744	13:20	21:40	8:20	8:00	0:20	SAC-SJC-SAC	
SAC	743-748	14:40	23:40	9:00	8:00	1:00	SAC-SJC-SAC	
SAC	745-746	15:45	22:38	6:53	8:00	0:00	SAC-OKJ-SAC	
SAC	747	16:45	21:40	4:55	8:00	0:00	SAC-SJC-SAC	LAYOVER IN SJC
SJC	724	6:50	11:40	4:50	8:00	0:00	SJC-SAC	
					120	9:24		

TABLE 7-7: CREW TURNS FOR SDP[1]/SDP[2]

8 STATION AND ACCESS ANALYSIS

8.1 EXISTING STATIONS

The Capitol Corridor serves sixteen stations at present (see Figure 1-1). Each station includes at least 800 (or longer) foot station platforms, ticket vending machines, lighting and real-time passenger information display systems Each station is in the process of getting security cameras installed. Six of the sixteen stations served are staffed by Amtrak agents shown on Figure 1.A.-1. At each station there are local transit connections directly at or

within walking distance from the station. Parking is provided at most of the stations (Berkeley being the exception) and bicycle racks or lockers are available at most stations (bicycles are also allowed on the trains). At select stations, there are connections to motorcoach service along other popular destinations throughout California and Northern Nevada, which extends the coverage of the Capitol Corridor.

8.2 New or Expanded Stations in the SDP

Completion of the expansion of service to Auburn with SDP^1 will not modify any of the existing station locations or stops. Sufficient layover track space at the Auburn station will permit the layover of two trainsets overnight for SDP^1. The only station modification with SDP^2 will include Fremont Station which will have one of the platforms lengthened to accommodate two trains in the station at one time.

The platform lengthening project for Fremont in SDP^2 will extend platform access on the southern side of the tracks thus allowing greater dispatching flexibility to accommodate ACE and Capitol Corridor trains as these trains approach and depart the station. At present there is insufficient platform length to permit two trains to occupy the Fremont station at one time. This platform lengthening will permit this move and eliminate what amounts to a single track portion of rail track for passenger rail services (commuter ACE trains that stop there with three daily weekday round trips and future eleven round trip Capitol Corridor intercity service).

In the overall CCSEP or SDP^{FINAL}, but not part of the FY 2010 SDP, the primary new station activities involve the new and regionally significant Union City Station. With the completion of the overall Oakland to San Jose Track Improvement Program (Phase 2), one additional station will be added at Union City. The Union City Intermodal Station (where Capitol Corridor will stop) will provide the third connection with the Bay Area Rapid Transit (BART) regional rail system after the existing Richmond Intermodal and Oakland Coliseum stations. The Union City Station has been approved as a future station stop location by the CCJPA Board. Once funding is available to pursue the passenger rail station component of the Union City Intermodal Station, the CCJPA will work with Amtrak to ensure that Union City becomes an official station stop in the Amtrak system. The Union City Intermodal Station is part of a larger phased project to closely integrate transit services and TOD. Future updates of the SDP, specifically when CCJPA makes application for FRA funding support for this important station, linkage to regional transit and TOD, will be provided.

Other than those mentioned above, no other station modifications are planned as a result of the service. Over time, additional stations may come online independent of the CCSEP. Future updates to the SDP will be revised if/when new stations are added to the service.

8.3 Stations and Intermodal Connectivity

To supplement train service, the Capitol Corridor provides dedicated motorcoach bus connections to San Francisco and communities south of San Jose and east of Sacramento. In addition, the CCJPA works with its partners and local transit agencies to offer expanded options for transit connections throughout the corridor. Currently, the train service connects with the BART system at the Richmond Intermodal and Oakland Coliseum stations (and will add a third connection when Union City is added as part of CCSEP); Caltrain service (Gilroy – San Jose – San Francisco) at San Jose Diridon station; the Altamont Commuter Express service (Stockton – Livermore – San Jose) at the Fremont/Centerville, Great America/Santa Clara, and San Jose Diridon stations; San Joaquin intercity trains at the Oakland Jack London, Emeryville, Richmond, Martinez, and Sacramento stations; VTA light rail at Great

America and San Jose Diridon stations; and Sac RT light rail at Sacramento station. Together with these local transit systems, the Capitol Corridor covers the second-largest urban service area in the Western United States.

8.4 Station Access

CCJPA surveys passengers twice a year (winter and summer) to determine, among other things, their trip purpose, mode of station access and ticketing type (see Figure 8-1 as shown for FY 2009 data). Through these bi-annual surveys, CCJPA is very attuned to the ridership profiles of our riders thus ensuring that policies which seek to boost non-automobile modes of access are pursued where feasible and cost effective. These survey responses can be broken into station-by-station detail where differences that may be expected surface (e.g., Berkeley station, without parking, has a low rate of driving percentage). On the whole, station access is expected to remain largely the same as it is today with the exception of the new, regionally significant connections to BART at Union City described above.

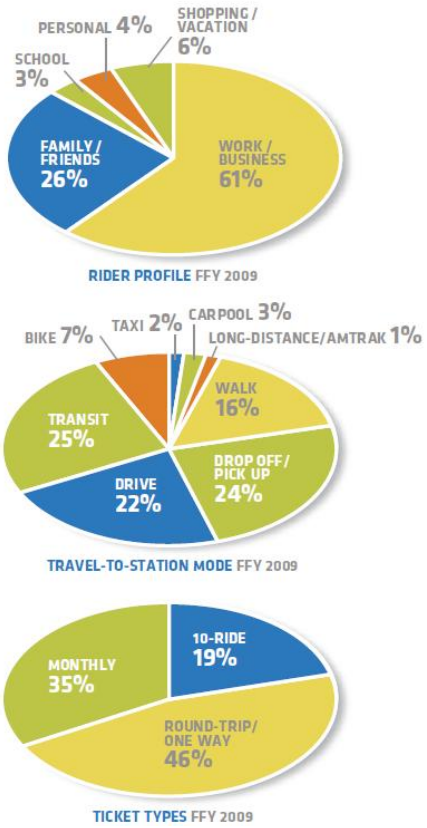


FIGURE 8-1: CAPITOL CORRIDOR TRIP PURPOSE, MODE OF ACCESS, AND TICKET TYPES

Stations are not owned by the CCJPA but rather by local jurisdictions, usually cities in which they reside. Amtrak has leases from the cities for the station facilities () and from UPRR or Caltrain for the platforms ().

Based on surveys Capitol Corridor station access is relatively stable year to year but shows slight seasonal variations for access by bicycles and walking. The percentage driving (and parking) at the station has decreased slightly over time as the effectiveness of the transit transfer program has been distributed throughout the service area. The CCJPA offers several programs to enhance transit connectivity. BART tickets are sold at a 20 percent discount onboard the Capitol Corridor trains to facilitate transfers to BART at the Richmond and Oakland Coliseum stations. The Transit Transfer Program allows Capitol Corridor passengers to transfer free of charge to participating local transit services, including AC Transit, Sac RT, Rio Vista, E-Tran (Elk Grove), Yolobus, Unitrans, County Connection (Martinez), Santa Clara VTA, Suisun-Fairfield Transit, Benicia Transit, and WestCAT. The CCJPA reimburses the transit agencies for each transfer collected as part of our operating expenses. CCJPA also partners with Santa Cruz Metro and Monterey-Salinas Transit, sharing operating costs for the benefit of both agencies and their riders.

9 Conceptual Engineering and Capital

The improvements include the following projects organized into two programs, the Auburn to Sacramento Program termed SDP[1] in this document and a subset of the overall the Oakland to San Jose Phase 2 project-list termed SDP[2]. In considering the totality of the CCSEP goals, the individual projects are to gain additional frequency in the respective portions of the Capitol Corridor service territory. In the cased of SDP[1], the project improvements are designed to reduce freight rail congestion in the freight corridor from Sacramento to Reno which will permit an additional Capitol Corridor train to serve Auburn.

Due to insufficient funding capacity the CCJPA is not pursuing funding to include all the projects listed in Table 8.A.-1 [Note: there is no project #2 in the overall Oakland to San Jose Phase 2 expansion plan however there is a project #2 in the Program EA but is not analyzed as part of CCSEP , nor is the Project EA project #2 subject of a pending HSIPR grant application as it doesn't belong to a CCJPA service expansion plan – it is a reliability project to be pursued in the future]. Figure 8.A.-1 locates on a map the improvements inherent in SDP^1 and SDP^2. In SDP^2, the CCJPA, working with URPR, has selected a project which will eliminate intermittent sections of single track railroad as well as complete the above mentioned Fremont Platform project. Once funding for these projects is secured, the CCJPA can work with UPRR, Caltrain, Union City and other project partners to pursue the remaining projects in future funding years.

9.1 PROJECT IDENTIFICATION

In assembling this SDP, the CCJPA has identified where it wants to go with respect to the projects which will achieve the additional frequencies to/from Auburn and San Jose. These projects are presented here as a guide toward future improvements. They provide a context towards CCJPA's objectives over the next five years with respect to project funding and a service improvement program (see Figure 9-1). The Auburn to Sacramento Program only includes Project #1 which will be responsible for one round trip increase between Sacramento and Auburn (one RT to two RTs). The Oakland to San Jose Program consists of Projects #3-#11 which will allow service frequency between Oakland and San Jose to increase from the current seven weekday daily round trip trains to eleven weekday daily round trip trains. In Table 9-1 the projects to be included as funded in the FY 2010 HSIPR program are identified in the right column. The project description that follows also identifies if the project is included in SDP^1 or SDP^2, or would be part of a future funding phase (e.g., SDP^3, SDP^4, etc.).

Project Number	Project Name	Anticipated Project-Level NEPA Environmental Document	Rail Network Location	Capacity Improvements and Service Increases	Part of FY2010 HSIPR Application
SDP[1]					
1	Donner Summit to Sacramento Double Track Project (Phase 2)	CE	Martinez Subdivision/ Roseville Subdivision	From one to two daily round trips.	YES
Projects in the Oakland to San Jose Corridor (Phase 2)					
3	Hayward Double Track (Elmhurst to Industrial Parkway)	CE	Niles Subdivision	From 7 to 11 daily round trips collectively. Incrementally, reliability projects with an interim capacity of several projects to increase to 9 daily round trips.	NO
4	Newark-Albrae Siding Connection including South Switching Lead Extension for Newark Yard	EA	Coast Subdivision		YES
5	CP Coast-Rte 237 (Gold Street) Double Track Project	CE	Coast Subdivision		NO
6	Change of route alignment from the UPRR Niles Subdivision to the UPRR Oakland Subdivision (Industrial Parkway to Shinn)	EA	Oakland Subdivision		NO
7	Union City Station and Track Work Improvements on the UPRR Oakland Subdivision (including reconnection with UPRR Niles Subdivision near Shinn Street crossing)	EA*	Oakland Subdivision		NO
8	Fremont Full Platform Extension (on Track 2)	CE	Niles Subdivision		YES
9 – 9A	Niles Canyon Railroad Mainline Track Upgrade (New Niles Wye to Former SP Main at CP-Hearst) and Radum Second Main Track Upgrade on UPRR Oakland Subdivision (near Pleasanton)	CE	Niles Subdivision/ Oakland Subdivision		NO
9 – 9B	Add Third Main Track on Niles Subdivision between Niles Junction and Newark Junction (in Fremont) or between Shinn Connection and Newark Junction	CE	Niles Subdivision/Oakland Subdivision		NO
10	San Jose Diridon Station Track and Platform Upgrade	CE**	Caltrain Track		Already funded but a project instrumental in permitting future Capitol Corridor frequency
11	Fourth Track Project	CE	Caltrain Track		NO
* The study area of Project 7 is analyzed under the California Environmental Quality Act (CEQA) in the *Union City Intermodal Station EIR,* which was adopted in February 2006 by the City Council of Union City. ** *This project has been cleared under CEQA and NEPA.*					

TABLE 9-1: OVERALL CCSEP PROJECT LIST

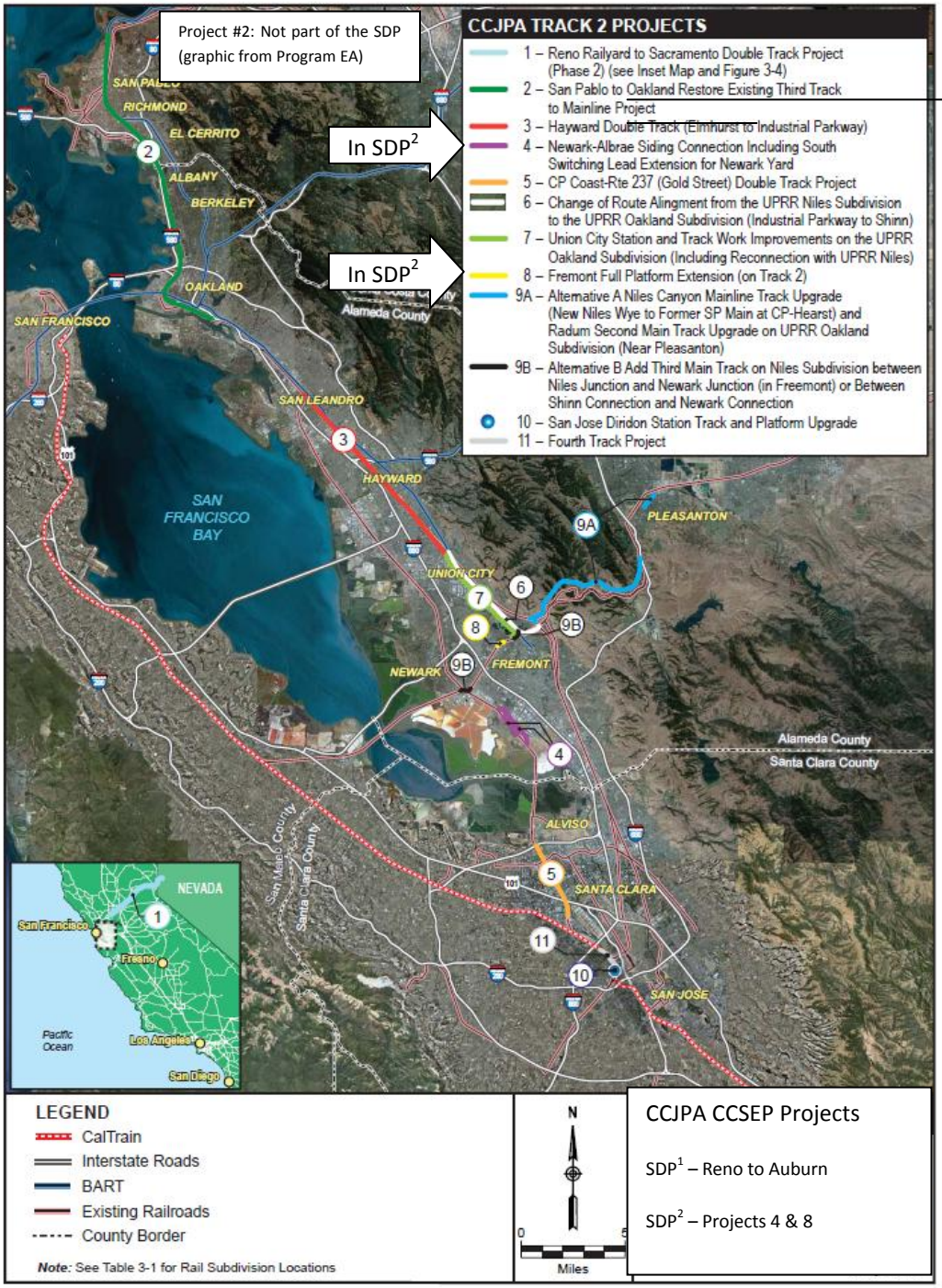


FIGURE 9-1: CCSEP OVERALL PROJECT MAP

9.1.1 PROJECT 1 – RENO RAIL YARD TO SACRAMENTO DOUBLE TRACK PROJECT (INCLUDED IN SDP[1])

The Reno Rail yard to Sacramento Double Track Project is located on the Martinez and Roseville subdivisions. Since UPRR has implemented Phase 1 (which was limited entirely to one main track), this Phase 2 project would focus on adding physical capacity to the other main track by re-establishing track sidings in pre-existing locations, installing

crossovers, notching existing tunnels to allow for taller freight rail traffic (double-stack containers), and allowing trains to pass and be temporarily stored. Implementation of this project would provide a capacity increase from Sacramento to Auburn from one daily round-trip to two daily round-trips.

Under previous ownership with Southern Pacific, a great deal of track infrastructure in the Reno to Sacramento territory was removed to reduce maintenance costs. In the short term, these actions may have made economic sense; however, as passenger rail and freight rail traffic has grown in the interim, the prior actions to remove track infrastructure has restrained freight usage and, as a result, impacted the ability of Capitol Corridor to increase service east of Sacramento. Until implementation of the first phase (Phase One Donner Summit Track Improvements) of projects by the UPRR, the present-day railway owner, double-stack container traffic was prohibited across Donner Summit and, due to the lack of sidings, even single-stack trains approaching the Donner Summit area from either the west or east have had to wait for the track in the Donner Summit area to be cleared before proceeding. UPRR has completed Phase 1 of the Donner Summit work to notch the tunnels, thus allowing double-stack container freight to pass through the tunnels on one of the main tracks, which has allowed rerouting of existing freight traffic to the Donner Summit route. The Phase Two Donner Summit Track Improvements will notch the tunnels on the other/second main track and reconnect the missing segment of double track, which will increase route capacity; therefore, it will allow the capacity for Capitol Corridor trains to be increased from the present one daily round-trip between Auburn and Sacramento to two daily round-trips.

A project map in located in Figure 9-2 and track and signal schematics are shown in Figure 9-3 on the following page.

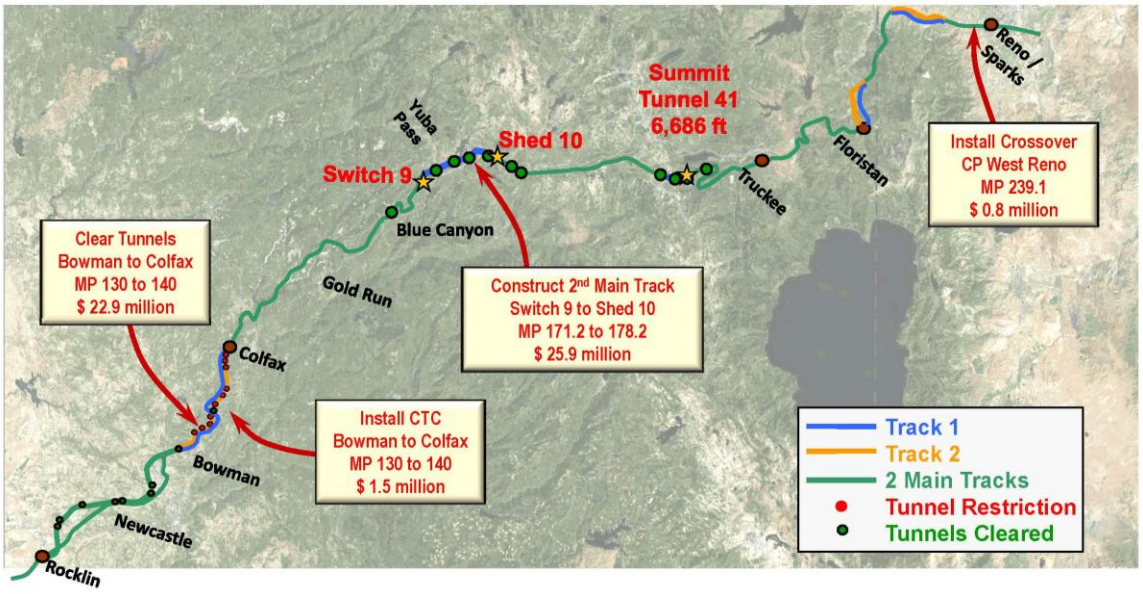


FIGURE 9-2: PROJECT 1 AERIAL MAP OF PROJECT ELEMENTS

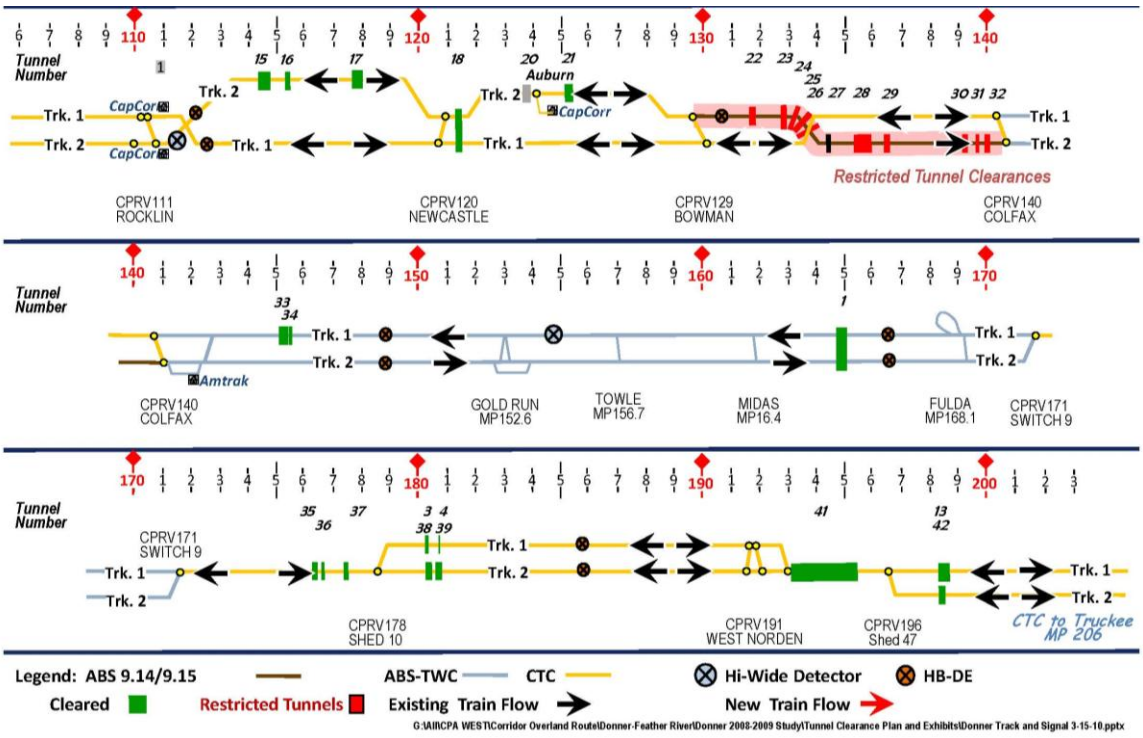


FIGURE 9-3: PROJECT 1 SCHEMATIC TRACK VIEW

9.1.2 Project 3 – Hayward Double Track (Elmhurst to Industrial Parkway) (Not part of FY 2010 Application)

The Hayward Double Track Project (Elmhurst to Industrial Parkway) is located on the Niles subdivision, within a 9-mile-long corridor from MP 13.5 to 22.5. The project would upgrade the Hayward siding by constructing double track to Industrial Parkway with a universal crossover at MP 22.5. Double track also would be constructed from MP 13.5 to 18.8, with universal crossovers at MP 15.5 and 18.8. All track improvements would be within existing ROW.

The Niles subdivision between Elmhurst and Niles Junction is a heavily used route in the South Bay Area. It is the Capitol Corridor's primary route to Hayward and Fremont. Adding infrastructure to eliminate congestion on this segment would improve travel times and enhance on-time performance for passenger trains between Oakland and San Jose. The Hayward Double Track Project would require coordination with local agencies and the U.S. Army Corps of Engineers (USACE) for a bridge structure crossing two creeks adjacent to the existing bridge.

9.1.3 Project 4 – Newark-Albrae Siding Connection Including South Switching Lead Extension for Newark Yard (Included in SDP[2])

This project is located on the Coast subdivision within a one-mile-long corridor from MP 32.9 to 33.9. The project involves adding a second main track, connecting sidings, and relocating the existing #30 high-speed turnout further south. With implementation of this project, the connected sidings would permit double track operation between Fremont and just north of the Alviso Wetlands, thus increasing overall capacity. Along the siding territory, there are disturbed, seasonal wetlands; therefore, the project would likely require a USACE permit. The switching lead extension for the Newark Yard would improve track capacity in the Newark area by limiting freight train usage of the mainline capacity.

9.1.4 Project 5 – CP Coast-Rte 237 (Gold Street) Double Track Project (Not part of FY 2010 Application)

The control point (CP) Coast-Route 237 (Gold Street) is located on the Coast subdivision, at the junction with Caltrain, within a 4.2-mile-long corridor from MP 40.0 to 44.2. The project location is shown in Figure 3-8. The project involves the addition of a second main track, following the present alignment, with universal crossovers at Great America near MP 41.8 and at CP Expressway MP 43.5. As with other double-track sections in the overall program, there would be additional track capacity added. The station at Great America would be modified with grade-separated pedestrian access, which would be located in a narrow ROW close to Lafayette Street.

9.1.5 Project 6 – Change of Route Alignment from the UPRR Niles Subdivision to the UPRR Oakland Subdivision (Industrial Parkway to Shinn) (Not part of FY 2010 Application)

CCJPA would operate on the UPRR Oakland subdivision (from Industrial Parkway to Shinn) following construction of the Union City Station and Track Work Improvements Project (Project 7) and would provide connections to and from the Niles subdivision. The CCJPA would operate on the Oakland subdivision once an agreement has been negotiated with UPRR. The intended project outcome is public purchase of the Oakland Subdivision from Industrial to Shinn so that the passenger rail track improvements in Project 7 can be completed on publicly owned track. The land needing to be acquired is mostly UPRR land with land around the Shinn Connection being owned by Alameda County.

9.1.6 Project 7 – Union City Station and Track Work Improvements on the UPRR Oakland Subdivision (Not part of FY 2010 Application)

The Union City Station and Track Work Improvements Project (Project 7) is located on the Oakland subdivision along a 4.9-mile-long corridor from MP 26.6 to 31.7. The project would construct a connection to the Oakland subdivision and a second main track; add a connection at Shinn; create an intermodal hub with BART at the Union City Passenger Rail Station; add a grade separation; and add double-track connections along ROW to the Niles and Centerville subdivisions. Project 7 has been analyzed under CEQA in the Environmental Impact Report (EIR) for the Union City Intermodal Terminal (Union City Intermodal Station Passenger Rail Project Final EIR, February 2006).

The project would allow CCJPA to serve the proposed Union City Passenger Rail Station and the Union City BART Station adjacent to the Oakland subdivision at MP 26.6. The proposed Union City Passenger Rail Station location is shown in Figure 3-3. The Oakland subdivision crosses the Niles subdivision at MP 24.1, with the BART line to Fremont using the same alignment. A track would be constructed from the Niles subdivision near MP 23.5 to the Oakland subdivision near MP 24.2 to create a connection and provide access to the Union City BART Station. A siding would be constructed in the Niles subdivision from MP 26.1 to MP 28.7. This connection would have to climb a grade to reach the overhead Oakland subdivision.

Per Project 6 above, property would be acquired to construct the Shinn Connection (as part of the Union City Passenger Rail Station Project) from the Oakland subdivision MP 29.3 to Niles subdivision MP 30.8. A new connection would be built from the Oakland subdivision to rejoin the Niles subdivision near MP 30.8 after crossing Alameda Creek.

Under existing conditions, eastbound freights and southbound passenger trains depart from Oakland in the same direction. The freight and passenger trains split at Elmhurst. Freight and passenger trains are delayed on the Centerville line. Currently, eastbound freight trains cannot be routed from the Niles subdivision to Oakland subdivision at Niles Junction. The Union City Station and Track Work Improvements Project would allow trains direct access to the Oakland subdivision and reconnect to the Niles subdivision where the Capitol Corridor currently operates, thus reducing run time even with a station stop at Union City. It also works in conjunction with Projects 9A or 9B to further reduce passenger to freight rail capacity conflicts by presenting “dedicated” corridors where passenger rail traffic and freight rail traffic can generally be separated for meaningful distances.

9.1.7 Project 8 – Fremont Track two Full Platform Extension (Included in SDP[2])

The Fremont Track Two Full Platform Extension Project is located on the Niles subdivision. The project would extend and upgrade the platform at the Fremont Centerville Station on main track 2, which would allow trains in either direction on either track to utilize the station, thus reducing conflicting moves. In its existing condition, the platform characteristics allow only one passenger train in the station at a time with one train held out, thus blocking mainline traffic. With a platform extension, two passenger trains (e.g., Capitol Corridor and ACE) can serve the station at the same time.

9.1.8 Project 9: Alternative A and Alternative B (Not part of FY 2010 Application)

The Project 9A and 9B alternatives are track capacity solutions, contributing to the overall set of track capacity increasing projects, permitting CCJPA to increase service from 7 to 11 daily round-trips in the Oakland to San Jose corridor and implementation of either could provide the required capacity. Projects 9A and 9B independently add track capacity so that the existing and planned freight train service levels, which utilize the Altamont/Niles Canyon corridor between the Port of Oakland and points east, are not degraded by the proposed increase in Capitol Corridor service from Oakland to San Jose.

From east to west, freight train service would increase through the communities from Pleasanton to Sunol would be the same under Project 9A, 9B, or the No-Project Alternative. Project 9A involves track work east of Fremont up the Niles Canyon and in Radum Yard (in the Pleasanton area) whereas Project 9B does not include track work east of the Fremont/Niles Canyon intersection but instead would add a third track between the Niles and Newark Junctions. Operationally, the preferred project alternative is Project 9A to avoid triple tracking through the Fremont-Centerville area and allow freight trains a more direct travel path between the Port of Oakland and points east of Pleasanton. In addition, the auto, pedestrian, and bicycle traffic in the Fremont-Centerville area would be spared from the more extensive delays of the increased freight service under Project 9A. Through Projects 9A or 9B, optimal Capitol Corridor service levels can be achieved.

9.1.8.1 Project 9A – Niles Canyon Railroad Mainline Track Upgrade and Radum Second Main Track Upgrade on UPRR Oakland Subdivision

The Niles Canyon Mainline Track Upgrade (New Niles Wye to Former SP Main at CP-Hearst) would be located on the Niles and Oakland subdivisions along an eight-mile-long corridor. The project would construct a connection at Niles Junction, siding, and upgrade Niles Canyon Railroad to CP-Hearst. There would be no grade crossings, and freight service would operate along the Niles Canyon upgraded line. The project would improve old tracks, provide more frequent service, and introduce quiet zones. The quiet zones would be part of a grade-crossing modification agreed to with UPRR. The Radum Second Main Track would construct a second main track along a 3.6-mile-long corridor on the Oakland subdivision, alleviating traffic congestion flowing east and west, and allowing freight to access the Oakland subdivision, thus increasing capacity and allowing flexibility of train moves as they enter/exit the Oakland to San Jose corridor.

The Niles Junction is currently a highly congested area. The project would, in combination with the other projects planned, create a preferred route separation in this area between Capitol Corridor and freight rail trains. With this project and others in CCSEP, the freight rail would no longer be required to travel through the Fremont-Centerville area to head to the Central Valley. The Niles Canyon is a historical railroad route that is located in the project corridor and owned by Alameda County. The Niles Canyon historical railroad offers recreational train service on Sundays during peak season and then less often during off-peak times of the year. The eastbound freight route is owned by Alameda County and UPRR. This project would be an independent project; CCJPA would not be the lead agency for implementation of the project yet would fund the project because it provides capacity for Capitol Corridor service expansion in conjunction with the other improvements listed herein.

9.1.8.2 Project 9B – Add Third Main Track on Niles Subdivision

The additional Third Main Track would be located on the Niles, Oakland, and Coast subdivisions. The project would construct a third main track for freight traffic utilizing the Coast subdivision. Existing service conflicts in the Fremont- Centerville area and increased Capitol Corridor train service, from seven to 11 daily round-trips, require triple tracking to maintain the existing freight train capacity. This triple tracking approach would have the potential to require grade crossing improvements and further disrupt vehicular traffic flow and the community of Fremont/Centerville.

9.1.9 Project 10 – San Jose Diridon Station Track and Platform Upgrade (Fully funded with FY 2009 HSIPR funds – a required project for achieving 11 RTs)

The San Jose Diridon Station is located in the south terminal of the Caltrain corridor in San Jose at MP 47.5. The station location is shown in Figure 3-3. The project would add three platforms with stairs and Americans with Disabilities Act (ADA) ramps to access the existing pedestrian underpass, and it would replace the existing layover

facility. The platforms would have standard amenities, such as lighting, canopies, benches, trashcans, signage, striping and higher platforms to allow improved ADA accessibility. Standard Caltrain systems, such as Visual Messaging System (VMS), Public Address (PA), and Closed-Circuit Television Cameras (CCTV), would be installed. This project would also include removal of the maintenance facilities currently located in the terminal; removal of tracks seven through 12; construction of new tracks seven through nine; and installation of new turnouts, fencing, and drainage. This project would replace two major control points at the north and south end of the terminal and install rebuilt high-speed switch machines. This project has been cleared under CEQA and NEPA, and it would be constructed and managed by the Peninsula Corridor Joint Powers Board (PCJPB) within their ROW.

The San Jose Diridon Station is an intermodal facility with five existing platform tracks to support Caltrain, Capitol Corridor, ACE and Amtrak long distance trains. In addition, UPRR freight service operates through the station. Due to the number of operators using this station, delays to any of the trains in this area can greatly affect the on-time performance of all of the operators. Given the congested nature of this area, the proposed project improvements are necessary to maintain and ensure reliable service for all of the operators.

This project would enhance reliability through this corridor by providing operating flexibility in the terminal, and it would decrease the duration in and out of the terminal. This project would provide future service expansion when the next phase of construction is complete, which includes additional tracks at the north and south ends of the terminal. The project would support CCJPA's future operating capacity by allowing traffic traveling east to west to flow more easily, and it would allow freight trains to use the Oakland subdivision.

This project is already funded but is included in the CCSEP for its importance from an operational standpoint to allowing 11 round trips for the Capitol Corridor in the Caltrain territory of San Jose.

9.1.10 Project 11 – Fourth Track Project (Not part of FY 2010 Application)

The 4th Track Project is located on Caltrain track extending one-mile north of the Diridon Station to the Caltrain Centralized Equipment Maintenance and Operations Facility (CEMOF). Currently, there are three existing tracks. The project would build a fourth track to connect the Diridon Station to the Caltrain CEMOF. This project would create capacity for all passenger trains in the Caltrain territory and permit the planned growth of Caltrain and ACE, as well as Capitol Corridor train service.

9.2 Project Cost Estimates

Project cost estimates are provided throughout the application materials CCJPA has provided with the two FY 2010 HSIPR applications but are summarized in Table 9-2 for their name, cost estimates, and funding sources.

Project Number	Project Name	Cost Estimate	Funding Source(s)
1 (SDP[1])	Donner Summit to Sacramento Double Track Project	$51M (for this 2nd phase; $22M spent in Phase 1 by UPRR)	UPRR, FRA HSIPR
4 (SDP[2])	Newark-Albrae Siding Connection including South Switching Lead Extension for Newark Yard	$20.9M	FRA HSIPR, State Prop 1A
8 (SDP[2])	Fremont Full Platform Extension (on Track 2)	$800,000	FRA HSIPR, State prop 1A

TABLE 9-2: COST ESTIMATES AND FUNDING SOURCES FOR SDP[1] AND SDP[2] PROJECTS

9.3 Program Schedule and Prioritization

Working with UPRR, the CCJPA has determined that both the SDP[1] and SDP[2] projects will move forward concurrently. UPRR labor forces and materials can be mobilized to complete the SDP[1] and SDP[2] project work by June 2013 provided the anticipated schedule may remain in place. The anticipated schedule is shown and submitted in the FY 2010 HSIPR required materials as shown in Table 9-3.

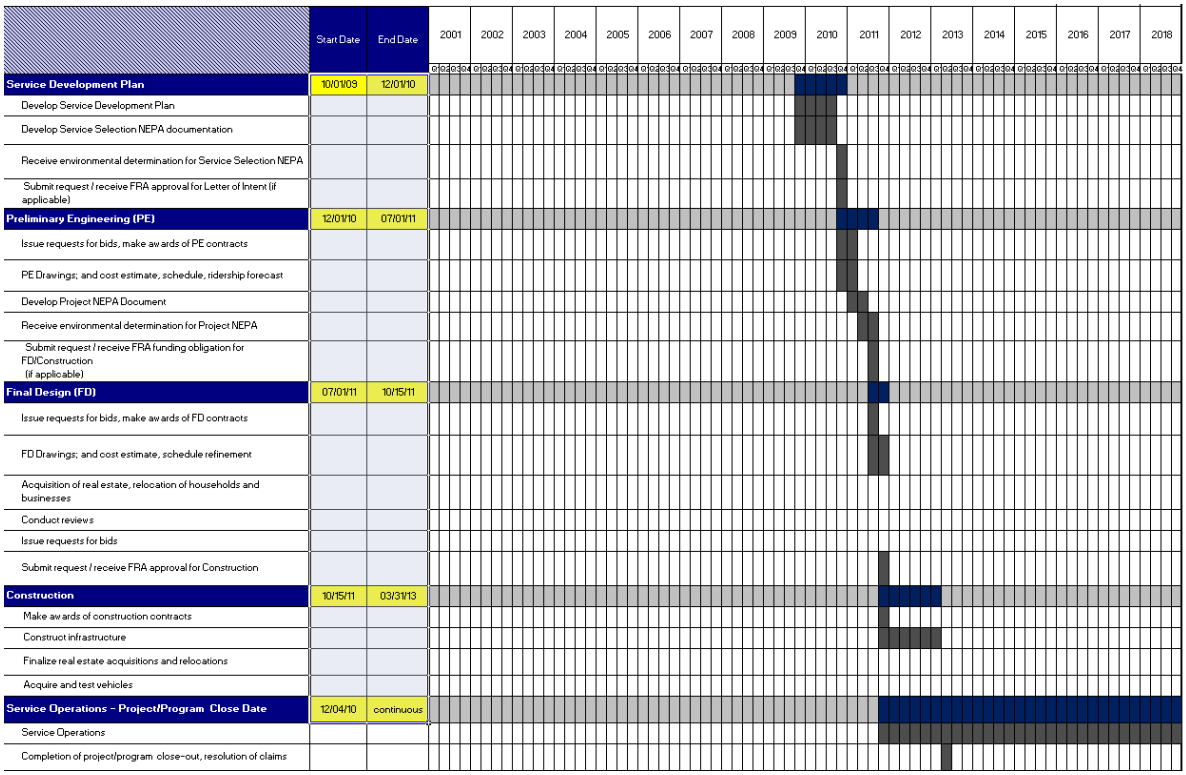


TABLE 9-3: ANTICIPATED SDP[1] AND SDP[2] PROJECT SCHEDULE

The individual project schedule is highly dependent on the notice of intent to award from FRA, completion of individual project Statements of Work (SOW), as well as execution of the individual project final funding agreements between FRA and CCJPA, along with any other project sponsors (Caltrans, Union City, and Caltrain). As of this writing based on prior awards (FY 2009 HSIPR ARRA funding), the form and content of funding agreements between CCJPA, UPRR, and Caltrain is not yet established. Those inform agreements will be based on the FY 2010 HSIPR awards, therefore it should be a faster process to negotiate the funding inform agreements between all parties.. Even as those agreements are in development or as a result of establishing any agreements related to the intent to award, the CCJPA will work with its project implementing partners and the FRA to take an overall look at the funding awarded for the projects and work on an overall master schedule which refines the schedules presented here.

Within the framework of the Master Schedule, for each project, the CCJPA will conduct the required tasks to get to project phase implementation and provide its project implementing entity (usually UPRR) a Notice to Proceed. If this is for design or environmental phases, then those processes can commence once appropriate staffing resources have been secured. For construction phases, first materials must be ordered, work crews scheduled and then the work completed. Once started, the overall work effort is expected to be completed within a schedule developed specifically for each project with the caveat that the duration of the project will depend on when it can

actually begin (seasonality issues) and what other factors (e.g., mobilization - availability of UPRR labor and materials) come into play. One factor to consider is the time it takes to order/deliver equipment and schedule work crews, which typically takes up to six months. Each project will have its period of physical construction of track and signal elements and then, depending on the nature of the project, there may be additional time for signal and cutover work.

9.3.1 Project Prioritization

Pursuant to the directions outlined in the Notice of Funding Availability (NOFA) for the FY 2010 HSIPR funds, the CCJPA has outlined two distinct service development programs within this SDP. These are based on the operational goals the CCJPA is seeking to provide which have already been discussed. In the event the CCJPA is awarded just enough funding to implement SDP[1] (Project 1), this project can stand alone in achieving the goals of providing more train service between Auburn and Sacramento. If funding for SDP[2] is provided, two additional projects on the list of projects between Oakland and San Jose required to get to 11 round trips will be implemented. This approach and these projects have been discussed above. The application packages matching this SDP are organized as follows:

- Application 1 includes SDP[1] for $51 million ($41 million in FY 2010 HSIPR funds, $10.3 million in UPRR funds);
- Application 2 includes SDP[1] plus Projects 4 and 8 of the overall Oakland to San Jose (Phase 2) 11-round trip package of projects for a total of $72.7 million ($58.14 million in FY 2010 HSIPR funds, $10.3 million in UPRR funds, $4.26 million in State Proposition 1A funds).

9.4 Conceptual Engineering Design Documentation

Conceptual engineering design documentation has been provided to FRA under separate cover and is supplied from UPRR, the sole construction partner for CCJPA in this round of funding. Developing final design documentation is required as a project phase element for implementing SDP[1] and SDP[2]. Each project phase will require the development of specific design documents, associated environmental disclosure under NEPA (under CEQA the projects are statutorily exempt), potential environmental permitting and construction.

10 Operating and Maintenance Costs and Capital Replacement Forecast

All operations/maintenance cost areas for the CCJPA are either paid from the State of California or via ticketing/food revenues. As part of the 1998 transfer of Capitol Corridor service to CCJPA from the state, the CCJPA is required to prepare an annual Business Plan to the California Secretary of the Business, Transportation and Housing Agency (BT&H) that identifies the current fiscal year's operating and marketing strategies; capital improvement plans for the Capitol Corridor; and the funding request so the CCJPA's operating, administrative, and marketing costs can be included in the State Budget proposal to the Legislature. Every April, the CCJPA submits a Business Plan Update to BT&H which presents an overview of the CCJPA's strategic plan and state funding request for the next two fiscal years (FY 2010-11 and FY 2011-12 is the most current version – see Table 10-1). The annual Business Plan Update also outlines the service and capital improvements that have contributed to the Capitol Corridor's growth, identifies needed improvements to sustain this growth, and incorporates customer input as detailed in Chapter 263 of California State Law. For each year, the CCJPA provides the level of service consistent

with funding appropriated by the legislature and allocated by the state. Any cost savings realized by the CCJPA or revenues in excess of business plan projections is used by the CCJPA for service improvements in the corridor.

Each year the CCJPA negotiates with and establishes an operating contract with Amtrak to provide the train operating service and maintain the equipment. Thus, all operations costs are borne through Amtrak. The administrative and marketing budgets are used directly by CCJPA.

CCJPA FY 2010-11 - FY 2011-12 Funding Requirement
Capitol Corridor Service

	Current	PROPOSED	
Service Level	**FY 2009-10 Budget**	**FY 2010-11 Budget**	**FY 2011-12 Budget**
Sacramento-Oakland			
Weekday	32	32	32
Weekend	22	22	22
Oakland-San Jose			
Weekday	14	14	14
Weekend	14	14	14
Sacramento-Roseville	2	2	2
Roseville-Auburn	2	2	2
Ridership (a)	1,602,205	1,596,500	1,636,413
Total Train Operating Expenses	$ 50,817,788	$ 51,370,500	$ 51,884,200
Equipment Capital Costs	$ -	$ -	$ -
Total Train Expenses	$ 50,817,788	$ 51,370,500	$ 51,884,200
Total Bus Expenses	$ 1,952,000	$ 1,866,000	$ 1,894,000
TOTAL Expenses (a)	$ 52,769,788	$ 53,236,500	$ 53,778,200
Train Revenue	$ 24,129,280	$ 24,324,920	$ 25,054,700
Bus Revenue	$ 1,540,167	$ 1,552,654	$ 1,598,000
TOTAL Revenue (a)	$ 25,669,447	$ 25,877,574	$ 26,652,700
CCJPA Funding Requirement			
CCJPA Operating Costs	$ 27,100,341	$ 27,358,926	$ 27,125,500
Insurance for State-Owned Equipment (b)	$ 375,000	$ 375,000	$ 375,000
Minor Capital Projects (c)	$ 1,006,790	$ 275,000	$ 275,000
Subtotal-CCJPA Operating Expenses	$ 28,482,131	$ 28,008,926	$ 27,775,500
Marketing (d)	$ 1,174,000	$ 1,174,000	$ 1,174,000
Administrative Expenses (e)	$ 1,451,800	$ 2,951,800	$ 2,951,800
TOTAL CCJPA Funding Request	**$ 31,107,931**	**$ 32,134,726**	**$ 31,901,300**

(a) Preliminary planning estimates. Amtrak to provide final ridership, revenue, and operating costs estimates.
(b) Amtrak procures insurance coverage for state-owned equipment that is operated for service.
(c) Expenses to be allocated for small or minor capital projects.
(d) Due to State budget constraints, the FY 2009-10 and FY 2010-11 marketing expenses will be capped at the same levels as the seven prior fiscal years ($1,174,000). Does not include contributions by Amtrak or additional resources provided by the State (i.e., market research program).
(e) Includes transfer of operating expenses to support CCJPA administrative expenses including call center/phone information and customer services now provided by CCJPA/BART.

TABLE 10-1: CCJPA FY 2010-11 – FY 2011-12 FUNDING AND OPERATING BUDGET

10.1 Costing Methodology and Assumptions

10.1.1 Maintenance of Way

Maintenance of Way (MOW) is addressed by the respective right-of-way owners, UPRR and Caltrain. Through the Amtrak operating contract, the CCJPA pays $3.25 per train mile. These costs are based on Amtrak's authorized incremental/avoidable costs for the host railroad's maintenance of the track and are paid to Amtrak through the annual operating budget. CCJPA pays an additional $50,000 per month to UPRR forces for them to maintain the railroad to Class V standards as opposed to the minimally required Class IV standards. This 'capitalized maintenance activity is the most important activity to reduce incidence of slow orders thereby helping to maintain high on-time performance which retains ridership growth. Separately, there are also incentive payments made to the UPRR for meeting OTP performance targets.

10.1.2 Maintenance of Equipment

The CCJPA is responsible for the administration and supervision of Amtrak's maintenance of the State-owned fleet of IPR passenger cars and locomotives assigned to Northern California. The goal of the CCJPA is to ensure equity in the operation and maintenance of equipment assigned to the Capitol Corridor and San Joaquin Corridor services. In accordance with the ITA, the CCJPA is entrusted with ensuring the rail fleet is operated and maintained to the highest standards of reliability, cleanliness and safety. In addition, it makes certain the unique features and amenities of the state-owned train equipment are well utilized and maintained to standards established by Amtrak, the state and the CCJPA. The costs are for cleaning, inspections, and minor repairs before and after revenue service.

10.1.3 Transportation

Annual transportation costs are paid to Amtrak who retains and pays for the costs for train crews (conductors, engineers and food service), bus connections, train fuel and railroad access payments. The CCJPA does pay UPRR a monthly incentive payment for UPRR's delivery of 92 percent or better on-time delivery of trains for all delays which are the responsibility of UPRR. The amounts vary based on UPRR performance but with the good OTP of the last several fiscal years, UPRR has earned approximately $2.5 million in FY 2010 and $2.2 million in FY 2009.

10.1.4 Marketing and Information

CCJPA's marketing budget is retained by CCJPA. For over ten years, the CCJPA's marketing budget has remained at $1,174,000 per year as provided to CCJPA through the marketing portion of the annual budget provided to CCJPA from the State. Over time, CCJPA has achieved remarkable results (and won various industry marketing awards) given the flat budget. The CCJPA uses a marketing mix of broad-based media campaigns and regional cross-promotions and outreach efforts to build awareness of the Capitol Corridor service. A primary objective is promoting the service to key markets and attracting riders to trains with available capacity. Marketing dollars and impact are maximized through joint promotions and advertising, as well as reciprocal marketing programs with the state, Amtrak, CCJPA member agencies and other selected partners.

Advertising Campaigns and Brand Awareness: Major media campaigns inform leisure and business travel audiences about the advantages of train travel, including service attributes, promotions/pricing and destinations. The current advertising mix includes radio spots, local television, traffic sponsorships, and online paid search, and it is continually adjusted to ensure consistent visibility in the target markets. CCJPA has employed broader use of the redesigned Capitol Corridor logo to update the image of the service and enhance brand recognition across media.

Advertising messages and artistic direction reflect the CCJPA's emphasis on the Capitol Corridor as a distinct service brand.

Targeted Marketing Programs: The CCJPA will continue successful programs that target specific markets, such as the Train Treks youth group discount program to boost midday, mid-week travel and customer retention efforts such as Rider Appreciation programs. Media-based promotions highlight riding the train to popular events such as Oakland Raiders and Cal Football games. In addition, the CCJPA will develop promotional programs that create awareness of the train as a way to reach other leisure destinations throughout Northern California.

Partnership Brand Marketing: The Capitol Corridor's Strategic Marketing Partnership Program has established a catalog of marketing assets and associated metrics to enhance the CCJPA's trade promotion negotiations. These assets enable selected partners to market their products through Capitol Corridor marketing channels such as interior, exterior and station signage, and electronic media. The program now has a solid foundation for increasing value and revenues to the advertising program by partnering with well-known organizations that share similar target audiences.

Joint Marketing and Outreach: The CCJPA achieves cost efficiencies by working with local community partners such CCJPA member agencies and local destinations to share creative development of select promotions that promote both destination and rail travel. CCJPA also partners with Amtrak and Caltrans on select promotions and events to better leverage shared marketing dollars.

Online Presence and Customer Communications: The CCJPA places great importance on communicating with our passengers and delivering service information to them through multiple channels. Efforts include:

- Creating an evolving website, e-newsletter, Twitter updates, electronic station signage, fliers, and posted signs inform customers about service changes, promotions and special events.
- Installing upgraded passenger information display sign (PIDS), which have more line space that will allow for better quality messages to passengers as well as future marketing partners.
- Leveraging Capitol Corridor's online presence across the Internet includes integration with transit-related online tools such as Google Transit, selective participation in online social networking sites such as Facebook, and listings in informational portals/directories.
- Coordinating efforts between Call Center operators and the Marketing and Operations staff to ensure callers receive clear and up-to-date information about the Capitol Corridor service and promotions.
- Developing a passenger service advisory system that will allow customers to sign up electronically and receive up-to-the minute advisories via email or mobile device.

Customer Relationship Management (CRM): CCJPA hopes to enhance its marketing efforts with more targeted promotions and outreach via a CRM program. CCJPA has developed a preliminary CRM plan in accordance with CRM industry standards. CRM deployment will enable the Capitol Corridor to strengthen its relationship with customers by learning about their travel preferences and then delivering more targeted promotions. It will also support efforts to follow-up on customer service issues.

Public Relations: A positive public image is also essential to building awareness of the brand.

In FY 2009, CCJPA's public information officer continued to engage the media and answer questions about the Capitol Corridor service. The Capitol Corridor was featured in 125 news stories that appeared in print, television, radio, and Internet media outlets. Staff secured a feature about Capitol Corridor service on the "Eye on the Bay," a Bay Area-based news magazine on KPIX Channel 5, the CBS affiliate. Additionally, B-roll images and video were provided to the media to supplement their news coverage. The estimated advertising value for the news coverage for FY 2009 was over $105,000.

Outreach and Advocacy: The CCJPA will develop a broader plan for advocacy of the Capitol Corridor and related services, and build upon outreach efforts with communities along the route. Efforts include:

- Advocacy and public relations efforts that aim to increase the Capitol Corridor's visibility and recognition as a unique interagency partnership
- Helping communities along the Capitol Corridor route build awareness of the service in their respective cities through local marketing campaigns including transit connections via the Transit Transfer Program
- An Annual Performance Report that informs the public and elected officials of the service's successes, benefits, and challenges to local communities
- Working with Operation Lifesaver – a voluntary effort by railroads, safety experts, law enforcement, public agencies, and the general public – the CCJPA coordinates with Caltrans Rail to support regional rail safety campaigns through education, engineering, and enforcement
- Leveraging CCJPA riders who use and benefit from the service as advocates in their communities
- Joint media promotions with well-known organizations to maximize media dollars and expand market reach
- Reciprocal marketing with tourism industry members such as hotels, airports, and convention/visitor bureaus
- Targeted marketing to school groups, senior citizens, special interest groups, and new residential communities
- Outreach and public relations efforts in the Silicon Valley/San Jose area to continue to leverage the FY 2006-07 service expansion
- Partnering with local food banks along its corridor to host food collection bins at staffed stations to help the needy during this economic downturn

10.1.5 Call Center/Customer Information

CCJPA had previously paid Amtrak for their toll-free customer service/information. In FY 2005, the CCJPA made a business decision to reduce operating costs and host call center and customer information functions with BART. These actions saved approximately $1.5 million/year and allowed CCJPA to expand its customer service programs described above and increase service frequency within roughly the same state operating budget. BART already had a customer call center and it was expanded with staff to adjust to the new role. As well, customers were able to talk with call center staff that was also familiar with BART thus enhancing the connectivity options. Customer complaints were also routed directly to BART and CCJPA staff which allowed for faster resolution and greater

customer satisfaction. The annual cost for local hosting of the call center functions is approximately $800,000 per year.

10.1.6 Station Costs

The station costs include a variety of cost items, depending on the station characteristics. Included are ticketing, station cleaning and maintenance, training and supervision, and stationmaster(s) and ushers. Also included are ticketing costs which are increasingly being shifted via strategic business initiatives toward electronic ticketing and sales or ticket printing from electronic kiosks.

10.1.7 On-Board Services

Amtrak on-board services are determined by the contract prices for on-board services agreed to by CCJPA and Amtrak for each annual contract. The services supported include both items requiring staffing by lounge service attendants (LSAs) and those on-board services which are amenities to the traveling passenger. These are explained as follows:

Accessibility: The Capitol Corridor and San Joaquin Corridor trains provide complete accessibility to passengers. Accessibility features include onboard wheelchair lifts, two designated spaces per train car for passengers in wheelchairs, and one wheelchair-accessible lavatory on the lower level of each train car.

Information Displays: Each California Car is equipped with passenger information displays that provide the train number and destination, plus any required public information.

Lavatories: Lavatories in California Cars feature electric hand dryers, soap dispensers and infant diaper-changing tables.

Telecommunications: The current mid-life overhaul program includes the expansion of 110-volt power access to additional locations within all cars to satisfy the growing demand of passengers who bring laptops and other electronic devices on the trains.

Bicycle Access: All Northern California Cab and Coach Cars have bicycle storage units that hold three bicycles on the lower level of the car. In addition, the 14 California Cab Cars have been retrofitted with a bike rack in the lower level seating area that can accommodate up to eight more bicycles. The five Surfliner Cab Cars have storage space for up to 13 bicycles in the lower level baggage area.

Wireless Network Program: In collaboration with Amtrak's national procurement process, the CCJPA will commence installing a wireless network in FY 2010 and complete it in FY 2011. The network will initially include passenger internet access and allow for operational applications such as networked in-train passenger information displays. The network will be a platform for future operational applications, including safety and security applications, which will be rolled out in future phases. Caltrans Rail Division is a partner with CCJPA in supporting the development of the wireless network for the rail fleet.

Food and Beverage Services: The Capitol Corridor and San Joaquins Corridor trains provide food service which is staffed by LSAs. A selection of food and beverages are maintained, stocked, restocked en route and are available for a purchase at reasonable prices. As well, the LSAs sell the popular BART discount tickets. Many of the food and beverage service improvements proposed in prior years have been implemented and are reaping benefits in customer satisfaction and increased sales of menu items. In fall 2009 CCJPA, Caltrans and Amtrak will begin plans

to upgrade the point-of-sale process with rollout planned for mid-2010. This upgrade will improve the efficiency and back-office management of the food and beverage service.

The continuing efforts by the CCJPA and Caltrans ensure the food and beverage service on the Capitol Corridor and San Joaquin Corridor trains exceeds customer expectations while contributing effectively to the services' revenues.

10.1.8 General/Administrative Expenses

Amtrak's General and Administrative (G&A) costs are allocated to trains through the Amtrak Performance Tracking (APT) system. APT divides G&A cost into five "sub-families": Corporate Administration; Centralized Services; Qualified Management & Services; Direct Customer; and Subsidiary. G&A costs are allocated only to the services they support, so the CCJPA is not allocated anything for Direct Customer expense (examples are Commercial or Commuter businesses) or Subsidiary expense (examples include Chicago Union Station, 30th Street Station, etc.).

Amtrak's General & Administrative Costs is a cost "family" within APT and is composed of five "sub-families": Corporate Administration, Centralized Services, Qualified Managerial & Services, Direct Customer, and Subsidiary. The costs associated with the Subsidiary sub-family are applied to the trains and services that use Amtrak subsidiaries, all of which are outside of the CCJPA's area of operation and are not discussed below.

The Corporate Administration Subfamily performs managerial and administrative functions that are properly considered corporate-wide in scope. Expenses included in the Corporate Administration Subfamily are expenses such as the president's salary, expenses of the inspector general's office, and similar costs that support the overall mission of the entire Amtrak enterprise rather than a subset of operations.

The Centralized Services Subfamily performs services for other portions of the Amtrak enterprise and is properly considered corporate-wide in scope. These services include computer services, payroll operations, human resources, and employee services available corporate-wide. Centralized Services costs represent services provided to and benefiting all employees and businesses operating under the Amtrak corporate umbrella.

The Qualified Managerial & Services Subfamily performs high-level managerial and supporting activities related to a subset of the total Amtrak enterprise. Although the ResCens in this Subfamily perform missions similar to the other G&A Subfamilies, because they do not support the entire operation, they are not considered corporate-wide and their allocation method needs to reflect this.

The Direct Customer (Non-NTS) Subfamily performs functions that support only Commercial or Commuter customers such as managing commuter operating contracts, real estate assets, and other support to customers outside of Amtrak's train operations. These ResCens are exclusively outside the NTS and have specific non-NTS customers.

For the purpose of estimating Avoidable Costs, the Corporate Administration, Centralized Services, and Qualified Managerial & Services subfamilies described above are classified as having Fixed Costs. Expenditures in these subfamilies are for corporate-wide activities and are not tied to a particular Route. Avoidable Costs relative to a particular Route would not be significant or measurable; therefore, costs incurred at ResCens in these subfamilies are 100 percent Fixed.

For the purpose of estimating Avoidable Costs, the Direct Customer (Non-NTS) Subfamily is classified as having Fixed Costs. Costs incurred at ResCens in the Direct Customer (Non-NTS) Subfamily are related to businesses other

than Amtrak's core business of providing intercity passenger train service, therefore, they are 100 percent fixed with respect to any Amtrak Route.

10.2 Summary of Operating Costs

The following is a brief description of the major cost categories that are comprise operating costs.

In terms magnitude, Direct (Train) Labor is the most significant element in this category. Direct (Train) Labor includes is comprised of two cost categories:

- Train & Engine which covers Crew Labor, Salaries, wages, benefits, and FELA for employees providing services for train operations (primarily engineers, conductors, and assistant conductors).
- On Board Service Labor and Support which covers Salaries, wages, and benefits for employees providing On Board Services in Café, Lounge, and Dining Cars (Including line managers but excluding commissary expense).

The Other Direct Costs cost category encompasses a series of other costs directly associated with the operation of a particular service.

- Host Railroad Maintenance of Way - payments to host railroads for incremental costs, primarily maintenance of way associated with passenger operations.
- Host Railroad Performance Incentives - Incentive payments to host railroads for meeting on-time and other performance targets.
- Fuel and Power - Diesel fuel and electric power used in train operations.
- Commissary Provisions and Management - Commissary provisions, supplies, operations, and management.
- Car & Locomotive Maintenance and Turnaround - Cleaning, inspections, and minor repairs on trains before and after revenue service.
- Direct Advertising - Sales & marketing expenses in support of a specific route, budgeted and recorded separate from other sales & marketing expense.
- Commissions - Commission expense from credit cards, travel agencies, and airline system access fees.
- Reservations & Call Centers - Reservation sales call centers for general public and travel agencies, and information systems for reservation services including automated ticket machines and on-line reservations.
- Customer Concession - Payments to passengers for food & lodging as a result of delays. This category generally includes unscheduled/ emergency motor coaches.
- Connecting Motor Coach - Scheduled motor coach connecting services.
- Stations (Route) - Stations serving a single route. Depending on location, may include ticketing, baggage and express, stationmaster and ushers, station cleaning and maintenance, snow and ice removal, training and supervision.

The Shared Costs cost category encompasses a series of other costs associated with the operation of a multiple trains and services.

- Stations (Shared) - Stations serving multiple routes. In addition to route station services, shared stations may include Red Cap and porter services.

- MoE Supervision Training and Support - Managerial, administrative, material control, backshops performing major repairs and capital overhauls.
- Amtrak MoW and Support - Operating maintenance of track assets, communication and signals, electric traction, buildings & bridges (exc. Stations), and associated management, supervision, and training. Outside of NEC, includes property owned and/or maintained by Amtrak.
- Yard Operations - Activities that support the movement of train equipment before and after revenue service.
- Marketing and Distribution - Marketing & sales, excluding advertising coded directly to a specific route.
- Police, Environmental and Safety - Police patrols, intelligence, counterterrorism, environmental, health and safety activities.
- T&E Overhead and Operations Management and Support - Train & Engine labor management and supervisory, dispatching and interlocking operations.
- Utilities - Utilities expense at terminals, stations, and support facilities supporting multiple operating departments.

10.3 Route Profit and Loss Statement

The Route Profit & Loss Statement is generated from the Amtrak Performance Tracking (APT) system, Amtrak's new cost accounting system developed jointly between Amtrak Finance and the USDOT Volpe Center. APT takes accounting data from the Amtrak general ledger accounting system and either assigns costs to specific trains wherever possible, or allocates shared costs to trains based on a variety of operating statistics that reflect relative use. APT is a fully-allocated system, so all of the company's costs are allocated out to trains. Amtrak is currently engaged with its State partners in the process of determining which costs are eligible for State reimbursement, as called for in PRIIA Section 209.

Revenues (transportation, food/beverage, mail, etc.) are added into the worksheet and an operating loss is calculated for that particular route. For corridor services like Capitol Corridor, the operating loss is the amount the CCJPA pays to Amtrak as part of its annual operating contract with Amtrak.

10.4 Capital Replacement Costs

Amtrak is responsible for replacement of Amtrak-owned assets in the corridor. These include among other things, station facilities and maintenance equipment. The State of California, through Caltrans Rail Division, is responsible for the various rolling stock renovation programs which have occurred over the years. These renovations have included, interior upgrades, door improvements and improvements to the heating/ventilation/cooling systems. UPRR and Caltrain are each responsible for their programs of track maintenance. As Capitol Corridor riders can attest, even with required service interruptions or schedule adjustments UPRR has been vigilant with its track and tie renewal programs over the past several years. The work has resulted in the intended benefits and will be required to begin anew in approximately ten years.

11 Public Benefits Analysis

Capitol Corridor is already a well entrenched Intercity Passenger Rail service supporting community livability, a "green" lifestyle, and the economy. The service provides direct jobs with UPRR, its freight rail host, Amtrak, its contract operator, and a host of other ancillary businesses, which feed off the activity generated by Capitol Corridor. The expansion of Capitol Corridor service will extend these benefits to those named entities, bolster the

travel options for existing riders and extend these benefits to new riders. Even if the realization of these benefits will come slower than desired due to funding limitations, the discussion of public benefits in this section are oriented toward the end goal of increasing Capitol Corridor service frequency in key underserved markets. The incremental means of realizing these benefits does not detract from the steps the CCJPA and the FRA can take from year to year to realize a greater and greater portion of those public benefits.

At present the Capitol Corridor is the top performing multi-frequency passenger rail service in the nation for on-time performance (92percent). In Amtrak's national customer satisfaction index surveys, Capitol Corridor service ranked consistently in the top five in the nation over the last three years. These surveys cover all aspects of service. So while the CCJPA, Amtrak and UPRR are constantly striving to improve upon performance, it will be challenging to achieve significantly better results for the service as a whole. That being said, the parties involved continue to meet on a regular bi-monthly basis to review areas of poor performance and seek actions to address such shortfalls. In short, metrics beyond OTP will be used to evaluate service performance (such as delay-minutes per 10,000 miles).

The CCJPA is unquestionably oriented to anticipating service benefits for its customers. This track record has been noted in being innovative and early adopters of services, which benefit those who use the service. Ranging from technology, where CCJPA initiated the conductor hand-held Automated Ticketing Validation (ATV) program which automatically creates a passenger manifest and increases ticket processing efficiencies through wireless services and with wireless internet trials on the service which are soon to be launched in a partnership with Amtrak's national program; to process-based services, such as the free Ticket Transfer program and the discounted BART tickets, the CCJPA is dedicated to ensuring the Capitol Corridor is as attractive a travel option as it can be for the capital and operating funds provided. It is perhaps this orientation which has contributed to Capitol Corridor ridership consistently outperforming the predicted ridership results when Amtrak has run its Ridership Model for every prior service frequency increase.

11.1 Operational and Transportation Output Benefits

Trip Time Improvements/Passenger Travel Time Savings: The implementation of SDP^2 will eliminate some single track sections of railroad where there were poorly-timed meets for some trains that were scheduled throughout the day. This affected some of the trains which did travel in both directions in the Oakland to San Jose area. The base running time with recovery pad and station dwell time for the Sacramento to San Jose route is 3 hours 5 minutes. The SDP^2 projects will reduce the delay minutes pursuant to the model run by UPRR (presented above) however there will be no official travel time reductions.

Reliability/Reductions in Passenger Delay Minutes: CCJPA maintains a database of delays based on the daily Amtrak conductor counts which dates back to April 1999. The UPRR model (discussed previously) demonstrates that there will be a reduction in train-stoppage per 100 minutes with the implementation of SDP^2 however these are not being captured as minutes of running time which can be reduced. It can be expected that the reduction in train-stoppage per 100 minutes will lead to even better on-time performance.

Outside of the structure of these agreements related to this SDP, the CCJPA working through Amtrak will be approaching UPRR to discuss travel time reduction which may result in scheduled travel time savings. Because of the high level of maintenance of the railroad the incidences of slow orders are so minimal that trains are regularly arriving at their endpoints ahead of schedule. As well, recently completed state funded projects to install crossovers at the Emeryville Station and the Bahia-Benicia and the pending Yolo Crossover (funded via ARRA HSIPR

Program) are improving flexibility for dispatchers. As a whole, these are welcome developments will be addressed but are not being captured in this SDP due to their indefinite and independent nature. If there are changes to the schedules in the interim period of FRA review/selection process, the CCJPA will inform FRA staff of these developments.

As discussed above, many of the measures CCJPA has taken with UPRR for delays the UPRR may be responsible for, or with Amtrak for delays they may responsible for (rolling stock maintenance/crew issues) have paid off to establish CCJPA's remarkable OTP. At this level of OTP it is very difficult to utilize the database to establish discernable trends or cause of delays that may be fixed by particular improvements under the present schedule which is design and dispatched in a way to obviously minimize delays. As stated in the scheduling discussion above and the prior discussion of the simulation model, the projects involved in the SDP are, according to modeling results, poised to ensure even better, smoother operations. In short, the limitations in certain areas of the existing track infrastructure are being eliminated (e.g., single track) such that not only will capacity increase, but train-to-train conflicts should reduce over what is experienced today.

Frequency Increases: As stated throughout this SDP, the overarching goal of this program is to increase service frequencies as outlined:

- **Auburn to Sacramento**: from one to two round trips (SDP[1]).
- **Oakland to San Jose**: from seven to 11 round trips plus a new station stop at Union City adjacent to the Union City BART Station and the TOD already underway.

If funding is provided to the CCJPA to implement the increase in service frequency associated with this application, then one of the goals of increasing service frequencies will be realized. Unfortunately, funding constraints limit CCJPA's ability to pursue the entire set of capital improvements which would permit CCJPA to offer 11 round trip service to San Jose. However, the benefit of funding and constructing Projects 4 and 8 will provide independent utility and are also part of the incremental projects required to create the capacity to achieve 9 and later 11 round trips to/from San Jose.

Net Increase in Annual Passenger Seat Miles: The implementation of the SDP will involve a reduction in train miles (58,864 in FY 2011) with the implementation of SDP[1]. As indicated previously, there is a temporary reduction in the core service (from the current 16 round trips to 15 round trips) between Sacramento and Oakland to accommodate the train moves required to increase passenger service to/from Auburn. The additional ridership, however, increases the incremental annual passenger seat miles by 2,669,941. The extension of trains to Auburn results in increased revenues that offset the loss of revenues for the reduced one round trip in the Sacramento to Oakland corridor. The implementation of SDP[2] does not modify the passenger seat miles from SDP[1] since there is no change to the schedule.

Generating Cross-modal Benefits: In Section 3, Rationale, there was extensive discussion about the roles of Capitol Corridor service among the other transportation modes. It presented the value proposition for investing in more Capitol Corridor service frequency in the northern and southern portions of the existing route as being as effective in the peak hours of travel as adding additional lanes of travel to the highway system. Next it demonstrated the cost effectiveness of the Capitol Corridor's service expansion program versus other equivalent highway improvements, and finally, it placed, in the Regional Transportation Planning context, the value expanded Capitol Corridor service has for the highway mode in, perhaps, deferring or avoiding planned large-scale investments in highway systems. Capitol Corridor was shown as being a vital feeder/distributor system to the future planned

California high-speed rail network with a jointly served station at San Jose (and eventually at Sacramento). This connection with high-speed rail enhances Capitol Corridor's already extensive integration (transit transfers, BART discount tickets, shared station facilities) with local and regional transit systems, of which BART has connections at both the San Francisco and Oakland Airports. On top of these connections, the motorcoach connections to Capitol Corridor service encompass most all major communities throughout Northern and Central California. With these many connections, Capitol Corridor is really within walking distance of many people's door.

11.2 User and Non-User Economic Benefits

Implementing the Capitol Corridor Service Expansion Program will provide a variety of user and non-user benefits that do not directly fall into the above transportation category.

Environmental Quality/Energy Efficiency/Reduction in Dependence on Foreign Oil: Calculations utilized for the air quality impact analysis in the Program EA for CCSEP provide the basis for evaluating such benefits as reducing energy use. Adding service frequency introduces more locomotive emissions and use of locomotive diesel fuel. However, the incremental increase in ridership results in less automobile trips and vehicle miles travelled and thus more than offsets that additional diesel fuel use both with the implementation of SDP[1] and SDP[2], but as future phases are implemented. As a result, upon ultimate implementation of CCSEP, net fuel use (in Northern California) drops to an average of 19,500 gallons of fuel saved on monthly basis. As well, Caltrans who owns the locomotives used in the Northern California fleet is now running a retrofitted locomotive which is now Tier 2 compliant and also has automatic idling fuel shutdown after a half an hour of inactivity. Funding is secured and plans are underway to retrofit the remainder of the locomotive fleet in this same manner which will ensure Capitol Corridor trains are running the most fuel efficient and cleanest fleet possible in the near future.

Reductions in Key Emission Categories: As demonstrated in the Program EA, air quality emissions are taking into account increased locomotive hours of service and reductions in automobile trips. Air quality regulation is a complex jurisdictional puzzle which does not match up with the Capitol Corridor service that crosses between two different Air Districts each of which have regulatory status and administrative requirements that differ by regulated pollutant. The information presented in Table 11-1 for full CCSEP implementation ignores the jurisdictional boundaries and instead examines the entire Capitol Corridor net emissions by regulated pollutant category considering increased locomotive hours of service and reductions in automobile trips. As is demonstrated, the results are on a net tonnage basis quite favorable for the full implementation of CCSEP with the largest pollutant reduction coming from CO_2, the primary greenhouse gas emission. Each of the pollutants which experience a slight increase (NO_x, PM10, and SO_2) all fall below the Environmental Protection Agency's *de minimis* thresholds by Air District and regulatory status for conducting a General Conformity Analysis which is to indicate that these are insignificant increases across the entire service territory. The significant reduction in CO_2 provides the basis that implementation of the CCSEP is one of the best measures to reduce greenhouse gas emissions yet still provide mobility benefits to Northern California.

Incremental Ridership and Locomotive Operations for Service Frequency Increases: OKJ-SJC & SAC-ARN	*Net (tons/year)*					
Capitol Corridor Fleet	**ROG**	**CO**	**NOX**	**PM10**	**SO2**	**CO2**
Fleet Composition: 100% Tier 2	-2.2	-32.6	20.5	0.5	108.9	-2,019.1

TABLE 11-1: ESTIMATE CRITERIA AIR POLLUTANT CHANGES WITH IMPLEMENTATION OF CCSEP

Interconnected Livable Communities: Capitol Corridor is already well integrated to the land use fabric of Northern California with stations that tend to be located in highly dense locations of urban centers. In areas where existing stations are not as integrated as they could be, local jurisdictions are working to capitalize on the proximity of the Capitol Corridor service as a basis for bring development closer to the station. Of particular note to this benefit category is the proposed Union City Intermodal Station included in the CCSEP. Union City has been very successful in utilizing the opportunities of vacant land east of the existing BART station to launch a TOD and community center which will have as its focal point not only the BART station but a new passenger rail station Capitol Corridor will serve. Union City, together with private developers, are counting on the powerful integration of the Intercity and Regional transportation systems with local bus transit service to ensure the station district becomes a desired location because of the proximity of the new transportation options.

Creating Jobs/Stimulating the Economy: The improvements included within CCSEP are complex and will involve the significant labor of engineers not to mention the construction crews completing the installation. Using a labor calculator based on the ARRA evaluation of job creation at one job for every $92,000 spent by government, approximately 790 Full Time Equivalent (FTE) jobs will be required for completion of SDP^1+SDP^2. On a permanent basis, one new Amtrak positions will be required to staff the new service frequencies and to staff a new San Jose Crew Base. The projections of direct and indirect jobs, (construction and permanent jobs), will increase as each subsequent phase (SDP^x) is applied for and funded. As the CCSEP is implemented, clearly new crews, maintenance personnel, and Amtrak station personnel will be required to implement the new frequencies.

11.3 Benefits by Rail Service Type

Standardization of Rolling Stock, Communications, and Power Equipment: Implementation of SDP^1 and SDP^2 doesn't require new rolling stock or influence the standardization of rolling stock, communications, or power equipment. Eventually as service frequencies increase as the CCSEP is realized, CCJPA will require the ordering of new rolling stock. When acquisition of rolling stock is timed such that a future HSIPR application can be made to justify it, the new equipment will be ordered utilizing the PRIIA's Section 305 Committee's standards which is aimed at standardizing rolling stock. Communications protocols will not be modified by the CCSEP or even SDP^1/SDP^2 since CCJPA is a tenant to the host railroads but CCJPA will support the required implementation of PTC.

Freight/Commuter Rail Operations Proportional Cost Sharing: CCJPA's service runs primarily on UPRR's tracks with the exception of the southern 2.5 miles which operate on Caltrain's commuter rail service lines. For the implementation of this CCSEP, as outlined in the financial plan, CCJPA is not the only funding partner for this endeavor. The UPRR has already funded $22 million of the SDP^1/Project 1 work through implementing Phase One in 2009. This cost sharing is not being acknowledged by FRA based on current policy. However, the UPRR also has committed $10.3 million to Phase 2 work if CCJPA is successful in securing FY 2010 HSIPR funding . When it comes time to implement the other phases of CCSEP, Caltrain, like CCJPA, is a public entity subject to obtaining public grants to complete projects that mutually support their operations as well as CCJPA's. Caltrain has already secured state and local funding as match to future HSIPR funding required to complete the projects CCJPA and Caltrain will benefit from in and around the San Jose Diridon Station. Similar to Caltrain, CCJPA has also committed state funding it was able to program for the FY 2010 HSIPR application. Union City is another partner in implementation of CCSEP and they have been successful in obtaining over $58 million in funding however there remains a question if project phases already underway will be considered by FRA as matching funding even if those project activities are necessary and underway to realize future project phases.

Positive Train Control Benefits: The primary and immediate benefit of implementing PTC along the Capitol Corridor is safety. The collision-avoidance properties of PTC will only make the Capitol Corridor a safer service for its passengers, employees, and surrounding communities. Another benefit of PTC will be to allow Capitol Corridor trains to operate up to 90 mph along straight, tangent track with the upgraded track infrastructure and grade crossing signal timing. Previous discussion above described CCJPA's role as a partial funding partner to UPRR for implementation of PTC within the legislated requirements. As these improvements will be implemented by UPRR and Caltrain at a time concurrent with PTC implementation, CCJPA understands that the construction of PTC may be incorporated into the design and operations of the identified track infrastructure.

As UPRR's and Caltrain's plans move closer towards implementing PTC, the CCJPA will work to ensure the safety and travel time savings benefits are achieved for the Capitol Corridor.

APPENDICIES

WEEKDAYS: Westbound — Auburn-Sacramento-Emeryville/San Francisco-Oakland-San Jose

CODE	STATION	TRAIN:	521	523	525	527	529	531	711	533	535	537	541	713	543	545	715	547	549	551	717	553
									SAN JOAQUIN					SAN JOAQUIN			SAN JOAQUIN				SAN JOAQUIN	
COX	Colfax	Depart										10:05a			1:30p							7:05p
ARN	Auburn/Conheim	Depart					6:35a					10:35a			2:00p				5:10p			7:35p
RLN	Rocklin	Depart					6:58a					10:50a			2:15p				No Stop			7:50p
RSV	Roseville	Depart		4:45a	5:35a		7:08a					11:05a			2:30p				5:40p			8:05p
SAC	Sacramento A	Arrive		5:20a	6:10a		7:37a					11:55a			3:20p				6:15p			8:55p
		Depart	4:30a	5:30a	6:20a	7:00a	7:40a	8:30a	Through Train from Bakersfield	9:20a	10:10a	12:10p	2:10p	Through Train from Bakersfield	3:35p	4:40p	Through Train from Bakersfield	5:40p	6:40p	7:40p	Through Train from Bakersfield	9:10p
DAV	Davis	Depart	4:45a	5:45a	6:35a	7:15a	7:55a	8:45a		9:35a	10:25a	12:25p	2:25p		3:50p	4:55p		5:55p	6:55p	7:55p		9:25p
SUI	Suisun-Fairfield	Depart	5:09a	6:09a	6:59a	7:39a	8:19a	9:09a		9:59a	10:49a	12:49p	2:49p		4:14p	5:19p		6:19p	7:19p	8:19p		9:49p
MTZ	Martinez B	Depart	5:30a	6:30a	7:20a	8:00a	8:40a	9:30a	10:03a	10:20a	11:10a	1:10p	3:10p	3:19p	4:35p	5:40p	6:28p	6:40p	7:40p	8:40p	8:56p	10:10p
RIC	Richmond–BART 2	Depart	5:55a	6:55a	7:45a	8:25a	9:05a	9:55a	10:28a	10:45a	11:35a	1:35p	3:35p	3:44p	5:00p	6:05p	6:53p	7:05p	8:05p	9:05p	9:22p	10:35p
BKY	Berkeley	Depart	6:02a	7:02a	7:52a	8:32a	9:12a	10:02a	No Stop	10:52a	11:42a	1:42p	3:42p	No Stop	5:07p	6:12p	No Stop	7:12p	8:12p	9:12p	No Stop	10:42p
EMY	Emeryville	Depart	6:10a	7:10a	8:00a	8:40a	9:20a	10:10a	⊕10:48a	11:00a	11:50a	1:50p	3:50p	⊕4:03p	5:15p	6:20p	⊕7:13p	7:20p	8:20p	9:20p	⊕9:43p	10:50p
OKJ	Oakland–Jack London	Arrive	6:21a	7:21a	⊕8:18a	8:51a	⊕9:38a	⊕10:28a	11:00a	⊕11:18a	12:01p	2:01p	4:08p	4:15p	5:26p	6:38p	7:25p	7:31p	8:38p	9:38p	9:55p	11:08p
		Depart	6:23a	7:23a		8:53a					12:03p	2:03p			5:28p			7:33p		10:00p		
OAC	Oakland Coliseum–BART 2	Depart	6:32a	7:32a	8:25a	9:02a	9:45a	10:35a		11:25a	12:12p	2:12p			5:40p			7:44p		No Stop		
HAY	Hayward	Depart	6:43a	7:43a		9:13a					12:23p	2:23p			5:52p			7:56p		No Stop		
FMT	Fremont-Centerville	Depart	6:59a	7:59a		9:29a					12:39p	2:39p			6:07p			8:15p		No Stop		
GAC	Santa Clara-Great Am.	Depart	◔7:16a	◔8:16a		9:46a					12:56p	2:56p			6:27p			8:33p		No Stop		
SJC	San Jose 1 C	Arrive	7:35a	8:35a		10:10a					1:15p	3:15p			6:45p			8:55p		11:55p		

WEEKDAYS: Westbound — Route 99 Emeryville to San Francisco Motorcoach Connection

CONNECTING TRAIN		521	523	525	527	529	531	711	533	535	537	541	713	543	545	715	547	549	551	717	553
Ar	Emeryville-Amtrak	6:08a	7:08a	7:58a	8:38a	9:18a	10:08a	10:46a	10:58a	11:48a	1:48p	3:48p	4:01p	5:13p	6:18p	7:11p	7:18p	8:18p	9:18p	⊕9:41p	10:48p
Lv	Emeryville-Amtrak	6:10a	7:10a	8:00a	8:40a	9:20a	10:10a	10:50a	11:00a	11:50a	1:50p	3:50p	4:05p	5:15p	6:20p	7:15p	7:20p	8:20p	9:20p	9:45p	10:50p
	SF Financial-Hyatt	⊕6:35a	⊕7:50a	⊕8:35a	⊕9:15a	⊕9:50a	⊕10:40a	⊕11:20a	⊕11:30a	⊕12:20p	⊕2:20p	⊕4:15p	⊕4:35p	⊕5:45p	⊕6:45p	⊕7:40p	⊕7:45p	⊕8:45p	⊕9:50p	⊕10:10p	⊕11:15p
	SF Ferry Building Annex	⊕6:40a	⊕7:55a	⊕8:40a	⊕9:20a	⊕9:50a	⊕10:45a	⊕11:20a	⊕11:35a	⊕12:25p	⊕2:25p	⊕4:20p	⊕4:40p	⊕5:50p	⊕6:45p	⊕7:45p	⊕7:50p	⊕8:50p	⊕9:55p	⊕10:10p	⊕11:20p
	SF Pier 39	⊕6:50a	⊕8:15a	⊕8:50a	⊕9:30a	⊕10:00a	⊕11:00a	⊕11:30a	⊕11:50a	⊕12:40p	⊕2:40p	⊕4:35p	⊕4:55p	⊕6:05p	⊕6:55p	⊕7:55p	⊕8:00p	⊕9:00p	⊕10:10p	⊕10:20p	⊕11:30p
	SF Civic Center 4	⊕6:40a	⊕7:50a	⊕8:35a	⊕9:15a	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop
	SF Shop Ctr. Market & 4th	⊕6:45a	⊕7:55a	⊕8:40a	⊕9:20a	⊕10:00a	⊕11:15a	⊕11:30a	⊕12:05p	⊕12:55p	⊕2:55p	⊕4:55p	⊕5:15p	⊕6:20p	⊕6:55p	⊕8:05p	⊕8:10p	⊕9:10p	⊕10:25p	⊕10:20p	⊕11:40p
	SF Moscone Center	⊕6:50a	⊕8:00a	⊕8:45a	⊕9:25a	⊕10:05a	⊕11:20a	⊕11:35a	⊕12:10p	⊕1:00p	⊕3:00p	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop
	SF Caltrain Depot	⊕6:55a	⊕8:05a	⊕8:50a	⊕9:30a	⊕10:10a	⊕11:25a	⊕11:40a	⊕12:15p	⊕1:05p	⊕3:05p	⊕5:05p	⊕5:25p	⊕6:30p	⊕7:05p	⊕8:15p	⊕8:20p	⊕9:20p	⊕10:35p	⊕10:30p	⊕11:50p

Reference Notes

Green — Amtrak Thruway Motorcoach Bus

Yellow — Quiet Cars Available

Grey — San Joaquin through trains to/from Bakersfield. Capitol Corridor ticket are accepted for travel on the San Joaquin service only between Oakland Jack London and Martinez, and SF motorcoach connections.

◔ Connecting motorcoaches for trains 540, 542 and 544 may depart 5 minutes after train arrival, even if train is early.

Ⓓ Stops to discharge passengers only, arrival time approximate.

6:00p Times in bold indicate Capitol Corridor train times.

Arrive / Depart — If separate departure/arrival times are not shown, stop is for passenger loading/unloading.

No Stop — Train/motorcoach will not stop at station.

Holidays Weekend schedule applies. Regularly scheduled service all other days.
Monday, May 31 – Memorial Day
Monday, September 6 – Labor Day

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2 For connecting BART schedules, visit www.bart.gov or call (510) 464-6000.

3 Connecting motorcoach for Trains 540, 542 and 544 may depart 5 minutes after train arrived, even if train is early.

4 Weekday service only.

Motorcoach Bus Connections

C **Sacramento**
Route 3 – to Marysville/Chico/Redding/Dunsmuir and Medford, Oregon;
Route 20 A/B – to Roseville/Colfax/Reno; **Route 24C** – to South Lake Tahoe

B **Martinez**
Route 7 – to Vallejo/Napa/Santa Rosa/Eureka, including Discovery Kingdom

C **San Jose**
Route 29 – to Santa Barbara; **Highway 17 Express** – to Santa Cruz

Reservations required for Routes 3 & 7. Contact the Amtrak Support Desk at 1-800-USA-RAIL. Emeryville-San Francisco schedule is also provided here. For more information on motorcoaches, please refer to the Capitol Corridor Motorcoach Bus Schedule.

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Schedule effective May 10, 2010

capitolcorridor.org
1-877-9-RIDECC
(1-877-974-3322)

CAPITOL CORRIDOR

WEEKDAYS: Eastbound

Route 99 San Francisco to Emeryville Motorcoach Connection

	SF Caltrain Depot	5:10a	5:55a	6:25a	7:00a	8:05a	8:45a	9:05a	11:05a	12:05p	12:15p	1:40p	2:30p	3:10p	3:50p	4:30p	4:50p	5:55p	7:30p	8:25p
	SF Moscone Center	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	2:35p	3:15p	3:55p	4:35p	4:55p	6:00p	7:35p	No Stop
	SF Civic Center 4	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	2:45p	3:25p	4:05p	4:45p	No Stop	No Stop	No Stop	No Stop
	SF Shop Ctr. Market & 4th	5:15a	6:05a	6:35a	7:10a	8:15a	8:55a	9:15a	11:15a	12:15p	12:25p	1:50p	2:50p	3:30p	4:10p	4:50p	5:00p	6:05p	7:40p	8:35p
	SF Pier 39	No Stop	6:00a	6:50a	6:55a	8:30a	9:15a	9:30a	11:30a	12:30p	12:40p	2:05p	2:40p	3:20p	4:00p	4:40p	4:50p	5:55p	7:40p	8:50p
	SF Ferry Building Annex	5:30a	6:10a	7:05a	7:10a	8:45a	9:35a	9:45a	11:45a	12:45p	12:55p	2:20p	3:00p	3:40p	4:20p	5:05p	5:15p	6:15p	7:55p	9:05p
	SF Financial-Hyatt	No Stop	6:10a	No Stop	7:20a	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	3:00p	3:40p	4:20p	5:05p	5:15p	6:15p	7:55p	No Stop
Ar	Emeryville-Amtrak	5:45a	6:35a	7:30a	7:45a	9:15a	10:05a	10:15a	12:15p	1:15p	1:25p	2:50p	3:30p	4:10p	4:50p	5:35p	5:45p	6:50p	8:20p	9:35p
CONNECTING TRAIN		**520**	**522**	**712**	**524**	**526**	**714**	**528**	**530**	**716**	**532**	**534**	**536**	**538**	**540**	**542**	**718**	**544**	**546**	**548**
Lv	**Emeryville-Amtrak**	**5:50a**	**6:40a**	7:40a	**7:55a**	**9:25a**	10:15a	**10:25a**	**12:25p**	1:25p	**1:35p**	**3:00p**	**3:40p**	**4:20p**	**5:00p**	**5:45p**	6:00p	**7:05p**	**8:30p**	**9:45p**

WEEKDAYS: Eastbound

San Jose-Oakland-Emeryville/San Francisco-Sacramento-Auburn

CODE	STATION	TRAIN:	518	520	522	712	524	526	714	528	530	716	532	534	536	538	540	542	718	544	546	548
SJC	**San Jose** 1	Depart				SAN JOAQUIN	6:40a		SAN JOAQUIN	9:05a			12:20p			3:00p		4:20p	SAN JOAQUIN	5:50p	7:15p	
GAC	**Santa Clara-Great Am.**	Depart					6:52a			9:19a			12:32p			3:14p		4:32p		6:02p	7:27p	
FMT	**Fremont-Centerville**	Depart					7:09a			9:38a			12:49p			3:33p		4:49p		6:19p	7:43p	
HAY	**Hayward**	Depart					7:24a			9:54a			1:04p			3:49p		5:04p		6:34p	7:59p	
OAC	**Oakland Coliseum–BART** 2	Depart					7:34a	8:55a		10:04a			1:14p			3:59p		5:14p		6:44p	8:10p	
OKJ	**Oakland–Jack London**	Arrive					7:43a	9:03a		10:13a			1:23p			4:08p		5:23p		6:53p	8:18p	
		Depart	4:30a	5:40a	6:30a	7:30a	7:45a	9:15a	10:05a	10:15a	12:15p	1:15p	1:25p	2:50p	3:30p	4:10p	4:50p	5:30p	5:50p	6:55p	8:20p	9:25p
EMY	**Emeryville**	Depart	4:40a	5:50a	6:40a	7:40a	7:55a	9:25a	10:15a	10:25a	12:25p	1:25p	1:35p	3:00p	3:40p	4:20p	5:00p	5:45p	6:00p	7:05p	8:30p	9:45p
BKY	**Berkeley**	Depart	4:44a	5:54a	6:44a	No Stop	7:59a	9:29a	No Stop	10:29a	12:29p	No Stop	1:39p	3:04p	3:44p	4:24p	5:04p	5:49p	No Stop	7:09p	8:34p	9:49p
RIC	**Richmond–BART** 2	Depart	4:52a	6:02a	6:52a	7:49a	8:07a	9:37a	10:24a	10:37a	12:37p	1:34p	1:47p	3:12p	3:52p	4:32p	5:12p	5:57p	6:09p	7:17p	8:42p	9:57p
MTZ	**Martinez** B	Depart	5:19a	6:29a	7:19a	8:19a	8:34a	10:04a	10:54a	11:04a	1:04p	2:04p	2:14p	3:39p	4:19p	4:59p	5:39p	6:24p	6:39p	7:44p	9:09p	10:24p
SUI	**Suisun-Fairfield**	Depart	5:38a	6:48a	7:38a	Through Train to Bakersfield	8:53a	10:23a	Through Train to Bakersfield	11:23a	1:23p	Through Train to Bakersfield	2:33p	3:58p	4:38p	5:18p	5:58p	6:42p	Through Train to Bakersfield	8:03p	9:27p	10:43p
DAV	**Davis**	Depart	6:02a	7:12a	8:02a	▼	9:17a	10:47a	▼	11:47a	1:47p	▼	2:57p	4:22p	5:02p	5:42p	6:22p	7:07p	▼	8:27p	9:52p	11:07p
SAC	**Sacramento** 3 A	Arrive	6:28a	7:38a	8:28a		9:45a	11:13a		12:15p	2:13p		3:25p	4:48p	5:22p	6:10p	6:48p	7:35p		8:55p	10:25p	11:33p
		Depart					10:05a			1:00p			4:00p		5:25p		6:50p	7:40p		9:05p		
RSV	**Roseville**	Depart					10:35a			1:30p			4:30p		5:48p		7:20p	8:05p		9:35p		
RLN	**Rocklin**	Depart					10:50a			1:45p			4:45p		5:56p		7:35p	8:20p		9:50p		
ABN	**Auburn/Conheim**	Depart					11:15a			2:00p			5:10p		6:30p		7:50p	8:45p		10:05p		
COX	**Colfax**	Arrive					11:30a			2:15p			5:25p									

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B Martinez
Route 7 – to Vallejo/Napa/Santa Rosa/Eureka, including Discovery Kingdom

G San Jose
Route 21 – to Santa Barbara; **Highway 17 Express** – to Santa Cruz

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CAPITOL CORRIDOR

WEEKENDS/HOLIDAYS: Eastbound

Route 99 San Francisco to Emeryville Motorcoach Connection

	SF Caltrain Depot	6:40a	6:25a	8:05a	8:45a	9:45a	11:15a	12:05p	12:45p	2:35p	3:35p	4:30p	4:50p	5:55p	6:45p	7:45p
	SF Moscone Ctr.	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	2:40p	3:40p	4:35p	4:55p	6:00p	6:50p	7:50p
	SF Shop Ctr. Market & 4th	6:50a	6:35a	8:15a	8:55a	9:55a	11:25a	12:15p	12:55p	2:45p	3:45p	4:50p	5:00p	6:05p	6:55p	7:55p
	SF Pier 39	6:45a	6:50a	8:10a	9:15a	10:10a	11:40a	12:30p	1:10p	2:35p	3:35p	4:40p	4:50p	5:55p	7:10p	8:10p
	SF Ferry Building Annex	7:00a	7:05a	8:25a	9:35a	10:25a	11:55a	12:45p	1:25p	2:55p	3:55p	5:05p	5:15p	6:15p	7:25p	8:25p
	SF Financial-Hyatt	7:00a	No Stop	8:25a	No Stop	No Stop	No Stop	No Stop	No Stop	2:55p	3:55p	5:05p	5:15p	6:15p	No Stop	No Stop
Ar	Emeryville-Amtrak	7:25a	7:30a	8:55a	10:05a	10:55a	12:25p	1:15p	1:55p	3:25p	4:25p	5:35p	5:45p	6:50p	7:55p	8:55p
CONNECTING TRAIN		**720**	**712**	**724**	**714**	**728**	**732**	**716**	**734**	**736**	**738**	**742**	**718**	**744**	**746**	**748**
Lv	Emeryville-Amtrak	**7:30a**	7:40a	**9:05a**	10:15a	**11:05a**	**12:35p**	1:25p	**2:05p**	**3:35p**	**4:35p**	**5:40p**	6:00p	**7:05p**	**8:05p**	**9:05p**

WEEKENDS/HOLIDAYS: Eastbound

San Jose-Oakland-Emeryville/SF-Sacramento-Auburn

CODE	STATION	TRAIN:	720	712	724	714	728	732	716	734	736	738	742	718	744	746	748
SJC	**San Jose** 1 C	Depart		SAN JOAQUIN	**7:50a**	SAN JOAQUIN	**9:50a**		SAN JOAQUIN	**12:50p**	**2:20p**		**4:25p**	SAN JOAQUIN	**5:50p**		**7:50p**
GAC	**Santa Clara-Great Am.**	Depart			**8:02a**		**10:02a**			**1:02p**	**2:32p**		**4:37p**		**6:02p**		**8:02p**
FMT	**Fremont-Centerville**	Depart			**8:19a**		**10:19a**			**1:19p**	**2:49p**		**4:54p**		**6:19p**		**8:19p**
HAY	**Hayward**	Depart			**8:34a**		**10:34a**			**1:34p**	**3:04p**		**5:09p**		**6:34p**		**8:34p**
OAC	**Oakland Coliseum–BART** 2	Depart			**8:44a**		**10:44a**			**1:44p**	**3:14p**		**5:19p**		**6:44p**		**8:44p**
OKJ	**Oakland–Jack London**	Arrive			**8:53a**		**10:53a**			**1:53p**	**3:23p**		**5:28p**		**6:53p**		**8:53p**
		Depart	**7:20a**	7:30a	**8:55a**	10:05a	**10:55a**	**12:25p**	1:15p	**1:55p**	**3:25p**	**4:25p**	**5:30p**	5:50p	**6:55p**	**7:55p**	**8:55p**
EMY	**Emeryville**	Depart	**7:30a**	7:40a	**9:05a**	10:15a	**11:05a**	**12:35p**	1:25p	**2:05p**	**3:35p**	**4:35p**	**5:40p**	6:00p	**7:05p**	**8:05p**	**9:05p**
BKY	**Berkeley**	Depart	**7:34a**	No Stop	**9:09a**	No Stop	**11:09a**	**12:39p**	No Stop	**2:09p**	**3:39p**	**4:39p**	**5:44p**	No Stop	**7:09p**	**8:09p**	**9:09p**
RIC	**Richmond–BART** 2	Depart	**7:42a**	7:49a	**9:17a**	10:24a	**11:17a**	**12:47p**	1:34p	**2:17p**	**3:47p**	**4:47p**	**5:52p**	6:09p	**7:17p**	**8:17p**	**9:17p**
MTZ	**Martinez** B	Depart	**8:09a**	8:19a	**9:44a**	10:54a	**11:44a**	**1:14p**	2:04p	**2:44p**	**4:14p**	**5:14p**	**6:19p**	6:39p	**7:44p**	**8:44p**	**9:44p**
SUI	**Suisun-Fairfield**	Depart	**8:28a**	Through Train to Bakersfield	**10:03a**	Through Train to Bakersfield	**12:03p**	**1:33p**	Through Train to Bakersfield	**3:03p**	**4:33p**	**5:33p**	**6:38p**	Through Train to Bakersfield	**8:03p**	**9:03p**	**10:03p**
DAV	**Davis**	Depart	**8:52a**		**10:27a**		**12:27p**	**1:57p**		**3:27p**	**4:57p**	**5:57p**	**7:02p**		**8:27p**	**9:27p**	**10:27p**
SAC	**Sacramento** 3 A	Arrive	**9:18a**		**10:55a**		**12:55p**	**2:23p**		**3:55p**	**5:23p**	**6:23p**	**7:22p**		**8:55p**	**9:53p**	**10:55p**
		Depart	10:05a				1:00p			4:00p			7:25p				
RSV	**Roseville**	Depart	⊖10:35a				⊖1:30p			⊖4:30p			7:48p				
RLN	**Rocklin**	Depart	⊖10:50a				⊖1:45p			⊖4:45p			7:56p				
ARN	**Auburn/Conheim**	Depart	⊖11:15a				⊖2:00p			⊖5:10p			8:30p				
COX	**Colfax**	Arrive	⊖11:30a				⊖2:15p			⊖5:25p							

Reference Notes

Green Amtrak Thruway Motorcoach Bus

Yellow Quiet Cars Available

Grey — San Joaquin through trains to/from Bakersfield. Capitol Corridor tickets are accepted for travel on the San Joaquin service only between Oakland Jack London and Martinez, and SF motorcoach connections.

◔ Connecting motorcoaches for trains 540, 542 and 544 may depart 5 minutes after train arrival, even if train is early.

⊖ Stops to discharge passengers only; arrival time approximate

6:00p Times in bold indicate Capitol Corridor train times

Arrive / Depart If separate departure/arrival times are not shown, stop is for passenger loading/unloading

No Stop Train/motorcoach will not stop at station

Holidays Weekend schedule applies. Regularly scheduled service all other days.
Monday, May 31 – Memorial Day
Monday, September 6 – Labor Day

1 For connecting Caltrain schedules, visit www.caltrain.com or call (800) 660-4287. San Jose Station reports 6:15am; closes 10:00pm.

2 For connecting BART schedules, visit www.bart.gov or call (510) 464-6000.

3 Connecting motorcoach for Trains 540, 542 and 544 may depart 5 minutes after train arrival, even if train is early.

4 Weekday service only.

Motorcoach Bus Connections

A **Sacramento**
Route 3 – to Marysville/Chico/Redding/Dunsmuir and Medford, Oregon; **Route 20 A/B** – to Roseville/Colfax/ Reno; **Route 20C** – to South Lake Tahoe

B **Martinez**
Route 7 – to Vallejo/Napa/Santa Rosa/Eureka, including Discovery Kingdom

C **San Jose**
Route 21 – to Santa Barbara; **Highway 17 Express** – to Santa Cruz

Reservations required for Routes 3 & 7. Contact the Amtrak Support Desk at 1-800-USA-RAIL. Emeryville-San Francisco schedule is also provided here. For more information on motorcoaches, please refer to the Capitol Corridor Motorcoach Bus Schedule.

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1-877-9-RIDECC
(1-877-974-3322)

CAPITOL CORRIDOR

Sacramento Motorcoach Bus Connections (A)

XSSH: Mondays – Fridays, except holidays. **SSH:** Saturdays, Sundays, holidays. For designated holidays see Reference Notes.

Route 3 Sacramento to Marysville/Chico/Redding*×

		DAILY	XSSH	SSH	XSSH	SSH	DAILY
Connecting Train		720/524	528	728	532	734	736/538
Sacramento-Amtrak	Arrive	**9:18/9:45a**	**12:15p**	**12:55p**	**3:25p**	**3:55p**	**5:23/6:10p**
Sacramento-Amtrak	Depart	10:15a*	12:35p	1:00p	(A)3:30p	4:00p	6:30p
Marysville	Depart	(A)11:05a	(A)1:35p	(A)2:00p	(A)4:20p	(A)4:50p	(A)7:30p
Oroville	Depart	(A)11:40a	(A)2:10p	(A)2:35p	(A)4:55p	(A)5:25p	(A)8:05p
Chico	Depart	(A)12:10p	(A)2:40p	(A)3:05p	(A)5:25p	(A)5:55p	(A)8:35p
Red Bluff	Depart	(A)1:00p	(A)3:30p	(A)3:55p	(A)6:15p	(A)6:45p	(A)9:25p
Redding	Arrive	(A)1:30p	(A)4:00p	(A)4:25p	(A)6:45p	(A)7:15p	(A)9:55p

Route 20A/B Sacramento to Roseville/Colfax/Reno**

		DAILY	DAILY	DAILY	XSSH	XSSH	XSSH
Connecting Train		720/524	528/728	532/734	540	542	544
Sacramento-Amtrak	Arrive	**9:18/9:45a**	**12:15/12:55p**	**3:25/3:55p**	**6:48p**	**7:35p**	**8:55p**
Sacramento-Amtrak	Depart	10:05a	1:00p	4:00p	(A)6:50p	(A)7:40p	(A)9:05p
Roseville	Depart	(A)10:35a	(A)1:30p	(A)4:30p	(A)7:20p	(A)8:10p	(A)9:35p
Rocklin	Depart	(A)10:50a	(A)1:45p	(A)4:45p	(A)7:35p	(A)8:25p	(A)9:50p
Auburn/Conheim	Depart	(A)11:15a	(A)2:00p	(A)5:10p	(A)7:50p	(A)8:40p	(A)10:05p
Colfax	Depart	(A)11:30a	(A)2:15p	(A)5:25p	No Stop	No Stop	No Stop
Truckee	Depart	(A)12:50p	(A)3:35p	(A)6:45p	No Stop	No Stop	No Stop
Reno	Depart	(A)1:30p	(A)4:15p	(A)7:25p	No Stop	No Stop	No Stop
Sparks	Arrive	(A)1:50p	(A)4:35p	(A)7:45p	No Stop	No Stop	No Stop

Route 20A/B Reno/Colfax/Roseville to Sacramento**

		XSSH	XSSH	DAILY	DAILY	DAILY	DAILY
Sparks	Depart	No Stop	No Stop	7:45a	11:10a	No Stop	4:45p
Reno	Depart	No Stop	No Stop	8:05a	11:30a	No Stop	5:05p
Truckee	Depart	No Stop	No Stop	8:45a	12:10p	No Stop	5:45p
Colfax	Depart	No Stop	No Stop	10:05a	1:30p	No Stop	7:05p
Auburn/Conheim	Depart	No Stop	No Stop	10:35a	2:00p	5:10p	7:35p
Rocklin	Depart	No Stop	No Stop	10:50a	2:15p	No Stop	7:50p
Roseville	Depart	4:45a	5:35a	11:05a	2:30p	5:40p	8:05p
Sacramento-Amtrak	Arrive	5:20a	6:10a	11:55a	3:20p	6:15p	8:55p
Connecting Train		523	525	537/737	543/743	549/749	553/751
Sacramento-Amtrak	Depart	**5:30a**	**6:20a**	**12:10p**	**3:35p**	**6:40p/7:10p**	**9:10p**

Route 3 Redding/Chico/Marysville to Sacramento*×

		DAILY	DAILY	DAILY	DAILY
Redding	Depart	6:20a	10:05a	12:45p	2:30p
Red Bluff	Depart	6:55a	10:40a	1:20p	3:05p
Chico	Depart	7:55a	11:40a	2:20p	4:05p
Oroville	Depart	8:20a	12:05p	2:45p	4:30p
Marysville	Depart	8:55a	12:40p	3:20p	5:05p
Sacramento-Amtrak	Arrive	10:00a	1:45p	4:25p	6:10p
Connecting Train		535/733	541/741	545/745	549/749
Sacramento-Amtrak	Depart	**10:10/10:40a**	**2:10/2:15p**	**4:40p**	**6:40/7:10p**

Route 20C Sacramento to South Lake Tahoe**

		SSH	XSSH
Connecting Train		720	524
Sacramento-Amtrak	Arrive	**9:18a**	**9:45a**
Sacramento-Amtrak	Depart	10:05a	10:05a
Placerville	Depart	11:05a	11:05a
Tahoe Wye	Depart	12:25p	12:25p
Stateline Transit Ctr.	Depart	12:35p	12:35p
Stateline-Kingsbury	Arrive	12:40p	12:40p

Route 20C South Lake Tahoe to Sacramento**

		XSSH	SSH
Stateline-Kingsbury	Depart	2:20p	2:20p
Stateline Transit Ctr.	Depart	2:25p	2:25p
Tahoe Wye	Depart	2:35p	2:35p
Placerville	Depart	3:55p	3:55p
Sacramento-Amtrak	Arrive	5:25p	5:25p
Connecting Train		547	747
Sacramento-Amtrak	Depart	**5:40p**	**5:40p**

KEY

- * May leave immediately after train arrives.
- ** Mobility impaired passengers in need of wheelchair lifts are requested to call 24 hours ahead, if possible, to 1-877-9-RIDECC (1-877-974-3322).
- ✦ Reservations are required for Routes 3 and 7, and are handled through the Amtrak Support Desk at 1-800-USA-RAIL (1-800-872-7245).
- × Contact Amtrak at www.amtrak.com or 1-800-USA-RAIL (1-800-872-7245) for information about stops/schedules beyond Redding, CA, including Dunsmuir, Mt. Shasta, Weed and Yreka, as well as Ashland and Medford, Oregon.

Reference Notes

Green	Amtrak Thruway Motorcoach Bus
(R)	Rest Stop
(N)	No service to/from Discovery Kingdom when park is closed
(L)	Connecting motorcoaches for trains 540, 542 and 544 may depart 5 minutes after train arrival, even if train is early
(D)	Stops to discharge passengers only; arrival time approximate
6:00p	Times in bold indicate Capitol Corridor train times
Arrive / Depart	If separate departure/arrival times are not shown, stop is for passenger loading/unloading
No Stop	Train/motorcoach will not stop at station
Holidays	Weekend schedule applies. Regularly scheduled service all other days. **Monday, May 31** – Memorial Day **Monday, September 6** – Labor Day

Key

- * May leave immediately after train arrives.
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CAPITOL CORRIDOR

Martinez Motorcoach Bus Connections (B)

Route 7 Martinez to Vallejo/Napa/Santa Rosa/Eureka*

		DAILY	DAILY	DAILY
WESTBOUND Connecting Train		729/533	541/741	547/747
Martinez-Amtrak	Arrive	**10:08/10:18a**	**3:08/3:13p**	**6:38p**
		DAILY	DAILY	DAILY
EASTBOUND Connecting Train		724/526	532/734	742/542
Martinez-Amtrak	Arrive	**9:42/10:02a**	**2:12/2:42p**	**6:17/6:22p**
Martinez-Amtrak	Depart	10:25a	3:25p	6:45p
Discovery Kingdom-Main Gate	Depart	ⓑ10:45a	No Stop	No Stop
Vallejo-Denny's	Depart	ⓑ10:50a	ⓑ3:50p	ⓑ7:10p
Napa Vine Transit Center	Depart	ⓑ11:05a	ⓑ4:05p	ⓑ7:25p
Napa-Wine Train	Depart	ⓑ11:10a	ⓑ4:10p	ⓑ7:30p
Petaluma-City Library	Depart	ⓑ11:15a	ⓑ4:15p	ⓑ7:35p
Rohnert Park	Depart	ⓑ11:30a	ⓑ4:30p	ⓑ7:55p
Santa Rosa-Marriott	Depart	ⓑ11:40a	ⓑ4:40p	ⓑ8:05p
Ukiah-Burger King	Depart	ⓓ12:50p	ⓓ5:50p	No Stop
Willits-Skunk Train Depot	Depart	ⓑ1:25p	ⓑ6:25p	No Stop
Eureka-Denny's	Depart	ⓑ4:25p	ⓑ9:20p	No Stop
Arcata-Transit Center	Depart	ⓑ4:40p	ⓑ9:40p	No Stop
McKinleyville-Airport	Arrive	ⓑ4:55p	ⓑ9:55p	No Stop

Route 7 Eureka/Santa Rosa/Napa/Vallejo to Martinez*

		DAILY	DAILY	DAILY	DAILY
McKinleyville-Airport	Depart	No Stop	No Stop	6:15a	10:10a
Arcata-Transit Center	Depart	No Stop	No Stop	6:30a	10:25a
Eureka-Denny's	Depart	No Stop	No Stop	6:45a	10:40a
Willits-Skunk Train Depot	Depart	No Stop	No Stop	9:35a	1:30p
Ukiah-Burger King	Depart	No Stop	No Stop	ⓓ10:30a	ⓓ2:25p
Santa Rosa-Marriott	Depart	6:00a	8:30a	11:50a	3:50p
Rohnert Park	Depart	6:10a	8:40a	12:01p	4:05p
Petaluma-City Library	Depart	6:25a	8:55a	12:15p	4:20p
Napa-Wine Train	Depart	No Stop	No Stop	12:25p	4:45p
Napa Vine Transit Center	Depart	No Stop	No Stop	12:30p	4:50p
Vallejo-Denny's	Depart	7:00a	9:20a	12:55p	5:10p
Discovery Kingdom-Main Gate	Depart	No Stop	No Stop	ⓓ1:00p	ⓓ5:15p
Martinez-Amtrak	Arrive	7:50a	10:05a	1:45p	6:05p
EASTBOUND Connecting Train		720/524	528/728	532/734	742/542
Martinez-Amtrak	Depart	**8:09/8:34a**	**11:04/11:44a**	**2:14/2:44p**	**6:19/6:24p**
WESTBOUND Connecting Train		529/727	535/733	541/741	747/547
Martinez-Amtrak	Depart	**8:40a**	**11:10/11:40a**	**3:10/3:15p**	**6:40p**

*Additional stops for Route 7 not shown. Visit www.amtrak.com for a complete schedule.

San Jose Motorcoach Bus Connections (C)

Route 21 San Jose to Santa Barbara

		DAILY	DAILY	DAILY	DAILY
Connecting Train		523/723	527/727	537/737	749/551
Oakland-Jack London	Arrive	**7:21/7:31a**	**8:51/9:31a**	**2:01p**	**9:08/9:38p**
Oakland-Jack London	Depart	**7:23/7:33a**	**8:53/9:33a**	**2:03p**	10:00p
San Jose-Amtrak	Arrive	**8:35/8:45a**	**10:10/10:45a**	**3:15p**	11:55p
San Jose-Amtrak	Depart	9:35a	11:25a	3:25p	11:59p
Gilroy-Caltrain	Depart	No Stop	No Stop	ⓒ4:05p	No Stop
Salinas-Amtrak	Depart	10:55a	12:45p	4:40p	1:20a
King City-McDonald's	Depart	ⓒ11:50a	ⓒ1:40p	ⓒ5:35p	ⓒ2:15a
Paso Robles-Amtrak	Depart	12:50p	2:40p	ⓒ6:20p	3:15a
Atascadero-Denny's	Depart	No Stop	3:00p	No Stop	No Stop
San Luis Obispo-Cal Poly	Depart	1:25p	3:25p	ⓒ6:55p	ⓒ3:50a
San Luis Obispo-Amtrak	Arrive	1:45p	3:45p	7:10p	3:55a
San Luis Obispo-Amtrak	Depart	**2:00p***	3:50p	No Stop	4:00a
Grover Beach-Amtrak	Depart	**2:20p***	4:15p	ⓒ7:30p	No Stop
Santa Maria-IHOP	Depart		4:40p	ⓒ7:55p	4:35a
Buellton-Burger King	Depart		5:10p	ⓒ8:30p	5:05a
Solvang-Solvang Park	Depart		5:20p	ⓒ8:40p	5:15a
Santa Barbara-Amtrak	Arrive	**4:31p***	6:40p	9:30p	6:30a

*Pacific Surfliner Train 798 connection to Santa Barbara with stops at Guadalupe 2:36p, Surf/ Lompoc 3:30p and Goleta 4:16p. Visit www.amtrakcalifornia.com for updates.

Route 21 Santa Barbara to San Jose

		DAILY	DAILY	DAILY	DAILY
Santa Barbara-Amtrak	Depart	9:45p	6:00a	**10:15a***	11:40a
Buellton-Burger King	Depart	10:30p	No Stop		12:25p
Solvang-Solvang Park	Depart	10:35p	No Stop		12:30p
Santa Maria-IHOP	Depart	11:15p	7:20a		1:10p
Grover Beach-Amtrak	Depart	11:40p	7:45a	**12:26p***	1:35p
San Luis Obispo-Amtrak	Arrive	12:05a	8:10a	**12:45p***	2:00p
San Luis Obispo-Amtrak	Depart	12:10a	8:20a	12:50p	2:05p
San Luis Obispo-Cal Poly	Depart	12:20a	8:25a	1:00p	2:15p
Atascadero-Denny's	Depart	No Stop	No Stop	No Stop	2:30p
Paso Robles-Amtrak	Depart	12:45a	8:55a	1:25p	2:45p
King City-McDonald's	Depart	ⓒ1:55a	9:45a	ⓒ2:35p	ⓒ3:55p
Salinas-Amtrak	Depart	2:55a	10:40a	3:35p	4:55p
San Jose-Amtrak	Arrive	4:10a	12:10p	4:50p	6:10p
Oakland-Jack London	Arrive	5:55a	No Stop	No Stop	No Stop
Connecting Train		522/720	532/734	544/744	546/748
San Jose-Amtrak	Depart		**12:20/12:50p**	**5:50p**	**7:15/7:50p**
Oakland-Jack London	Depart	**6:30/7:20a**			

*Pacific Surfliner Train 799 connection from Santa Barbara with stops at Goleta 10:27a, Surf/Lompoc 11:33a, Guadalupe 12:09p and Grover Beach 12:26p. Visit www.amtrakcalifornia.com for updates.

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CAPITOL CORRIDOR

San Jose Motorcoach Bus Connections

Highway 17 Express San Jose – Santa Cruz

FOR FARES, SCHEDULE UPDATES AND HOLIDAY INFORMATION VISIT: WWW.SCMTD.COM
Provided by Santa Cruz Metropolitan Transit District's Highway 17 Express

Santa Cruz/Scotts Valley to San Jose

Metro Center	Scotts Vly. Transit Ctr.	San Jose Diridon	Capitol Corridor Train Departs
NORTHBOUND WEEKDAYS			
5:25a	5:40a	6:17a	**6:40a**
7:30a	7:45a	8:32a	**9:05a**
11:00a	11:15a	11:55a	**12:20p**
1:10p	No Stop	2:00p	**3:00p**
3:00p	3:15p	4:00p	**4:20p**
4:30p	4:45p	5:30p	**5:50p**
5:30p	5:45p	6:30p	**7:15p**
NORTHBOUND WEEKENDS/HOLIDAYS			
6:40a	6:55a	7:35a	**7:50a**
8:40a	8:55a	9:40a	**9:50a**
11:40a	11:55a	12:40p	**12:50p**
12:50p	1:05p	1:50p	**2:20p**
2:35p	2:50p	3:35p	**4:25p**
4:35p	4:50p	5:35p	**5:50p**
6:35p	6:50p	7:35p	**7:50p**

San Jose to Santa Cruz/Scotts Valley

Capitol Corridor Train Arrives	San Jose Diridon	Scotts Vly. Transit Ctr.	Metro Center
SOUTHBOUND WEEKDAYS			
7:35a	7:47a	8:27a	8:47a
8:35a	9:05a	9:45a	10:05a
10:10a	10:40a	11:20a	11:40a
1:15p	1:35p	2:15p	2:35p
3:15p	3:45p	4:30p	4:55p
6:45p	7:05p	7:43p	8:03p
8:55p	9:15p	9:53p	10:08p
SOUTHBOUND WEEKENDS/HOLIDAYS			
8:45a	9:00a	9:35a	9:50a
10:45a	11:00a	11:45a	12:05p
1:45p	2:00p	2:45p	3:05p
3:15p	3:45p	4:30p	4:50p
5:20p	5:45p	6:30p	6:50p
6:45p	6:55p	7:40p	8:00p
8:45p	9:05p	9:45p	10:05p

All arrival times after Scotts Valley Transit Ctr. are approximate due to varying traffic conditions

Monterey – San Jose Express

FOR FARES, SCHEDULE UPDATES AND HOLIDAY INFORMATION VISIT: WWW.MST.ORG OR CALL 888-MST-BUS1

Monterey to San Jose – Northbound

Monterey Transit Plaza	Edgewater Transit Exchange	Prunedale Park 'n Ride	Gilroy Caltrain Station	Morgan Hill Caltrain Station	San Jose Diridon Station	Capitol Corridor Connecting Train	Capitol Corridor Connecting Departs
NORTHBOUND WEEKDAYS							
5:10a	5:22a	5:44a	6:11a	6:38a	7:23a	528	**9:05a**
9:50a	10:02a	10:24a	10:51a	11:18a	12:03p	532	**12:20p**
3:18p	3:30p	3:52p	4:19p	4:46p	5:31p	544	**5:50p**
NORTHBOUND WEEKENDS/HOLIDAYS							
5:22a	5:34a	5:56a	6:23a	6:50a	7:35a	724	**7:50a**
10:24a	10:36a	10:58a	11:25a	11:52a	12:37p	734	**12:50p**
3:15p	3:27p	3:49p	4:16p	4:43p	5:28p	744	**5:50p**

San Jose to Monterey – Southbound

Capitol Corridor Connecting Train	Capitol Corridor Connecting Arrives	San Jose Diridon Station	Morgan Hill Caltrain Station	Gilroy Caltrain Station	Prunedale Park 'n Ride	Edgewater Transit Exchange	Monterey Transit Plaza
SOUTHBOUND WEEKDAYS							
521	**7:35a**	7:55a	8:40a	8:57a	9:22a	9:42a	9:55a
535	**1:15p**	1:35p	2:15p	2:32p	3:02p	3:22p	3:35p
537	**3:15p**	5:53p	6:38p	6:55p	7:20p	7:40p	7:53p
SOUTHBOUND WEEKENDS/HOLIDAYS							
723	**8:45a**	9:05a	9:50a	10:07a	10:37a	10:57a	11:10a
733	**1:45p**	2:05p	2:50p	3:07p	3:37p	3:57p	4:10p
741	**5:20p**	6:00p	6:30p	6:47p	7:17p	7:37p	7:50p

Motorcoach Stops

Arcata (ARC) – 925 East Street, Transit Center 95521

Atascadero (ATA) – Denny's Restaurant, 6910 El Camino Real, 93422

Auburn/Conheim (ARN) – Robert F. Conheim Train Station, 277 Nevada St. at Fulweiler Ave., 95603

Buellton (BUL) – Burger King, 238 East Highway 246, 93427

Chico (CIC) – West 5th at Orange St., 95928

Colfax (COX) – 99 Railroad at Church St., 95713

Discovery Kingdom/Marine World (VMW) – 2001 Marine World Parkway, Vallejo, 94589 see also Vallejo

Eureka (EKA) – 6th & C St. (Bus stop behind Denny's Restaurant) 95501

Gilroy (GLY) – Caltrain Depot, 7250 Monterey St., 95020

Grover Beach (GVB) – Amtrak Station, 180 W. Grand Ave., 93433

King City (KGC) – McDonalds, 1350 Broadway Circle, 93930

Marysville (MRV) – Yuba-Sutter Transit Stop, 915 8th St., 95901

McKinleyville (MKV) – Arcata Airport Terminal, 3561 Boeing Ave., 95521

Morgan Hill (MHC) – Caltrain Station, 17300 Depot St. 95037

Monterey (MRY) – Transit Plaza, 500 Tyler St. at Pearl St., 93940

Napa (NPW) – Napa Valley Wine Train Depot, 1275 McKinstry St., 94559

Napa (NAP) – VINE Transit Center, 1151 Pearl St., 94559

Oroville (ORV) – Park & Ride Lot, Grand Ave. & Highway 70, 95965

Paso Robles (PRB) – 800 Pine St., 93446

Petaluma (PTC) – City Library, 100 Fairgrounds Dr., 94952

Placerville (PCV) – Transit Center, Mosquito Rd. at Clay St., 95667

Prunedale (PDL) – Park-and-Ride Lot at Hwy 156 & Hwy 101, 93907

Red Bluff (RBF) – Taco Bell, 228 Main St., 96080

Redding (RDR) – RABA Bus Station, 1530 Yuba St., 96001

Reno, NV (RNO) – 280 N. Center St., 89501

Rocklin (RLN) – 3700 Rocklin Rd. at Railroad Ave., 95677

Rohnert Park (RPC) – 6335 Commerce Blvd. (Across from Safeway), 94928

Roseville (RSV) – 201 Pacific St. at Church St., 95678

Salinas (SNS) – 11 Station Place (1 block north of Market St.), 93901

San Luis Obispo (SLO) – 1011 Railroad Avenue, 93401

San Luis Obispo/Cal Poly Campus (SLP) – Vista Grande Restaurant, Grand Ave. and Deer Rd., 93401

Santa Barbara (SBA) – 209 State St., 93101

Santa Cruz (SCZ) – Metro Center Center Island, 920 Pacific Ave., 95060

Santa Maria (SAT) – IHOP Restaurant, 205 S. Nicholson Ave., 93454

Santa Rosa (SRC) – Courtyard By Marriott, 175 Railroad St., 95401

Scotts Valley (SVY) – Transit Center, 246 Kings Village Rd., 95066

Seaside (SES) – Edgewater Transit Exchange, Playa Ave. & California Ave., 93955

Solvang (SLV) – Solvang Park, 1630 Mission Dr. at 1st St., 93463

Sparks, NV (SPX) – The Nugget, 1100 Nugget Ave. 11th St. Entrance, 89431

Stateline-Kingsbury, NV (SLN) – 169 Highway 50, 89449

Stateline Transit Ctr. (SLH) – 4114 Lake Tahoe Blvd., S. Lake Tahoe 96150

Truckee (TRU) – 10065 Donner Pass Rd., 96161

Tahoe Wye (SLT) – South Y Transit Center, 1000 Lake Tahoe Blvd. 96150

Ukiah (UKH) – Burger King, 711 E. Perkins St., 95482

Vallejo (VAL) – Denny's Restaurant, 4355 Sonoma Blvd., 94589

Willits (WTS) – California Western (Skunk Train) Depot, 200 E. Commercial St. at Railroad Tracks, 95490

Staffed Amtrak station, ticket sales
(ARC) Amtrak station code

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CAPITOL CORRIDOR

WEEKENDS/HOLIDAYS: Westbound — Auburn-Sacramento-Emeryville/SF-Oakland-San Jose

CODE	STATION	TRAIN:	723	727	711	729	733	737	741	713	743	745	715	747	749	717	751
					SAN JOAQUIN					SAN JOAQUIN			SAN JOAQUIN			SAN JOAQUIN	
COX	Colfax	Depart						10:05a			1:30p						7:05p
ARN	Auburn/Conheim	Depart				8:05a		10:35a			2:00p						7:35p
RLN	Rocklin	Depart				8:28a		10:50a			2:15p						7:50p
RSV	Roseville	Depart				8:37a		11:05a			2:30p						8:05p
SAC	Sacramento (A)	Arrive				9:07a		11:55a			3:20p						8:55p
		Depart	5:40a	7:40a	Through Train from Bakersfield	9:10a	10:40a	12:10p	2:15p	Through Train from Bakersfield	3:35p	4:40p	Through Train from Bakersfield	5:40p	7:10p	Through Train from Bakersfield	9:10p
DAV	Davis	Depart	5:55a	7:55a		9:25a	10:55a	12:25p	2:30p		3:50p	4:55p		5:55p	7:25p		9:25p
SUI	Suisun-Fairfield	Depart	6:19a	8:19a		9:49a	11:19a	12:49p	2:54p		4:14p	5:19p		6:19p	7:49p		9:49p
MTZ	Martinez (B)	Depart	6:40a	8:40a	10:03a	10:10a	11:40a	1:10p	3:15p	3:19p	4:35p	5:40p	6:28p	6:40p	8:10p	8:56p	10:10p
RIC	Richmond–BART 2	Depart	7:05a	9:05a	10:28a	10:35a	12:05p	1:35p	3:40p	3:44p	5:00p	6:05p	6:53p	7:05p	8:35p	9:22p	10:35p
BKY	Berkeley	Depart	7:12a	9:12a	No Stop	10:42a	12:12p	1:42p	3:47p	No Stop	5:07p	6:12p	No Stop	7:12p	8:42p	No Stop	10:42p
EMY	Emeryville	Depart	7:20a	9:20a	⊕10:48a	10:50a	12:20p	1:50p	3:55p	⊕4:03p	5:15p	6:20p	⊕7:13p	7:20p	8:50p	⊕9:43p	10:50p
OKJ	Oakland-Jack London	Arrive	7:31a	9:31a	11:00a	⊕11:08a	12:31p	2:01p	4:06p	4:15p	5:26p	6:38p	7:25p	7:31p	9:08p	9:55p	11:08p
		Depart	7:33a	9:33a			12:33p	2:03p	4:08p		5:28p			7:33p	10:00p		
OAC	Oakland Coliseum–BART 2	Depart	7:42a	9:42a		11:15a	12:42p	2:12p	4:17p		5:40p			7:42p	No Stop		
HAY	Hayward	Depart	7:53a	9:53a			12:53p	2:23p	4:28p		5:52p			7:53p	No Stop		
FMT	Fremont-Centerville	Depart	8:09a	10:09a			1:09p	2:39p	4:44p		6:07p			8:09p	No Stop		
GAC	Santa Clara-Great Am.	Depart	8:26a	10:26a			1:26p	2:56p	5:01p		6:27p			8:26p	No Stop		
SJC	San Jose 1 (C)	Arrive	8:45a	10:45a			1:45p	3:15p	5:20p		6:45p			8:45p	11:55p		

WEEKENDS/HOLIDAYS: Westbound — Route 99 Emeryville to San Francisco Motorcoach Connection

CONNECTING TRAIN		723	727	711	729	733	737	741	713	743	745	715	747	749	717	751
Ar	Emeryville-Amtrak	7:18a	9:18a	10:46a	10:48a	12:18p	1:48p	3:53p	4:01p	5:13p	6:18p	7:11p	7:18p	8:48p	9:41p	10:48p
Lv	Emeryville-Amtrak	7:20a	9:20a	10:50a	10:50a	12:20p	1:50p	3:55p	4:05p	5:15p	6:20p	7:15p	7:20p	8:50p	9:45p	10:50p
	SF Financial-Hyatt	⊖7:50a	⊖9:50a	⊖11:20a	⊖11:15a	⊖12:50p	⊖2:20p	⊖4:20p	⊖4:35p	⊖5:45p	⊖6:45p	⊖7:40p	⊖7:45p	⊖9:20p	⊖10:10p	⊖11:15p
	SF Ferry Building Annex	⊖7:55a	⊖9:50a	⊖11:20a	⊖11:15a	⊖12:55p	⊖2:25p	⊖4:25p	⊖4:40p	⊖5:50p	⊖6:45p	⊖7:45p	⊖7:50p	⊖9:25p	⊖10:10p	⊖11:20p
	SF Pier 39	⊖8:10a	⊖10:00a	⊖11:30a	⊖11:25a	⊖1:10p	⊖2:40p	⊖4:40p	⊖4:55p	⊖6:05p	⊖6:55p	⊖7:55p	⊖8:00p	⊖9:40p	⊖10:20p	⊖11:30p
	SF Shop Ctr. Market & 4th	⊖8:25a	⊖10:00a	⊖11:30a	⊖11:25a	⊖1:25p	⊖2:55p	⊖5:00p	⊖5:15p	⊖6:20p	⊖6:55p	⊖8:05p	⊖8:10p	⊖9:55p	⊖10:20p	⊖11:40p
	SF Moscone Center	No Stop	⊖10:05a	⊖11:35a	⊖11:30a	⊖1:30p	⊖3:00p	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop	No Stop
	SF Caltrain Depot	⊖8:35a	⊖10:10a	⊖11:40a	⊖11:35a	⊖1:35p	⊖3:05p	⊖5:10p	⊖5:25p	⊖6:30p	⊖7:05p	⊖8:15p	⊖8:20p	⊖10:05p	⊖10:30p	⊖11:50p

Reference Notes

Green Amtrak Thruway Motorcoach Bus

Yellow Quiet Car Available

Grey San Joaquin through trains to/from Bakersfield. Capitol Corridor tickets are accepted for travel on the San Joaquin service only between Oakland-Jack London and Martinez, and SF motorcoach connections.

◔ Connecting motorcoaches for trains 540, 542 and 544 may depart 5 minutes after train arrival, even if train is early.

⊖ Stops to discharge passengers only; arrival time approximate

6:00p Times in bold indicate Capitol Corridor train times

Arrive If separate departure/arrival times are not shown, stop is for **Depart** passenger loading/unloading.

No Stop Train/motorcoach will not stop at station

Holidays Weekend schedule applies. Regularly scheduled service all other days.
Monday, May 31 – Memorial Day
Monday, September 6 – Labor Day

1 For connecting Caltrain schedules, visit www.caltrain.com or call (800) 660-4287. San Jose Station opens 6:15am, closes 10:00pm.

2 For connecting BART schedules, visit www.bart.gov or call (510) 464-6000.

3 Connecting motorcoach for Trains 540, 542 and 544 may depart 5 minutes after train arrival, even if train is early.

4 Weekday service only.

Motorcoach Bus Connections

(A) **Sacramento**
Route 3 – to Marysville/Chico/Redding/Dunsmuir and Medford, Oregon; **Route 20 A/B** – to Roseville/Colfax/Reno; **Route 20C** – to South Lake Tahoe

(B) **Martinez**
Route 7 – to Vallejo/Napa/Santa Rosa/Eureka, including Discovery Kingdom

(C) **San Jose**
Route 21 – to Santa Barbara; **Highway 17 Express** – to Santa Cruz

Reservations required for Routes 3 & 7. Contact the Amtrak Support Desk at 1-800-USA-RAIL. Emeryville-San Francisco schedule is also provided here. For more information on motorcoaches, please refer to the Capitol Corridor Motorcoach Bus Schedule.

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CAPITOL CORRIDOR

Station Name (North to South)	Station Abbreviation
Auburn	ARN
Rocklin	RLN
Roseville	RSV
Sacramento	SAC
Davis	DAV
Suisun/Fairfield	SUI
Martinez	MTZ
Richmond (BART)	RIC
Berkeley	BKY
Emeryville	EMY
Oakland Jack London	OKJ
Oakland Coliseum (BART)	OAC
Hayward	HAY
Fremont	FMT
Great America/Santa Clara	GAC
San Jose Diridon	SJC