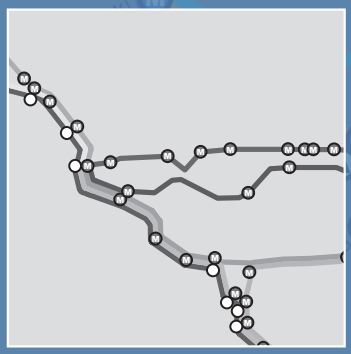
April 2012 | FINAL REPORT

LOSSAN Corridorwide STRATEGIC IMPLEMENTATION PLAN










PREPARED BY
HNTB

Los Angeles > San Diego > San Luis Obispo Rail Corridor Agency

LOSSAN
Since 1989

MEMBERS AGENCIES:

California Department of Transportation (Caltrans)

Los Angeles County Metropolitan Transportation Authority (LACMTA)

North County Transit District (NCTD)

Orange County Transportation Authority (OCTA)

San Diego Association of Governments (SANDAG)

San Diego Metropolitan Transit System (MTS)

San Luis Obispo Council of Governments (SLOCOG)

Santa Barbara County Association of Governments (SBCAG)

Ventura County Transportation Commission (VCTC)

EX-OFFICIO MEMBERS:

Amtrak

California High-Speed Rail Authority (CHSRA)

Riverside County Transportation Commission (RCTC)

Southern California Association of Governments (SCAG)

ADDITIONAL TECHNICAL ADVISORY COMMITTEE MEMBERS:

Burnlington Northern Santa Fe (BNSF)

California Public Utilities Commission (CPUC)

Southern California Regional Rail Authority (SCRRA)

Union Pacific (UP)

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GLOSSARY Acronyms and Terms

Amtrak:	National Railroad Passenger Corporation
BART:	San Francisco Bay Area Rapid Transit District
BNSF:	Burlington Northern Santa Fe Railway
BT&H:	Business, Transportation & Housing Agency
Caltrans:	California Department of Transportation
CCJPA:	Capitol Corridor Joint Powers Authority
CEOs:	Chief Executive Officers
CHSRA:	California High-Speed Rail Authority
CTC:	California Transportation Commission
DOR:	Caltrans Division of Rail
FRA:	Federal Railroad Administration
FTE:	Full-Time Equivalent
IRMT:	Intercity Rail Management Team
ITA:	Interagency Transfer Agreement
JPA:	Joint Powers Authority
LACMTA:	Los Angeles County Metropolitan Transportation Authority (MTA)
LOSSAN:	Los Angeles-San Diego-San Luis Obispo Intercity Rail Corridor
MBTA:	Massachusetts Bay Transportation Authority
MOU:	Memorandum of Understanding
MPO:	Metropolitan Planning Organization
NCTD:	North County Transit District
NNEPRA:	Northern New England Passenger Rail Authority
OCTA:	Orange County Transportation Authority
PRIIA:	Passenger Rail Improvement and Investment Act
PTA:	State of California Public Transportation Account
PTC:	Positive Train Control
PWG:	Project Working Group
RCTC:	Riverside County Transportation Commission
SANDAG:	San Diego Association of Governments
SBCAG:	Santa Barbara County Association of Governments
SCG:	Staff Coordinating Group
SCRRA:	Southern California Regional Rail Authority (Metrolink)
SDMTS:	San Diego Metropolitan Transit System

GLOSSARY Acronyms and Terms (continued)

SLOCOG:	San Luis Obispo Council of Governments
STIP:	State Transportation Improvement Program
TAC:	Technical Advisory Committee
UPRR:	Union Pacific Railroad
VCTC:	Ventura County Transportation Commission

Definitions

Commuter Rail: An electric or diesel propelled railway for urban passenger train service consisting of local short distance travel operating between a central city and adjacent suburbs. Service must be operated on a regular basis by or under contract with a transit operator for the purpose of transporting passengers within urbanized areas or between urbanized areas and outlying areas. Commuter rail service is generally characterized by: multi-trip tickets, the highest frequency of service during Monday-Friday morning and evening peak-period travel times, specific station to station fares, and usually only one or two stations in the central business district.

Intercity Rail: Intercity Rail is generally defined as passenger rail service interconnecting major cities and/or populated areas with heavily traveled corridors to and between metropolitan areas. These corridors are generally more than 100 miles, but less than 750 miles long, have frequent service throughout the day, and usually offer business class service, as well as café/beverage service for all customers. Some trains also handle checked baggage. The LOSSAN Corridor is defined as 'Intercity Rail'.

Long Distance or National Network Trains: These types of trains are also intercity trains but travel long distances (generally 750 miles or longer) serving both major cities as well a small communities and serve to form a national network across the country, similar to interstate highways built in sparsely populated states and regions. These trains usually operate only once daily in each direction, and offer sleeping accommodations, full meal and beverage service, and other amenities attractive to travelers, in addition to economy coach services. They often are the only means of public transport to rural communities along their route.

LOSSAN North: LOSSAN North is defined as the segment of the LOSSAN Corridor stretching north from Los Angeles to Ventura, Santa Barbara and San Luis Obispo Counties.

LOSSAN South: LOSSAN South is defined as the segment of the LOSSAN Corridor extending south from Los Angeles to Orange and San Diego Counties.

Managing Agency: A Managing Agency is defined as the agency which provides the JPA staff, office space, financial and accounting support, and human resource support to the JPA. An example is that BART actually employs and "houses" the Capitol Corridor JPA staff under a contract with the CCJPA Board.

Executive Summary

The Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency initiated the LOSSAN Corridorwide Strategic Implementation Plan as a first step in implementing a new corridorwide vision for passenger rail services. This vision was adopted by the LOSSAN Board of Directors in 2009 and calls for a fresh look at the future of the entire rail corridor with an emphasis on Intercity Rail service. The *LOSSAN Corridor Strategic Assessment* (2010) and *LOSSAN Corridor Quick Improvement Study* (2008) were the foundation for this work, and twelve stakeholders signed a Memorandum of Understanding (MOU) in 2010 to jointly participate in this effort.

The goals of this LOSSAN Corridorwide Strategic Implementation Plan study are:

- Collectively provide the infrastructure to allow more peak period trains, faster through-express trains and additional service improvements that meet current and future conventional and high-speed intercity, commuter, and freight demands both north and south of Los Angeles Union Station.
- Integrate regional fare policy and develop common fare media that are based in part on early implementation lessons in the corridor as appropriate (electronic revenue collection).
- Integrate and/or coordinate operations and develop more efficient operating schedules and dispatching for corridor services.
- Implement a strategy for seamless rail travel in the corridor.
- Collaborate to identify and establish new services for un-served and underserved markets.
- Integrate and improve traveler information, standardized to the extent possible.
- Coordinate with Long-Distance Passenger Rail and connecting Motorcoach Services.

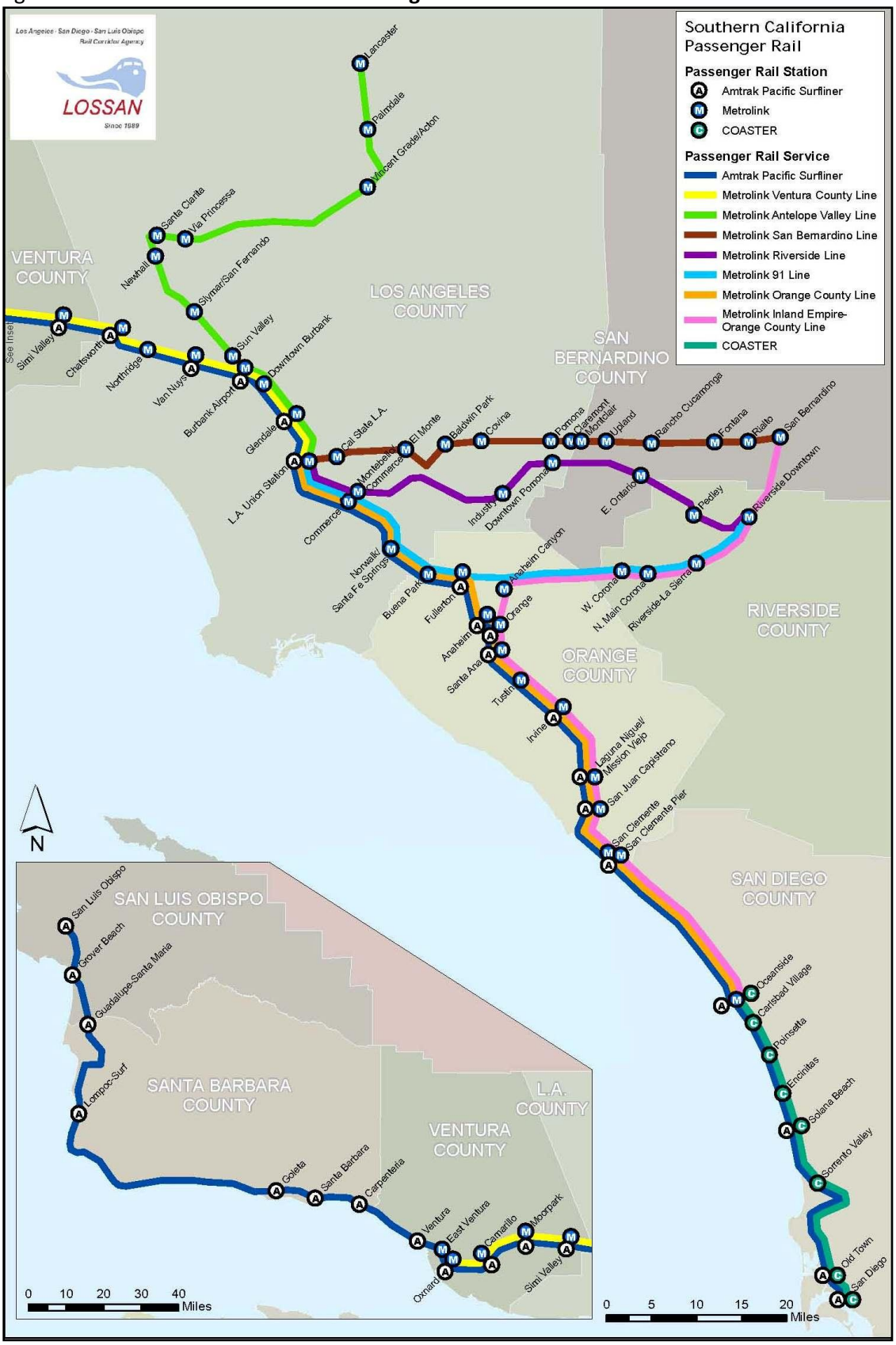
As background, the LOSSAN Rail Corridor Agency is a joint powers agency that was formed in 1989 to coordinate intercity rail service between Los Angeles and San Diego. The LOSSAN Rail Corridor Agency works to increase ridership, revenue, capacity, reliability, and safety on the coastal rail line from San Diego to Los Angeles to San Luis Obispo. In 2001, the agency expanded to include rail agencies and operators north of Los Angeles to San Luis Obispo. With this change, all rail agencies along the entire Pacific Surfliner corridor are represented on LOSSAN. In 2011, representation was expanded to include Amtrak, the California High-Speed Rail Authority and the Riverside County Transportation Commission, as ex-officio members.[1]

Existing Conditions

The LOSSAN Corridor is a 351 mile long intercity and commuter rail corridor, stretching from San Diego in the south, up the coast to Orange County, Los Angeles County, Ventura County, and Santa Barbara County to San Luis Obispo County (Figure ES-1). This six-county area has a population of approximately 17.4 million (2010 US Census) and based on state and regional projections is forecasted to grow to just over 21 million by 2030. The LOSSAN corridor annually transports more than 2.7 million intercity passengers, the second busiest for Amtrak nationwide. One in every nine Amtrak riders uses the corridor.

[1] Current LOSSAN Board: Voting members are: SANDAG, SDMTS, NCTD, OCTA, LACMTA, VCTC, SBCAG, SLOCOG and Caltrans; Ex-Officio Members are: Amtrak, CHSRA, SCAG and RCTC.

Figure ES - 1 **Southern California Passenger Rail Network**



In addition to Amtrak, there are 4.5 million passengers each year on the commuter rail systems: Metrolink and COASTER. These services help reduce congestion and improve mobility and air quality along the I-5 and SR 101 freeway corridors. Estimates for Metrolink ridership show that rail commuters in the Los Angeles area take the equivalent of one lane off the busy I-5 corridor alone. Also known as Amtrak's Pacific Surfliner corridor, this 351-mile rail line serves Southern California's key coastal population centers and two of the state's most congested regions: Los Angeles and San Diego.

The increasing ridership and demand for additional frequency on both commuter and intercity rail services has strained the capacity of the LOSSAN corridor to accommodate the reliable operation of more trains. Since Amtrak's initial 1971 passenger rail service, funding for both operating and capital improvements has been provided by a series of local, state and federal funding mechanisms. However, even with the past and planned improvements, a number of constraints remain that limit future ridership and revenue growth in the LOSSAN Corridor. These include constrained capital infrastructure, railroad right-of-way and exclusive operational rights by multiple owners, as well as multiple services competing for track time, which is becoming increasingly scarce.

Stakeholder Outreach and Data Gathering

The first step in the planning effort was to meet with Chief Executive Officers (CEOs) and senior staff from corridor stakeholders and member agencies to further discuss the objectives of this study and to gain a better understanding of local, regional, and corridor priorities. These meetings took place in the fall of 2010 and early 2011 and included technical staff, executives and Board Members of 13 agencies: Amtrak, Caltrans, LACMTA, NCTD, OCTA, RCTC, SANDAG, SDMTS, SLOCOG, SBCAG, SCAG, SCRRA, and VCTC.

In addition, small groups of technical staff and consultants formed to review the existing conditions at stations along the corridor.

While each agency has its own issues specific to their location, certain common elements emerged from these meetings as goals or objectives of the Strategic Implementation Plan – the following is a summary of the observations, goals and objectives that were identified.

- The desire to utilize the LOSSAN Corridor to its full potential, including better coordination of intercity and commuter rail services, transit connectivity, and providing new travel options for under or un-served markets.
- Solidify the Rail 2 Rail program, or a similar program which offers travel flexibility to passengers.
- Implement an electronic fare collection along the coordinated LOSSAN Corridor, in developed/integrated with all three existing passenger rail providers (Amtrak, Metrolink and COASTER).
- Provide convenient and common ticketing and transfers between modes of transportation, working with the member agencies and the associated transit systems.
- Develop a cohesive business plan that utilizes all modes of transportation to serve the most potential patrons.
- Develop a rail system that minimizes travel times for each service, yet also provides convenient connection points.
- Improve Amtrak on-time statistics for Pacific Surfliner intercity trains.

- Establish a forum of stakeholders for the development of a business plan.
- Synchronize arrivals and departures to provide the maximum benefit to the passengers.
- Plan and obtain funding and permits for additional double tracking and multiple tracking to improve operations.

A listing of the stakeholder meetings and attendees is shown in Appendix A. A summary of the station information assessment of the corridor is included in Appendix C.

Quick Improvements

The LOSSAN Corridor Quick Improvements Study final report lists 20 concepts for near-term improvements that could be implemented fairly quickly and at minimal cost. Four additional items were added by the LOSSAN Board through other actions since the publication of the final report. The LOSSAN Technical Advisory Committee (TAC) members originally volunteered to implement various improvements and met with limited success, due to other priorities competing for the same resources.

Since August 2010, implementation of the remaining quick improvements has been advanced by a LOSSAN project manager in coordination with member agencies and other stakeholders. Many improvements have been completed. Several improvements have reached a level where implementation is fully dependent on an agency complementary project that is currently underway or additional resources that have not currently been identified. Lastly, there are some improvements that have evolved over time or have been dropped due to various circumstances.

Section 2 of this report summarizes these improvements. Further details are included in Appendix B.

Preferred Service Plan Business Case

Working with OCTA and their consultant (Parsons Brinckerhoff) and Caltrans and Amtrak and their consultant (AECOM), a 'Business Case' for both intercity and commuter train services for years 2014 and 2030 was developed as the 'Preferred Service Plan'. This business case analysis focused on the desire for new service to under- and un-served markets. A project working group (PWG) comprised of member agencies developed specific service goals for both short-term and long-term improvements as follows and shown in Table ES-1:

- By 2014, completion of on-going capital work to improve capacity should allow for the operation of additional commuter rail services, including selected run-through Metrolink-COASTER trains to serve travel markets that cross the Orange/San Diego County line but are currently un-served, additional intercity service and limited stop intercity service, and the introduction of commuter service between Ventura and Santa Barbara.
- By 2030, it is expected that Pacific Surfliner trains will operate during peak hours on an hourly frequency between Los Angeles and San Diego with shorter travel times due to limited stop operation, additional commuter trains will operate throughout the Santa Barbara to San Diego corridor, and Amtrak's Coast Daylight service will operate between Los Angeles and San Francisco. Overall the number of train operations would nearly double.

Table ES - 1 Preferred Service Plans (Existing 2011, Proposed 2014 and 2030)

Weekday Service/number of trains	2011 Baseline	2014	2030
Commuter – San Diego to Oceanside	22	32	54
Commuter – Orange County to Los Angeles	42	54	88
Commuter – North of Los Angeles	61	64	90
Pacific Surfliner	22	24	36
Long-Distance Trains	4	4	6
TOTAL	**151**	**178**	**274**

By 2014, relatively modest service improvements can be made with existing rolling stock and a constrained capital improvement program currently under final design/construction. The greatest challenge is to overcome traditional institutional boundaries in the way these services have been operated to date. In 2011, Metrolink service to San Diego County to serve the Del Mar Races demonstrated that such cooperation can result in new service patterns. These new service patterns can then attract a portion of the travel market to rail that is not captured by rail today primarily because of inconvenience, unavailability or both. It is envisioned that the Pacific Surfliner service will incrementally deliver shorter travel times and will likely develop a service pattern of selected station stops, and these station stops will be designed for convenient transfers to/from the commuter service.

By 2030, complimenting the increase in intercity service would be more frequent commuter service, including additional commuter trains which traverse the entire southern portion of the route between Los Angeles and San Diego, making it easier to use the train service from points in one county to destinations in the other without having to change trains. Common stations would allow for convenient transfers from intercity to local commuter trains. An increase in both commuter and intercity service to Ventura and Santa Barbara Counties is also included, with increased intercity service frequency to San Luis Obispo County also being provided. All trains operating to/from points north of Los Angeles would operate as through trains south of Los Angeles to San Diego.

Tables ES-2 and 3 show the LOSSAN 2030 Ridership Forecast and Revenue Forecast, respectively, based on this assumed business case.

Table ES - 2 LOSSAN 2030 Annual Ridership Forecast

2030 ANNUAL RIDERSHIP FORECAST (millions of riders)			
Service	**2030 "No Build"**	**2030 "Build"**	**Percentage Change**
Pacific Surfliner Intercity	3.8	4.7	23.7%
Commuter	6.3	10.5	66.7%
Total	**10.1**	**15.2**	**50.5%**

Table ES - 3 LOSSAN 2030 Annual Revenue Forecast

2030 ANNUAL REVENUE FORECAST ($millions)			
Service	**2030 "No Build"**	**2030 "Build"**	**Percentage Change**
Pacific Surfliner Intercity	$78.3	$108.0	38.0%
Commuter	$41.2	$70.5	71.2%
Total	**$119.5**	**$178.5**	**49.4%**

Both ridership and revenue increase significantly when the projected 2030 service levels are operated along the LOSSAN Corridor. Intercity ridership increases by nearly 24% and revenue increases by almost 38% (due to longer trips made on intercity, shorter and local trips on the improved commuter service). Commuter rail ridership increases by over 66% and revenue by more than 71%.

Funding Status for Intercity Service

For nearly three decades, the State of California and Amtrak have jointly funded the operating support requirements for the Pacific Surfliner most recently on a 70 percent / 30 percent basis. The only other source of funds is passenger revenues. For the current budget year, FY 2011, this support totals $42 million, of which $28 million is state Public Transportation Account (PTA) funds and $15 million is from Amtrak, to match a healthy level of passenger fares of $58 million or 58 percent. Together, the total annual operating budget for the Pacific Surfliner service is $100 million (see Table 1 for budget chart).

However, this State/Amtrak funding split is scheduled to change in FY 2013-14, the first year of implementation of Section 209 of the federal Passenger Rail Improvement and Investment Act (PRIIA) of 2008. The subsidy requirements for the Pacific Surfliner service is forecast to increase considerably due to the fact that the federal law requires Amtrak to cease providing the share of operating costs for routes of 750 miles or less, under a new nationally applied cost allocation formula. This law applies to the Pacific Surfliner intercity rail service.

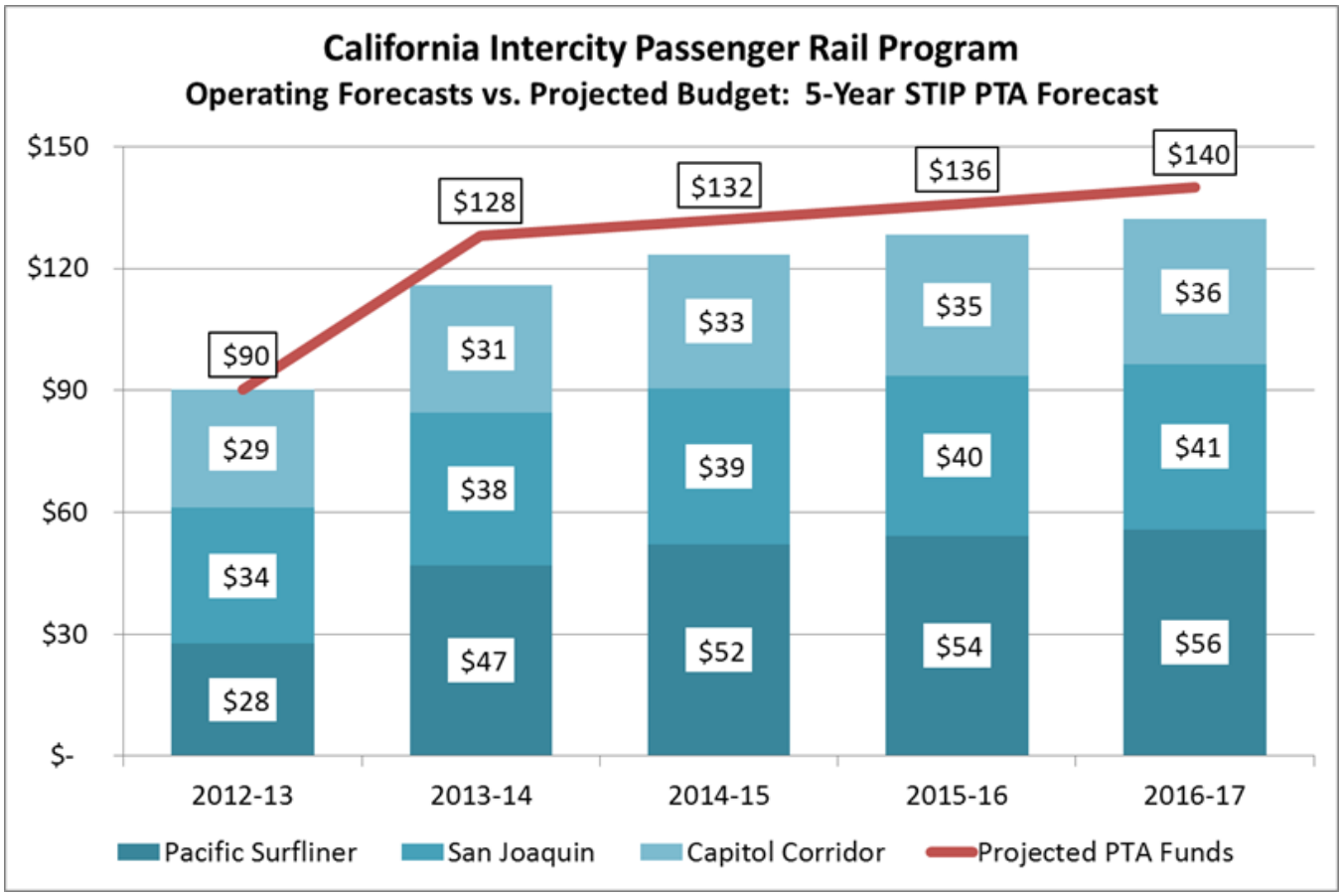
Additionally, certain capital costs historically borne by Amtrak, such as for the maintenance and overhaul costs of the Amtrak-owned rolling stock used on the Pacific Surfliner service, under PRIIA, will be charged to the contracting entity (currently Caltrans Division of Rail (DOR)) as part of the annual operating cost of service. This fact therefore increases the operating cost of service to the state.

Amtrak has also provided some capital contribution towards increasing the fixed-infrastructure and rail capacity along the LOSSAN Corridor. The PRIIA legislation does not appear to prohibit continuation of such investments, but the opportunity to continue the capital investment partnership with Amtrak may be dependent upon Amtrak continuing to be the operator of intercity service for some extended period of time.

Figure ES-2 demonstrates that under the current proposed policy (and worst-case scenario), overall California's Intercity Passenger Rail PRIIA support costs can be accommodated in FY2013-14 within the current proposed 2012 State Transportation Improvement Program (STIP) Fund Estimate, according to the California Transportation Commission (CTC). The figure shows that for the current 2011-12 fiscal year, $90 million is provided in state PTA revenues for the three state-supported services. Under the first year of PRIIA, the FY2013-

14 statewide cost will increase to $115 million. The 2012 STIP fund estimate shows $128 million in available revenues for the intercity passenger rail program for the same year (FY2013-14).

Figure ES - 2 CA Intercity Passenger Rail (IPR) Operating Forecasts vs. Projected Budget



Note: Rounding affects operating forecast totals

Based upon the projected implementation costs of PRIIA and the projected fund estimate of the revenues in the PTA, it appears that state funding will be adequate to support the continued operation of all three state supported services, without any reduction in service or need for supplemental revenue support. However, the need to monitor the state funding situation to ensure adequate funding for the intercity passenger rail program should continue to be a priority.

Possible Local Authority for the Pacific Surfliner Intercity Service

The *LOSSAN Corridor Strategic Assessment* provided initial research and analysis on the possibility of a new governance model for passenger rail services in the LOSSAN Corridor. Part of this current effort is to further explore this possibility although the decision was made to focus efforts on solely the state-supported Pacific Surfliner intercity service. The corridor's two commuter rail services are not part of this effort, should the LOSSAN Board of Directors decide to move forward with local intercity rail management. Furthermore, financial support would continue to be provided by the state as shown above.

Benefits

The overall goal of this model is for a local joint powers authority (JPA) to transform the existing Pacific Surfliner intercity rail service from a state managed service to a service under local authority that is more responsive to local needs, issues, and consumer desires. Several benefits have been identified if service is managed locally:

- More cost-effective allocation of resources/decision making;
- Unified, more powerful voice in Sacramento and Washington DC;
- More opportunities to coordinate/partner locally on passenger and customer issues;
- Improved coordination on corridor capital improvements; and
- Focused local management on operations.

It is important to note that with or without a local authority, the Pacific Surfliner operating costs will become 100% funded by Caltrans DOR as a result of PRIIA Section 209 implementation. It should be noted that Amtrak will still contribute a proration of its corporate support services.

Should efforts to authorize a local JPA to assume local management of intercity service move forward, the plan evaluates two models:

1. Select an existing member agency to be the Managing Agency to provide and house the professional railroad staff and support services for the LOSSAN JPA. This analysis is modeled after the Capitol Corridor JPA in northern California which oversees the intercity service between the Bay Area and Sacramento; or
2. Create a new stand-alone independent agency to become the Managing Agency, providing and housing both the professional railroad staff as well as the other administrative support services for the JPA.

Costs

Table ES-4 summarizes the LOSSAN Corridor Pacific Surfliner JPA Options, comparing the Capitol Corridor JPA and Caltrans DOR budgets with estimates for the two options (Member Agency and Independent Agency).

Table ES - 4 Cost Effectiveness: Local Authority Comparisons with Current Structure

LOSSAN Corridor Pacific Surfliner Local JPA Options ($millions)				
		Pacific Surfliner		
Measure	Capitol Corridor JPA	Caltrans DOR[1] (Current)	Member Agency[2]	Independent Agency[3]
Full Time Staff Positions	16.5	10	11	30
Staffing Costs (fully loaded) [6]	*$1.7*	*$1.3*	*$1.5*	*$2.0*
Office Space-Administrative Agency support	*$1.2*	*$0.7*	*$1.2*	*$1.2*
Amtrak management [4]		*$1.0*		
Subtotal	$2.9	$3.0	$2.7	$3.2
Marketing[5]	$1.2	$1.7	$1.7	$1.7
TOTAL	**$4.1**	**$4.7**	**$4.4**	**$4.9**

[1] Consultant estimate; based on review of 61 existing positions allocated to Caltrans-Division of Rail.

[2] Includes 11 full time positions plus 7 additional positions that would be shared within the Managing Agency, each at 25 percent time (7 positions @ $145k/yr. fully loaded).

[3] Based on Altamont Corridor Express (ACE) annual budget for 6 trains each weekday.

[4] Functions now performed by Amtrak staff for Caltrans DOR that would be performed by new LOSSAN JPA (train scheduling, mechanical oversight, marketing, etc.) similar to functions now performed by CCJPA.

[5] New LOSSAN JPA could significantly leverage marketing budget via partnerships with member agencies/transit authorities to jointly promote corridor ridership growth.

[6] Managing Agency staffing unit costs are based upon approximately the same unit costs as the Capitol Corridor; Capitol Corridor numbers are based upon the BT&H Allocation letter dated October 19, 2011, for FY 11-12.

A decision to form a local JPA would also involve a governance structure and voting representation of a new governing board. Any decision on a management structure, save for the status quo, will also require basic staffing decisions.

In order to negotiate with the State for a 'transfer of responsibility agreement' (referred to as the Interagency Transfer Agreement, or ITA), an entity must be selected to negotiate such an agreement, professional rail staff will need to be assembled in preparation for the date of actual transfer of responsibility and contracts will need to be negotiated with Amtrak and perhaps others. This entity has been referred to as the Managing Agency and it is intended to hire, house/support and provide the professional railroad team to locally manage the LOSSAN Corridor intercity services. This staff would be provided under a contract between the Managing Agency and a new LOSSAN Joint Powers Authority (JPA) Board.

While the Managing Agency (MA) would be responsible for the staffing and operations of the intercity rail service, the MA director of this service would report to the LOSSAN board of directors on all policy matters.

Risks and Mitigations

While there are many benefits and cost efficiencies in creating a local JPA for the Pacific Surfliner intercity rail service, the LOSSAN Board should also consider the potential risks and mitigation measures of forming such a local JPA. The study has outlined five potential risks that may occur due to the formation of a local JPA for the Pacific Surfliner intercity rail service:

1. Continue state support for intercity passenger rail service;
2. Create an effective management structure for the Local JPA;
3. Create and maintain technical competency for operations of the intercity rail service;
4. Own and control the Pacific Surfliner rolling stock; and
5. Maintain statewide rail and bus connections to the Pacific Surfliner service.

The risks and mitigations to these goals are summarized below.

Risk 1 - Continue state support for intercity passenger rail service: If authority is turned over to a local JPA, one of the risks is that the state might reduce funding levels for the system and require local agencies to start funding a portion of the costs. The magnitude of the exposure if all state funds were withdrawn exceeds $52 million in state support in FY2013-14 when Section 209 takes effect[2]. Regardless, the state fiscal situation should be monitored.

Mitigating that risk is the fact that there are adequate operations funds for the Pacific Surfliner for the foreseeable future, even under the changed federal funding criteria. In addition, there are no cuts to state intercity rail operations funds proposed in the FY2012-13 draft state budget, which includes the operations budget for the Capitol Corridor JPA (CCJPA) service and, specifically, those funds which are passed through to the CCJPA to manage that service. The Capitol Corridor example shows that the State continued to fund that system without the necessity of any local funding. In the 15 years of history with the CCJPA, no local funds have been used to offset the loss of state funds.

In addition, three specific mitigation measures could be implemented to offset any potential funding risks, including:

- **Focused Advocacy in Sacramento and Washington DC**: The Capitol Corridor JPA has enjoyed success in their local advocacy role for continuing state and federal funding for their intercity rail corridor. A LOSSAN JPA would also benefit from a more focused effort by the collective advocacy of its Southern California and Central Coast members.

  For the past six years, LOSSAN, CCJPA, San Joaquin Valley Rail Committee, and the Coast Rail Coordinating Council have coordinated advocacy efforts related to the state's intercity rail program. However, this effort could be strengthened with a more focused effort by all LOSSAN member agencies in a new, local JPA role. A LOSSAN JPA with new authority to manage and operate the intercity

[2] Section 209 of the federal Passenger Rail Improvement and Investment Act (PRIIA) of 2008

rail service would receive more recognition in Sacramento and Washington DC than LOSSAN in its current status.

- **Maintenance of Effort (MOE)**: Legislation could include, as part of the creation of the LOSSAN JPA, "maintenance of effort" (MOE) requirement for state funding. A "MOE" in legislation mandates that an agency maintain its level of funding for a program so that any new funding is an overall increase in funding and not a substitution of funding.
- **Demonstration Project**: The LOSSAN JPA could be made a pilot or demonstration program and allow the local JPA to revert back to Caltrans after three to five years.

Risk 2 - Create an effective management structure for the Local JPA: A second risk could be the management structure of the local JPA. This proposed governance structure is similar to the Capitol Corridor but different from a typical railroad agency whereby the board and staff are under one agency. The risk of this proposed arrangement is that it might create miscommunication between the Managing Agency and the local JPA board, thereby negatively affecting the Pacific Surfliner intercity rail service quality.

One way to mitigate any disconnect in the running of the service is for the lead Managing Director to have a dual reporting responsibility and be the link between the Managing Agency and the LOSSAN JPA Board. In addition, the LOSSAN Board could take a strong leadership role with all board members becoming familiar with the service and being proactive in creating policy for running it in a cost effective manner.

Risk 3 - Create and maintain technical competency for operations of the intercity rail service: Third, it is critical to the operations of the local LOSSAN JPA that it has the appropriate quantity and quality of the technical staff. The risk is that the LOSSAN intercity rail service may suffer if the Managing Agency and the LOSSAN JPA could not attract and maintain an adequate number of technically competent railroad staff.

Although the Pacific Surfliner service would be delivered by Amtrak under contract to the JPA and specifically by Amtrak technical railroad staff, the JPA still needs to perform an oversight role. The Capitol Corridor JPA and the Metrolink Commuter Rail Safety Peer Review Panel Report[3] are examples of ways to attract and train technical railroad staff and well as perform adequate oversight of contracted rail service. With secure funding and a clear and compelling management structure, the Managing Agency should be able to attract and maintain technically competent railroad staff.

Risk 4 - Own and control the Pacific Surfliner rolling stock: A fourth goal is to have the flexibility to control and allocate the rolling stock cars and locomotives for the Pacific Surfliner service. In order to do that, the JPA would have to own this equipment. The risks are that either Amtrak would not agree to sell or lease the equipment and/or the JPA would not have the funds in the short term to purchase or lease the equipment. The mitigation measure to these risks would be the phasing of the purchases to correspond to available funding in the future.

Risk 5 - Maintain statewide rail and bus connections to the Pacific Surfliner service: One of the risks of focusing on the local needs of the Pacific Surfliner service is to lose sight of the importance of the statewide bus and rail

[3] *Metrolink Commuter Rail Safety Peer Review Panel Report*, January 5, 2009.

connections to this service, especially on the north end of the corridor. One way to mitigate this risk is to ensure that the JPA includes a policy to make sure these statewide connections are maintained and improved by Caltrans and the other transit providers.

Next Steps

Should the LOSSAN Board of Directors decide to pursue the authority to manage the Pacific Surfliner intercity service, there are several steps which are needed to complete this transfer of responsibilities. They are:

1. Seek LOSSAN Board and member Agency CEOs concurrence to begin steps to form a JPA (support in concept was authorized by the Board on August 24, 2011);
2. Seek legislation to obtain state authorization to authorize a JPA (initial action taken by the LOSSAN Board and CEOs on January 25, 2012);
3. Upon enactment of state authorization, a JPA agreement would be drafted and each member agency would need to take independent action to join the JPA;
4. Upon action by each member agency, a locally-based JPA would be created between and among the LOSSAN member agencies for the administrative management of the LOSSAN Corridor intercity passenger rail service;
5. Select or create a Managing Agency; MOU to be signed between each member agency and the Managing Agency;
6. Managing Agency hires the railroad management staff for the JPA ;
7. Negotiate an Interagency Transfer Agreement (ITA) with Caltrans; and
8. Negotiate an initial operating contract with Amtrak, including ownership options for the rolling stock.

It is recommended that the professional railroad staff hired to perform this administrative management function for the LOSSAN Board be housed in an existing LOSSAN member agency (the Managing Agency) as the most efficient and cost-effective means of implementing locally based, customer-focused intercity passenger rail service management.

1. Introduction

The Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency is a joint powers agency that was formed in 1989 to coordinate intercity rail service between Los Angeles and San Diego. In 2001, the agency expanded to include rail agencies and operators north of Los Angeles to San Luis Obispo. With this change, all rail agencies along the entire Pacific Surfliner corridor are represented on LOSSAN. In 2011, representation was expanded to include Amtrak, the California High-Speed Rail Authority and the Riverside County Transportation Commission, as ex-officio members. The LOSSAN Rail Corridor Agency works to increase ridership, revenue, capacity, reliability, and safety on the coastal rail line from San Diego to Los Angeles to San Luis Obispo.

The LOSSAN Rail Corridor Agency initiated the *LOSSAN Corridorwide Strategic Implementation Plan* as a first step in implementing a new corridor-wide vision for passenger rail services. This vision was adopted by the LOSSAN Board of Directors in 2009 and calls for a fresh look at the future of the entire rail corridor. Specifically, the goals of this study are as follows:

- Collectively provide the infrastructure to allow more peak period trains, faster through-express trains and additional service improvements that meet current and future conventional and high-speed intercity, commuter, and freight demands both north and south of Los Angeles Union Station
- Integrate regional fare policy and develop common fare media that are based in part on early implementation lessons in the corridor as appropriate (electronic revenue collection)
- Integrate and/or coordinate operations and develop efficient operating schedules and dispatching for corridor services
- Implement a strategy for seamless rail travel in the corridor
- Collaborate to identify and establish new services for un-served and underserved markets
- Integrate and improve traveler information
- Coordinate with Long-Distance Passenger Rail and connecting Motorcoach Services.

In the fall of 2010, project efforts on the LOSSAN Corridor intercity passenger rail service commenced. Fact finding and data gathering were the initial areas this work focused on, followed by the implementation of previously identified near-term improvements. Member agency priorities were identified, assembled, and presented to the LOSSAN Board in January 2011. Common priorities from the individual member agencies became LOSSAN Corridor priorities. This report details the efforts of this study, as well as the associated assessments and modeling efforts to develop preferred service plans and potential management plans for the future of the LOSSAN Corridor. A discussion of the potential risks and corresponding mitigations of transferring the administrative responsibility from the State to a local JPA is also provided.

The report contains the following sections: Existing Conditions, Stakeholder Outreach, Quick Improvements, Preferred Service Plans and Business Case, Management Plan/Financial Case, Governance Framework, Summary and Implementation Strategy.

Existing Conditions

The LOSSAN Corridor is a 351-mile long intercity and commuter rail corridor, stretching from San Diego in the south, up the coast to Orange County, Los Angeles County, Ventura County, and Santa Barbara County to San Luis Obispo County (see Figure 1, LOSSAN Corridor Map). The LOSSAN Corridor is the second highest in passenger travel on the entire Amtrak-operated system. Also known as Amtrak's Pacific Surfliner corridor, this 351-mile rail line serves Southern California's key coastal population centers and two of the state's most congested regions: Los Angeles and San Diego.

This route was not historically a corridor with frequent passenger service. However, as population, travel and demand increased, additional passenger rail service was first funded by Caltrans in 1974 and has grown to 11 round trips between San Diego and Los Angeles, with five extending service to Santa Barbara and two the full length of the corridor to San Luis Obispo. Concurrently, commuter rail services were also introduced on the same infrastructure within four of the six counties along the corridor. The increasing ridership and demand for more service on both commuter and intercity rail services has strained the capacity of the line to accommodate these services reliably. Despite the limitations in capacity, the LOSSAN corridor carries more than 2.7 million intercity passengers and 4.5 million passengers each year on the commuter rail systems: Metrolink and COASTER. One in every nine Amtrak riders in the nation uses the LOSSAN Corridor.

Initial local measures for public investments in the corridor commenced as early as the late 1980s, but the most significant capital investments have occurred following the voter-approved capital bond propositions adopted in 1990 (primarily from Proposition 116, and also some funding from Propositions 111, and 108, all enacted that same year). Since that time, local county tax measures have provided capital funding for LOSSAN Corridor projects supplemented with the state capital investment programs, and more recently with the advent of a federal rail capital grant program administered by the Federal Railroad Administration (FRA). California and the LOSSAN Corridor have been recipients of a portion of these federal capital grant funds. However, even with the past improvements, there are a number of current constraints that limit future ridership and revenue growth in the LOSSAN Corridor, which are discussed below.

Constrained Capital Infrastructure: Limitations in track capacity in key high service areas, primarily between Fullerton and Los Angeles but also south of Laguna Niguel and north of Chatsworth, limit the ability to significantly increase service. These limitations have prompted a series of capital investments to increase the line's track capacity, such as the Fullerton to LA triple track project. These current and future investments include construction of additional double track and multiple tracks in other congested sections and will allow for future expansion of service. Additionally, a reduction in the number of vehicular grade-crossings are a priority along particularly congested segments to reduce risks, improve overall safety, and minimize train delays caused by errant vehicles at these crossings. Orange County has already initiated an aggressive grade-crossing safety enhancement program and is pursuing grade separations at several key locations.

Multiple Owners of the LOSSAN Corridor Railroad Right-of-Way: A complexity somewhat unique to the LOSSAN Corridor is the ownership of the railroad right-of-way for a portion or all of the trackage by multiple entities. County agencies own all or a portion of the corridor within their respective counties and private freight railroads own two segments of the LOSSAN corridor with BNSF Railway retaining ownership of the major 'choke-point' between Fullerton and Redondo Junction. Amtrak and Caltrans own the rights for intercity service on the LOSSAN Corridor, and Riverside County Transportation Commission (RCTC) owns the exclusive rights to operate

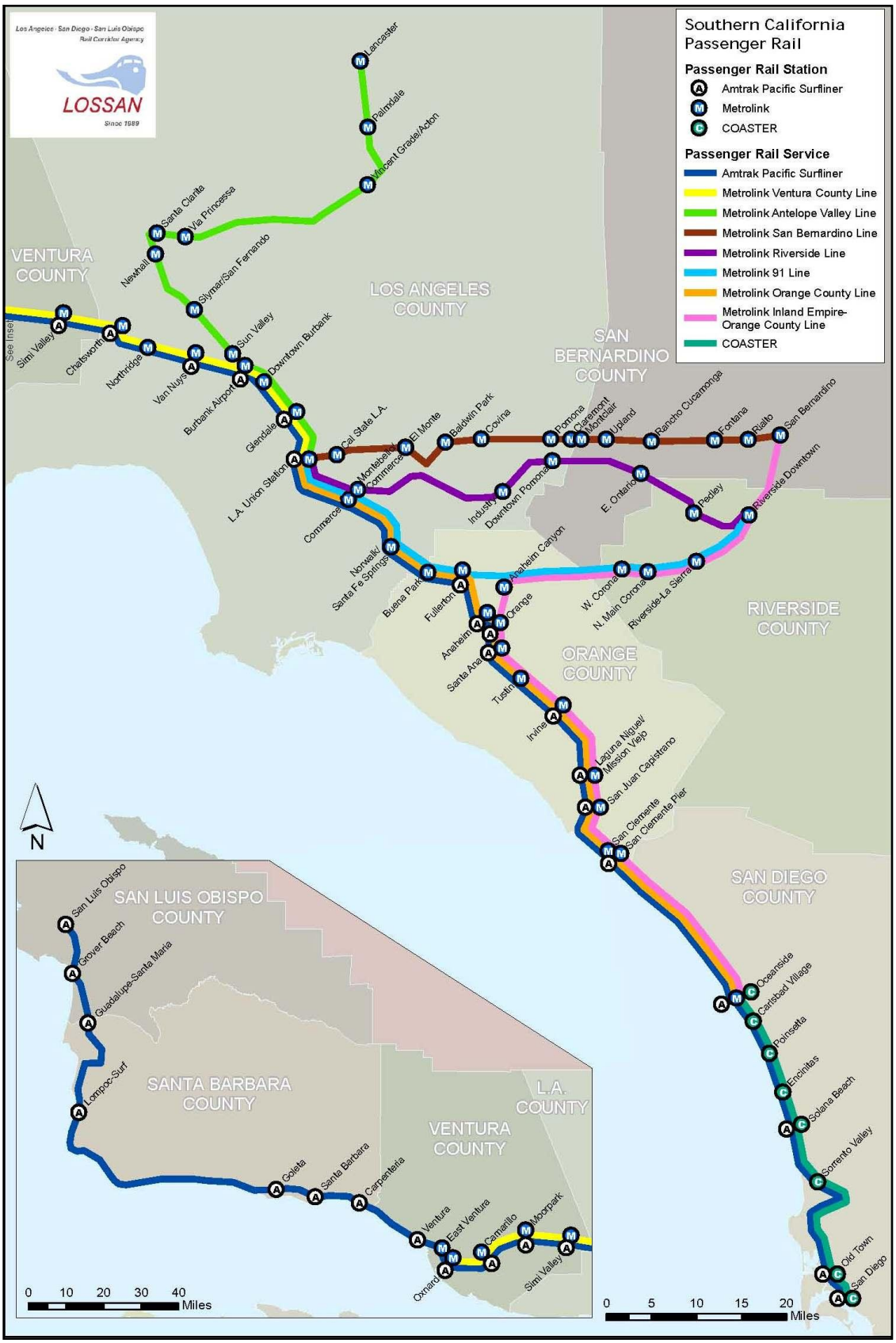
passenger rail service (other than Amtrak) between Los Angeles and San Bernardino along the BNSF Railway, including the busy Fullerton-Redondo Junction 'choke point' on the LOSSAN Corridor. Track and right-of-way ownership rights are shown in Figure 2 and described in more detail in the next section.

This multiple ownership requires a high degree of cooperation between and among the various entities for scheduling and operation, as well as for future expansion planning and other capital improvements.

Multiple Services Competing for Track Time: Commuter rail, Amtrak intercity and passenger rail long-distance and freight rail services currently compete for track time on the LOSSAN Corridor. Each entity typically develops its own plans and schedules with somewhat limited coordination with the other entities. However, some coordination efforts have been underway in the last year, which included a joint schedule change by all passenger rail providers on January 9, 2011, the Rail 2 Rail programs, and combined marketing efforts.

Figure 1 shows the map of the LOSSAN corridor, along with the other Southern California connecting passenger rail services.

Figure 1 Southern California Passenger Rail Network



Corridor Agencies

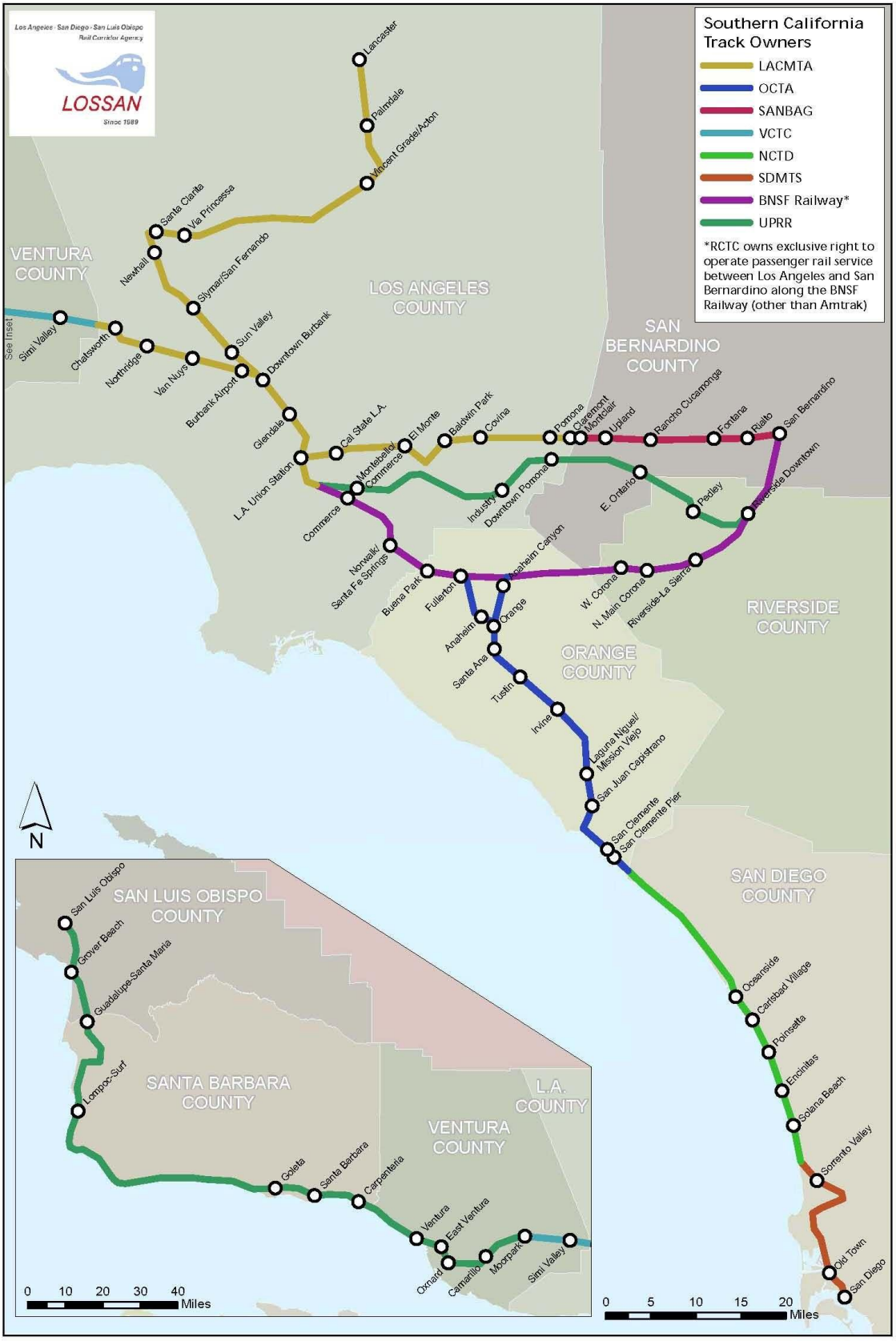
In addition to the Amtrak operated Pacific Surfliner intercity corridor trains, there are COASTER commuter trains operating between Oceanside and San Diego (operated by NCTD) and Metrolink commuter trains operating from Oceanside, East Ventura, the Antelope Valley, Orange County, and the Inland Empire to Los Angeles Union Station (operated by SCRRA). The corridor is also shared with BNSF Railway and Union Pacific Railroad (UPPR) freight rail services. Both UPRR and BNSF Railway maintain trackage rights on the publicly owned passenger rail segments, but these railroads also still own key high use portions of the LOSSAN Corridor over which the intercity and commuter trains operate. While this situation makes for a more complex management challenge, there are other complex ownership situations across the country.

Amtrak also owns rights to operate its long-distance national network passenger trains over portions of the LOSSAN corridor. Currently, there are three long distance trains which use parts of the LOSSAN corridor: The daily Coast Starlight (trains #11 and #14) between Los Angeles and Seattle; the daily Southwest Chief (trains #3 and #4) between Los Angeles and Chicago, and the thrice-weekly Sunset Limited (trains #1 and #2) between Los Angeles, San Antonio/New Orleans/Chicago. Sunset Limited does not currently travel on LOSSAN corridor, though it may be rerouted onto LOSSAN via Fullerton in the future.

In addition to those portions of the corridor owned by the host railroads, five public agencies own portions (Figure 2). The title to the publicly owned segments of the LOSSAN Corridor resides in local agencies in each of the counties through which the LOSSAN Corridor passes. Publicly owned segments of the right-of-way in the Metrolink service area are generally resident in the county agency: VCTC owns Moorpark to the Los Angeles County line; LACMTA owns most of the rights-of-way within Los Angeles County; and OCTA owns the right-of-way within Orange County. Within San Diego County, title to the publicly owned right-of-way is split between two agencies; NCTD from the Orange County line through the City of Del Mar, and San Diego Metropolitan Transit System (SDMTS) through the City of San Diego to Santa Fe Depot in San Diego. In the major 'throat' into Los Angeles from the south and east, BNSF Railway still owns the segment of the LOSSAN Corridor between Fullerton and Redondo Junction. In addition, RCTC owns 'the passenger slots' for the Riverside Metrolink service that joins the LOSSAN Corridor at Fullerton, and continues on the LOSSAN corridor into Los Angeles Union Station (LAUS).

The majority of the intercity passenger cars and locomotives utilized on the LOSSAN Corridor are Amtrak-owned. The State of California also owns a fleet of passenger cars and locomotives, but only ten (10) Pacific Surfliner passenger cars that are used in the corridor are state owned. However, the Amtrak-owned fleet and the state-owned fleet are fully compatible.

Figure 2 LOSSAN Corridor Ownership



Administrative Conditions

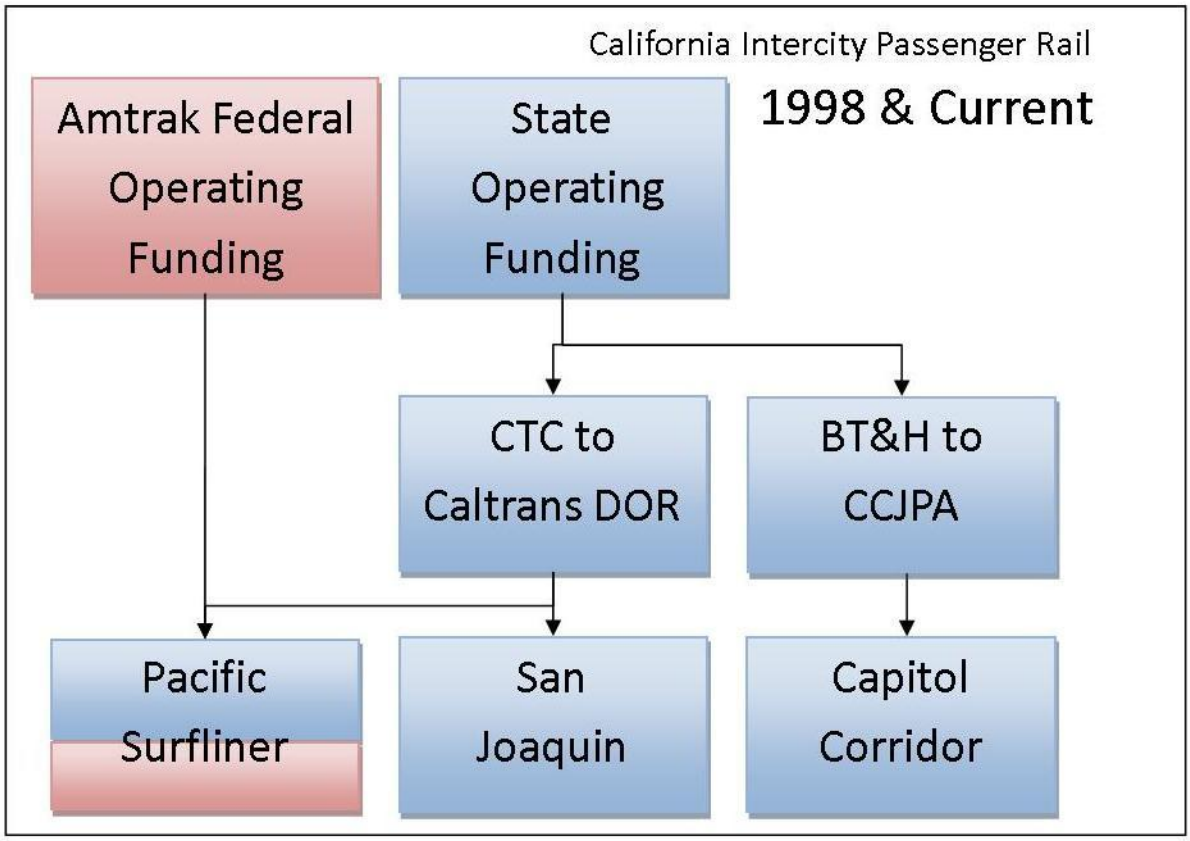
Largely through the Caltrans Division of Rail (DOR), the State of California has planned, developed and implemented three state-supported intercity passenger rail routes, which are all now among the top five busiest routes in the national Amtrak system. The Pacific Surfliner, Capitol Corridor, and San Joaquin services have been initiated and/or expanded largely as a result of the voter-approved bond measures passed in 1990. This statewide intercity passenger rail investment by the State of California is now approximately $1.9 billion since 1990. The 1990 voter-approved bonds provided one-time state capital investments necessary to successfully transform these three rail corridors into some of the busiest intercity passenger routes in the nation, and California now generates some 20% of all the passengers on the entire national Amtrak system.

When Amtrak was created in 1971, a 'legacy' skeletal network of national passenger rail services was mandated by Congress. Included in that legacy network was the operation of three daily round-trip trains between San Diego and Los Angeles. The San Diego-Los Angeles trains were then known as 'The San Diegans', and initially no contribution was required from the state for the operation of these trains. The San Joaquin and the Capitol Corridor routes were new services initiated after the creation of Amtrak in 1971 and have developed on a full-cost-of-service contract basis with Amtrak, and the operating contracts with Amtrak are basically already providing the federally required PRIIA Section 209 annual financial support.

The amount of annual state financial support required is determined by calculating the difference between the cost-of-service (Amtrak operating agreement) and the passenger fares and other revenue generated. Also, the annual state support includes specific funding for administration and marketing functions, separate from train operations support. All three state-supported intercity services generally meet the state's goal of achieving at least 50% recovery of operating costs from passenger fares and other revenue. This farebox recovery ratio is also consistent with federal highway recovery of approximately 50% from gas taxes. The Pacific Surfliner has traditionally been the state's best performer on farebox recovery, and has consistently achieved between 50% and 60% recovery ratios.

Historically, Caltrans DOR administratively managed all three intercity services until 1998. In 1998 administrative management responsibility was transferred from DOR to the newly created CCJPA for the 170-mile long Capitol Corridor service between the Sacramento region, Oakland/San Francisco and San Jose in Northern California. Caltrans DOR continues to maintain its administrative management responsibility for the LOSSAN Corridor and San Joaquin routes and maintains capital programming authority for all three corridors. Figure 3 depicts the administrative management and funding sources of the three state-supported intercity passenger rail routes that has been in place since 1998.

Figure 3 State Intercity Rail Service Administrative & Funding Conditions



The LOSSAN Corridor

As population and demand for intercity rail continued to grow along the busy LOSSAN Corridor between San Diego and Los Angeles, Caltrans DOR approached Amtrak to increase the frequency of train service under the terms of then-existing federal legislation known as 'section 403 (b)'. This was a financially advantageous formula for states to contract with Amtrak for new and/or expanded passenger rail service. As San Diegan frequencies were added, ridership also grew, as did demand for more train travel choices. Caltrans DOR contracted with Amtrak for added service, and the initial three trips each way between San Diego and Los Angeles have become today's 11 daily round-trips. Five round-trips also now operate north of Los Angeles to Santa Barbara/Goleta, and two of those round-trip trains extend service to San Luis Obispo.

At the time Caltrans DOR began increasing this state-contracted frequency growth along the Corridor, there was neither NCTD's COASTER nor SCRRA's Metrolink commuter rail service in operation. During the ensuing years, federal laws changed the formula for funding paid by the states for additional contract Amtrak services, resulting in today's approximate split of LOSSAN Pacific Surfliner net operating costs at 30% Amtrak-funded (for the three the 'legacy trains') and 70% state-funded (for everything else, including the northerly LOSSAN Corridor expansion to Santa Barbara and San Luis Obispo).

Following the voter approved proposition 116 in 1990, the LOSSAN Counties elected to use a portion of these state bond funds together with local funds to acquire most of the now-publicly owned portions of the LOSSAN Corridor from the then Santa Fe Railway. This purchase resulted in the ownership conditions/entities that exist today.

Ridership and revenue are considered quite respectable along the LOSSAN Pacific Surfliner route, and the current annual operating support provided by the state for its current share of the net-cost of service is approximately $28 million. Table 1 shows the current FY11/12 operations budget for the Pacific Surfliner service which totals approximately $100 million. Approximately $58 million, or 58 percent, is covered by passenger fares and other revenues, 28 percent of the operating budget is provided by the state and 15 percent is received from Amtrak.

Table 1 Current Pacific Surfliner Operations Budget Overview

CURRENT PACIFIC SURFLINER OPERATIONS BUDGET OVERVIEW	
	FY11/12 Actual ($millions)
Total Expenses	**$99.7**
Revenue:	
Ticket Revenue	$54.4
Food, Beverage, Other	$3.2
State Operations Support*	$27.6
Amtrak Operations Support	$14.6
Total Revenue:	**$99.7**

* Amtrak pays 30 percent of LOSSAN Corridor service as part of Amtrak's basic system, while the State pays the remaining 70 percent. The State supports 100 percent of San Joaquin and Capitol Corridor.

Passenger Rail Investment and Improvement Act of 2008 (PRIIA)

Section 209 of the Passenger Rail Investment and Improvement Act of 2008 requires that all Amtrak service on routes of 750 miles or less in length become the funding responsibility of the state. There are 19 states subject to Section 209 provisions and all have various pricing agreements. Led by a team of state/agency contracting managers, and to satisfy the mandate of the federal PRIIA legislation, the states have negotiated a uniform national pricing model with Amtrak, and a menu of services that each state or other contracting entity can purchase from Amtrak is included. The Amtrak Board approved the new costing plan in August 2011, and at this writing, 18 of the 19 states that contract with Amtrak have also approved the costing plan, including California.

As a result of PRIIA, the full net-cost of operation of the Pacific Surfliner service in FY 13/14 must be funded by the State of California. The San Joaquin and the Capitol Corridor services are already on a full net-cost-of-service contract basis with Amtrak, so the major financial impact of PRIIA on the State of California is for the Pacific Surfliner service. However, this change in funding responsibility also transfers greater control over the service to Caltrans DOR, or to whichever entity becomes responsible for the administrative management of the service.

In their current role, Caltrans DOR is the state's means of applying for and allocating federal grant funding for the LOSSAN Corridor, as well as for the San Joaquin and Capitol Corridor services. However, Caltrans DOR and Amtrak share in managing significant aspects of the Pacific Surfliner, including service options, fares and capital investments. Amtrak currently owns significant property within the LOSSAN Corridor, and while train operations are mostly over rights-of-way owned by other agencies/entities, Amtrak retains ownership of certain 'slots', as well as station interests (although this may be as a tenant), owns and operates maintenance facilities, and owns

most of the rolling stock used for the Pacific Surfliner. Amtrak has also historically participated in the state's rolling stock procurement program, track capacity projects, new, expanded maintenance facilities, and planning and marketing activities. Amtrak currently has allocated a portion of its internal capital funding for on-going LOSSAN Corridor track capacity improvements. There appears to be no restriction in the future on such Amtrak capital participation under PRIIA.

Of particular concern to the LOSSAN Board of Directors is the continuation of annual state operating support required for the Pacific Surfliner service as a result of PRIIA. It is estimated that the state costs for the assumption of the full net cost of service for the Pacific Surfliner service will be an additional $19 million in the first year, over and above the current 2011 amount of $28 million. The total annual state support required for the Pacific Surfliner will therefore be approximately $47 million in FY13/14, as shown in Table 2.

Table 2 Near-Term LOSSAN Pacific Surfliner Operational Impacts under PRIIA

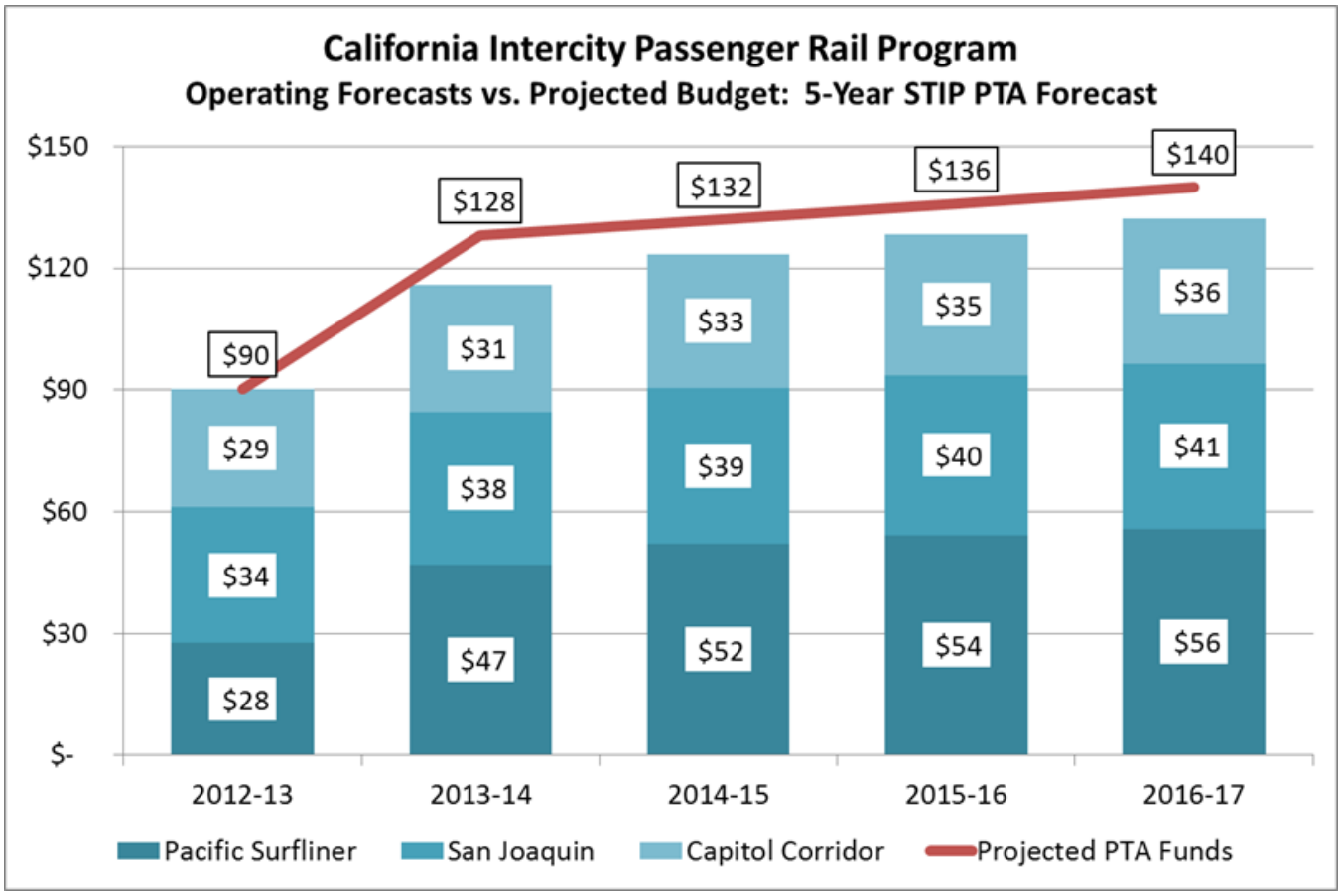
IMPACTS of the PRIIA Section 209 Implementation on LOSSAN Pacific Surfliner Corridor Costs ($millions)			
Funds	**2013-2014**	**2014-2015**	**2015-2016**
Ticketing and Other Revenue*	$67.3	$70.6	$74.2
State Supported Funds:	$47	$52	$54
Operations	*$42.0*	*$43.0*	*$45.0*
Capital	*$5.0*	*$9.0*	*$9.0*
Total Budget	**$114.3**	**$122.6**	**$128.2**

* assumes 5 percent annual growth in food and beverage revenue and 5 percent annual growth in passenger fares.

Figure 4 shows the projected expenses (bars) and state PTA revenue (line) for the three California Intercity Rail services. For example, for FY 2012-13, $90 million is provided in state PTA revenues for the three state-supported services, fully covering its expenses. Under the first year of PRIIA, the FY2013-14 statewide cost is projected to increase to $115 million, with PTA revenues for all three state-supported services projected at $128 million, thereby also fully covering their expenses with state funds.

Therefore, based upon the CTC fund-estimate projections for the State Transportation Improvement Program (STIP) for the state PTA funds, there appear to be adequate funds in the state budget to accommodate this transfer of Amtrak-borne costs. However, the LOSSAN Board continues to monitor the state budget situation and will continue to jointly advocate in Sacramento along with the other intercity rail corridor boards to protect these funds.

Figure 4 California IPR Operating Forecasts vs. Projected Budget – 5-Year STIP PTA Forecast ($millions)



Note: Rounding affects operating forecast totals

Capitol Corridor Model in Northern California

This study reviewed the Capitol Corridor model in Northern California because it represents an example of a state-run intercity rail service that was shifted to local administrative management when the Capitol Corridor Joint Powers Authority (CCJPA) was formed. Since the CCJPA's start up in 1998, the state has funded 100% of the required level of state support for the Capitol Corridor intercity passenger rail service. This now locally controlled service is a model for consideration as the LOSSAN Board considers options for local authority for the Pacific Surfliner.

The Capitol Corridor is a 170-mile rail route interconnecting the San Jose-Oakland/San Francisco-Sacramento regions with up to 32 daily trains. Ridership is currently 1.7 million, making it the third busiest route in the Amtrak system. Farebox recovery is 50% and on-time performance is 95%, making the most 'on-time service' on the entire Amtrak system. Many of these improvements are due to the aggressive local management of the service, and the crafting of incentive-based agreements with UPRR and Amtrak. CCJPA was also able to take advantage of the state Proposition 1B funds for rolling stock procurements as well as successful negotiation with the Southern Pacific, now UPRR.

Under the provisions of State Law (Senate Bill 457), legislative authority for the creation of the CCJPA was established in 1996. That same year, six member agencies each approved its participation, the CCJPA was

officially formed, and staff initiated negotiations with Caltrans for the ITA. The CCJPA is comprised of a 16 member board, with two members from each of the eight counties, each member having one vote. Each CCJPA Board Member is an appointee of one of the six member transit agencies, and the appointee to the CCJPA Board must also be a sitting member of the Board of that appointing member agency.

Both Caltrans DOR and the CCJPA call upon and utilize additional support staff from their larger umbrella organizations. Caltrans DOR services for accounting/payroll, legal, human resources, procurement, finance, etc., services are provided by the California Department of Transportation to support the Caltrans DOR staff, in a similar manner that the Bay Area Rapid Transit District (BART) provides these support services to the Capitol Corridor staff. As BART is a regional, single purpose public transit agency, widely recognized for its exceptional cost-recovery from revenues (60-70%) and a lean but efficient and effective management team, the transfer of the Capitol Corridor administrative management to the CCJPA (housed in the BART organization headquarter offices in Oakland), was believed to have been a very cost-effective move, setting the stage for a focus on Capitol Corridor service growth.

CCJPA Service Growth

When the CCJPA was created, the negotiated ITA with Caltrans initially provided state funding to the CCJPA for the equivalent of 6 full-time positions. The Capitol Corridor train service then consisted of only 4 daily round-trips, or 8 daily trains. Today the Capitol Corridor service consists of 32 weekday trains (four times the initial service), yet CCJPA management staff has increased to only 16.5 dedicated positions within BART (the local managing agency providing the Capitol Corridor Management Team to the CCJPA Board), which includes four mechanical positions based within the Amtrak Oakland Maintenance Facility to maintain the rail fleet used on both Capitol Corridor and San Joaquin services.

An additional seven positions were created within BART for telephone information services, and the funds to support this CCJPA-BART contract service were reduced from the Amtrak operating budget, as the CCJPA believed it could deliver this service to the Capitol Corridor customers more cost-effectively than could Amtrak. The addition of the telephone information service positions is an example of a 'cost-efficiency' measure determined by the local Management Team. Furthermore, the cost savings from this move was substantial enough to permit the Management Team to add more Capitol Corridor train frequency at no additional net cost to the state.

CCJPA Staffing

There are no employees of the CCJPA. The CCJPA actually consists of the Board of Directors and the CCJPA Board then contracts with BART to provide a dedicated, professional railroad management team functioning as the CCJPA staff, office space and administrative support (legal, treasury, accounting, human resources, payroll, etc.) as part of its duties as the Managing Agency. The staff members of the CCJPA Management Team are all BART employees for administrative purposes, but are dedicated to managing the Capitol Corridor service. The decision on which local agency is selected as the Managing Agency to provide and house the professional railroad staff for the Capitol Corridor service rests with the CCJPA Board. This situation has existed since 1999. In the first three years (1996-1999) the initial state enabling legislation designated BART as the Managing, or Administrative, Agency, but in subsequent years, the decision of selection and term of the Managing Agency were determined by consensus of the CCJPA Board. BART is currently serving as the Managing Agency in a several-times-renewed 5-year term (currently 2010-2015) agreement with the CCJPA Board.

The CCJPA staff negotiates and administers contracts for operations, maintenance, and capital projects and prepares the Annual Business Plan update, utilized by Caltrans and required by the Business, Transportation, and Housing Agency (BT&H) to establish the annual state funding allocation to the CCJPA for financial support of the Capitol Corridor service. The CCJPA is comprised of staff with technical expertise in transportation/operations, rolling stock, engineering (track, signals and structures, railroad construction, etc.), finance, customer service/marketing and capital programs administration.

Four of the Capitol Corridor 16.5 positions are full-time mechanical (locomotives, coaches, diners, etc.) experts who work in the Oakland Maintenance Facility alongside Amtrak management and craft employees. These CCJPA/BART employees provide technical assistance and expertise, thereby ensuring that the valuable state-owned rail rolling stock assets are properly maintained and are available to provide passenger service with a high degree of reliability on both the Capitol Corridor and San Joaquin services. The Capital Corridor and San Joaquin trains are assigned from a common equipment pool, and all Northern California Caltrans-owned rolling stock is leased to the CCJPA for maintenance purposes. While Caltrans DOR pays a share of the total rolling stock maintenance costs in Oakland in its direct contract with Amtrak, the CCJPA provides for all four mechanical employees in its operating budget.

CCJPA Management Results

The following benefits were accomplished by over a ten year period of local administrative management of the Capitol Corridor. The potential exists for a similar improvement in service and efficiency in a locally based management organization in Southern California for the LOSSAN Pacific Surfliner service.

- Annual ridership grew nearly four-fold from 463,000 to more than 1,700,000;
- Annual revenue grew from $6 million to more than $24 million;
- Train frequency grew from 8 daily trains to 32 trains. The Capitol Corridor now offers the most frequent intercity passenger train service in the country, outside of the Northeast Corridor.
- State support grew from $12 million to $26 million, with 7 straight years of 'flat' state support while service frequency, ridership and revenue continued to grow faster than costs;
- Farebox recovery from passengers increased from 29.8% (FY1997-98) to 50% today;
- Travel time was reduced by 20 minutes;
- On-time performance improved from the 70-80% range to 95%, and has consistently remained there for several years, making it the best on-time performance of any Amtrak service; and
- Transit transfer connections are provided to rail passengers by agreements with every transit agency along the Capitol Corridor, with CCJPA reimbursing local transit agencies for each transferring rail passenger to local transit.

Under the financial case discussion in Section 6, this study has identified specific anticipated improvements to the LOSSAN corridor with a locally controlled JPA.

2. Stakeholder Outreach, Data Gathering, and Public Involvement Program

The first step in developing this plan was to meet with CEOs and senior staff from corridor stakeholders and member agencies to further discuss the objectives of this study and to gain a better understanding of local, regional, and corridor priorities. These meetings took place in the fall of 2010 and early 2011 and included technical staff, executives and Board Members of 13 agencies and entities along the LOSSAN Corridor. Meetings were conducted with Amtrak, Caltrans, LACMTA, NCTD, OCTA, RCTC, SANDAG, SDMTS, SLOCOG, SBCAG, SCAG, SCRRA, and VCTC.

Certain common elements emerged from these meetings as goals or objectives of this effort and the Strategic Implementation Plan – the following observations, goals and objectives were expressed:

- Consensus that the LOSSAN corridor is not being used to its full potential and the desire to make improvements for better coordination between Amtrak and commuter services.
- A desire to solidify the Rail 2 Rail program, or a similar program which offers travel flexibility to passengers.
- Implement an electronic fare collection along the coordinated LOSSAN Corridor, and have it developed/integrated with all three existing passenger rail providers (Amtrak, Metrolink and COASTER).
- Provide convenient and common ticketing and transfers between modes of transportation, working with the member agencies and the associated transit systems.
- Develop a cohesive business plan that utilizes all modes of transportation to serve the most potential patrons.
- Develop a system that minimizes travel times for each service, yet also provides convenient connection points.
- Improve Amtrak on-time statistics.
- Establish a 'forum' for development of a "family" business plan to show the available services.
- Synchronize arrivals and departures to provide the maximum benefit to the passengers.
- Add more double track and multiple track to improve operations/capacity/reliability.

While each agency has its own issues specific to their location, the above noted items were universal throughout the LOSSAN Corridor. Observations and objectives or goals specific to the member agencies are summarized below.

Amtrak

Amtrak expressed its priority as trying to work with states to successfully implement PRIIA. Of concern was the ability of the state to support the current service when the federal law takes effect. However, Amtrak expressed a desire to remain a strong partner with the State of California and the entities responsible for the administrative management of the intercity passenger rail services. Amtrak noted its current partnership with the CCJPA as evidence of its commitment to work with a differing management structure than is currently in place for the LOSSAN Corridor.

Caltrans

Since the voter-approved intercity rail bond measures were passed in 1990, and including the state's prior capital intercity rail investments, California has invested some $1.9 billion into three intercity passenger rail corridors, building them into the second, third and fifth busiest routes in the Amtrak system.

Caltrans' position on the creation of a local JPA for administrative management of the Pacific Surfliner is that 'this is a local decision', and Caltrans will partner with a JPA should that be the local decision, as it has with the Capitol Corridor JPA. Regardless of the decision, Caltrans will remain a strong partner in all intercity services. Caltrans will retain responsibility for rail planning, programming of capital funding, and federal grant application and administration. Additionally, Caltrans will continue to be responsible for preparation and updates to the federally required State Rail Plan. Caltrans DOR will also be the procurer and owner of additional rolling stock used on the LOSSAN Corridor, and on all three state-supported intercity services.

Los Angeles County Metropolitan Transportation Authority (LACMTA)

LACMTA's objectives have been to create synergy and balance in the corridor. Rail 2 Rail is a step in that direction. This corridor should be referred to as the I-5/101 LOSSAN Corridor as it provides significant relief to the I-5 freeway; it carries 1-1/2-lanes' worth of traffic between Orange and Los Angeles counties. The work that is being done for governance will create that synergy and develop a more balanced service that will blend with the other services in the corridor. In addition, local governance provides a stronger voice for the customers who use the services.

North County Transit District (NCTD)

NCTD owns the LOSSAN railroad right-of-way from the City of Del Mar to the San Diego/Orange County border. NCTD is interested in exploring opportunities to extend COASTER service north from Oceanside to the Orange County/Los Angeles market destinations, as well as the extension of Metrolink service south from Oceanside to San Diego County destinations. SCRRA and NCTD have recently cooperated to provide trial weekend service to Solana Beach to serve the Del Mar race season. Also, NCTD is the lead agency for Positive Train Control (PTC) design and implementation along the San Diego Subdivision. NCTD wants to ensure that its rights of ownership and track access are protected, but is supportive of the best use of Amtrak service along the LOSSAN Corridor, as well as coordination of schedules and fares.

Orange County Transportation Authority (OCTA)

OCTA's main interest is in providing enough additional rail track capacity for its expanded commuter rail service plan in order to implement it with reliable operation. There are no institutional or policy issues at OCTA with respect to other rail services extending into Orange County or out of Orange County in order to serve travel market demands that cross county/agency jurisdictional lines. Grade crossings (and the elimination of as many of them as possible) are a prime concern and priority in Orange County. OCTA has initiated several grade-separation projects, especially where multi-track operation is envisioned. OCTA is also working with the California High-Speed Rail Authority on the Los Angeles to Anaheim section.

Riverside County Transportation Commission (RCTC)

Riverside County expressed a strong desire to join the LOSSAN Corridor as a voting member. Although the county is not directly on or served by the Pacific Surfliner intercity service, RCTC owns the commuter passenger

rights between Fullerton and Redondo Junction. RCTC's continues development of Metrolink commuter service expansion to Perris Valley and expressed a desire for new intercity service to Palm Springs.

San Diego Association of Governments (SANDAG)

SANDAG has served as the agency providing staff to the LOSSAN Board for 12 years. Additionally, SANDAG has authority for transit project construction in the region including:

- Double track projects along the LOSSAN Corridor.
- Del Mar Bluffs Stabilization – currently underway but the ultimate plan is to construct a tunnel at this location.
- Miramar Curve – this project will realign curves and increase speeds.
- Grade Separations – the grade crossings on the Corridor are seen as risks to the overall Corridor.
- Airport Intermodal Transportation Center (ITC) – a multimodal transportation hub adjacent to San Diego International Airport adjacent to the LOSSAN Corridor.
- Mid-Coast Trolley extension from downtown San Diego to University City/UCSD.

San Diego Metropolitan Transit System (SDMTS)

The SDMTS owns the LOSSAN railroad right-of-way in the City of San Diego. Their primary interest is in developing a more intense transit hub at the Santa Fe Depot for their light-rail system and the establishment of the ITC at San Diego International Airport. Both of these locations will include Pacific Surfliner service, as well as commuter trains, light rail trains and buses. SDMTS is working jointly on several regional transit projects potentially impacting the LOSSAN Corridor intercity and commuter rail services.

- Changes at Santa Fe Depot caused by planned extension of the trolley platforms.
- Mid-Coast Trolley extension.
- Bus Rapid Transit (BRT) service from North County Inland/Interstate 15 Corridor and South Bay with service to the Santa Fe Depot. This would add further benefit to coordinating rail service.

San Luis Obispo Council of Governments (SLOCOG)

SLOCOG is committed to working with UPRR to make capital investments that will result in their desired service levels, which are as follows:

- Santa Barbara to San Luis Obispo, including four round trips to/from Los Angeles, with two of these operating as through trains to/from San Jose and the San Francisco Bay Area.

Another priority is completion of the LOSSAN North Programmatic Environmental Impact Report/Environmental Impact Statement in 2012 and Service Development Plan. Caltrans District 5 is leading the environmental effort.

Santa Barbara County Association of Governments (SBCAG)

SBCAG's highest priority is to provide additional near-term (2012) commuter rail service during peak weekday mornings and afternoons between East Ventura and Santa Barbara/Goleta. SBCAG has identified this service as potential mitigation for the Highway 101 widening and reconstruction program, which is expected to be under

construction for 10 years. SBCAG has also identified a new North Goleta station/platform is an important component of this service.

Southern California Association of Governments (SCAG)

SCAG indicated support for the process of evaluating options for LOSSAN Corridor management, and viewed the concept of a more local management as a positive move for Southern California. SCAG also indicated that they were willing and able to provide assistance on travel data, especially with regard to origin and destination information. They acknowledged the difficulty in gathering good origin and destination information on potential markets that cross jurisdictional lines, particularly when the origin was in the SCAG district and the destination was in the SANDAG district, or vice-versa due to modeling limitations that tap the cross county market in developing new services.

Southern California Regional Rail Authority (Metrolink)

Metrolink's goal is to have sufficient capacity along the LOSSAN Corridor to provide more reliable, frequent service with shorter travel times, particularly during the peak-period travel times, in order to capture the anticipated latent market.

Issues such as station capacity in Los Angeles (with future run-through tracks), multiple track capacity between Los Angeles and Fullerton (and perhaps farther south), coordination with Pacific Surfliner and COASTER services, and the role/integration of high speed rail are all of concern and interest to Metrolink.

Ventura County Transportation Commission (VCTC)

VCTC is supportive of efforts to implement 'reverse commute' train service from East Ventura in conjunction with the Highway 101 reconstruction project. VCTC also supports continuation of the Rail 2 Rail program, as regular Ventura rail passengers rely more heavily on that flexibility to use Amtrak service, since there is more limited Metrolink train service to Ventura County than to most other SCRRA member counties.

While Ventura County is a member agency of SCRRA, it is the only SCRRA member county without a local tax measure to support the annual financial support required for the Metrolink rail service. Funds are allocated annually from Ventura County general revenues. However, Ventura County does benefit from multiple weekday Metrolink train service frequencies to Los Angeles from as far north as East Ventura, as well as the ten Pacific Surfliner trains, two of which are jointly sponsored Caltrans/Amtrak/Metrolink trains.

Public Involvement Program

Regular updates on various aspects of this plan were taken to more than 25 public meetings of the LOSSAN Board of Directors and TAC throughout the corridor. A project fact sheet was developed, and along with staff reports, previous studies, and other project information, is available at *www.lossan.org*. A list of meetings and fact sheet are included in Appendix A.

3. Quick Improvements

The *LOSSAN Corridor Quick Improvements Study* final report was prepared on behalf of OCTA in July 2008 and details 20 concepts for near-term improvements that could be implemented fairly quickly and at minimal cost. Four additional items were added by the LOSSAN Board through other actions since the publication of the final report. LOSSAN TAC members have volunteered to implement various improvements and continue to be involved.

Since August 2010, the remaining quick, or short-term, improvements have been managed by a LOSSAN project manager in coordination with member agencies and other stakeholders. Eleven improvements have been fully completed. Several improvements have reached a level where implementation is fully dependent on an agency complementary project that is currently underway or additional resources that have not currently been identified. Lastly, there are some improvements that have evolved over time or have been dropped due to various circumstances.

Table 3 shows the status of the short-term improvements, as well as the agency responsible for implementation, with the following color codes:

- The 'gray' colored rows indicate improvements that have been completed;
- 'Green' indicates the improvements that are scheduled for implementation;
- 'Yellow' indicates improvements that are moving forward but face some unresolved issues; and
- 'Red' indicates improvements that will take longer to implement than first envisioned and completion will likely extend beyond the end of February 2012 target completion date.

The green and yellow items are expected to be completed or substantially completed by the end of February 2012.

These improvements are described in brief in Table 3 and in more detail in Appendix B.

Table 3 Short Term LOSSAN Corridor Improvements

Complete	Short-Term Improvement	% Complete	Implementing Agency	Status
☑	On-line Trip Planner	100%		Complete
☑	Orange County Station Signage	100%		Complete
☑	Union Station Central Information Booth/Brochure	100%		Complete
☑	511 Information	100%		Complete
☑	Rail Connections	100%		Complete
☑	Joint Marketing	100%		Complete
☑	L.A.–San Diego Limited Stop Express Service	100%		Complete
☑	On-Train Information	100%		Complete
☑	Amtrak Bus and Metrolink Connections	100%		Complete
☑	Minimize Dwell Times	100%		Complete
☑	Freeway Changeable Message Signs	100%		Complete
☐	San Diego Station Signage	75%	NCTD	Oceanside way finding signage program will be installed in Jan/Feb 2012
☐	Consolidated LOSSAN Corridor Timetable	65%	Caltrans, Amtrak, Metrolink, NCTD	Operators will launch consolidated timetable targeted for April/May 2012
☐	Commuter Service to Underserved Markets	60%	Metrolink, NCTD	San Diego to Orange County through commuter service to launch in 2012
☐	Ventura to Santa Barbara Service	65%	SBCAG, VCTC, Metrolink, UPRR, Caltrans	A lot of momentum but trackage rights, capital improvements, and funding agreements must be formalized
☐	Improved Distribution of passenger information at joint stations	60%	Caltrans, Amtrak, Metrolink, NCTD, local jurisdictions, station owners	A station assessment was completed in Fall 2011. Improvements will be dependent on each station operator.
☐	Better Airport Connections	50%	Amtrak, Metrolink, LAWA	Metrolink and LAWA are currently finalizing the agreement for transfers to the FlyAway bus service.
☐	Rail 2 Rail Program Corridorwide	40%	Metrolink, Caltrans	Negotiations continue between Caltrans/Amtrak and Metrolink.
☐	Mutual Aid Agreements	50%	Caltrans, Amtrak, Metrolink, NCTD	Mutual Aid may be formalized as part of the new governance structure
☐	Free Transfers – Transit Transfer expansion	40%	Caltrans, Local Transit Operators	Mechanisms in place but currently state lacks funding to expand program
☐	Additional Midday Service	30%	Metrolink, OCTA	No timeframe set for Orange County service expansion program
☐	Electronic Passenger Information System	20%	Metrolink, Amtrak	Dependent on PTC rollout
☐	Joint Ticketing	20%	Amtrak, Metrolink, NCTD	E-ticketing on Surfliner Trains in 2012. No plans to integrate fares among services.
☐	Schedule Changes on Local Transit	10%	Amtrak, Metrolink, NCTD, Local Transit Operators	No plans to base local transit schedule changes on train schedule changes.

Improvements Completed

Consolidated LOSSAN Corridor Trip Planner

Develop a LOSSAN Corridor rail trip planner with illustrative mapping, showing connections. As of January 2011, Amtrak Pacific Surfliner, Metrolink, and COASTER services are using the Google Transit on-line trip planning service.

Orange County Station Signage

OCTA should work with local jurisdictions with stations to ensure adequate signage is in place. With regard to station signage, Amtrak and Metrolink should work together with LOSSAN Corridor public transportation agencies to ensure passenger information is located optimally per location for the benefit of all train riders. By November 2011, sign installation at all Orange County stations was complete.

Central Information Booth at Los Angeles Union Station

Originally, this improvement called upon Metrolink, LACMTA, and Amtrak/Caltrans to jointly investigate the potential for locating and staffing a central information booth or booths at high foot-traffic points in Los Angeles Union Station (LAUS); e.g., at east and west portals of the under track pedestrian tunnel. The potential of selling both Metrolink and Amtrak tickets at the booth(s) was also to be explored. Upon additional field work, this improvement evolved into development of an informational brochure on the various services available at LAUS, which were made available in November 2011 (also available at *www.lossan.org*).

511 Information

Ensure inclusion of rail transit information in the forthcoming Los Angeles area "511" deployment. The LA 511 website went on-line in June 2010 and has information and links to all LA County transportation options, including Metrolink and Amtrak. The web site address is http://go511.com/default.aspx. As of November 2010, San Diego, Orange Los Angeles, Ventura and San Luis Obispo Counties all have operational 511 systems with train information and Santa Barbara County was receiving proposals for the development of a traveler information website. This item is largely complete.

Rail Connections

Transit agencies should consider potential connections with each schedule adjustment made in future years in the context of other operating requirements and promote the existing connectivity of trains for both Los Angeles connections (Metrolink and Amtrak/Caltrans) and Oceanside (Metrolink, NCTD/COASTER and Amtrak/Caltrans) connections, potentially using the Consolidated LOSSAN Corridor Timetable. Near-term easy fixes for missed connections, such as the Metrolink train 663 and COASTER train 692, were completed in July of 2011 and Metrolink now announces transfer information upon arriving at LAUS.

Joint Marketing by LOSSAN Corridor Operators

Metrolink, NCTD/COASTER, and Amtrak/Caltrans should explore the opportunities for directed joint marketing for services to special events, as well as creative ways to develop the potential of Rail 2 Rail in the LOSSAN Corridor. Marketing staff from each LOSSAN corridor agency met in March of 2011 to coordinate corridorwide

marketing efforts. The outcome of this initial meeting resulted in the scheduling of joint bimonthly meetings of each LOSSAN corridor agency, with regular reporting to the LOSSAN Board.

Los Angeles–San Diego Limited Stop Express Service

Limited stop Pacific Surfliner express service was launched by Caltrans and Amtrak in February 2011 by converted an existing northbound morning trip. A six-month progress report was completed by Amtrak in November 2011.

On-Train Information

Continue to encourage onboard explanation of delays on Metrolink, COASTER, and Pacific Surfliner trains. This improvement evolved to providing WiFi services onboard trains. WiFi service on Pacific Surfliner cars was implemented in September of 2011, with statewide service implementation launched in November 2011.

Amtrak Bus and Metrolink Coordination

Metrolink and Amtrak/Caltrans should discuss promotion of Metrolink/Thruway bus connections in their respective schedules, as well as the potential for increasing the number of stops on the Thruway buses to improve their utility for Metrolink riders. The January 9, 2012, service change improved connectivity between Amtrak Thruway buses and Pacific Surfliner trains.

Minimize Dwell Times

Amtrak conducted station surveys to determine the potential to minimize dwell times and allow scheduled run times to be reduced between August of 2008 and September 2011, which resulted in the reduction of some station dwell times on the Pacific Surfliner. These station dwell time changes were implemented with the January 9, 2012, service change.

Freeway Changeable Message Signs

Amtrak/Caltrans, NCTD/COASTER, and Metrolink should discuss the potential for putting train information on freeway Congestion Management System (CMS) facilities with Caltrans Districts having CMS in the LOSSAN Corridor. Orange County (Caltrans District 12 and Metrolink) was selected for a freeway CMS pilot project to provide train information to motorist stuck in traffic. In December of 2011, Caltrans and Metrolink implemented the variable message signs on Interstate 5, providing motorists with train travel time compared to driving travel time. It is expected that the freeway CMS message pilot project will be expanded to other Southern California locations.

Improvements Scheduled for Implementation

San Diego County Station Signage

NCTD should work with local communities with stations to ensure adequate signage is in place, particularly on major streets that do not connect to/from Interstate 5 (I-5). In addition, Amtrak/Caltrans, Metrolink, and NCTD/COASTER should work to identify both short term measures and longer term actions to coordinate information, signage, and public address announcements at the Oceanside Transit Center.

This improvement evolved into an NCTD station wayfinding project, which will be implemented as capital improvements are implemented at the Oceanside Transit Center. NCTD will be installing improved way-finding signage in Oceanside Transit Center in January and February of 2012.

Consolidated LOSSAN Corridor Timetable

Develop a LOSSAN Corridor Consolidated Timetable, showing all trains in the corridor from San Luis Obispo to San Diego. The timetable should highlight potential connections between services and would be available online in an electronic format. The joint marketing staff group is developing concepts for a public version of the consolidated timetable.

Commuter Service to Underserved Markets

This improvement addresses the potential implementation of enhanced services to attract new passengers in underserved commuter markets between San Diego County and Orange County. This study effort was included as part of the Business Case efforts and the service schedule for 2014 includes these service enhancements. The next steps for implementation are the development of an operating plan and revenue sharing agreement between Metrolink and NCTD to operate trains through Oceanside.

Improvements Moving Forward

Ventura to Santa Barbara Service

The LOSSAN Board recommended the development of new rail service between Ventura and Santa Barbara to relieve peak-period congestion on Highway 101 be added to the improvements list. Various modeling, site reviews, cost estimates and discussions have been undertaken to assess the feasibility of adding new service between Ventura and Santa Barbara and are currently on-going. SBCAG and Ventura County Transportation Commission are working together to coordinate on minor capital improvements at East Ventura, secure track rights with UPRR, develop operating plan with Metrolink, and provide operating subsidy possibly from highway mitigation funding.

Improved Distribution of Passenger Information at Joint Stations

Metrolink, NCTD/COASTER, and Amtrak/Caltrans should consider working together to determine the best practices for providing customer information at stations. The effort to better understand how information is disseminated at stations within the LOSSAN Corridor began in June 2011 with a field tour of San Diego and Orange County stations to document the current availability of rail and local transit information. The LOSSAN Station Information “SWAT Team” Checklist surveys were conducted at all stations and a final report completed in early 2012.

Airport Connections

New airport connection services should be explored from the Anaheim to Los Angeles International Airport (LAX) and from the Santa Ana Station to John Wayne Airport. Amtrak and MTS should discuss the potential for Amtrak riders getting a free transfer to the Airport Flyer for a ride to the airport (similar to COASTER). In addition, transit operators should encourage the corridor airports near them to provide user-friendly links to their Web sites (San Diego International, Bob Hope (Burbank), and John Wayne airports already have these, whereas, LAX, Santa Barbara, and San Luis Obispo did not).

This improvement evolved to also include allowing Amtrak passengers to purchase Flyaway bus tickets from LAUS to LAX the same way they purchase any Amtrak California Thruway bus ticket (one transaction, but two coupons), which requires agreements on ticketing and revenue payments. Currently Metrolink and Los Angeles World Airports (LAWA) are in discussions to offer Metrolink monthly pass holders' free transfers to LAX Flyaway buses. Additional Amtrak and Metrolink coordination with LAWA will be required to formalize agreements.

In addition, the Burbank-Glendale-Pasadena Airport Authority is planning a Regional Intermodal Transportation Center at the Bob Hope Airport in Burbank, which will serve the existing rail services in the corridor.

Corridorwide Rail 2 Rail Program

Another improvement still underway is the continuation of the Rail 2 Rail program, allowing monthly commuter rail pass holders to ride on Amtrak trains and Amtrak riders to use Metrolink trains. Discussions to maintain the Rail 2 Rail program have been underway since October 2010 and are ongoing. Metrolink, Amtrak and Caltrans will need to agree on the terms of a new Rail 2 Rail contract. NCTD, Amtrak, and Caltrans launched a program in San Diego County in August 2011, which is paid for through an upgraded passenger fare.

Improvements Determined Longer Term

Mutual Aid Agreement

Discussions continue between Caltrans, Amtrak, Metrolink, and NCTD regarding the formalization of mutual aid agreements between their agencies. Informal agreements have been in place since the start-up of commuter rail service in the corridor.

Transfers

All transit services connecting to trains in the LOSSAN Corridor should be encouraged to offer free transfers to train riders. At this time the only remaining obstacle to expanding implementation of "Transit Transfers" from intercity Pacific Surfliner customers for 'free' connections is the provision of funding for this purpose in the state operating budget for the Surfliner. Caltrans will need to identify and propose an additional funding item in the intercity rail budget to expand the state's transit transfer program, as the current budget amount for such transfers is already at capacity. If additional funding is identified and made available for this purpose, Caltrans can then execute agreements with the remainder of the local transit operators along the LOSSAN corridor.

Mid-Day Service

Explore the possibility of having one or two of the mid-day Pacific Surfliner trains make added stops in Orange County, and explore Ventura County Line service additions with Los Angeles and Ventura Counties as longer term options. The Metrolink Service Expansion Program began in July 2011, with the addition of six trips on the Orange County line. However, while Metrolink and OCTA have identified mid-day service enhancements, no implementation timeframe has been set due to limited demand and reduced operating funds. No additional intercity stops in Orange County are planned.

Passenger Information at Stations

Metrolink is currently integrating the customer information system with their Positive Train Control (PTC) program. At this time, digital message signs are installed at all stations; however, there are separate systems

and signs at shared stations – Amtrak train information should be included and incorporated into a single system.

Ticketing

The original suggestion to investigate the potential for selling COASTER tickets through the new ticket vending machines (TVMs) evolved into the implementation of Amtrak's new E-ticketing program on the Surfliner corridor. A long-term goal relating to ticketing is the development and implementation of an integrated regional fare policy and common fare media.

An integrated fare service would have to take into consideration the various fare structures of the commuter rail verses the intercity rail services. It is not the intention of this study to imply that the fares of all services would be the same. The study does recognize the different markets of intercity vs. commuter rail services. With electronic fare media, sharing a similar fare card/method while having the flexibility to charge a fare differential and/or premium for higher level service is possible and probable.

Impact of Schedule Changes on Local Transit

Given the anticipated changes to train schedules, particularly on Metrolink, local transit providers in the LOSSAN Corridor should be asked to regularly review their timetables to optimize the potential for good transit-rail connections wherever possible. Discussion and coordination for this identified improvement has started – an element that will facilitate 'timely local transfers' is advance notice of train schedule changes to local transit providers. Amtrak, Metrolink, NCTD, and the local transit operators that serve LOSSAN train stations will continue to coordinate schedule changes and improve timed transit connections.

Improvements Eliminated From List

WiFi at Stations

Amtrak/Caltrans, Metrolink, and NCTD/COASTER should jointly explore the cost-effectiveness of WiFi service options at station locations. Station WiFi services at San Diego, Los Angeles, and Santa Barbara were determined to be sufficient due to the fact that there are large numbers of intercity passengers at these stations. Commuters do not tend to arrive at the station with time sufficient to take advantage of station WiFi. Furthermore, WiFi onboard Pacific Surfliner trains is also available. For these reasons, this improvement was dropped from the list.

4. Business Case for a Preferred Service Plan

A key component of the new vision for the corridor is the development of a business case for new services corridorwide to:

- Open up passenger rail to currently un-served or underserved markets as a competitive alternative to driving alone; and
- Collectively provide the infrastructure to allow more peak period trains, faster through-express trains and additional service improvements that meet current and future conventional and high-speed intercity, commuter, and freight demands both north and south of Los Angeles Union Station.

This business case builds upon two main components: (1) operations modeling to test if new services are possible given existing and planned infrastructure improvements and if not, what additional infrastructure is needed and (2) ridership and revenue forecasting to test if new services are successful at attracting additional ridership to passenger rail services. OCTA agreed to hire Parsons Brinckerhoff to conduct operations modeling and Caltrans agreed to assign AECOM with the forecasting task. Both efforts were provided in-kind by these agencies.

Two time periods were part of the analysis, a short-term service plan for 2014 and a long-term service plan for 2030. Both efforts required assumptions on the infrastructure (double tracking, signal improvements, etc.) planned to be in service during the particular time frame as well as number of assumptions regarding service such as number of trains and stopping patterns.

Detailed work officially started in March 2011 and a project working group (PWG) of LOSSAN member agencies met regularly to first develop the assumptions for both service and infrastructure and to review the detailed modeling results and provide comments that were then transmitted to the Board of Directors. PWG members were: Amtrak, BNSF Railway, Caltrans, LACMTA, NCTD, OCTA, RCTC, SANDAG, SBCAG, SCAG, SCRRA, SDMTS, SLOCOG, UPRR, VCTC, and consultant teams.

Each scenario was modeled using the Berkeley Simulation Software Rail Traffic Controller (RTC) to determine the feasibility of the assumed infrastructure to support the desired future train volumes. Summary results for both planning horizons are provided below. Detailed operations analysis reports and ridership and revenue forecasts are provided in Appendix D.

2014 Preferred Service Plan

The PWG developed specific goals to be tested in the short term analysis and reviewed these with the Board of Directors:

- New through commuter trains between San Diego and Los Angeles making all stops.
- New Pacific Surfliner roundtrip between Ventura and Santa Barbara to serve the commuter market.
- Additional limited stop Pacific Surfliner trains.
- Additional mid-day COASTER and Metrolink service with timed connections in Oceanside.

- Integration of two Caltrans statewide goals for intercity service: (1) better connectivity with the San Joaquin corridor and (2) moving to a consistent 7-day per week intercity schedule (at the time of this analysis, schedules Monday through Thursday were different than Friday through Sunday).

From these broad goals, three detailed service scenarios were developed:

Version 1: 167 trains with increases in commuter services between Los Angeles and San Diego ("through trains"), Laguna Niguel and Fullerton, and Oceanside and San Diego. Commuter trips between Ventura and Santa Barbara Counties are included. Consistent seven day per week schedule for Pacific Surfliner by reducing service to 22 trips Monday through Sunday (currently 22 trips Monday through Thursday and 24 trips Friday through Sunday).

Version 2: 173 trains with additional commuter services over Version 1 including additional Inland Empire Orange County and Laguna Niguel to Fullerton services. Pacific Surfliner trips increased to 24 trips on Saturdays and Sundays only (22 trips Monday through Friday).

Version 3A: 178 trains with additional commuter services over Version 2, including additional commuter service on the Perris Valley Line from Riverside County. One existing southbound Pacific Surfliner trip is converted to Express. Consistent seven day per week schedule for Pacific Surfliner by increasing service to 24 trips Monday through Sunday.

Table 4 summarizes the assumptions in train volumes between scenarios and also compares each with a baseline or "no build" scenario for 2014, essentially the 2011 levels of service operating in 2014. No additional Amtrak long-distance service was assumed by 2014 (all scenarios included the current two Coast Starlight and two Southwest Chief trips). Assumptions were made for slight increases in BNSF and UPRR freight services.

Table 4 Short Term Service Plan Train Volumes

TRAIN VOLUMES FOR SHORT TERM SERVICE SCENARIOS				
Weekday Service	**2014 Service Scenarios**			
	Baseline	**Version 1**	**Version 2**	**Version 3A**
Commuter (LOSSAN South)	64	77	83	86
Commuter (LOSSAN North)	61	64	64	64
Pacific Surfliner Intercity	22*	22	22**	24
Amtrak Long Distance	4	4	4	4
Total	**151**	**167**	**173**	**178**

* 2 additional trips are included on Friday, Saturday and Sunday
** 2 additional trips are included on Saturday and Sunday

2014 Operations Analysis

The PWG developed a list of new capacity infrastructure that is expected to be complete and in use by 2014 above the current level of capacity along the entire corridor. Given that these new projects most likely need to be fully funded and either in final design or under construction currently, this new infrastructure list was considered constrained:

- New Platform #7 at Los Angeles Union Station, Los Angeles County
- Partial Triple Track between Los Angeles and Fullerton, Los Angeles County
- New Control Point (CP) Stadium, Orange County
- Santa Margarita Bridge Replacement and Second Track, San Diego County
- Oceanside Station Pass Through Track, San Diego County
- Carlsbad Double Track, San Diego County
- Sorrento Valley Double Track, San Diego County
- Sorrento to Miramar Double Track Phase 1, San Diego County
- San Diego Crossovers, San Diego County

The detailed operations analysis found that the most aggressive service scenario, Version 3A, was feasible given the available infrastructure in 2014. However, additional infrastructure improvements were required at East Ventura Station in Ventura County for the overnight layover of the Ventura-Santa Barbara commuter train.

Furthermore, two additional projects were recommended in order to improve the reliability of service. They are currently in the preliminary engineering and environmental phase through a federal ARRA grant. They are:

- Second platform at Van Nuys Station, Los Angeles County; and
- Second track between CP Bernson and CP Raymer, Los Angeles County

2014 Projected Ridership and Revenue

For comparison purposes, a Baseline ridership and revenue forecast of a 2014 schedule and a forecast for the three versions outlined above were developed. Table 5 summarizes total ridership for these scenarios and the incremental change of the three versions over the Baseline.

More than 7.9 million intercity and commuter passengers are forecast for the Baseline scenario for 2014. Overall, each scenario increases ridership with the most aggressive changes in Versions 2 and 3A yielding the highest ridership gains, more than 440,000 passengers annually. Comparing the forecast for intercity and commuter ridership shows decreases in the intercity ridership for Versions 1 and 2, which include service reductions from the Baseline scenario. The changes proposed by Amtrak and Caltrans in Version 3A, including better connectivity between Pacific Surfliner trains, have a positive impact on intercity ridership.

Table 6 compares the ridership for all corridor services between scenarios as well as the impacts to ridership on the San Joaquin Corridor, one of the objectives of Caltrans in terms of better statewide connectivity. Version 3A, which includes these changes, slightly increases San Joaquin ridership over the Baseline. Overall, Version 3A shows a 4.7 percent increase over the Baseline compared to a 2.7 percent change for Version 1 and a 4.9 percent change for Version 2.

Table 5 Short Term Ridership Forecast

RIDERSHIP FORECAST FOR SHORT TERM SERVICE SCENARIOS			
Total Ridership			
2014 Scenario	**Intercity Service (Pacific Surfliner*)**	**Commuter Service**	**Total Ridership**
Baseline	3,002,400	4,954,400	7,956,800
Version 1	3,031,700	5,172,900	8,204,600
Version 2	3,026,300	5,399,900	8,426,200
Version 3A	3,027,800	5,370,800	8,398,600
Increment Over Baseline			
2014 Scenario	**Intercity Service (Pacific Surfliner*)**	**Commuter Service**	**Total**
Baseline	3,002,400	4,954,400	7,956,800
Version 1	+29,300	+218,500	+247,800
Version 2	+23,900	+445,500	+469,400
Version 3A	+25,400	+416,400	+441,800

*As an example and for comparison purposes, total Surfliner ridership in FY 2011 was 2.7 million passengers.

Table 6 Short Term Ridership by Type of Service

RIDERSHIP FORECAST FOR SHORT TERM SERVICE SCENARIOS Total Corridor Ridership				
Service	**2014 Scenario**			
	Baseline	**Version 1**	**Version 2**	**Version 3A**
Pacific Surfliner	3,002,400	3,031,700	3,026,300	3,027,800
Coast Starlight	435,500	436,800	436,800	436,800
San Joaquin	1,120,900	1,124,700	1,124,700	1,124,700
Commuter	4,954,400	5,172,900	5,399,900	5,370,800
Total Ridership	**9,513,200**	**9,766,100**	**9,987,700**	**9,960,100**

2014 Business Case Analysis

The business case analysis of both the operations modeling and the ridership forecasts for the short term service plan determined that over all, the short term plan is constrained by the level of new capacity improvements expected to be in place by 2014. An operational bottleneck was identified at the East Ventura Station in order to implement new commuter service between Ventura and Santa Barbara by 2014, but selected capital improvements can mitigate this bottleneck. While not required to run the desired levels of service, the PWG recommended improvements in Los Angeles County in the Van Nuys area in order to improve service reliability.

In terms of additional passenger rail service, the overall statewide goals for better connectivity can be met. The goal for additional service for new commuter markets is also met through the introduction of new through commuter service making all stops between Los Angeles and San Diego. Overall, a five percent ridership gain between all corridor services is forecast based on level of new infrastructure and the desired levels of service available in 2014.

Tables 7, 8 and 9 summarize both the operations analysis and ridership forecast for each of the three short term scenarios studied and Appendix D provides the detailed analysis.

Table 7 Version 1 Short Term Service Plan Scenario

VERSION 1 SHORT TERM PREFERRED SERVICE PLAN

Description of Services in Addition to Current:

- Includes 3 new commuter trips between San Diego and Los Angeles.
- Includes 6 new commuter trips between San Diego and Oceanside.
- Includes 6 new Orange County intra-county commuter trips between Laguna Niguel and Fullerton.
- Includes 2 new Ventura to Santa Barbara commuter-friendly trips.
- Reduction of 2 intercity trips on Friday, Saturday and Sunday.

Description of Infrastructure Assumptions:

- New Platform north of Goleta, Santa Barbara County.
- Partial Triple Track between Los Angeles and Fullerton.
- New Control Point near Anaheim Station.
- In San Diego County: Completion of Oceanside Pass-Through Track, Carlsbad Double Track, Sorrento Valley Double Track, Sorrento to Miramar Phase 1, and Tecolote/Washington Crossovers.
- No additional capacity in San Luis Obispo, Santa Barbara, Ventura, or Orange Counties.

	Baseline	Version 1	Absolute Change
Number of Trips Corridorwide (total number - weekdays)			
Pacific Surfliner (All Stop)	21	21	0
Pacific Surfliner (Limited Stop)	1	1	0
Commuter (Metrolink and COASTER)	125	139	14
Ventura - Santa Barbara Commuter	0	2	2
Coast Starlight	2	2	0
Southwest Chief	2	2	0
TOTAL:	151	167	16
Ridership Forecast (annual ridership)			
Pacific Surfliner	3,002,400	3,031,700	29,300
San Joaquin	1,120,900	1,124,700	3,800
Coast Starlight	435,500	436,800	1,300
Commuter	4,954,400	5,172,900	218,500
TOTAL:	9,513,200	9.766,100	252,900

Potential Infrastructure Needs/Bottlenecks:
Track improvements at East Ventura Station.

Table 8 Version 2 Short Term Service Plan Scenario

VERSION 2 SHORT TERM PREFERRED SERVICE PLAN

Description of Services in Addition to Current:

- Includes 3 new commuter trips between San Diego and Los Angeles.
- Includes 6 new commuter trips between San Diego and Oceanside.
- Includes 10 new Orange County intra-county commuter trips between Laguna Niguel and Fullerton.
- Includes 2 new IEOC commuter trips.
- Includes 2 new Ventura to Santa Barbara commuter-friendly trips.
- Reduction of 2 intercity trips on Friday.

Description of Infrastructure Assumptions:

- New Platform north of Goleta, Santa Barbara County.
- Partial Triple Track between Los Angeles and Fullerton.
- New Control Point near Anaheim Station.
- In San Diego County: Completion of Oceanside Pass-Through Track, Carlsbad Double Track, Sorrento Valley Double Track, Sorrento to Miramar Phase 1, and San Diego Crossovers.
- No additional capacity in San Luis Obispo, Santa Barbara, Ventura, or Orange Counties.

	Baseline	Version 2	Absolute Change
Number of Trips Corridorwide (total number - weekdays)			
Pacific Surfliner (All Stop)	21	22	0
Pacific Surfliner (Limited Stop)	1	2	0
Commuter (Metrolink and COASTER)	125	145	20
Ventura - Santa Barbara Commuter	0	2	2
Coast Starlight	2	2	0
Southwest Chief	2	2	0
TOTAL:	151	173	22
Ridership Forecast (annual ridership)			
Pacific Surfliner	3,002,400	3,026,300	23,900
San Joaquin	1,120,900	1,124,700	3,800
Coast Starlight	435,500	436,800	1,300
Commuter	4,954,400	5,399,900	445,500
TOTAL:	9,513,200	9,987,700	474,500

Potential Infrastructure Needs/Bottlenecks:
Track improvements at East Ventura Station.

Table 9 Version 3a Short Term Service Plan Scenario

VERSION 3a SHORT TERM PREFERRED SERVICE PLAN

Description of Services in Addition to Current:

- Includes 3 new commuter trips between San Diego and Los Angeles.
- Includes 6 new commuter trips between San Diego and Oceanside.
- Includes 10 new Orange County intra-county commuter trips between Laguna Niguel and Fullerton.
- Includes 2 new IEOC commuter trips and 3 new Perris Valley Line trips.
- Includes 2 new Ventura to Santa Barbara commuter-friendly trips.
- Numerous modifications to current Pacific Surfliner schedule, Addition of 2 intercity trips Monday through Thursday to match weekend schedule.

Description of Infrastructure Assumptions:

- New Platform north of Goleta, Santa Barbara County.
- Partial Triple Track between Los Angeles and Fullerton.
- New Control Point near Anaheim Station.
- In San Diego County: Completion of Oceanside Pass-Through Track, Carlsbad Double Track, Sorrento Valley Double Track, Sorrento to Miramar Phase 1, and Tecolote/Washington Crossovers.
- No additional capacity in San Luis Obispo, Santa Barbara, Ventura, or Orange Counties.

	Baseline	Version 3A	Absolute Change
Number of Trips Corridorwide (total number - weekdays)			
Pacific Surfliner (All Stop)	21	22	1
Pacific Surfliner (Limited Stop)	1	2	1
Commuter (Metrolink and COASTER)	125	148	23
Ventura - Santa Barbara Commuter	0	2	2
Coast Starlight	2	2	0
Southwest Chief	2	2	0
TOTAL:	151	178	27
Ridership Forecast (annual ridership)			
Pacific Surfliner	3,002,400	3,027,800	25,400
San Joaquin	1,120,900	1,124,700	3,800
Coast Starlight	435,500	436,800	1,300
Commuter	4,954,400	5,370,800	416,400
TOTAL:	9,513,200	9,960,100	446,900

Potential Infrastructure Needs/Bottlenecks:
Track improvements at East Ventura Station.
Los Angeles Union Station
Oceanside Transit Center

2030 Preferred Service Plan

In addition to making a business case for short-term passenger rail improvements in the corridor, the vision also addresses the need for a long-term preferred service plan. In this case, the PWG developed a 2030 time frame in order for these goals to be considered for inclusion in the appropriate long-range regional transportation plans throughout the corridor. The goals for the long-term business case are:

- Additional commuter and intercity services consistent with state and regional plans
- Additional through commuter service between Los Angeles and San Diego
- Introduction of the Coast Daylight service between Los Angeles and San Francisco
- Additional commuter service between Ventura and Santa Barbara
- New San Diego stops at Intermodal Transportation Center, Del Mar Fairgrounds, and Convention Center
- Express COASTER service
- Peak period intercity trains converted to limited stop express services
- Integration of future high-speed train service

From these broad goals, three detailed service scenarios were developed:

Version 1: No High Speed Rail – This version is based on the service levels and stopping patterns agreed to by the PWG for the Pacific Surfliner, Metrolink and COASTER. This version assumes the completion of the infrastructure projects identified as "likely" for each county.

Version 2: High Speed Rail Phased Implementation – This version included the same infrastructure and service assumptions as Version 1, but built off of the Version 1 assumptions to address the anticipated increase in service levels from high speed rail. This increase in conventional intercity and commuter service levels would be to accommodate the anticipated need for feeder services to connect the LOSSAN corridor with the southern terminus of initial high speed rail dedicated alignment, which could potentially terminate somewhere in the San Fernando Valley.

Version 3: Dedicated Passenger Track – For this version, it was assumed that a new 2-track dedicated passenger corridor would be constructed between Los Angeles and Anaheim to be shared by high speed rail, Pacific Surfliner and Metrolink Orange County Line trains. Freight service and the Metrolink Perris Valley Line would continue to operate on the existing BNSF triple track alignment between Fullerton and Los Angeles. This version had already been studied in part between Los Angeles and San Diego as part of the California High Speed Rail Project. North of Los Angeles, the infrastructure presented in Version 1 would be assumed since high speed trains are anticipated to be on a dedicated

alignment. South of Anaheim, it is again assumed that the conventional passenger trains would operate on the infrastructure presented in Version 1, since high speed trains are not anticipated to operate further south than Anaheim on the LOSSAN corridor.

The PWG requested that the California High-Speed Rail Authority take the lead to complete the operations analysis and ridership/revenue forecast for Versions 2 and 3. That analysis is pending further development of the proposed high-speed rail service plan for Southern California and therefore not included in this document.

Other externalities that may affect long term service goals include daily Sunset Limited, new service to Las Vegas, and service to Coachella Valley/Palm Springs/Arizona, plus the potential for some conventional intercity access between the LA Basin and Bakersfield in some form, perhaps on future HSR alignment.

Table 10 summarizes the train volumes assumed in Version 1 compared to a Baseline or "No Build" scenario for 2030. Assumptions are also made for Amtrak's long-distance services and BNSF and UPRR freight service.

Table 10 Long Term Service Train Volumes

TRAIN VOLUMES FOR LONG TERM SERVICE SCENARIO 1		
Weekday Service	**2030 Service Scenarios (# of trains)**	
	Baseline	**Version 1**
Commuter (LOSSAN South)	64	142
Commuter (LOSSAN North)	61	90
Pacific Surfliner Intercity	22	36
Amtrak Long Distance	4	6
TOTAL	**151**	**274**

Note that the one weekday roundtrip Coast Daylight is included in the Pacific Surfliner totals. It is currently being planned by the Coast Rail Coordinating Council and would create a downtown San Francisco to downtown Los Angeles service.

2030 Operations

The initial service plan as presented to the PWG was found to be infeasible given the sections of single track that remained in the LOSSAN South area, which included Dana Point and San Clemente in southern Orange County and Del Mar and San Onofre in San Diego County. In order to reliably operate this initial service plan, full double track of the corridor between Los Angeles and San Diego was required.

While complete double tracking of the corridor would be the ultimate goal, this is not seen as feasible by 2030 given a number of environmentally and politically sensitive areas. As a result, a number of iterations to the service plan were tested to identify a service plan that could feasibly operate along the corridor given the infrastructure assumptions assumed by the PWG. Overall, this revised service plan

was found to be feasible assuming a few additional infrastructure recommendations. While the service was modified, the service goals presented by the agencies were maintained.

As with LOSSAN South, the initial service plan for the LOSSAN North area as presented to the PWG was found to be infeasible given the sections of single track that remained. It was identified that in order to reliably operate this initial service plan, between 18 and 20 miles of additional double track between Los Angeles and San Luis Obispo would be required. This would be in addition to the projects already identified by the PWG.

This extent of additional double track is not seen as feasible by 2030 given a number of environmentally and politically sensitive areas. As a result, a number of iterations to the service plan were tested to identify a service plan that could feasibly operate along the corridor given the infrastructure assumptions assumed by the PWG. Overall, this revised service plan was found to be feasible assuming a few additional infrastructure recommendations.

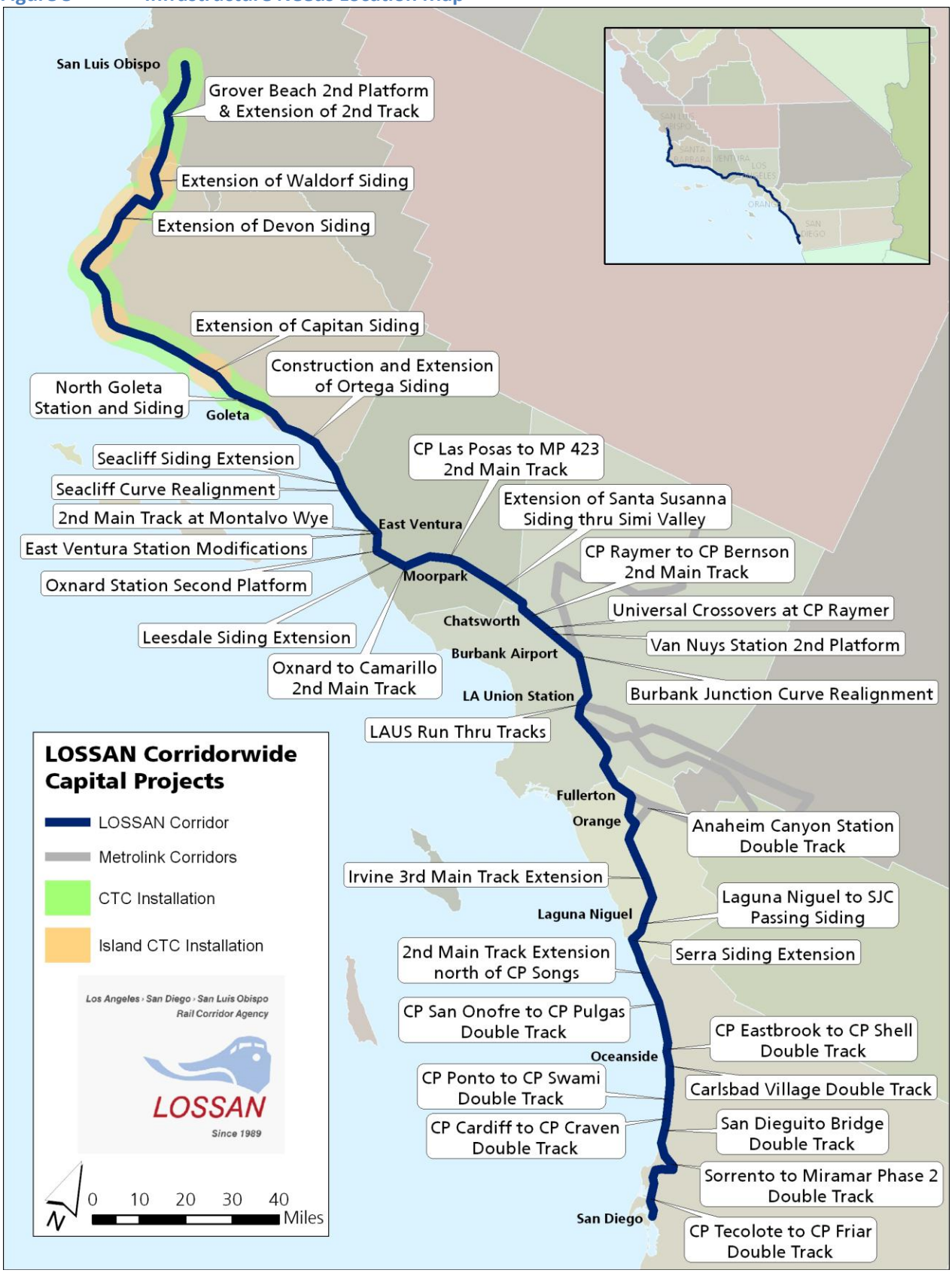
Table 11 identifies the individual capacity projects needed to implement Version 1 of the 2030 service plan. The geographic location of the individual projects is shown in Figure 5 following Table 11. In addition to the projects originally identified as likely to be completed by the PWG, additional infrastructure that would be needed in order to implement the service plan is highlighted. At least $2.1 billion in projects are needed by 2030. These projects are reasonably expected to be funded by 2030 and are generally listed in each member agency's fiscally constrained long range plan.

Table 11 Long Term Scenario Infrastructure Needs

Project Description	Cost Estimate ($millions)	Previously Identified?
SAN DIEGO COUNTY	**$921**	
TOTAL For Previously Identified Projects	$883	-
TOTAL for New Projects Identified in Operations Analysis	$38	-
San Onofre to Pulgas Double Track	$66	Y
Eastbrook to Shell Double Track	$45	Y
Carlsbad Village Double Track	$45	Y
Cardiff to Craven Double Track	$78	Y
San Dieguito Bridge Double Track	$110	Y
Sorrento Valley Double Track	$34	Y
Sorrento to Miramar Double Track (Phase 2)	$120	Y
Elvira to Morena Double Track	$80	Y
Oceanside Station Pass Thru Track (formally stub tracks)	$18	Y
Poinsettia Station Improvements (holdout issue)	$15	Y
CP Ponto to CP Moonlight DT	$43	Y
CP Moonlight to CP Swami DT	$20	Y
CP Tecolote to CP Friar	$44	Y
Airport Intermodal Transportation Center	$165	Y
CP Songs to CP "Trestles" Double Track	$38	N
ORANGE COUNTY	**$120**	
TOTAL For Previously Identified Projects	$105	-
TOTAL for New Projects Identified in Operations	$15	-

Project Description	Cost Estimate ($millions)	Previously Identified?
Analysis		
Laguna Niguel to San Juan Capistrano Passing Siding	$30	Y
Irvine 3rd Main Track Extension	$75	Y
Anaheim Canyon Station Double Track	$30	Y
Serra Siding Extension	$15	N
LOS ANGELES COUNTY	$849	
TOTAL For Previously Identified Projects	$844	-
TOTAL for New Projects Identified in Operations Analysis	$5	-
Union Station Run-Through Tracks	$640	Y
CP Raymer to CP Bernson Second Main Track	$71	Y
Van Nuys North Platform	$40	Y
Burbank Junction Track Realignment	$9	Y
CP Raymer Universal Crossover	$5	N
VENTURA COUNTY	**$160**	
TOTAL For Previously Identified Projects	$115	-
TOTAL for New Projects Identified in Operations Analysis	$120	-
CP Las Posas to MP 423 Second Main Track	$57	Y
Oxnard to Camarillo Second Main Track	$15	Y
Leesdale Siding Extension	$15	Y
Seacliff Siding Extension	$18	Y
Seacliff Curve Realignment	$10	Y
Santa Susana Siding Extension, Simi Valley Station	$40	N
East Ventura Station Improvements	$5	N
Oxnard Station North Platform	$20	N
Montalvo Wye Second Track	$55	N
SANTA BARBARA COUNTY	**$115**	
TOTAL For Previously Identified Projects	$60	-
TOTAL for New Projects Identified in Operations Analysis	$55	-
Ortega Siding	$20	Y
Goleta Siding Extension	$10	Y
CTC Installation (Islands only)	$30	Y
Capitan Siding Extension	$15	N
Devon Siding Extension	$15	N
Waldorf Siding Double Track	$25	N
SAN LUIS OBISPO COUNTY	**$105**	
TOTAL For Previously Identified Projects	$30	-
TOTAL for New Projects Identified in Operations Analysis	$75	-
CTC Installation	$30	Y
Grover Beach Second Platform and Track	$75	N
TOTAL PROJECTS	**$2,186**	

Figure 5 Infrastructure Needs Location Map



2030 Projected Ridership and Revenue

Table 12 summarizes the forecast level of corridor ridership assumed under both a "no build" scenario and the Version 1 of the 2030 preferred service plan. Currently, nearly seven million riders use the three passenger rail corridor services, which are forecast to increase to a ridership of 10 million under the 2030 Baseline/"No Build" scenario, primarily due to market growth. Testing the preferred operations plan, where train service increases from 151 trains now to 274 trains each weekday results in more than 5.1 million additional riders – a 50 percent increase, over the "No Build" scenario.

The 2030 service plan also results in $59 million in additional annual fare revenue by 2030, a 49 percent increase over the "No Build" 2030 scenario (Table 13).

Table 12 Long Term Ridership Forecast

2030 RIDERSHIP FORECAST (millions of riders)			
Service	**2030 "No Build"**	**2030 "Build"**	**Percentage Change**
Pacific Surfliner Intercity	3.8	4.7	23.7%
Commuter	6.3	10.5	66.7%
TOTAL	**10.1**	**15.2**	**50.5%**

Table 13 Long Term Revenue Forecast

2030 REVENUE FORECAST ($millions)			
Service	**2030 "No Build"**	**2030 "Build"**	**Percentage Change**
Pacific Surfliner Intercity	$78.3	$108.0	38.0%
Commuter	$41.2	$70.5	71.2%
TOTAL	**$119.5**	**$178.5**	**49.4%**

2030 Business Case Analysis

By 2030, it is expected that LOSSAN intercity service will offer an hourly frequency during peak hours between Los Angeles and San Diego with shorter travel times due to limited stop operation. Complimenting this intercity service would be more frequent commuter service, including some commuter trains which traverse the entire route between Los Angeles and San Diego, making it easier to use the train service from points in one county to destinations in the other without having to change trains. Common stations would allow for convenient transfers from intercity to local commuter trains. An increase in both commuter and intercity service to Ventura and Santa Barbara Counties is also included, with increased intercity service frequency to San Luis Obispo County also being provided. All trains operating to/from points north of Los Angeles would operate as through trains south of Los Angeles to San Diego.

Forecasting studies have projected significantly increased total passenger market capture, and significantly increased passengers and passenger miles traveled. Overall, ridership is expected to increase 50 percent by 2030. Intercity ridership is projected to increase by 24 percent over the 2030 "No Build", while commuter ridership is forecast to increase by 66 percent.

The results of the operations simulation indicated that the assumed 2030 infrastructure for the LOSSAN Corridor can feasibly support the operations of the Version 1 timetable while maintaining operational flexibility, reliability, performance, and capacity for rail operations; however additional recommendations to improve system reliability were identified in most corridor segments. The additional infrastructure projects recommended totaled between nine and 12 miles of second main track and station improvements in the northern corridor and between two and three miles of additional second main track in the southern corridor.

It should be noted that these infrastructure project recommendations may change depending on the preferred service plan ultimately chosen for implementation in 2030. Furthermore, the significant level of remaining single track infrastructure along the entire LOSSAN Corridor will continue to be the most significant operational limitation having the greatest impact on performance, in particular the sections of single track through Ventura County and north Los Angeles County, as well as San Diego County and south Orange County. These single track segments will continue to have the potential to contribute to cascading delays across the entire corridor when trains are not on schedule.

A capacity analysis for Los Angeles Union Station (LAUS) was not performed as part of this analysis. Such an analysis would require inclusion of the San Bernardino and Riverside Lines, which were not identified as part of this analysis as well as consensus on the equipment cycles and manipulations throughout the Metrolink territory. As such, possible deadhead (non-revenue) movements between the Central Maintenance Facility (CMF) and LAUS were also not included in this analysis. This issue is currently being studied by LACMTA as part of the LAUS Master Plan. LACMTA has identified the need to do a separate effort for the rail service outside of Union Station, consistent with LACMTA's strategic planning work.

Table 14 summarizes both the operations analysis and ridership forecast for Version 1 and Appendix D provides the detailed analysis.

Table 14 Version 1 Long Term Service Plan Scenario

VERSION 1 LONG TERM PREFERRED SERVICE PLAN

Description of Services in Addition to Current:

- Includes 10 new commuter trips between San Diego and Los Angeles.
- Includes 18 new commuter trips between San Diego and Oceanside.
- Includes 14 new Orange County intracounty commuter trips between Laguna Niguel and Fullerton.
- Includes 10 new IEOC commuter trips, 23 new 91 Line/Perris Valley Line trips and 4 new Inland Empire-San Diego commuter trips
- Includes 16 new Antelope Valley trips and 16 new Ventura Line trips.
- Includes 8 new Ventura to Santa Barbara commuter-friendly trips.
- Hourly Pacific Surfliner schedule, most peak period trips are limited stop express.

Description of Infrastructure Assumptions:

- At least $2 billion in additional double track projects in all LOSSAN counties with exception of Los Angeles
- Run-through tracks at Los Angeles Union Station
- Centralized Traffic Control along sections of the LOSSAN North corridor.

	Baseline	Version 1	Absolute Change
Number of Trips Corridorwide (total number - weekdays)			
Pacific Surfliner (All Stop)	21	28	7
Pacific Surfliner (Limited Stop)	1	8	7
Commuter (Metrolink and COASTER)	125	224	99
Ventura - Santa Barbara Commuter	0	8	8
Coast Starlight	2	2	0
Southwest Chief/Sunset Limited	4	4	0
TOTAL:	151	274	123
Ridership Forecast (annual ridership)			
Pacific Surfliner	3,817,000	4,747,300	930,300
San Joaquin	Na	Na	49,900
Coast Starlight	Na	Na	1,300
Commuter	6,305,700	10,448,700	4,143,000
TOTAL:	10,122,700	15,196,000	5,124,500

Potential Infrastructure Needs/Bottlenecks:

Additional double track in north San Diego County, south Orange County, and 12 miles of additional double track in the LOSSAN North corridor.

Potential for delay due to remaining single track through City of Del Mar.

Prioritized Capital Plan

Since 2009, LOSSAN Member Agencies have been successful at securing state and federal rail capital grants for priority infrastructure projects. More than $120 million in FRA grants have been awarded for preliminary engineering, environmental documentation, final design, and construction of capacity, speed and safety improvement projects along the corridor. Caltrans, Amtrak, and the LOSSAN member agencies also have a long history in funding capital improvements.

Determination of which projects to submit for consideration has been traditionally the decision of individual member agencies, depending on the priority projects identified for their particular jurisdiction. While this process has provided a prioritized list of improvements for many of the member agencies to be used in applying for funding, it has failed to present a comprehensive list of prioritized projects for the entire 351-mile LOSSAN Corridor.

The LOSSAN Corridorwide Strategic Implementation Plan presents the first attempt by all member agencies to develop a coordinated prioritization list based on detailed service plans under both a short-term and a long-term time frame. Detailed operations modeling, ridership and revenue forecasts have been completed, showing positive impacts for the proposed service plans. Both short and long-term service plans depend upon a set of infrastructure improvements throughout the 351-mile corridor, many of which are not fully funded at this time (Figure 5 Infrastructure Needs Location Map). As new funding opportunities become available at the regional, state, and federal levels, it is important to have a comprehensive, prioritized plan as justification for future funding opportunities. It is therefore, important to document the relative priority of projects on a corridorwide basis.

The guiding principles listed below drive the detailed project evaluation criteria and ultimately the priority project rankings:

- *Supports Corridorwide Vision*
  Overall, the project supports the corridorwide vision for seamless rail travel in the corridor, and specifically additional passenger rail service to unserved or underserved markets, and better coordination and integration among services.

- *Supports a Regional Network/System Approach*
  Project contributes to the ultimate goal of creating one passenger rail system/network in southern California through capacity improvements, better coordination with existing and future passenger rail systems, and benefits other services such as freight.

- *Rail Operational Improvements*:
  Project provides additional opportunities to increase service in the corridor though capacity improvements; project improves operators' ability to consistently adhere to schedules or reduce travel time; provides additional customer amenities.

Two main quantitative rail operations evaluation criteria were developed in order to apply these guiding principles (Table 15). These are the impact on passenger train delay caused by either other passenger trains or freight trains and the increase in the number of trains/level of service. Both compare the short term service plan for 2014 and the long-term service plan for 2030. In addition,

three qualitative criteria were developed: the stage of development of the project, the required level of environmental analysis required, and the level of community support for the project. These criteria also are detailed in Table 15. These criteria were applied to a specific corridor segment, not to individual projects, which corresponded to segments of the corridor planned to have specific increases in services (e.g., Oceanside to San Diego). Therefore all projects in a given corridor segment receive the same ranking. Three informational criteria were developed and also shown in Table 15; however, these are not included in the segment rankings.

There are two additional criteria that also are important and should be considered as funding opportunities arise:

- *Geographic Equity*
  Provide consideration for equity among the corridor segments.

- *Funding Source*
  Which project is ultimately selected in a call for projects is dependent on the primary requirements for the specific funds (e.g., freight benefit, intercity benefit, or commuter benefit or projects which need construction funds only).

Applying these criteria resulted in the segment rankings shown in Table 16. Overall, four of the top five ranked segments are in the LOSSAN North section of the corridor. The segment between Oceanside and San Diego in San Diego County also is in this first tier of segments.

The same segment scores are shown for individual projects in Table 17. Individual projects are not shown in overall rank order, in order to remain flexible in terms of future funding opportunities. The detailed scores for both the segments and the individual projects, where applicable, are provided in Appendix D.6.

Table 15 Project Evaluation Criteria

Criteria	*Specific Measure*	*Description*
Rail Operations	Impact on Train Delay	Change in train delay associated with passenger trains held by other passenger trains or freight trains (cumulative minutes per weekday). A greater positive impact on delay receives a higher ranking.
Rail Operations	Level of Service	Percentage increase in the number of trains, both passenger and freight, proposed between 2014 to 2030 service plans. A high percentage increase receives a higher ranking.
Qualitative	Project Readiness	Stage of project[1]: 1=Planning 2=Preliminary Engineering/ Environmental 3=Final Design
Qualitative	Required Environmental Document	Level of Environmental Analysis needed[1]: 0=EA/EIR/EIS 1=Categorical Exclusion
Qualitative	Level of Community Support	Level of public/community support for project[1]: 0=Significant Opposition 1=Little/moderate level of Opposition 2=No Opposition
Informational	Geographic Region	County
Informational	Project Cost	Total project cost ($millions)
Informational	Amount of additional track	Amount of track added by project (miles)

[1] Project receives these points depending upon the specific criteria.

Table 16 Summary Ranking of Corridor Bottleneck Segments

Ref. No.	Corridor Segment	County	Impact on Train Delay[1]	Level of Service[1]	Qualitative[2]	Average Ranking	Overall
6	Moorpark to Chatsworth	Ventura	2	1	2	1.7	1
8	Chatsworth to Burbank Airport	Los Angeles	1	8	1	3.3	2
5	East Ventura to Moorpark	Ventura	5	4	10	6.3	3
15	Oceanside to San Diego	San Diego	3	7	9	6.3	3
4	Goleta to East Ventura	Ventura	13	5	2	6.7	5
2	San Luis Obispo to Goleta	Santa Barbara	4	10	7	7.0	6
9	Burbank Airport to LA Union Station (LAUS)	Los Angeles	7	12	2	7.0	6
10	LAUS to Fullerton[3]	Los Angeles	12	3	10	8.3	8
12	Orange to Laguna Niguel	Orange	14	9	2	8.3	8
3	Goleta to East Ventura	Santa Barbara	11	5	10	8.7	10
1	San Luis Obispo to Goleta	San Luis Obispo	10	10	8	9.3	11
14	Laguna Niguel to Oceanside	San Diego	9	14	6	9.7	12
13	Laguna Niguel to Oceanside	Orange	6	14	10	10.0	13
Segments with no planned capacity projects							
7	Moorpark to Chatsworth	Los Angeles	8	1	0		
11	Fullerton to Orange	Orange	15	13	0		

[1] Ranking is based on 1=greatest change / 14=least change.

[2] Qualitative Ranking is an average of (1) Project Readiness, (2) Required Environmental Document, and (3) Community Support. Based on 1=highest in qualitative benefits / 14=lowest.

[3] Metrolink territory only, River Subdivision.

Table 17 Summary Evaluation of Corridorwide Projects

Project	County	Total Cost ($millions)	Additional Track (miles)	Evaluation of Corridor Bottleneck Segment		
				Impact on Train Delay[1]	Level of Service[1]	Qualitative Ranking[2]
CTC Installation	San Luis Obispo	$30	N/A	10	10	8
Grover Beach Second Platform and Track	San Luis Obispo	$75	3.5	10	10	8
CTC Installation (Island)	Santa Barbara	$30	N/A	4	10	7
North Goleta Station and Siding	Santa Barbara	$10	0.25	4	10	7
Extension of Waldorf Siding	Santa Barbara	$25	1.0	4	10	7
Extension of Devon Siding	Santa Barbara	$15	1.0	4	10	7
Extension of Capitan Siding	Santa Barbara	$15	1.7	4	10	7
Construction and Extension of Ortega Siding	Santa Barbara	$20	2.0	11	5	10
Seacliff Siding Extension	Ventura	$18	1.4	13	5	2
Seacliff Curve Realignment	Ventura	$10	N/A	13	5	2
Montalvo Wye Second Track	Ventura	$55	1.25	13	5	2
East Ventura Station Improvements	Ventura	$5	N/A	13	5	2
CP Las Posas to MP 423 Second Main Track	Ventura	$57	3.5	5	4	10
Leesdale Siding Extension	Ventura	$15	2.0	5	4	10
Oxnard to Camarillo Second Main Track	Ventura	$15	5.0	5	4	10
Oxnard Station Second Platform	Ventura	$20	N/A	5	4	10
Santa Susana Siding Extension, Simi Valley Station	Ventura	$40	1.6	2	1	2
CP Raymer to CP Bernson Second Main Track	Los Angeles	$71	6.5	1	8	1
CP Raymer Universal Crossover	Los Angeles	$5	N/A	1	8	1
Van Nuys North Platform	Los Angeles	$40	N/A	1	8	1
Burbank Junction Track Realignment	Los Angeles	$9	N/A	7	12	2
Union Station Run-Through Tracks	Los Angeles	$640	1.5	12	3	10
Anaheim Canyon Station Double Track	Orange	$30	0.2	N/A	N/A	N/A
Irvine 3rd Main Track Extension	Orange	$75	8.5	14	9	2

Project	County	Total Cost ($millions)	Additional Track (miles)	Evaluation of Corridor Bottleneck Segment		
				Impact on Train Delay[1]	Level of Service[1]	Qualitative Ranking[2]
Laguna Niguel-San Juan Capistrano Passing Siding	Orange	$30	1.8	6	14	10
Serra Siding Extension	Orange	$15	1.0	6	14	10
CP Songs to CP "Trestles" Double Track	San Diego	$38	0.8	9	14	6
San Onofre to Pulgas Double Track	San Diego	$66	5.8	9	14	6
Eastbrook to Shell Double Track	San Diego	$45	0.6	9	14	6
Carlsbad Village Double Track	San Diego	$45	1.1	3	7	9
CP Ponto to CP Swami Double Track	San Diego	$63	3.5	3	7	9
CP Cardiff to CP Craven Double Track	San Diego	$78	1.5	3	7	9
San Dieguito Bridge Double Track	San Diego	$110	1.1	3	7	9
Sorrento to Miramar Double Track (Phase 2)	San Diego	$120	1.8	3	7	9
CP Tecolote to CP Friar Double Track	San Diego	$44	0.9	3	7	9

1. *Ranking is based on 1=greatest change / 14=least change.*
2. *Average ranking of projects in the particular corridor bottleneck segment. Based on 1=highest in qualitative benefits / 14=lowest.*

N/A: not applicable.

5. Financial Case for a Local Administrative Authority

The *LOSSAN Corridor Strategic Assessment* completed preliminary research on potential changes to the current organizational structure for passenger rail services in southern California. Based upon this assessment, the LOSSAN Board of Directors approved a MOU in 2009 in part to further develop alternative organizational structures, including a possible local authority for passenger rail service. Upon further refinement of these alternatives, it was determined to focus only on a possible local JPA for the Pacific Surfliner intercity passenger rail service. In August 2011, the LOSSAN Board of Directors approved in concept this idea and directed staff and agency management to develop a detailed framework for this organizational structure and potential legislation.

The overall goal of this local JPA is to transform the existing Pacific Surfliner intercity rail service from a State/Amtrak funded and managed service to a service under local authority that can more cost-effectively manage the state resources and be more responsive to local needs, issues, and consumer desires.

Overall Structure and Jurisdiction

In the establishment of a LOSSAN JPA, consideration will only be given to state supported intercity rail service and not consider alternatives or modifications of Metrolink and COASTER governance structures. However, it is important to improve coordination of all services and more effectively integrate the longer distance corridor services with the more regional services to provide riders with the most choices and most attractive services. It should also be noted that the initial discussions should consider operations of the Pacific Surfliner service to be within the existing LOSSAN corridor service area (San Diego to San Luis Obispo). While there is possibility for other expanded service, this should be considered as possible future expansion, and the governance structure should address such expansion at the appropriate time.

Structural Benefits

The LOSSAN Board of Directors identified the following benefits for a local authority:

- A more efficient and cost-effective allocation of resources and decision making related to service expansion, frequencies, extensions, connectivity, and schedules. New services such as the Ventura to Santa Barbara commuter friendly rail service or additional limited stop express Pacific Surfliner trains could be implemented more quickly at the local/regional level.

- A unified southern California voice at the state and federal level when advocating on passenger rail issues as opposed to individual advocacy that may or may not currently take place. For example, there are about 60 members of the state delegation and 26 members of the state's federal delegation, in addition to California's two senators, who represent the LOSSAN Corridor. Currently, Caltrans cannot lobby the state on behalf of the LOSSAN Corridor; a local JPA can.

- Consolidated passenger services such as fares, ticketing, marketing/advertising, and information systems and potential efficiencies to be gained from these more coordinated efforts.

- Coordinated capital improvement priorities that benefit the entire corridor and the ability to focus scarce resources on the projects that will do the most good. A local authority that includes the rail

owners and operators along the corridor would be in a better position to coordinate these improvements.

- More focused oversight and management of on-time performance, schedule integration, mechanical issues, and customer service by local staff. Local authority board members and senior management who are also located along the corridor and using the service mean that customer-related issues could more easily be identified.

The LOSSAN Board of Directors and member agency CEOs have an advantage in that a similar decision was made in northern California in the mid-1990s, when the CCJPA was created. This resulted in the dramatic improvements that occurred as a result of that CCJPA being created as an indicator of the possibilities for major improvement to the LOSSAN Corridor. Furthermore, CCJPA marketing funds have been leveraged for many years in partnership with CCJPA member agencies. Additionally, when service improvements or changes are contemplated, the decision on implementation would be made locally by the JPA comprised of member agencies being directly served by this service.

While conditions on the LOSSAN Corridor are not identical to the Capitol Corridor, there are many similarities and many opportunities to employ those same successful common situations in the creation of a locally-based administrative and management team structure for the LOSSAN Corridor intercity passenger rail service. These include the multiple owners and users of the route, multiple member agencies involved in both commuter rail service and local connecting transit services, an involved and active Board and local communities, long-distance national network trains on parts of the route, freight services operating intermixed with passenger services, dispatching conducted by an entity not directly involved in the management or operation of the intercity corridor service, and contract operations of the intercity service by Amtrak.

In order for the LOSSAN Board and agency CEOs to make an informed decision and evaluate the pros and cons of bringing the administrative management of the LOSSAN Corridor intercity passenger rail service into a locally-based entity, it is important to review the potential risks and mitigation strategies impacting such a decision.

Potential Risks and Mitigations

The following discussion outlines risks and mitigation options for three main issues regarding the formation of the local JPA for the Pacific Surfliner service. Five goals that contain risks include:

1. Continue state support for intercity passenger rail service;
2. Create an effective management structure for the Local JPA;
3. Create and maintain technical competency for operations of the intercity rail service;
4. Own and control the Pacific Surfliner rolling stock; and
5. Maintain statewide rail and bus connections to the Pacific Surfliner service.

Risk 1: Continued State Support for Intercity Passenger Rail Service

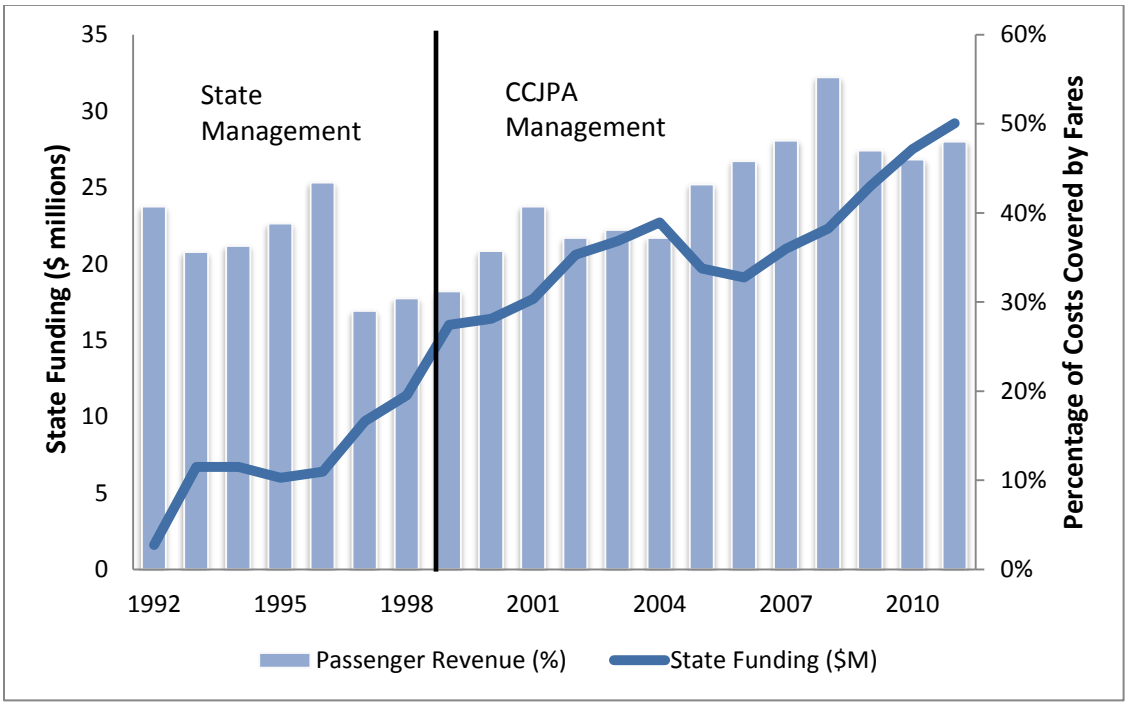
If authority is turned over to the local JPA, one of the risks is that the state might reduce funding levels for the system and require local agencies to start funding a portion of the costs. The magnitude of the exposure if all state funds were withdrawn exceeds $52 million in state support in FY2013-14.

PTA revenues are the only source of state funds for the intercity rail program and the program is the first call (taken off the top) of the non-State Transit Assistance funds (non-STA is 50 percent of PTA funds). Propositions 22 and 26 passed by California voters in 2010 provided additional protections for these funds. The fund estimate from the CTC in early 2011 showed adequate PTA funding levels for the intercity rail program through FY2016-17.

The Capitol Corridor (CCJPA) example shows that the State continued to fund that system without the necessity of any local funding. In the 15 years of history with the CCJPA, no local funds have been used to offset the loss of state funds.

Figure 6 shows the history of operations funding both before the CCJPA and since local authority, including the level of state support and the percentage of operations costs provided by passenger fares. In short, the CCJPA has received a state allocation that has fully supported operations since its startup in 1998 (it is noteworthy that the drop in state funds during FY 2005 and 2006 was due to cost savings identified by Amtrak and CCJPA and specifically the transfer of customer call center duties from Amtrak to the CCJPA/BART Transit Information Call Center.)

Figure 6 Capitol Corridor JPA Level of State Support 1992 - 2010



Analysis shows that there are adequate operations funds for the Pacific Surfliner for the foreseeable future, even under the changed federal funding criteria. Additionally, the success of California's intercity passenger rail program (which has become a national "model") and the number of people served by the statewide Amtrak California rail and bus network would support its continued operation. California also has a $1.9 billion investment at stake, and there is likely to be a significant public and legislative response to protect that investment and the state-wide transportation asset that it represents.

That said, the state fiscal condition should be closely monitored. The Governor's draft FY2012-13 budget, released on January 5, 2012, identified $146 million for the state's intercity rail program, an increase of $13 million for operations over the final FY2011-12 budget. This is a positive sign of support at the state level. However, since the $13 million increase was identified to fund increases for the new federal PRIIA law, Section 209, that are not needed until FY2013-14, the state may consider reducing the overall funds by this amount, resulting in a similar level of funding for intercity rail operations compared to FY2011-12.

Therefore, no cuts to state intercity rail operations funds are proposed in the draft state budget, which includes the operations budget for the Capitol Corridor service and specifically those funds which are passed through to the CCJPA to manage that service. However, the Governor's budget does propose the elimination of 14 of 19 positions in the Caltrans DOR that provide various management and oversight functions for the Pacific Surfliner and San Joaquin corridor services.

Mitigation

There are three potential ways to mitigate the risk of reduced future state funding:

- **Focused Advocacy in Sacramento and Washington DC**: The Capitol Corridor JPA has enjoyed success in their local advocacy role for continuing state and federal funding for their intercity rail corridor. The LOSSAN JPA would benefit from a focused effort by the collective advocacy of its Southern California and Central Coast members. In addition, a local LOSSAN JPA with new authority to manage and operate the intercity rail service would receive more recognition in Sacramento and Washington DC than LOSSAN in its current status.

  For the past six years, LOSSAN, CCJPA, San Joaquin Valley Rail Committee, and the Coast Rail Coordinating Council have coordinated advocacy efforts related to the state's intercity rail program. Joint visits in Sacramento and Washington DC are made at least annually. These efforts have met with success including the passage in 2005 of Assembly Joint Resolution 18, which solidified California's support for Amtrak, and more recent efforts to educate members to the need for bond funds for rolling stock and capital improvements.

  However, this effort could be strengthened with a more focused effort by all LOSSAN member agencies in a new, strengthen local JPA role. For example, on LOSSAN/CCJPA visits to Washington, the LOSSAN group has never received time from a member of the federal delegation representing the LOSSAN corridor, meeting instead with staff. The group has received time with members when visiting with the CCJPA region, since the CCJPA has more authority over its service as a JPA than does the current LOSSAN board over its service area.

- **Maintenance of Effort (MOE)**: Include in legislation, as part of the creation of the LOSSAN JPA, a "maintenance of effort" requirement for state funding. A "MOE" in legislation mandates that an agency maintain its level of funding for a program so that any new funding is an overall increase in funding and not a substitution of funding. For example, legislation could state (with optional timelines):

    a. *As a requirement of the creation of the LOSSAN JPA, the governor shall certify that the state will maintain its current and planned levels of state transportation funding for the Pacific Surfliner service for the duration of the service life [or for a period of five years]." The 'fund estimates' prepared by the CTC indicate that adequate fund receipts are expected to sustain the state's intercity passenger rail program for the foreseeable future.*

- **Demonstration Project**: Make the LOSSAN JPA a pilot or demonstration program and allow the local JPA to revert back to Caltrans after three-five years. If disbanded, the local start-up costs, as shown in Table 19, would have to be reimbursed in order to keep the local agencies whole. For example, legislation could state:

    a. *The LOSSAN JPA shall manage the Pacific Surfliner service for a demonstration period of five years to demonstrate the cost effectiveness and sustainability of that service. Not later than three years after the LOSSAN JPA is enacted, the JPA shall submit a report to the Legislature on its findings, conclusions, and recommendations concerning the demonstration program authorized by this section. The report shall include an analysis of the cost effectiveness and sustainability of the LOSSAN Intercity Rail Corridor under the management of the local JPA verses under the former management by the Caltrans Division of Rail. If the analysis shows and the legislature agree that the system is not cost effective or sustainable under the Local JPA, then the LOSSAN system shall be returned to the management of Caltrans' Division of Mass Transit, beginning the next state fiscal year.*

Supporting Information and Background

Maintenance of Effort

There are many examples, some of which are listed below, of local, state and federal agencies requiring a Maintenance of Effort (MOE) funding requirement so that the funds they distribute increase, rather than replace, existing funding. For example, the federal American Recovery and Reinvestment Act (ARRA) program requires states to maintain their level of funding so that ARRA funds are additive to their programs. Caltrans has a "maintenance of effort" requirement for local funds for many of their state funding programs. Other regional agencies, such as the Sacramento Transportation Authority, have MOE requirements for local cities and counties so that their regional transportation sales tax measures increase overall transportation funding.

Federal ARRA[4] MOE: The Maintenance of Effort requirement (Section 1201) under the federal ARRA program required the governor of each state to certify that the state would maintain its current level of transportation spending from Feb 17, 2009 through September 30, 2010 to help ensure that federal funds would be used in addition to rather than in place of state funds and thus increase overall spending. Those that failed to do so

[4] American Recovery and Reinvestment Act of 2009

could not participate in the August 2011 redistribution of obligation authority under the Federal Aid Highway Program. A GAO report[5] outlines that 29 states met the MOE and 21 states did not.

CTC/Caltrans MOEs: The CTC has a "maintenance of effort" requirement for the Traffic Congestion Relief Act Exchange Program. Ensuring MOE requirements are met (i.e., exchange funds do not supplant other local transportation funding). Agencies not meeting this maintenance of effort requirement may not be allowed to participate in the next exchange cycle.

LACMTA MOE: Local Agreement for Proposition C Sales Tax Funds (also Measure R sales tax funds): LACMTA has a "Maintenance of Effort" requirement for their local sales tax funds. The LACMTA Memorandum of Understanding (MOU) with local agencies states:

> *10. LACMTA MOU MAINTENANCE OF EFFORT -- MOE*
> *On September 26, 2002, the LACMTA Board of Directors required that prior to receiving Proposition C 10% or 25% grant funds through the Call for Projects, Grantee must meet a Maintenance of Effort (MOE) requirement consistent with the State of California's MOE as determined by the State Controller's office. With regard to enforcing the MOE, LACMTA will follow the State of California's MOE requirement, including, without limitation, suspension and re-implementation.*

The State Controllers MOE requirement for the receipt of state sales tax and gas tax reads:

> *In order to receive Proposition 42 allocations, cities must be in compliance with the MOE provision. The MOE provision requires cities to expend from their general fund, in the budget year in which Proposition 42 monies are allocated, a defined amount of funds for transportation purposes. This amount is equal to or greater than the average transportation expenditures for the fiscal years 1996-97, 1997-98 and 1998-99[6].*
>
> *At the end of each fiscal year in which a city has received Proposition 42 funding, the city must prove to the State Controller that they have spent the required MOE monies. Any city that fails to do so must reimburse the state for the funds it recovered during that fiscal year.*

Demonstration Project

Many projects are developed as demonstration or pilot projects, especially those that are new concepts, such as High Occupancy Toll (HOT) or Express Lanes. The LACMTA has enacted, through state legislation and a federal grant, an Express Lane program on the I-10 El Monte Busway and the I-110 Harbor Transitway. State legislation states:

> LACMTA Approved Legislation, Section 149.6
>
> *Not later than three years after Agency first collects revenues from any of the projects, Agency shall submit a report to the Legislature on its findings, conclusions, and recommendations concerning the demonstration program authorized by this section. The report shall include an analysis of the effect of*

[5] http://www.gao.gov/assets/330/320351.pdf

[6] For more information, see *CaliforniaCityFinance.com*

the HOT lanes on the adjacent mixed-flow lanes and any comments submitted by the Department and the Department of the California Highway Patrol regarding operation of the lane.

The LOSSAN JPA could add a similar section and require devolution back to the state if the analysis deems the Local JPA to not be in the best interest of the intercity rail system. Such protective language for a new JPA would satisfy the concerns of the JPA member agencies on this issue.

Risk 2: Create an Effective Management Structure for the Local JPA

Once a decision is made to authorize a locally-based JPA, steps need to be taken to:

1. Contract with a member agency or independent agency to serve as the Managing Agency; and
2. Hire qualified railroad management and technical staff within the Managing Agency with direct reporting responsibilities to the JPA Board of Directors.

This governance structure is similar to the Capitol Corridor but different from a typical railroad agency whereby the board and staff are under one agency. The risk of this proposed arrangement is that it might create miscommunication between the Managing Agency and the Local JPA board thereby negatively affecting the LOSSAN intercity rail service quality.

It is worthwhile to look at the results after 15 years of local administrative management on the Capitol Corridor. The expected and actual efficiencies from creation of the CCJPA, its effective management team and high degree of customer focus have produced results that have exceeded expectations. These efficiencies included improved frequency of service, three-to-four fold increases in revenue and ridership, a series of capital investments made in cooperation with UPRR, improved revenue-to-cost ratio, and, for the past three or more years, 'on-time' performance of 95% delivered to the riders and customer satisfaction. Local control was clearly the right management decision for the Capitol Corridor.

Mitigation

One way to counteract any disconnect in the running of the LOSSAN service is for the lead LOSSAN Managing Director to have a dual reporting responsibility and be the link between the Managing Agency and the LOSSAN JPA board. This person should report directly to the CEO of the Managing Agency for administrative and staffing issues, including legal assistance required for agreements such as technical oversight of the service provider's contract (Amtrak). In addition, this person should also report to the LOSSAN JPA board for policy issues.

This arrangement requires the LOSSAN Board to take a strong leadership role in all board members becoming familiar with the service and being proactive in creating policy for the cost effective running of the Pacific Surfliner service. On the Capitol Corridor, the CCJPA Board adopted 'Vision Plan' provides clear guidance to the railroad staff, and the document is periodically updated. Staff performance is measured against progress in accomplishing the policy goals established in the Vision Plan.

Supporting Information and Background

Examples of creating a strong executive staff and strong board can be found in the Capitol Corridor JPA analysis and a recent Metrolink Commuter Rail Safety Peer Review Panel Report, both the final report[7] and six-month

[7] Metrolink Commuter Rail Safety Peer Review Panel Report, January 5, 2009.
http://www2.metrolinktrains.com/documents/news_updates/Metrolink_Safety_Peer_Rev_Panel_Final010509.pdf

report card[8]. The Capital Corridor JPA analysis is found in Section 1 of this report. The Metrolink study recommended strong management oversight of the contracted service as well as a stronger leadership role for the SCRRA Board of Directors.

Risk 3: Create and Maintain Technical Competency for Operations of the Intercity Rail Service

Critical to the operations of the local LOSSAN JPA is the appropriate quantity and quality of the technical staff. The risk is that the LOSSAN intercity rail service may suffer if the Managing Agency and the LOSSAN JPA cannot attract and maintain an adequate number of technically competent railroad staff.

Mitigation

Although the Pacific Surfliner service is delivered by Amtrak under contract to the JPA, and specifically by Amtrak technical railroad staff, the JPA still needs to perform an oversight role. With secure funding (see Issue I) and clear and compelling management structure (see Risk 2), then the Managing Agency should be able to attract and maintain technically competent railroad staff.

Supporting Information and Background

In order to maintain quality service and sustain and increase its funding, the LOSSAN JPA must ensure that it has the management and technical capacity to manage service. The JPA also needs to ensure adequate oversight of the contracted service (Amtrak) and maintain safety. The Capitol Corridor and the Metrolink Commuter Rail Safety Peer Review Panel Report are examples of ways to attract and train technical railroad staff and well as perform adequate oversight of a contracted rail service.

As an example, Capitol Corridor functions such as schedule changes are done in a cooperative manner with specific representation by each agency with train operations over the corridor. This collegiality fosters both a professional working relationship and understanding of the various service needs, but also ensures that implementation will go smoothly and reliably meet the expectations desired from making the schedule changes. This inclusive procedure mitigates concerns of agencies that they could lose control of the scheduling of their respective services.

Another important issue is how safety and FRA compliance issues are managed. What entity is responsible for rules compliance? What are the checks and balances? Should there be a safety compliance officer or safety oversight manager?

Risk 4: Own and Control the Pacific Surfliner Rolling Stock

A fourth goal is to have the flexibility to control and allocate the rolling stock cars and locomotives for the Pacific Surfliner service. In order to do that, the JPA would have to own this equipment. The risks are that either Amtrak would not agree to sell or lease the equipment and/or the JPA would not have the funds in the short term to purchase or lease the equipment.

Mitigation

The mitigation measure to these risks would be the phasing of the purchases to correspond to available funding in the future.

[8] Metrolink Commuter Rail Safety Peer Review Panel – Six-Month Report Card, December 31, 2009.

Supporting Information and Background

While it is not essential that California purchase the Pacific Surfliner fleet, it is highly desirable if a LOSSAN JPA wishes to control the use of the equipment on its corridor. Funding, both state Proposition 1B and federal funds, is available for capital purchases for the Intercity Rail system.

Proposition 1B was passed by California voters in 2006 and sets aside $400 million for the state's intercity passenger rail program for capital purchases. Of this amount, a minimum of $125 million is designated specifically for the procurement of additional intercity passenger railcars and locomotives, subject to appropriation by the California legislature.

In December 2011, the California Transportation Commission approved an allocation of $42 million of the $125 toward the purchase of 42 bi-level rail cars and six diesel-electric locomotives for use on the three state-supported intercity rail corridors including the Pacific Surfliner. These funds will be used to match $168 million in federal grants received from the Federal Railroad Administration. Caltrans plans to issue a request for proposals in March 2012 and partner along with other states on a larger rolling stock procurement. The first cars are expected in about 3-4 years.

While Caltrans has plans for an additional $45 million for future rolling stock purchases, $38 million, the balance of the $125, would potentially be available to Caltrans for other rolling stock purchases. More funds could be made available if the CTC were to agree to go above the minimum amount.

Regarding current rolling stock ownership, for the CCJPA, the state owns all of the fleet (rail cars) and locomotives as well as a majority of the Oakland Maintenance Yard. For the Pacific Surfliner, of the total fleet of 50 rail cars, the state owns 10 cars and Amtrak owns 40 cars as well as the 10 locomotives. Amtrak also owns the Maintenance Yard that the Pacific Surfliner uses. For the Pacific Surfliner, the 10 state-owned rail cars are dedicated to intercity rail service but can be deployed on any of the three state owned corridors. The Pacific Surfliner cars are of the same basic design, are fully compatible with the northern California fleet, and have been well maintained. The base fleet was delivered in the late 1990s, and the last of cars were delivered in 2002. The locomotives are 1995 vintage.

The state-owned cars only operate within California. Unless there is an agreement with Amtrak to the contrary, the Amtrak owned cars can be moved anywhere within the Amtrak system.

The current fleet has been overhauled at least once, and the interiors refurbished at least twice, with new carpets, upholstery, curtains, air-conditioning, etc. They are basically in very good condition.

In a purchase arrangement, the current value of the fleet needs to be based upon depreciated value, less any funding the state provided to conduct the overhauls and refurbishing. Once a total value for purchase is established (including all Amtrak-owned parts inventory in LA), then the options for financing that purchase can be evaluated. First option is to use a portion of the $400 million state bond funds as ‘match’, and seek a federal capital grant. Second option is use state bond funds for an outright purchase (this is the way the state’s current fleet was purchased, as there was no federal capital matching program at the time). Also, a lease-to-purchase option might be pursued.

There are many ways to gain control over the rolling stock. Perhaps the LOSSAN Board/CEOs should wait five or more years to see if they want to buy them, and by then, maybe the decision will be to buy all new equipment with state bonds/federal capital grants.

Risk 5: Maintain statewide rail and bus connections to the Pacific Surfliner service

One of the risks of focusing on the local needs of the Pacific Surfliner service is to lose sight of the importance of the statewide bus and rail connections to this service, especially on the north end of the corridor.

Mitigation

One way to mitigate this risk is to ensure that the JPA includes a policy and directs staff to make sure these statewide connections are maintained and improved amongst the Pacific Surfliner service, Caltrans and the other transit providers.

Supporting Information and Background

Since the formation of the local CCJPA, both the CCJPA and Caltrans have worked cooperatively regarding train and bus connections. Buses budgeted and scheduled by the CCJPA between Sacramento-Reno, Nevada, were (and still are) designed to accommodate connections from San Joaquin trains and buses between Stockton and Sacramento. The five round-trip buses between Santa Barbara and San Jose are scheduled and budgeted jointly between the CCJPA and Caltrans. The passengers discern no difference, by intent. Caltrans and the CCJPA work together on these issues consistently.

Additionally, Caltrans and the CCJPA jointly provide operations support for a connecting bus service between San Jose and Santa Cruz. The connecting buses were scheduled and funded separately, but by working together and partnering with Santa Cruz transit, a more frequent, more reliable service was implemented for all passengers. There is no evidence that the two separate rail management entities (CCJPA and Caltrans) have not cooperated on maintaining the most extensive and convenient connecting bus services anywhere in the country. This cooperation is why some of the rail-and-bus services have been so successful.

A local LOSSAN Corridor JPA would continue to foster this connectivity and cooperation with Caltrans and the state's other passenger rail operators.

Service Efficiency

As background to a discussion on cost effectiveness, analysis was completed on the current Pacific Surfliner service and compared to other intercity service (Capitol Corridor) and Southern California commuter operations (Table 15). PRIIA will have an enormous impact on the cost of the Pacific Surfliner service, and even though the CTC fund estimate concludes that state PTA funds will be there to pick up the increase, there is an opportunity for local agencies to demonstrate that they have the ability to manage this service more cost-effectively.

As shown in Table 18, Pacific Surfliner farebox recovery rates are healthy at 57 percent and service compares favorably in terms of service efficiency in terms of operations cost per train mile.

Table 18 Service Efficiency: Current Operational Comparison

Measure	Pacific Surfliner	Capitol Corridor	Metrolink (System)	COASTER
Weekday Trains	22	32	166	24
Passenger Boardings	2,787,000	1,708,000	11,375,000	1,272,000
Total Operations Cost	$99,388,000	$59,000,000	$179,676,000	$15,388,000
Fare Revenue	$56,674,000	$29,700,000	$98,524,000	$6,160,000
Farebox Recovery Rate	57%	50%	55%	40%
Train Miles	1,740,000	1,200,000	2,650,000	343,000
Operations Cost/Train Mile	$57.12	$49.16	$67.80	$44.86

Cost Effectiveness

Central to draft legislation, as it was in 1997 with Senate Bill 457, should be a cost effectiveness argument and specifically, answering the question if it is more cost effective for a local authority to manage service than the current management by Caltrans Division of Rail.

The basic available choices include the following.

1. Take no action: LOSSAN Pacific Surfliner service will become 100% funded by the state as a result of PRIIA Section 209 implementation, and therefore 100% administratively managed by Caltrans DOR (in place of current 70%-30% split with Amtrak); or
2. Establish a locally-based JPA to become responsible for the administrative management of the Pacific Surfliner service, and
    a. Select an existing member agency to be the Managing Agency to provide and house the professional railroad staff and support services for the LOSSAN JPA; or
    b. Create a new stand-alone entity to become the Managing Agency, providing and housing both the professional railroad staff as well as the other administrative support services for the JPA.

Table 19 outlines the major staffing, marketing, and other administrative costs related to the status quo with Caltrans, and a local authority managed by a member agency or a new independent agency. A comparison is also made with the Capitol Corridor JPA.

For the current management at Caltrans DOR, it is estimated that 10 full-time equivalent (FTE) positions are devoted to the corridor operations with a total budget of $1.3 million. Additional functions by Amtrak such as scheduling and mechanical oversight officers are budgeted as well as $1.7 million for marketing. This number has been assumed based upon discussions with Caltrans DOR. Only two current Caltrans DOR positions were identified as being dedicated to full time management of LOSSAN service, with other DOR positions sharing in certain LOSSAN management functions.

Considering that the LOSSAN Corridor is second largest in the country, it is a conservative estimate that 10 FTEs are inherent to the Caltrans DOR staff for Pacific Surfliner administrative management, Caltrans DOR indicated

that several functions performed by CCJPA staff for the Capitol Corridor are actually performed by Amtrak personnel for the Pacific Surfliner. Therefore, it is estimated that seven current Amtrak LOSSAN Corridor positions are built into the Caltrans DOR-Amtrak contract (and budget) for LOSSAN management services. The exact number and dollar value to be transferred to a new JPA is a subject to be negotiated in the ITA. If a LOSSAN member agency serves as the Managing Agency, the total budget is estimated at approximately $4.4 million.

Table 19 Cost Effectiveness: Local Authority Comparisons with Current Structure

LOSSAN Corridor Pacific Surfliner Local JPA Options ($millions)				
		Pacific Surfliner		
Measure	Capitol Corridor JPA	Caltrans DOR[1] (Current)	Member Agency[2]	Independent Agency[3]
Full Time Staff Positions	16.5	10	11	30
Staffing Costs (fully loaded) [6]	*$1.7*	*$1.3*	*$1.5*	*$2.0*
Office Space-Administrative Agency support	*$1.2*	*$0.7*	*$1.2*	*$1.2*
Amtrak management [4]		*$1.0*		
Subtotal	$2.9	$3.0	$2.7	$3.2
Marketing[5]	$1.2	$1.7	$1.7	$1.7
TOTAL	**$4.1**	**$4.7**	**$4.4**	**$4.9**

[1] Consultant estimate; based on review of 61 existing positions allocated to Caltrans-Division of Rail.

[2] Includes 11 full time positions plus 7 additional positions that would be shared within the Managing Agency, each at 25 percent time (7 positions @ $145k/yr. fully loaded).

[3] Based on Altamont Corridor Express (ACE) annual budget for 6 trains each weekday.

[4] Functions now performed by Amtrak staff for Caltrans DOR that would be performed by new LOSSAN JPA (train scheduling, mechanical oversight, marketing, etc.) similar to functions now performed by CCJPA.

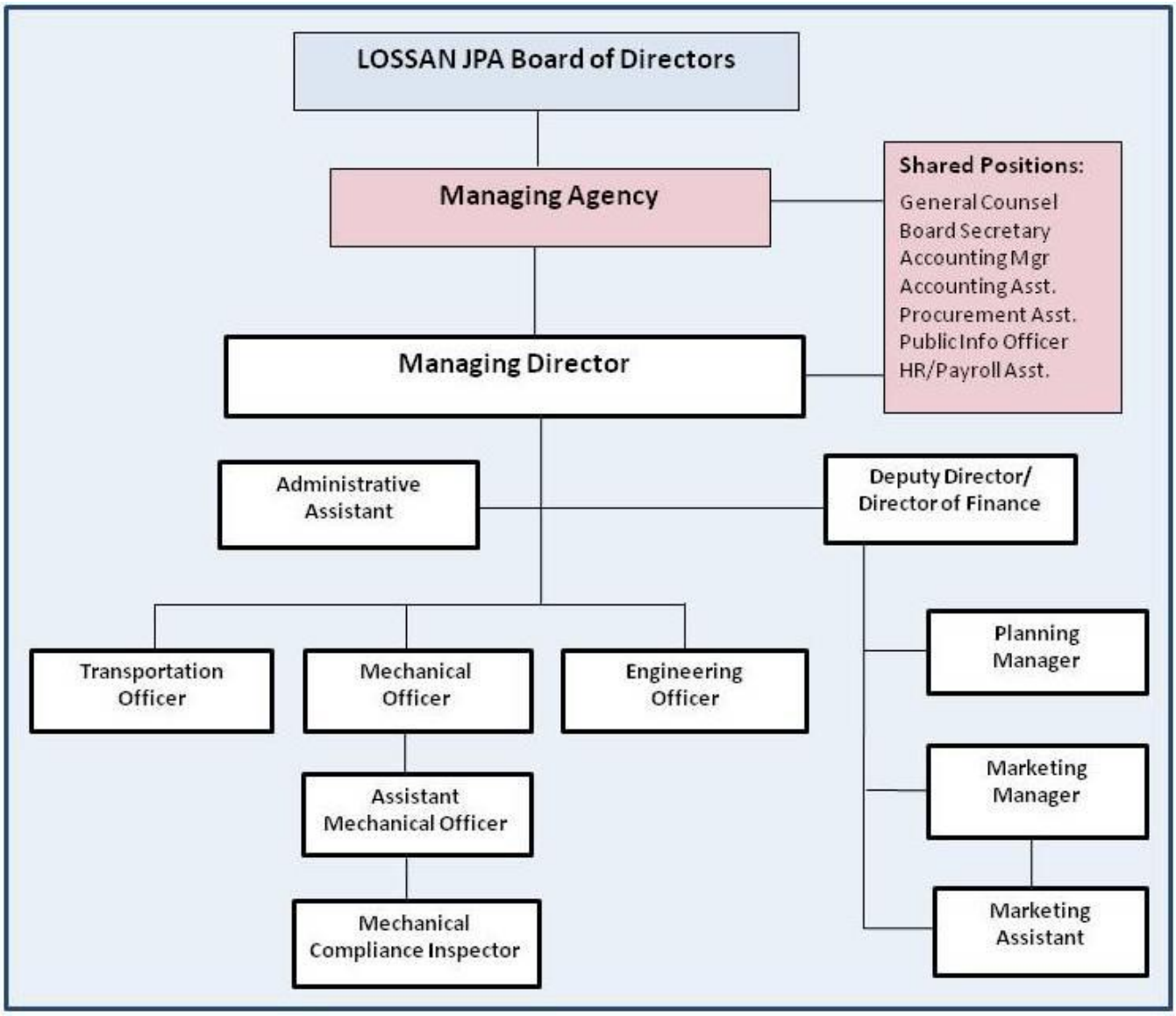
[5] New LOSSAN JPA could significantly leverage marketing budget via partnerships with member agencies/transit authorities to jointly promote corridor ridership growth.

[6] Managing Agency staffing unit costs are based upon approximately the same unit costs as the Capitol Corridor; Capitol Corridor numbers are based upon the BT&H Allocation letter dated October 19, 2011, for FY 11-12.

The Board had requested an analysis of a new independent agency to serve as the Managing Agency verses a Member Agency. That analysis showed a total budget estimate of $4.9 million, compared to $4.4 million for the Member Agency, the difference from the Member Agency being in the number of full-time positions needed for the Independent Agency and the lack of economies of scale associated with sharing positions under the Member Managing Agency example.

The organization chart identifies 11 full time equivalents to initially manage the service (shown in Figure 7). However, an additional seven positions were estimated to be shared with the Member Managing Agency for functions such as legal counsel, accounting, public information, procurement, human resources and payroll. If the Amtrak-owned Pacific Surfliner fleet of rolling stock can be procured by the state, then possibly two additional mechanical staff may be necessary. This situation is similar to the evolvement of the current Capitol Corridor/BART approach.

Figure 7 Draft LOSSAN JPA Organizational Chart



The 11 full-time LOSSAN JPA Rail Management Team (RMT) positions will be able to carry out the functions required to manage the service. The state will compensate the local JPA for these 11 positions, as well as for the seven shared support functions for the JPA that are supplied by the Managing Agency.

There are currently seven Amtrak shared positions for the Pacific Surfliner service and the study recommends seven shared positions for the member agency as Managing Agency option. These are not the same seven positions, as explained below.

- Seven Amtrak positions: For the member agency option, it is recommended that JPA RMT have 11 positions. Those 11 include the functions currently performed by the seven Amtrak shared positions. These functions being performed by Amtrak are occurring because there is no significant day-to-day management presence by Caltrans in Southern California. The costs for these seven shared Amtrak positions are built into the total current costs of the Pacific Surfliner service. With the transfer

of the management responsibility for these functions to a local JPA, the Amtrak costs should reflect this cost reduction, although with PRIIA going into effect in FY 2013-14, and the resulting costing formula changes for all Amtrak state-supported service, it is very difficult to isolate the share of seven specific Amtrak positions (and the costs of them) that would no longer be needed due to the creation of the local JPA.

There are no such Amtrak-shared costs on the San Joaquin or the Capitol Corridor because these services are 'full contract' services with Amtrak, meaning that these two state-supported intercity services have a contract in which Amtrak does not share in the financial support. Amtrak bills its full costs, net of revenue, to the state for the San Joaquin, and to the CCJPA for the Capitol Corridor. This same formula will apply to the Pacific Surfliner service when the PRIIA law is implemented. There will be no 'Amtrak share' of the Pacific Surfliner costs borne by Amtrak, nor an 'Amtrak share' of management. The Rail Management Team (RMT) costs in the Managing Agency and their functions assume all the required management activities necessary for effective local management of the Pacific Surfliner service.

In summary, the seven Amtrak shared positions and their costs 'go away' and the local JPA staff of 11 assumes those responsibilities.

- Seven shared Managing Agency positions: These are seven administrative positions that the member agency as Managing Agency would have as a regular course of their own business (e.g., Board secretary, accounting, payroll, procurement, etc.) but would share 25% of their time to support the local LOSSAN JPA. The state funded budget for the JPA would pay 25% of these seven administrative positions and these would be in addition to the 11 full time Rail Management Team positions (railroad, finance, planning and marketing, etc.) for the JPA. There would be no local funding for these positions including no local assessment to support the administration or the operations of the service.

Managing Agency staffing unit costs are based upon approximately the same unit costs as the Capitol Corridor; Capitol Corridor numbers are based upon the California Business, Transportation and Housing (BT&H) Allocation letter dated October 19, 2011, for FY 11-12.

When the Capitol Corridor started, only six positions were paid for by the state (compared to 16.5 today). However, there were only four trains daily each way (compared to 16 today) and less than 500,000 riders annually (compared to 1,709,000 today), so the staff grew with the service and the state funding paid for that growth with no local contributions by either the six CCJPA member agencies or the CCJPA Managing Agency (BART).

The LOSSAN Corridor is starting out with a bigger base of service and riders, hence the 11 positions to be state funded. The Capitol Corridor is responsible for the mechanical oversight of the entire Northern California fleet, including the trains used on the San Joaquin, hence the greater number of positions there. Eleven positions should be an adequate start for the LOSSAN JPA, but the Managing Agency has the authority to 'move around' up to 10% of the funds in each of the allocation categories, so it can 'manage' these funds to support more or less positions, depending upon the need. The CCJPA can provide guidance on how this works.

In summary, there has never been a local assessment against any of the CCJPA member agencies in the entire 15 year existence of the CCJPA, in spite of the quadrupled expansion in service, riders, revenue, etc.

Additional Benefits

It should be noted that there are other potential benefits to a local joint powers authority that have not been quantified at this time, including:

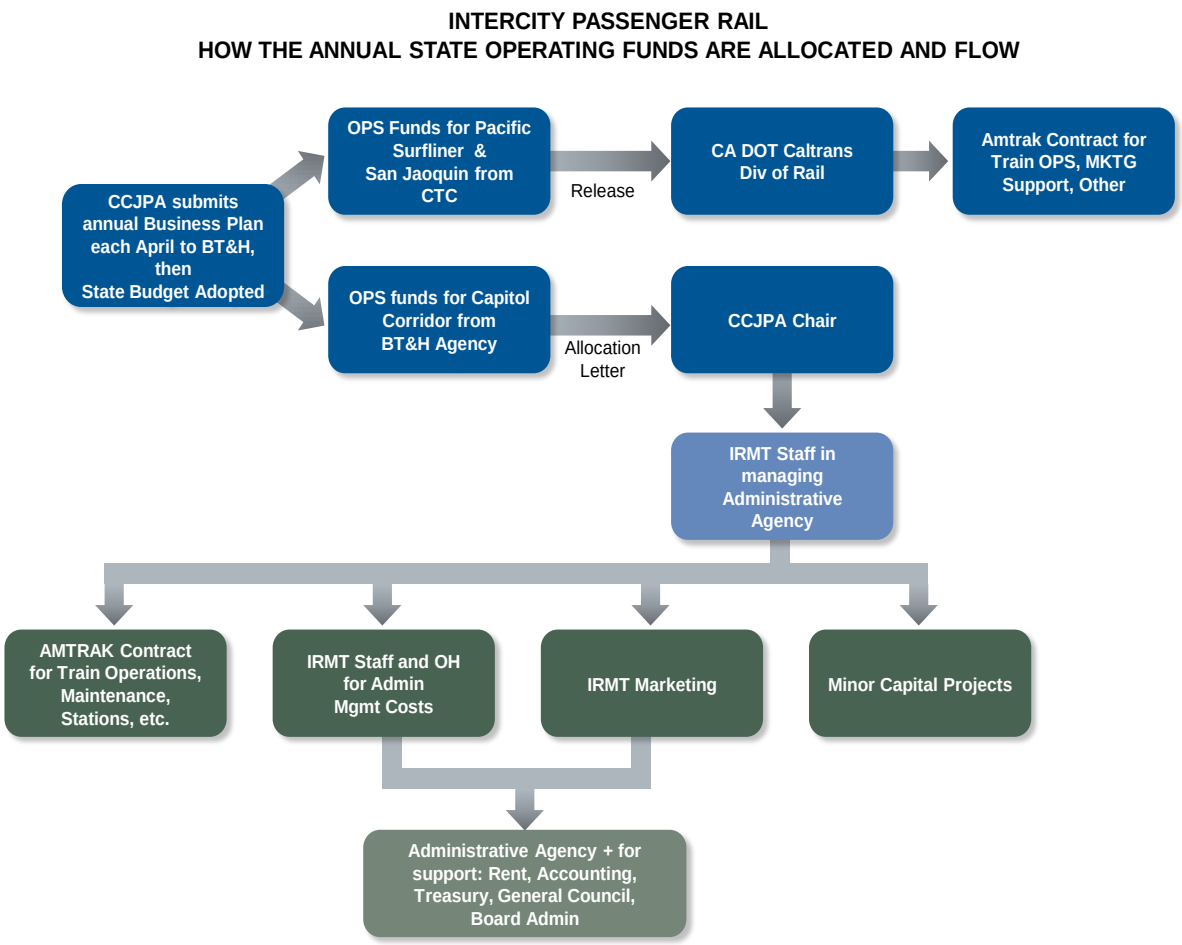
- Integrated regional fare policy and development of common fare media.
- Improved coordination/collaboration on service changes between and among member agencies. Although the January 9, 2012 service change was coordinated between the three passenger rail services, little input was considered by the LOSSAN Board in making Pacific Surfliner service changes.
- Joint marketing and partnerships with local member agencies and taking advantage of local relationships with chambers of commerce, media outlets, tourism offices, etc. In 2010, LOSSAN staff initiated regular meetings by corridor marketing staffs to document current joint marketing activities and to identify opportunities for future collaboration that can take advantage of these local connections.
- Joint timetable. This has been a topic of the bimonthly joint marketing staff meetings and specifically an effort underway by Amtrak, Metrolink, and COASTER staff. Through efforts by member agencies, the first ever publication is planned around the spring/summer 2012 service change.
- Consolidated website and customer information.

State Funding Mechanisms for Local Management

The current annual state budget includes a line item for the operating costs of the three state-supported intercity passenger rail routes. This line item provides funding for train operations, a marketing budget for each service, certain capitalized maintenance projects/equipment overhauls, and the administrative staff budgets for Caltrans-DOR and the administrative staff for the Capitol Corridor. Caltrans DOR is also allocated funding for overhauls of the state-owned fleet, regardless of their assignment to a particular corridor. The CTC must annually approve and release the allocation of state support funds to Caltrans DOR for the operation of Pacific Surfliner and San Joaquin services, while the Secretary of BT&H allocates operating, administrative and marketing funds to the CCJPA.

Figure 8 outlines the difference in the flow of funds between the Pacific Surfliner/San Joaquin/Caltrans and the Capitol Corridor/CCJPA.

Figure 8 Flow of State Operating Funds for Intercity Rail



However, Caltrans DOR and the CCJPA make regular reports to the CTC, often jointly, on financial and operating performance of the state-supported intercity passenger rail services, and the CTC still allocates and releases capital funding for all three intercity services in the state's intercity passenger rail program, as they do for all state-funded transportation projects.

In addition to administratively managing the Pacific Surfliner and San Joaquin intercity rail routes, Caltrans DOR also provides statewide technical support for rolling stock, prepares annual operating and capital budgets, serves as the state's Federal Railroad Administration (FRA) applicant and grantee, and also is responsible for the preparation of the California State Rail Plan and periodic updates, a document required for federal grants. These additional functions are noted because the total number of staff positions associated with the direct administrative management of the Pacific Surfliner is difficult to calculate in isolation.

Additional Cost Considerations

Start Up

There will be some LOSSAN JPA up-front costs incurred in negotiations of an ITA with the Caltrans DOR by the selected Managing Agency. While the costs for negotiating with the state and setting up the new LOSSAN JPA and Management Team may not reach the level of the BART-incurred $700,000 in 1998, it is estimated that the initiated startup costs for the current effort could be $500,000. This would include legal review, negotiations, hiring the management and technical staff team, and other costs that will be incurred during the negotiations with the state. These up-front costs are not reimbursable by the state. Due to the existence of the ITA between the CCJPA and Caltrans DOR, the LOSSAN Corridor agencies may have a negotiating advantage in terms of both cost and time, since the CCJPA-Caltrans ITA is for a similar purpose and has been in-place for some 15 years.

BART and the CCJPA member agencies believed that these initial up-front costs would be 'returned' several fold in ensuing years as the locally managed Capitol Corridor service improvements, ridership growth and train reliability generated a more efficient, cost-effective and locally responsive train service. This has indeed proven to be the case on the Capitol Corridor. Again, there will be up-front costs to make the transfer, set up a professional railroad management team, negotiate the ITA, and negotiate the initial Amtrak contract for service delivery.

Rolling Stock

One of the major functions of an intercity JPA staff is the scheduling, use, deployment and maintenance of the rolling stock. In order to effectively manage the service, and gain the most productivity from use of the rolling stock, you must have control over it. In this regard, the LOSSAN Pacific Surfliner service is again different than the northern California rolling stock used on the Capitol Corridor. Amtrak owns all the locomotives and all but ten coach/café/cab cars in the Pacific Surfliner fleet. The entire CCJPA-controlled fleet is (1) owned by the State of California, (2) leased to the CCJPA, and (3) the CCJPA controls its assignments, and oversees the maintenance. For a LOSSAN JPA to be efficient and cost-effective, it must control the fleet of rolling stock.

Amtrak currently owns the majority of the LOSSAN Corridor rolling stock, although Caltrans is positioned to become a more significant equipment owner as new state rolling stock is purchased and delivered over the next five years. The disposition of the current LOSSAN Corridor Amtrak-owned fleet (coaches and locomotives) is an issue which needs to be addressed and resolved. Maintenance of the entire fleet is currently conducted by Amtrak, and Amtrak can continue to provide this maintenance (regardless of rolling stock ownership) in the LA Amtrak facility, in much the same way that the state-owned Northern California fleet of rolling stock is maintained by Amtrak in the Oakland Maintenance Facility for service on the San Joaquin and Capitol Corridor trains. Under any scenario, Amtrak would still continue to service its long-distance national network trains at the same facility. However, LOSSAN JPA control (purchase or long-term lease) will provide a sense of security for service planning, that the fleet will always be available, and not threatened to be moved to another location by Amtrak.

Therefore, It is recommended that the state negotiate with Amtrak for the acquisition of the entire Amtrak-owned Pacific Surfliner fleet of coaches and locomotives. State Proposition 1B bond funds (and possibly federal grant funds) are already available to make this purchase, thereby putting the rolling stock fleet in southern California on the same ownership basis as the northern California fleet.

If the LOSSAN Corridor Amtrak rolling stock is acquired by the State, the 'capital' charges for rolling stock can be eliminated from the direct Pacific Surfliner budget, but an equivalent amount will need to be included in the Caltrans DOR budget in order to conduct the regular overhauls of this then-state-owned fleet. Again, this is the procedure used in the San Joaquin and Capitol Corridor services, where Caltrans already includes these northern California fleet overhaul costs in its DOR budget. These funds are essential to ensure proper maintenance, reliability and protection of the value of the state-owned rail equipment assets.

Rights-of-Access and Liability Protection

Amtrak is the only entity in the nation with a statutory right-of-access to the private freight railroads for the purpose of providing intercity passenger rail services. Furthermore, Amtrak is also the owner of the intercity 'slots' along the LOSSAN Corridor, whether the tracks are owned by the individual public agencies, or by the private freight railroads. Therefore, Amtrak as 'operator' of the intercity passenger trains brings this ownership to the table. As with the Capitol Corridor enabling legislation, a new LOSSAN JPA would have the right to contract out service operation to another entity besides Amtrak, but the access rights and slot ownership rights that Amtrak has on the LOSSAN Corridor would be lost. They are not transferrable.

Amtrak, as the contract-operator of LOSSAN Pacific Surfliner service, also brings substantial value in its assumption of liability for the service it operates, and the liability agreements it has with the private railroads. Caltrans DOR has previously indicated that the California Constitution prohibits the state from indemnifying a third party or purchasing insurance of behalf of a third party. Therefore, the liability issue greatly favors Amtrak as the operator of the LOSSAN Corridor intercity passenger trains and if so, would bring cost protection for the LOSSAN JPA.

Managing Agency

A decision/consensus will need to be reached between and among the LOSSAN member agencies as to the form and structure, as well as a location, to serve as the Managing Agency and house the administrative staff (see Intercity Rail Management Team section that follows). Unless otherwise specified in start-up legislation, the LOSSAN JPA would determine the selection of the Managing Agency to provide the dedicated IRMT staff. Provisions of the ITA would transfer funding for staffing and support costs for the IRMT.

An initial contract term of five years between the LOSSAN Board and the Managing Agency would seem to be a reasonable term, with a review of the Managing Agency's performance by the LOSSAN Board during that initial term. Based upon the periodic reviews of Managing Agency performance, the LOSSAN Board may consider a renewal/extension with the current Managing Agency or take other actions.

If a new, stand-alone entity is created to be the Managing Agency, then additional start-up time and resources will be required. If an existing Member Agency is selected to be the Managing Agency, then costs, start-up time and additional resources can be minimized, as they have been on the Capitol Corridor by housing the CCJPA IRMT staff in the BART organization.

A final decision on the LOSSAN Managing Agency is currently pending.

Managing Agency Support

Under any circumstance, the selected Managing Agency must have certain essential administrative and managerial capabilities; including a large enough support staff to be easily able to absorb staff, and handle the

finances and business practices associated with management of the Pacific Surfliner service. The agency will need to have the resources and support staff to accommodate what will amount to be an increase of 12 or so employees in that agency, and has the financial capability to manage receipts and expenditures for an annual business increase of at least $100-135 million per year in operating costs, plus the ability to administer large capital investment programs. Familiarity with federal capital grant programs and procedures will be essential for major investment projects. Legal support, accounting, bills payable, receivables, payroll and human resources support are all functions assumed to exist within the selected Managing Agency and that these resources will be adequate to absorb the above referenced increase in employees and the additional annual cash-flow. In a new, stand-alone entity, these functional capabilities would be required internally. To the extent that the Managing Agency has expertise in rail planning and/or operations, this is clearly 'a plus'. Agencies having constructive relationships with Caltrans DOR, Amtrak, UPRR and BNSF Railway will be at a distinct advantage, and continuing these positive relationships will be essential for an Managing Agency to be successful.

This Managing Agency should have the respect and confidence of all the other LOSSAN member agencies. It must convey to the LOSSAN Board that it has a focus and policy commitment to grow the intercity service as a major component of the entire LOSSAN Corridor, and that it will strive for this service to become a significant and substantial partner with the commuter agencies and private railroads who share tracks.

The final amount of annual state support available to the Managing Agency for its administration purposes will be a negotiated amount to be included in the ITA. However, based upon the identified annual funding allocated to the CCJPA for administration ($2.9M), and considering the proportional operating budget of the Pacific Surfliner, a conservative estimated calculation would result in approximately $4.2 million being allocated annually to the Managing Agency for the dedicated IRMT and all its support costs.

Intercity Rail Management Team (IRMT)

Regardless of which entity is selected to be the Managing Agency, the most important factor is that the IRMT must be comprised primarily of a dedicated professional railroad staff assembled for the sole purpose of managing, expanding and improving the intercity passenger rail service along the entire LOSSAN Corridor and otherwise meeting the goals established by the LOSSAN Board. Staff needs to be adequate to negotiate and manage contracts for operations, maintenance, construction and finance. There needs to be a technical level of expertise in railroad transportation/operations, rolling stock, engineering (track, signals and structures, etc.), finance, customer service/marketing and the ability to carry out capital investment projects.

The base IRMT staff should have minimal 'split' or 'partial responsibility' shared with other services or agencies, such as the administrative part-time involvement of the Board Secretary, Treasurer and General Counsel, who already may be full-time Managing Agency employees, if an existing agency is selected to be the Managing Agency. The Operating/Marketing IRMT staff would be fully dedicated to the intercity corridor service. Again, this provides efficient use of management resources. It is essential that the IRMT Executive Manager/Managing Director and those staff members that report directly to that position be dedicated to managing the LOSSAN Corridor intercity rail service.

IRMT Managing Director: The leadership position (Managing Director) of the IRMT should be at an executive level within the Managing Agency, and organizational reporting can be to the CEO and to the Chair of the LOSSAN Board. The Managing Director's performance evaluations should be conducted with the direct involvement of the Chair of the new LOSSAN Corridor Board and the CEO of the Managing Agency. The reason

for this is obvious, in that the Chair represents the views of the entire LOSSAN Board, and not solely the view of the Managing Agency which houses the IRMT. In a new, stand-alone Managing Agency, the Chair would likely conduct such performance reviews in concert with the full LOSSAN Board.

IRMT Staff: The IRMT structure should include a minimum staff for administering the basic functions for delivery of a successful intercity passenger rail service (see Figure 7). IRMT staff should include executive operations leadership (Managing Director), and professional railroad expertise in transportation, railroad engineering and construction, maintenance-of-equipment, finance, planning and marketing.

Member Agency Staff Participation

While it is not mandated by legislation, it is highly desirable that there be high-level member of each LOSSAN member agency's staff designated to participate in regularly scheduled meetings/conference calls with IRMT staff. Referred to as the Staff Coordinating Group (SCG), this group, while requiring minimal time per month, establishes the necessary 'bridge' between the IRMT staff and the LOSSAN member agencies' staff and Board members. This participatory and inclusive structure allows the IRMT staff to extend their expertise and allows essential information to be conveyed to LOSSAN Board members in order to make informed policy decisions at LOSSAN Board meetings and allows feedback from member agency LOSSAN Board members.

The SCG would include one designated high-level participant from each member agency. In addition, there would be a representative from each Metropolitan Planning Organization (MPO) (if not already a member agency) along the LOSSAN Corridor, as well as representation by Caltrans-DOR. Caltrans participation will facilitate communication between and among DOR and BT&H which would ultimately allocate the annual Pacific Surfliner budget appropriation for operating, administrative, marketing and overhead funds for the intercity rail service.

This SCG also can provide a participating role in briefing Board Directors on key issues and also in the development of the intercity service for sister organizations such as Amtrak, Metrolink, the California High-Speed Rail Authority (CHSRA), as well as for the host railroads (UPRR and BNSF Railway).

Opportunities for the LOSSAN Corridor: Understanding, Criteria and Term

The most critical component in the selection of a Managing Agency is its demonstrated understanding and commitment to improving, expanding and fostering the growth of the intercity rail service, and its commitment to do so in a mutually beneficial manner with the commuter rail partners and freight rail partners who share the tracks of this busy LOSSAN rail corridor.

The LOSSAN Corridor is 'the premier route of Amtrak in the West', and on par with the Northeast Corridor. The Pacific Surfliner service is not just a leisure market service with discretionary riders traveling on a flexible schedule. The longer distance business traveler is a significant potential market that is not currently being captured on the LOSSAN service, as that market is being captured on the Northeast Corridor, and on the Capitol Corridor.

In July 2011, Caltrans conducted an extensive on-board survey with more than 4,000 Pacific Surfliner passengers. Caltrans asked about demographics, overall travel behaviors and satisfaction levels regarding their Pacific Surfliner experience. Regarding demographics, the survey showed that 78% were leisure passengers, 14% were business passengers and 8% were commuting passengers. The full survey as well as the presentation is available upon request to the Caltrans DOR.

With this in mind, a set of criteria were developed to guide the selection of a Managing Agency to house the potential LOSSAN JPA, which includes the following three overall criteria:

1. Capability
2. Administrative experience
3. Corridor experience

A series of measures were developed to assess the potential candidate agency's ability to effectively administer and manage the LOSSAN Corridor service – these measures are detailed in Table 20.

Table 20 Criteria for Managing Agency Selection

Criteria for Managing Agency Selection	
Evaluation Criteria	**Measure(s)**
Capabilities	1. The agency should be large enough that it can fulfill its primary responsibilities, yet undertake this additional responsibility; sufficient administrative and technical capabilities 2. The agency should have available space to house the initial intercity rail management team (IRMT) staff and expand as necessary at little or no additional cost 3. The agency should have legal and government affairs expertise to help guide the IRMT in their negotiations with the state to affect an interagency transfer agreement (ITA) 4. The agency should have existing administrative support functions that can absorb the IRMT staff with minimal cost impact 5. The agency should be able to administer the financial and administrative functions to support the IRMT including human resources, develop and execute budgets, treasury, accounts receivable & payable, payroll, contracts/procurement, board secretarial and administrative duties, etc., in a cost effective manner (recognizing that the gross annual Pacific Surfliner operating budget will be in the $130 million per year range, with net-of-revenue state support being in the $55-65 million range)
Administrative Experience	1. The agency should have an understanding of, and experience in, administering capital projects (rail preferable), as such projects could reach a scope of hundreds of millions of dollars 2. The agency should have some knowledge of and experience in federal capital grant processes, preferably in federal railroad administration (FRA) grants, and their reporting requirements 3. The agency should have some familiarity with the California Department Of Transportation-Division Of Rail (DOR), as the working relationship between the JPA, the IRMT staff in the managing agency and Caltrans DOR will remain integrated 4. The agency should have significant familiarity, experience and established relationships with CPUC and FRA 5. The agency should have a familiarity with Amtrak (which crews the trains, staffs the stations, maintains the rolling stock and supervises operations) 6. The agency should have familiarity with and ability to negotiate with rail road owners/operators 7. The agency should have experience identifying, analyzing and managing risks related to operations and administration 8. The agency should be free of any appearance of a conflict of interest in the proper use and allocation of state-supported intercity rail funds.
Corridor Experience	1. The agency and IRMT staff should physically be located in a place along the corridor. 2. The agency should have a clear understanding of the intercity corridor marketplace (as distinct from the ‘commuter rail’ market and ‘the long distance rail’ market), its intercity submarkets, opportunities for connectivity with other transit and rail services, and engage the professional IRMT staff to aggressively plan, manage and promote the corridor-wide intercity services

The LOSSAN Member Agencies should (and must) be assured that the selected Managing Agency has the commitment and will provide the resources to develop the LOSSAN Corridor intercity train service as a premier travel option for the longer distance business travelers, as well as for the discretionary leisure market along the entire Pacific Surfliner route. It should be noted that only about 20% of the ridership in 1999 on the Capitol Corridor was business/work related, while between 60-65% is business/work-related travel today. The average trip length has stayed almost the same (about 70 miles per trip). Given similar demographic characteristics on the LOSSAN Corridor (but a much larger population base), plus the existence of quality commuter rail services with shorter average trip lengths, there should be no concern to the commuter rail providers from efforts to grow the longer distance business/work market on the intercity trains or vice versa.

The ability to capture the longer distance discretionary business travelers has a lot to do with increased reliability, shorter travel time, offering a reserved-seat Business Class service, available food and beverage service, work spaces, Wi-Fi, the ability to make reservations, and generous seat type and spacing. Prices for tickets of intercity service are market driven, and are not set like public transit fares. Commuter rail fares are set for the commuter with, depending on the local transit agency, policy fares set for the transit dependent, students and the elderly and disabled. Intercity passengers are willing and able to pay higher fares for premium quality service, especially if it is reliable. Understanding the role of intercity rail service as both a premier travel option for the longer distance business travelers, as well as for the discretionary leisure market is an essential criteria to be considered in the selection of a Managing Agency for the LOSSAN Corridor intercity service.

Term

LOSSAN Board action on January 25, 2012 indicated a recommendation of three (3) years for an initial term; however, subsequent terms could be longer.

Alternate LOSSAN Corridor Intercity Administrative Option: A New Stand-Alone Entity

The Capitol Corridor JPA is not the only example of an intercity passenger rail managing agency. In the State of Maine, the Maine Department of Transportation (DOT) established a new, stand-alone entity for the specific purpose of initiating, managing and growing an intercity passenger rail corridor service between Portland, Maine and Boston, Massachusetts. This Maine DOT entity is called the Northern New England Passenger Rail Authority (NNEPRA). NNEPRA has an Executive Director, and staff functions similar to those included in the organizational structure described for the Managing Agency. NNEPRA also has an independent Board, to whom the NNEPRA staff reports.

Currently, NNEPRA contracts with Amtrak for operation of 10 daily intercity corridor trains ("The Downeaster" service) over the 116 mile Portland-Boston route. There is extensive Massachusetts Bay Transportation Authority (MBTA) commuter rail service on the southern-most 35 miles of the route, and the MBTA owns the tracks from the Massachusetts-New Hampshire state line to Boston over which Maine's Downeaster service operates. NNEPRA works cooperatively with the MBTA commuter rail office to establish train schedules and coordinate 'slots' for intercity and commuter train operation, as well as to jointly secure federal capital funding for improvements to track, bridges and other facilities along the line. A private freight railroad (PanAm Railways) owns the track on the remaining 80+ miles of the route in New Hampshire and Maine. NNEPRA has a major capital expansion program underway (an additional 35 miles) north to Freeport and Brunswick, Maine (under construction by track-owner PanAm Railways), and construction is also underway on a new NNEPRA owned maintenance facility in Brunswick. In 2012, Amtrak will commence expanded Downeaster train

operation to/from Brunswick under a contract with NNEPRA. The rolling stock, while provided by Amtrak, has a contractual term of 20 years to be provided by Amtrak to NNEPRA.

The organizational structure and functions of NNEPRA are parallel and similar to those of the Capitol Corridor. Both organizations are authorized by state legislation, and both have independent boards. In the case of NNEPRA, the six member Board is appointed by the Governor, and includes the state Commissioner of Transportation (or designee). While there is basically no other criteria, the current NNEPRA Board has a member who is president of the Maine State Chamber of Commerce, as well as four other members. These NNEPRA Board members serve specific two-year or three-year overlapping terms, and can be reappointed. The NNEPRA Executive Director is hired by the NNEPRA Board, and the NNEPRA staff is hired by the Executive Director and reports to that position. CCJPA Board Members must also be a member of, and appointed by, the member transit agency that they represent.

Summary of Costs and Funding

Future Annual Projected Costs for LOSSAN Corridor Operations and Maintenance

For the LOSSAN Member Agencies and the future Managing Agency of the LOSSAN Intercity passenger rail service to assess the approximate annual costs of this service, and the expected level of passenger revenue and state-support (state funding), there are several factors that should be considered. Table 21 shows a recap of these costs and forecast revenue, beginning in the first year of PRIIA Section 209.

Table 21 Preliminary Pacific Surfliner Operations Funds ($millions)

PRELIMINARY PACIFIC SURFLINER OPERATIONS FUNDS ($millions)			
FUNDS	**2013-2014**	**2014-2015**	**2015-2016**
Ticketing and Other Revenue*	**$ 67.3**	**$ 70.6**	**$ 74.2**
State Supported Funds		$ 56.8	$ 58.8
Operations	$ 42.0	$ 43.0	$ 45.0
Capital	$ 5.0	$ 9.0	$ 9.0
Subtotal, State Supported Funds	**$ 47.0**	**$ 52.0**	**$ 54.0**
Managing Agency Costs - State Funds			
Staffing	$ 1.5	$ 1.5	$ 1.5
Office Space/Support	$ 1.2	$ 1.2	$ 1.2
Minor Capital	$ 0.4	$ 0.4	$ 0.4
Marketing	$ 1.7	$ 1.7	$ 1.7
Subtotal, Managing Agency Costs	**$ 4.8**	**$ 4.8**	**$ 4.8**
Total, Operations Revenues	**$ 119.1**	**$ 127.4**	**$ 133.0**

Available Financial Resources

Taking the actual FY 2010-11 LOSSAN Corridor gross revenue as a 'baseline' ($55.3 million), adding 5% for food & beverage revenue, and escalating this income 5% per year to 2014 (2 years= +10%), an assumed revenue for FY 2013-14 is $67.3 million. The level of expected (and assumed) state support for operations is based on PRIIA fully charged in FY13/14, is an annual increase in state support of $19 million, over the current budgeted $28 million in state support, for an expected total state-support level of $47 million. Therefore, the Managing Agency would have available a gross resources for the LOSSAN Service operation of approximately $120 million,

of which the revenue from operations is $67.3 million and the level of state-support for contact service is $51.8 million. Included in this state support allocation are funds for minor capital ($0.4 million), administrative/ staffing costs for the Managing Agency ($4.4 million), and an annual marketing budget ($1.7 million).

Within the allocated above amounts, the Managing Agency should expect to be allocated about $1.2 million per year to assist in providing the office space and support services for the IRMT. These funds would be budgeted as part of the total state-allocation. If the Managing Agency's IRMT can deliver the service for lower costs, or can increase revenues above plan, resulting a lower net-cost of service, then the resulting residual available funds are allowed by the state to be reinvested into the intercity service to further improve frequencies or support other direct benefits to the LOSSAN Corridor intercity passenger train service.

In essence, based upon current knowledge, the Managing Agency should expect to have approximately $52 million available as the level of state-support in FY 2013-14, and this amount would be allocated to cover the staffing and support costs of the IRMT, as well as for train operations, maintenance, and marketing. This final amount will be negotiated as part of the ITA with Caltrans DOR.

Table 22 below summarizes the preliminary budget for the Managing Agency that could be expected both during the initial ITA negotiation phase and for the first year of operations – in this case, anticipated to be FY 2013-14.

Table 22 Preliminary Managing Agency State Support

Managing Agency State Support*	**FY2013-14 ($ millions)**
ITA Negotiations/Start-Up (funded locally)	$ 0.5
TOTAL Start-Up Costs**	**$ 0.5**
Annual Operations	
Operations and Maintenance	$ 42.0
Capital Costs	$ 5.0
Subtotal, O&M	**$ 47.0**
Managing Agency	
Staffing	$ 1.5
Office Space/Support	$ 1.2
Minor Capital	$ 0.4
Marketing	$ 1.7
Subtotal, Managing Agency	**$ 4.8**
TOTAL Annual State Support Need	**$ 51.8**

* Does not include ticketing and other revenue.

**The $500,000 is an estimate based upon the BART experience with the Capital Corridor ITA at $700,000 14 years ago. The lower number today is because the LOSSAN Agreements would not need to be created from scratch, as there are now existing 'model agreements' that can be modified. This is a one-time only cost.

The Managing Agency should not be placed in a position of having to divert its existing resources to support the IRMT. In addition to providing funding for these expenses, the state allows the Managing Agency, through an

annual allocation of all these state-provided funds by the Secretary of BT&H to be compensated for its administrative support via an 'add-on' at a reasonable overhead cost-reimbursable basis. This overhead charge amount can be established either as a percentage of the annual administrative and marketing budgets of the intercity rail service to be paid to the Managing Agency, or it can be paid on a direct cost reimbursement basis. Hence, the previous reference to a $1.2 million annual contribution towards Managing Agency overhead, if the Managing Agency is housed in an existing agency.

For example, if the administrative and marketing budgets for the LOSSAN IRMT staff were $5 million annually, and an existing agency was selected as the Managing Agency, and that agency's state-approved overhead rate was 24%, then the Managing Agency could receive payment of $1.2 million for the year as its reimbursement for the additional administrative support costs of housing the IRMT staff (rent), human resource support (hiring, payroll), treasury and accounting (accounts payable and managing the received grant funds), legal and board support services. These overhead funds would be included in the total amount of the annual budget allocated by BT&H to the LOSSAN Corridor IRMT. This reimbursement of costs can also be done on a direct cost reimbursement basis, if that is a more cost-effective basis.

Additionally, in order to protect the Managing Agency from having to expend its own resources, it is recommended that the state funding support be transmitted in advance to the JPA for its operating support, administration and marketing. This provision should be included in the ITA, with similar language as is in the ITA between the State and the CCJPA.

6. Governance Framework

The LOSSAN member agencies and Board of Directors have developed an overall proposal for a new organizational structure for a local authority.

Commuter and Intercity Passenger Rail Services

It should be noted that it is not the goal of this document or the pending legislation to establish or modify the existing operating definition of the Pacific Surfliner, COASTER, or Metrolink services. However, there are specific federal definitions that distinguish between intercity and commuter rail service ("What is commuter" was defined in a 1971 ICC case, "MBTA vs. Penn Central Corporation"). Six specific criteria define 'commuter rail service' in that Interstate Commerce Commission ruling, among them: distance of the route is less than 100 miles; service is provided primarily in peak weekday travel times; 70% or more of the passengers travel on multi-ride tickets, etc.

Additionally, there are specific state mechanisms and criteria for funding intercity and commuter rail services, and these are embodied in statute, policy and the State Rail Plan: commuter/regional rail services must be financially supported by local jurisdictions, and state operating funds will only be provided to intercity passenger rail services, etc. While both intercity and regional/commuter rail services may operate on the same tracks, and even serve some of the same stations, the characteristics of their markets tend to be significantly different.

Intercity fares are generally established on a per-mile travelled formula basis, whether one-way, round-trip or multi-ride. The state goal for farebox recovery from intercity services is 50% from the passengers, 50% from state-subsidy, and fares are managerially adjusted as part of a state-approved annual Business Plan, and these fares are generally 'market driven'. All three of the state-supported service meet or exceed the 50% recovery goal, and fares are incrementally adjusted as often as twice per year.

Regional/commuter fares are generally determined by public boards (much akin to the process of establishing fares for local transit services), after public hearings and are generally set much lower than intercity fares, even when the regional/commuter fare formula considers distance travelled, either in miles, or by 'zones' travelled. Regional/commuter fares generally cover between 20% and 40% of the cost of service, with local subsidy making up the difference.

Intercity rail fares are established more like fares on an airline. Intercity fare revenue needs are projected and revenue goals established and included in the Business Plan in order to sustain the quantity and quality of the train service (or possibly expand it) and make the service attractive enough to retain and attract additional customers who use the service precisely because of its convenience and high quality customer focus. This policy has allowed the state's intercity service to grow significantly, while maintaining and expanding service quantity and quality.

Potential Governance Structure

Through much detailed discussion at the staff, CEO, and LOSSAN Board of Directors levels, a proposed governance structure has been developed (Table 23). The proposal builds upon the current makeup of the LOSSAN JPA with slight modifications to voting members.

Table 23 Proposed Governance Structure for the Local Authority

PROPOSED GOVERNANCE STRUCTURE FOR THE LOCAL AUTHORITY			
Current LOSSAN JPA		**Proposed LOSSAN JPA**	
Voting Members	Ex-Officio Members	Voting Members	Ex-Officio Members
SANDAG	Amtrak	SANDAG	Amtrak
SDMTS	CHSRA	SDMTS	CHSRA
NCTD	SCAG	NCTD	SCAG
OCTA	RCTC	OCTA	Caltrans
LACMTA		LACMTA	
VCTC		VCTC	
SBCAG		SBCAG	
SLOCOG		SLOCOG	
Caltrans		RCTC	

There are currently 10 votes on the Board (SANDAG, SDMTS, and NCTD share two votes) with the same number of votes for the proposed JPA. Under this proposal, RCTC would become a voting member and Caltrans would move from voting members to ex-officio.

There are other components of the proposed structure:

Managing Agency: All LOSSAN member agencies are eligible fill the role of Managing Agency, provided the agency meets the Managing Agency criteria noted in Table 17.

Voting Thresholds: The Board of Directors may choose to specify that certain critical functions will require a three-quarters majority for passage. Examples include the annual budget or adoption of the annual business plan. Specific functions are still under discussion.

Alternate Board Members: Board alternates would be permitted, similar to the existing JPA structure.

Board Membership: Individual board members would be appointed by their member agency, similar to the existing JPA structure.

Legislative Action

The LOSSAN Board of Directors must also decide to move forward on legislation to grant a local JPA the authority to manage the Pacific Surfliner service. With the approval in concept on August 24, 2011, and the decision on January 25, 2012, to move forward on a placeholder "spot" bill, the Board is positioned for legislative action in 2012.

The legislative staffs and CEOs from the member agencies first developed an overall framework for this bill including:

- Permissiveness: The legislation would be permissive and not mandate that a local authority be formed in the event that agreement cannot be reached between the state and the local authority.

- Cost-Effectiveness: The Secretary of Business, Transportation, and Housing would make a determination that a local authority would result in administrative or operating cost reductions and may authorize Caltrans to enter into an Interagency Transfer Agreement (ITA) to transfer those administrative functions. The ITA between Caltrans and the local authority would detail the terms and transfer of administrative responsibility from the state to the local authority.
- Operations Funding: The state would allocate operations funds to the local authority on an annual basis, similar to the procedure used successfully for Capitol Corridor service for 15 years, through the BT&H allocation process.
- Managing Agency and Staffing/Support Funding: The local authority may contract with a member agency or independent agency for administrative purposes. The specific budget and terms for transferring state funds for these costs would be included in the ITA.
- Timing: The ITA would be executed on or before December 31, 2013, for an initial period of five years.
- Minimum Levels of Intercity Service: The level of service funded by the state shall in no case be less than the current number of intercity roundtrips operated in a corridor and serving the end points currently served by the intercity rail corridor.

Additional provisions are currently under developed but the Board will have at least three additional opportunities to review specific language ahead of the April 27, 2012, deadline for policy committees to hear and report to fiscal committees fiscal bills introduced in their house in the California Legislature.

7. Summary

The *LOSSAN Corridorwide Strategic Implementation Plan* was initiated because 12 public agencies in Southern California wanted the nation's second busiest passenger rail corridor to attain a new vision for service. These agencies continue to coordinate in terms of operations, scheduling, marketing, planning, and other functions but the LOSSAN Board of Directors approved the concept of a local authority for the state' supported intercity passenger rail service, Amtrak's Pacific Surfliner service.

The LOSSAN Corridor Strategic Assessment and LOSSAN Corridor Quick Improvement Study were the foundation for this work, and stakeholders signed a Memorandum of Understanding (MOU) in 2010 to jointly participate in this effort. The goals of this study are as follows:

- Collectively provide the infrastructure to allow more peak period trains, faster through-express trains and additional service improvements that meet current and future conventional and high-speed intercity, commuter, and freight demands both north and south of Los Angeles Union Station;
- Integrate regional fare policy and develop common fare media that are based in part on early implementation lessons in the corridor as appropriate (electronic revenue collection);
- Integrate and/or coordinate operations and develop efficient operating schedules and dispatching for corridor services;
- Implement a strategy for seamless rail travel in the corridor;
- Collaborate to identify and establish new services for un-served and underserved markets;
- Integrate and improve traveler information; and
- Coordinate with Long-Distance Passenger Rail and connecting Motorcoach Services.

In order to accomplish the goals identified by the LOSSAN board, the study focused on the following topics which are summarized in subsequent discussions:

- Analysis of Existing Conditions;
- Stakeholder Outreach and Data Gathering;
- Implementation of quick improvements for the corridor;
- Development of a preferred service plan and analysis of the business case for that plan; and
- Development of the financial case for a local administrative authority, including overall structure and jurisdiction; structural benefits and risks and mitigation measures. In addition, the study reviewed service efficiencies, a management plan, the roles and responsibilities of a new Managing Agency as well as an alternative concept of a new, stand-alone entity for the LOSSAN Corridor.

Analysis of Existing Conditions

The LOSSAN Corridor and Amtrak's Pacific Surfliner is the second highest in passenger travel on the entire Amtrak-operated system. This 351-mile rail line serves Southern California's key coastal population centers and two of the state's most congested regions: Los Angeles and San Diego. The demand for service on both commuter and intercity rail services in this corridor has strained the capacity of the line to accommodate these

services reliably. Despite the limitations in capacity, the LOSSAN corridor carries more than 2.7 million intercity passengers and 4.5 million passengers each year on the commuter rail systems: Metrolink and COASTER. One in every nine Amtrak riders uses the corridor.

Initial local measures for public investments in the LOSSAN Corridor service commenced as early as the late 1980s, but the most significant capital investments have occurred following the voter-approved capital bond propositions adopted in 1990. Since that time, local tax measures are providing capital funding for LOSSAN Corridor projects, which have been supplemented by the state capital investment programs, and more recently through the FRA grant program. However, even with the past improvements, there are a number of current constraints that limit future ridership and revenue growth in the LOSSAN Corridor:

- Constrained Capital Infrastructure;
- Multiple Owners of the LOSSAN Corridor Railroad Right-of-Way; and
- Multiple Services Competing for Track Time.

Stakeholder Outreach and Data Gathering

Outreach meeting were conducted with Amtrak, Caltrans, LACMTA, NCTD, OCTA, RCTC, SANDAG, SDMTS, SLOCOG, SBCAG, SCAG, SCRRA, and VCTC in the fall of 2010 and early 2011. In addition, a "Swat Team" was formed of technical staff to review the existing conditions of the corridor, particularly at stations. While each agency or entity had its own specific goals, objectives, the overarching desire was to utilize the LOSSAN Corridor to its full potential, by improving coordination between Amtrak and commuter services, as well as other operational and capital improvements.

Completion of Near Term "Quick" Improvements

The LOSSAN Corridor Quick Improvements Study final report lists 20 concepts for near-term improvements that could be implemented fairly quickly and at minimal cost. Four additional items were added by the LOSSAN Board through other actions since the publication of the final report. Seven improvements have been fully completed. Several improvements have reached a level where implementation is fully dependent on an agency complimentary project that is currently underway or additional resources that have not currently been identified.

Business Case for New Passenger Rail Service

A Short Term and Long Term 'Business Case' for enhanced intercity and commuter train services were developed by a project working group of LOSSAN member agencies as the 'Preferred Service Plan'. The operational impacts and projected ridership and revenue impacts were developed for both 2014 and 2030.

The results of the simulations indicated that the assumed infrastructure for both 2014 and 2030 in terms of additional double tracking, signal improvements, and other infrastructure can feasibly support the operations of the preferred timetable while maintaining operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

However additional recommendations to improve system reliability were identified in several key corridor segments. The additional infrastructure projects recommended as part of this operations analysis are summarized in Chapter 5 and detailed in Appendix D.

Business Financial Case for Local Authority

During the past sixteen months, the LOSSAN Board has researched the options it has for taking on a stronger local management of the Pacific Surfliner intercity passenger rail service, and what the costs, benefits, risks, and mitigations would be from creation of such a local management effort.

The objective of this local JPA is to transform the existing Pacific Surfliner intercity rail service from a State/Amtrak funded and managed service to a service under local authority that can more cost-effectively manage the state resources and be more responsive to local needs, issues, and consumer desires.

In reviewing available structural options, the model of a JPA established under California law to manage the Capitol Corridor in Northern California is the CCJPA, has been followed. On August 24, 2011, with unanimous consensus of both the LOSSAN Board and the local transit agency CEOs, the concept of a similar JPA to manage the Pacific Surfliner Corridor was approved.

Since August 28, 2011, the focus has been on developing the governance structure and detailing the financial case, including state and other resources that would be available to the new LOSSAN JPA and its member agencies in order to ensure that no additional risks or financial exposure would be incurred by the member agencies in assuming the local management of LOSSAN Corridor intercity passenger rail service.

The study also includes, in Chapter 6, the risks and mitigation measures for five goals with potential risks that may occur due to the formation of a local JPA for the Pacific Surfliner intercity rail service: (1) maintain continued state support for intercity passenger rail service; (2) create an effective management structure for the Local JPA; (3) create and maintain technical competency for operations of the intercity rail service; (4) own and control the Pacific Surfliner rolling stock; and (5) maintain statewide rail and bus connections to the Pacific Surfliner service.

According to federal law (PRIIA Section 209), Amtrak will no longer financially share in the operational support towards delivery of LOSSAN Pacific Surfliner service, thereby making the LOSSAN service a fully state-supported contract service, the same as has existed on the San Joaquin route and the Capitol Corridor.

The level of expected state funding for intercity train operation has been estimated using the fund estimates projected by the CTC, along with estimates for ridership and revenue estimates for the next several years, and will be the responsibility of the state with or without a local authority. From all available information, it appears that adequate state financial resources will be available to sustain current Pacific Surfliner frequency levels. Capital procurement of additional state-owned rolling stock is in process and, along with planned and funded rail infrastructure improvements along the corridor, should result in additional capacity being available for intercity trains to grow ridership along the LOSSAN Corridor.

Governance Framework for a Local Authority

Finally, a local governance framework was developed for the LOSSAN Pacific Surfliner Corridor service. It should be noted that it is not the goal of this document or the pending legislation to establish or modify the existing operating definition of the Surfliner, COASTER, or Metrolink services. The LOSSAN member agencies and Board of Directors have developed an overall proposal for a new organizational structure for a local authority. There are currently 10 votes on the Board (SANDAG, SDMTS, and NCTD share two votes) with the same number of

votes for the proposed JPA. Under this proposal, RCTC would become a voting member and Caltrans would move from voting members to ex-officio.

Actions remaining to accomplish the goals of the LOSSAN Board and agency CEOs include reaching consensus on legislative language, as well as consensus on the location, housing and administrative support for the dedicated staff that will become the local JPA management (IRMT).

At this time, draft legislative language has been developed and is in review by the LOSSAN member agencies.

8. "Path Forward" Implementation Strategy

The potential for improvement to both the intercity corridor service and the parallel commuter rail services is enormous, as evidenced by the 50% growth in ridership by the year 2030 forecast in the long-term corridorwide preferred service plan. California's population continues to grow, and southern California is a desirable destination for much of that growth. As part of the path forward, the LOSSAN Corridor agencies have identified their collective goal of increasing the use of all forms of passenger rail service in the corridor and to capture an increasing share of the total corridor travel market on rail. The member agencies have also identified a number of risks and concerns that are associated with reaching those goals and the ultimate creation of a local JPA management team. It is the intent of this implementation plan to identify and address those risks based on the best information currently available.

Management Options, Costs and Risk Analysis

This report has identified three organizational/management approaches for the LOSSAN Corridor, these approaches include:

1. Do nothing - Caltrans DOR assumes full management and responsibility for the Pacific Surfliner intercity service based on the implementation of PRIIA;
2. Authorize a JPA to oversee the Pacific Surfliner service through contracts with an existing JPA member agency to serve as the Managing Agency (with locally-based dedicated rail staff); or
3. Authorize a JPA to oversee the Pacific Surfliner service through contracts with a new, independent entity to serve as the Managing Agency (with locally-based dedicated rail staff).

Leaving the administrative management within Caltrans DOR is projected to cost approximately $4.7 million per year, slightly more than that estimated for the creation of a local JPA that contracts with a member agency. However, this approach minimizes financial risk to the LOSSAN Corridor member agencies, but it does not allow for or improve the ability of the corridor member agencies' to influence, facilitate or improve service quality/quantity and scheduling coordination, nor would it foster or improve the cost-effectiveness for the provision of rail services and combined marketing efforts within the corridor.

Contracting with an existing agency to handle the day-to-day management responsibilities is estimated to cost approximately $4.4 million per year, the most cost-effective option of the three presented and would allow for greater coordination, control and cost-effectiveness for the provision and rail services in the LOSSAN Corridor. Lastly, contracting with an independent agency to handle day-to-day management is estimated to cost approximately $5.2 million per year and would provide the same changes regarding coordination, control and cost-effectiveness as an existing agency.

The Capitol Corridor in northern California has provided a model of what an effective local JPA management team can accomplish with existing state resources, on which the above estimates were modeled. The existence of parallel commuter rail services over much of the LOSSAN Corridor, and the fact that most of the corridor is publicly owned, presents an opportunity for the transportation agencies along the LOSSAN Corridor to jointly undertake the administrative management of this intercity passenger rail service and better integrate that service with enhanced commuter rail service to accomplish the stated goals of the LOSSAN Board of Directors.

If no action is taken, full responsibility for the administrative management of the Pacific Surfliner service will rest with Caltrans DOR per Section 209 of PRIIA. As noted previously, DOR has only two full time staff assigned to management of the Pacific Surfliner service and a total of approximately ten full-time-equivalent (FTE) positions involved in its management. However, DOR has indicated that due to the state budget conditions, at least 6 of these FTEs are likely to be eliminated within the DOR structure, reducing the remaining Pacific Surfliner management capability at DOR by over half.

Legislation

At their January 25, 2012, meeting, the LOSSAN Board of Directors approved sending the draft 'spot', or placeholder, legislation for review by California's Legislative Counsel. The Board of Directors and member agency CEOs continue to develop a final draft version. If/when enacted, this legislation will provide state authority to create and sustain a local JPA. The language in this legislation must ensure that the state will continue its level of financial support for the Pacific Surfliner service in an annual amount necessary to sustain existing service levels under PRIIA. Language under development is permissive.

Furthermore, provisions in the ITA would allow the dissolution of the JPA with administrative management returning to the state, if the level of state funding allocated to the JPA is no longer adequate to sustain current service levels. While there is no past precedent of inadequate annual funding allocation levels, given the current financial condition of the state the issue and associated risk should not be dismissed and has been raised as a major concern by the LOSSAN Board.

Regional Actions

Once legislation is approved and signed by the Governor, there are several steps necessary for the implementation of a local authority and transfer of the authority for the Pacific Surfliner service from the state to the JPA. First, a Memorandum of Understanding (MOU) between and among the LOSSAN Member Agencies spelling out roles and responsibilities will need to be approved. Changes to the JPA's joint exercise of powers agreement and bylaws and subsequent approval by all JPA members will also be required.

It is recommended that the professional railroad staff hired to perform administrative management functions for the JPA be housed in an existing LOSSAN member agency (the Managing Agency) as the most efficient and cost-effective means of implementing locally based, customer-focused intercity passenger rail service management.

The first task of the Managing Agency once the JPA is created and the JPA railroad leadership team has been hired, would be to negotiate and finalize the ITA with Caltrans DOR. Following the ITA being in-place, the next major task will be negotiating an initial operating contract with Amtrak (again, similar to the annual operating contract negotiated between the CCJPA and Amtrak), and it is also recommended that in both the ITA and Amtrak negotiations that the existing Amtrak-owned Pacific Surfliner fleet (locomotives and coaches) be acquired by Caltrans-DOR. Such action will put the LOSSAN Corridor service on the same basis as the San Joaquin service and Capitol Corridor service in Northern California where the trains are owned by the State.

The LOSSAN Board of Directors has taken serious steps towards a new vision for the corridor's passenger rail services and is committed to reaching consensus in terms of its future. The opportunity for a greater level of regional cooperation to deliver more attractive and cost-effective passenger rail services for Southern and

Central Coast California exists now. Visionary leadership and political will can seize this opportunity and improve the LOSSAN Corridor passenger rail services for generations to come.

Next Steps

Should the LOSSAN Board of Directors decide to pursue the authority to manage the Pacific Surfliner intercity service, the following is a summary of the next steps:

1. Seek LOSSAN Board and member Agency CEOs concurrence to begin steps to form a JPA (support in concept was authorized by the Board on August 24, 2011);
2. Seek legislation to obtain state authorization to authorize a JPA (initial action taken by the LOSSAN Board and CEOs on January 25, 2012);
3. Upon enactment of state authorization, a JPA agreement would be drafted and each member agency would need to take independent action to join the JPA;
4. Upon action by each member agency, a locally-based JPA would be created between and among the LOSSAN member agencies for the administrative management of the LOSSAN Corridor intercity passenger rail service;
5. Select or create a Managing Agency; MOU to be signed between each member agency and the Managing Agency;
6. Managing Agency hires the railroad management staff for the JPA ;
7. Negotiate an Interagency Transfer Agreement (ITA) with Caltrans; and
8. Negotiate an initial operating contract with Amtrak, including ownership options for the rolling stock.

It is recommended that the professional railroad staff hired to perform this administrative management function for the LOSSAN Board be housed in an existing LOSSAN member agency (the Managing Agency) as the most efficient and cost-effective means of implementing locally based, customer-focused intercity passenger rail service management.

Central Coast California exists now. Visionary leadership and political will can seize this opportunity and improve the LOSSAN Corridor passenger rail services for generations to come.

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2. Seek legislation to obtain state authorization to authorize a JPA (initial action taken by the LOSSAN Board and CEOs on January 25, 2012);
3. Upon enactment of state authorization, a JPA agreement would be drafted and each member agency would need to take independent action to join the JPA;
4. Upon action by each member agency, a locally-based JPA would be created between and among the LOSSAN member agencies for the administrative management of the LOSSAN Corridor intercity passenger rail service;
5. Select or create a Managing Agency; MOU to be signed between each member agency and the Managing Agency;
6. Managing Agency hires the railroad management staff for the JPA ;
7. Negotiate an Interagency Transfer Agreement (ITA) with Caltrans; and
8. Negotiate an initial operating contract with Amtrak, including ownership options for the rolling stock.

It is recommended that the professional railroad staff hired to perform this administrative management function for the LOSSAN Board be housed in an existing LOSSAN member agency (the Managing Agency) as the most efficient and cost-effective means of implementing locally based, customer-focused intercity passenger rail service management.

Appendices

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A. Stakeholder Outreach Meetings and Public Involvement Program

Stakeholder Outreach Meetings		
Agency	**Meeting Date**	**Attendees**
Amtrak	January 18, 2011	Pat Merrill, Jonathan Hutchison, Bill Duggan
Caltrans DOR	January 18, 2011	Marty Tuttle, Bill Bronte, Leo Hoyt, Lea Simpson
LACMTA	September 13, 2010 October 6, 2010	Alex Clifford, Art Leahy
NCTD	September 16, 2010	Matt Tucker, Brett Rekola, Tom Lichterman, Angela Miller
OCTA	September 15, 2010	Darrell Johnson
RCTC	February 16, 2011	Sheldon Peterson
SANDAG	September 14, 2011	Gary Gallegos, Muggs Stoll, Jim Linthicum, Bill Prey, Linda Culp, Danny Veeh
SBCAG	October 6, 2010	Jim Kemp, Scott Spaulding
SCAG	October 4, 2010	Hasan Ikhrata, Doug Williford, Naresh Amatya, Matt Gleason
SCRRA	January 19, 2011	Dennis Marzec, Gray Crary, Mark Waier
SDMTS	September 16, 2010	Paul Jablonski, Sharon Cooney
SLOCOG	October 5, 2010	Pete Rodgers, Ron DiCarli
VCTC	March 31, 2011	Mary Travis, Darren Kettle

Public Information

Below is a listing of the meetings held to provide the public with informational updates and opportunities to review and comment on the various deliverables associated with this plan. In addition, the project fact sheet is attached, and along with additional related information, is available at www.lossan.org.

LOSSAN Public Meetings			
Meeting	**Meeting Date**	**Location**	**Topic(s)**
Board of Directors	September 30, 2010	San Luis Obispo	Short Term Improvements, Status Update
Technical Advisory Committee (TAC)	October 14, 2010	San Diego	Short Term Improvements
Board of Directors	October 27, 2010	Los Angeles	Short-Term Improvements
TAC	November 19, 2010	Los Angeles	Short-Term Improvements, Status of Stakeholder Outreach
Board of Directors	December 15, 2010	Los Angeles	Stakeholder Outreach, Short-Term Improvements
Joint Board/TAC	January 19, 2011	Los Angeles	Short-Term Improvements, Overall Status Report
TAC	February 16, 2011	Los Angeles	Fact Sheet, Short-Term Improvements
TAC	March 10, 2011	Los Angeles	Short-Term Improvements
Board of Directors	March 30, 2011	Los Angeles	Overall Status, Short-Term Improvements
TAC	April 14, 2011	Los Angeles	Overall Status, Short-Term Improvements, Business Case
Board of Directors	April 29, 2011	Santa Barbara	Overall Status, Short-Term Improvements, Governance
TAC	June 9, 2011	Los Angeles	Business Case, Short-Term Improvements
Board of Directors	June 22, 2011	Oceanside	Overall Status, Short-Term Improvements, Business Case
TAC	July 14, 2011	Los Angeles	Business Case, Short-Term Improvements
Board of Directors	July 27, 2011	Los Angeles	Overall Status, Business Case, Short-Term Improvements, Governance

LOSSAN Public Meetings			
Meeting	**Meeting Date**	**Location**	**Topic(s)**
Board of Directors	August 24, 2011	Orange	Business Case, Governance
TAC	August 31, 2011	Los Angeles	Short-Term Improvements, Business Case, Governance
Board of Directors	September 28, 2011	Los Angeles	Overall Status, Short-Term Improvements, Business Case, Governance
TAC	October 13, 2011	Los Angeles	Governance, Business Case, Short-Term Improvements
Board of Directors	October 26, 2011	Orange	Overall Status, Goverance, Business Case, Short-Term Improvements
TAC	November 3, 2011	Los Angeles	Governance, Business Case, Short-Term Improvements
Board of Directors	November 16, 2011	Los Angeles	Overall Status, Governance, Business Case, Short-Term Improvements
TAC	December 1, 2011	Los Angeles	Governance, Business Case, Short-Term Improvements
Board of Directors	December 14, 2011	Los Angeles	Overall Status, Governance, Business Case, Short-Term Improvements
TAC	January 12, 2012	Los Angeles	Governance, Short-Term Improvements
Board of Directors	January 25, 2012	Orange	Governance, Short-Term Improvements
TAC	February 9, 2012	Los Angeles	Draft Report
Board of Directors	February 29, 2012	Los Angeles	Revised Draft Report
TAC	March 8, 2012	Los Angeles	Project Priority List and Revised Draft Report
Board of Directors	March 30, 2012	Santa Barbara	Approval of Final LOSSAN SIP Report

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LOSSAN CORRIDORWIDE STRATEGIC IMPLEMENTATION PLAN

FACT SHEET

LOSSAN

"...one of the busiest intercity passenger rail corridors in the nation..."

The Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor Agency seeks to increase ridership, revenue, capacity, reliability, and safety on the coastal rail corridor from San Diego to Los Angeles to San Luis Obispo. This is Amtrak's second busiest rail corridor behind the Northeast Corridor and is shared with Metrolink and COASTER commuter rail and BNSF Railway and Union Pacific freight services.

LOSSAN member agencies are the rail owners and operators, regional transportation planning agencies, and metropolitan planning organizations along the 351-mile corridor. The California Department of Transportation and Amtrak also are members. Each agency has signed a Memorandum of Understanding (MOU) to work cooperatively on the Strategic Implementation Plan.

In 2009, the LOSSAN Joint Powers Board developed the following vision for the corridor with these objectives:

» **Service Expansion**—both to enhance the existing travel market and introduce service to underserved/unserved markets.

» **Integrated Services**—including future high-speed rail service and improved connections between rail services at major hubs such as Los Angeles Union Station (LAUS).

» **Enhanced Connections**—including feeder bus and connector services, first- and last-mile services, and improved connections with long-distance services and thruway bus service.

» **Corridorwide Capital Program**—prioritized corridorwide based on future service needs and the business evaluation.

» **Integrated Fare Policy**—including common fare media, electronic collection system, and corridorwide Rail2Rail program.

» **Enhanced Customer Experience**—including one Web site for rail information, trip planner, WiFi, and other related short-term/quick improvements.

Key components of the Strategic Implementation Plan are:

Business Case

A business case for future service improvements will be developed based on two main components. First, detailed passenger rail ridership forecasts will be developed for a number of key service alternatives, including local or commuter passenger rail service, intercity service, and future high-speed passenger rail services in the corridor. Second, detailed operations modeling analysis will be completed on these service scenarios.

Preferred Service Plan

Based upon the business case, a preferred service plan identifying the capital needs and organizational options will be developed. This plan will include the development of a prioritized corridorwide capital program that will address the shared vision for the corridor.

Corridorwide Implementation Strategy

The emphasis of the later phase of work will be to develop an implementation strategy, including an appropriate institutional and organizational structure for the success of the LOSSAN corridor.

(*Continued on reverse*)

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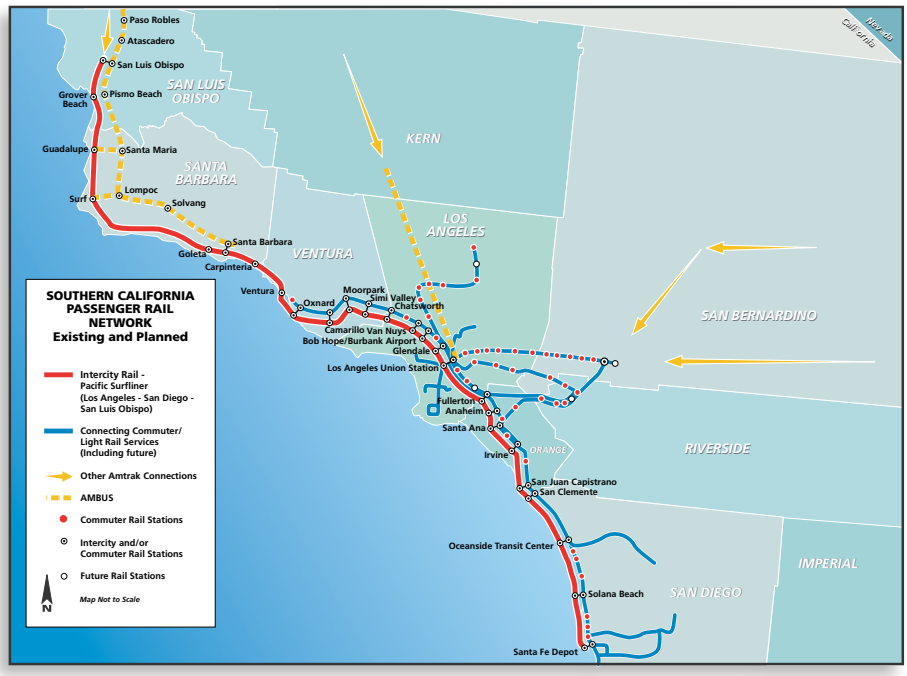

Completion of Short-Term Service Improvements

A number of short-term, or quick, service improvements that have been identified by LOSSAN member agencies will be pursued In parallel with the Strategic Implementation Plan:

1. Consolidated LOSSAN Corridor Timetable
2. Online Trip Planner
3. Electronic Passenger Information System
4. Amtrak Distribution of Metrolink Info
5. On-Train Information
6. Orange County Station Signage
7. San Diego Signage
8. LAUS Information Brochure
9. Freeway Changeable Message Signs
10. 511 Information
11. Rail Connections
12. Additional Midday Service
13. Mutual Aid Agreements
14. Minimization of Dwell Times
15. Connecting Transit/Ticketing
16. Joint Ticketing
17. Schedule Changes on Local Transit
18. Joint Marketing
19. Free Transfers
20. Better Airport Connections
21. Amtrak Bus and Metrolink Connections
22. Wi-Fi at Stations
23. LA–San Diego Limited Stop Express Service
24. Rail2Rail Program Corridorwide
25. Commuter Service to Underserved Markets
26. Ventura to Santa Barbara Service
27. Coast Daylight Service (long-term)

Public Involvement and Outreach

Throughout this process, regular updates will be provided at public meetings of the LOSSAN Joint Powers Board and Technical Advisory Committee. In addition, presentations will be made to stakeholders as needed. Meeting schedules and more information are available at ***www.lossan.org***.

Schedule

The following are milestones for the Strategic Implementation Plan:

Business Case	Dec. 2011
Preferred Service Plan	Dec. 2011
Implementation Strategy	Dec. 2011
Quick Improvements	Jan. 2012
Study Conclusion	Feb. 2012

LOSSAN Members

California Department of Transportation (Caltrans)

Los Angeles County Metropolitan Transportation Authority (LACMTA)

North County Transit District (NCTD)

Orange County Transportation Authority (OCTA)

San Diego Association of Governments (SANDAG)

San Diego Metropolitan Transit System (MTS)

San Luis Obispo Council of Governments (SLOCOG)

Santa Barbara County Association of Governments (SBCAG)

Ventura County Transportation Commission (VCTC)

EX-OFFICIO MEMBERS:

Amtrak

California High-Speed Rail Authority (CHSRA)

Riverside County Transportation Commission (RCTC)

Southern California Association of Governments (SCAG)

ADDITIONAL TECHNICAL ADVISORY COMMITTEE MEMBERS:

Burnlington Northern Santa Fe (BNSF)

California Public Utilities Commission (CPUC)

Southern California Regional Rail Authority (SCRRA)

Union Pacific (UP)

B. Detailed Quick Improvements List for the LOSSAN Corridor

Legend
Completed Improvements
Scheduled for implementation
Moving forward but some unresolved issues
Longer to implement than first envisioned

STATUS OF SHORT-TERM IMPROVEMENTS

Complete	Short-Term Improvement	% Complete	Implementing Agency	Status
☑	On-line Trip Planner	100%		Complete
☑	Orange County Station Signage	100%		Complete
☑	Union Station Central Information Booth/Brochure	100%		Complete
☑	511 Information	100%		Complete
☑	Rail Connections	100%		Complete
☑	Joint Marketing	100%		Complete
☑	L.A.–San Diego Limited Stop Express Service	100%		Complete
☑	On-Train Information	100%		Complete
☑	Amtrak Bus and Metrolink Connections	100%		Complete
☑	Minimize Dwell Times	100%		Complete
☑	Freeway Changeable Message Signs	100%		Complete
☐	San Diego Station Signage	75%	NCTD	Oceanside way finding signage program will be installed in Jan/Feb 2012
☐	Consolidated LOSSAN Corridor Timetable	65%	Caltrans, Amtrak, Metrolink, NCTD	Operators will launch consolidated timetable targeted for April/May 2012
☐	Commuter Service to Underserved Markets	60%	Metrolink, NCTD	San Diego to Orange County through commuter service to launch in 2012
☐	Ventura to Santa Barbara Service	65%	SBCAG, VCTC, Metrolink, UPRR, Caltrans	A lot of momentum but trackage rights, capital improvements, and funding agreements must be formalized
☐	Improved Distribution of passenger information at joint stations	60%	Caltrans, Amtrak, Metrolink, NCTD, local jurisdictions, station owners	A station assessment was completed in Fall 2011. Improvements will be dependent on each station operator.
☐	Better Airport Connections	50%	Amtrak, Metrolink, LAWA	Metrolink and LAWA are currently finalizing the agreement for transfers to the FlyAway bus service.
☐	Rail 2 Rail Program Corridorwide	40%	Metrolink, Caltrans	Negotiations continue between Caltrans/Amtrak and Metrolink.
☐	Mutual Aid Agreements	50%	Caltrans, Amtrak, Metrolink, NCTD	Mutual Aid may be formalized as part of the new governance structure
☐	Free Transfers – Transit Transfer expansion	40%	Caltrans, Local Transit Operators	Mechanisms in place but currently state lacks funding to expand program
☐	Additional Midday Service	30%	Metrolink, OCTA	No timeframe set for Orange County service expansion program
☐	Electronic Passenger Information System	20%	Metrolink, Amtrak	Dependent on PTC rollout
☐	Joint Ticketing	20%	Amtrak, Metrolink, NCTD	E-ticketing on Surfliner Trains in 2012. No plans to integrate fares among services.
☐	Schedule Changes on Local Transit	10%	Amtrak, Metrolink, NCTD, Local Transit Operators	No plans to base local transit schedule changes on train schedule changes.
☑	Wi-Fi at Stations	N/A		Dropped

Consolidated LOSSAN Corridor Trip Planner

Original Description: Develop a LOSSAN Corridor rail trip planner with illustrative mapping, showing connections. Metrolink is currently working with Google Trip Planner to add schedules at no cost to Southern California Regional Rail Authority (SCRRA. NCTD and Amtrak should submit schedules to Google for online trip planning.

Progress Notes:

08/08: Assess Google Transit capabilities for corridor OCTA, bus services already available; Metrolink is investigating; SANDAG to check relative to Regional 511 System. Need to discuss maintenance issues/updates; need to develop budget.

10/08: OCTA provided status report at LOSSAN TAC meeting.

08/09: NCTD is in final testing with Google Transit.

10/09: NCTD schedules and routes are now available on Google Transit trip planning Web site. Currently, Metropolitan Transit System (MTS), NCTD, OCTA, Metro, Metrolink, San Luis Obispo Transit, Santa Barbara Metropolitan Transit District, and Amtrak Pacific Surfliner (Santa Barbara to San Diego) are now available on Google Transit, allowing intercity and interagency trip planning.

04/10: All of the California Intercity Passenger Rail Corridors are now on Google Transit on-line trip planning service. Caltrans and Amtrak are working on adding the Amtrak Thruway Motorcoach Service to Google Transit.

01/11: The online trip planner is complete.

Actions Required for Implementation: COMPLETE

Orange County Station Signage

Original Description: With regard to directional signage, OCTA should work with local jurisdictions with stations to ensure adequate signage is in place. With regard to station signage, Amtrak and Metrolink should work together with LOSSAN Corridor public transportation agencies to ensure passenger information is located optimally per location for the benefit of all train riders. The potential for Metrolink personnel to provide Surfliner information via the Metrolink blue station phone also should be explored.

Progress Notes:

08/08: Additional signage has been installed showing which track to use, other information.

01/09: OCTA is proposing one integrated rail services sign for stations.

04/09: OCTA completed pilot program and is currently working with partner agencies to finalize.

08/09: OCTA continues to work with Orange County station cities to finalize and plans on moving forward with production (OCTA) and installation (City) in October/November.

11/09: OCTA has agreements with Orange County station cities and is now in the approval process with Caltrans Headquarters.

02/10: Designs have been approved and signs are being fabricated; installation will be in eight of ten corridor cities.

03/10: The signs will be delivered on March 22. Cities will have 90 days to install.

04/10: Orange County station cities have started to install signs.

11/10: The Orange County Station Signage installation has been completed.

Actions Required for Implementation: COMPLETE

Central Information Booth at Los Angeles Union Station

Original Description: Metrolink, Metro, and Amtrak/Caltrans should jointly investigate the potential for locating and staffing a central information booth or booths at high foot-traffic points in Los Angeles Union Station (LAUS); e.g., at east and west portals of the under track pedestrian tunnel. The potential of selling both Metrolink and Amtrak tickets at the booth(s) also could be explored.

This improvement evolved into development of an informational brochure on the various services available at LAUS (also available at *www.lossan.org*).

Progress Notes:

08/08: Assess possibility of providing same information at each of the three locations, not just at a central booth. Need formal information-sharing agreement at each location.

12/08: Metro and Amtrak staff conducted walk thru at station.

04/09: Metro staff is heading up a group of LOSSAN TAC members and rail advocates to review this item. One suggestion this group will discuss is the possibility of an informational brochure on all rail services at Union Station and where to find detailed information.

06/09: Metro marketing staff is currently developing a draft informational brochure, which should be available for LOSSAN review early this fall.

10/09: Metro marketing staff is anticipating the release of the information brochure in spring 2010.

02/10: Information brochure is under design and should be available for review in the next two months.

05/10: The information brochure is delayed due to new vendors that are coming to Union Station in the summer. In addition to the brochure, enhanced station signage also will be installed.

07/10: Metro marketing staff has developed a Draft Union Station brochure and map and are seeking comments from the LOSSAN TAC and Board before they are made available to the public.

09/10: Metro marketing staff has finalized the Union Station brochure and map.

11/10: The station maps and brochures will be posted in the next few weeks after all of the new station vendors open.

1/11: Brochures have been distributed to Metro, Metrolink, and Amtrak representatives for distribution to answer questions regarding services at LAUS. Wayfinding maps have been printed. Metro has been working with Katellis on locations and placement.
This item is complete.

Actions Required for Implementation: COMPLETE

511 Information

Original Description: Transit agencies in the LOSSAN Corridor desirous of having their transit information included in the Los Angeles area 511 deployment should contact Metro staff at (213) 922-2951. Also, Amtrak and Metrolink information should be made available via the 511sd phone system.

Progress Notes:

08/08: Investigate Google Trip Planner.

01/09: Metro staff to provide update at next LOSSAN TAC meeting.

04/09: Metro staff provided an overview of the 511 system for the Los Angeles area, to include rail information. The system is expected to launch in mid-2009.

04/09: LOSSAN Board of Directors requested a future presentation on 511 for other areas of the corridor.

12/09: Metro launched 511 as a Beta System 11/23/09. The public launch will take place in early 2010.

03/10: Metro will launch the full scale 511 system in summer 2010.

05/10: OCTA and Caltrans District 12 are conducting an inventory of signage for 636-RIDE and 1-800-COMMUTE and will replace with 511 signs.

07/10: Metro's 511 system went online in June. The Web site has information and links to all Los Angeles County transportation options, including Metrolink and Amtrak. The Web site address is http://go511.com/default.aspx.

07/10: OCTA and Caltrans District 12 expect the inventory of signage will be complete by the end of July. All of the signs will be replaced with 511 signage.
11/10: San Diego, Orange, Los Angeles, Ventura, and San Luis Obispo Counties all have operational 511 systems with train information. Santa Barbara County is developing a traveler information Web site that will have train information.
01/11: Santa Barbara is receiving proposals for the development of the traveler information Web site. This system should be in place in the summer of 2011.
GOAL: Short-term – Traveler information systems including rail options. Long-term – One source of traveler information.
04/11: This item is largely complete.

Actions Required for Implementation: COMPLETE

Rail Connections

Los Angeles Connections Original Description: Metrolink and Amtrak/Caltrans should continue to consider potential connections with each schedule adjustment made in future years in the context of other operating requirements; e.g., crew hours, fuel, train consists, mainline operating slots, etc. Key to this effort will be understanding the current connection policies of the operators and developing ones that reflect an effort to integrate different operators' services in the corridor. Further, the agencies should promote the existing connectivity of trains. One tool to promote connections would be the Consolidated Corridor Timetable discussed above.

Oceanside Connections Original Description: (A) Metrolink, NCTD/COASTER, and Amtrak/Caltrans should continue to consider potential connections with each schedule adjustment made in future years in the context of other operating requirements, as noted above. Further, the agencies should promote the existing connectivity of trains. One tool to promote connections would be the Consolidated Corridor Timetable discussed above. (B) A study should be undertaken to analyze the market for rail travel through Oceanside.

Progress Notes:
08/08: Review in Strategic Assessment, including market research (current and future markets). Access relative to Rail 2 Rail program.
01/11: Metrolink is exploring the opportunity for increased connectivity with connections at LAUS. They are working on a revised schedule that may include additional connections. These changes will be shown in the new schedule in May 2011.
Additional connectivity will be part of the strategic assessment business plan.
The measure of success will be the successful implementation of the coordinated corridor.
06/11: Initial work on the Business Case modeling identified a few 'missed connections,' most by only minutes. These have been provided to Metrolink and COASTER staff with the intent that small adjustments in the train schedules can provide sufficient time for passengers to make connections. The Metrolink schedule change on July 5 will fix the missed connection between Metrolink train 656 and COASTER train 692.
07/11: Near-term easy fixes for missed connections were implemented as planned by Metrolink on July 5, 2011, Timetable. Metrolink announces transfer information upon arriving at LAUS.
07/11: This item is complete.

Actions Required for Implementation: COMPLETE

Joint Marketing by LOSSAN Corridor Operators

Original Description: Metrolink, NCTD/COASTER, and Amtrak/Caltrans should discuss the opportunities for directed joint marketing for services to special events, as suggested above. Furthermore, Metrolink and Amtrak/Caltrans should explore creative ways to develop the potential of Rail 2 Rail® in the LOSSAN Corridor.

Progress Notes:

08/08: LOSSAN TAC recommends regular quarterly meetings between corridor agencies marketing staff.

10/08: Amtrak does not have staff support for additional quarterly meetings at this time.

04/09: LOSSAN staff will manage this project and contact Amtrak marketing staff and others regarding an initial conference call.

01/11: A conference call will be scheduled between SANDAG, NCTD, Amtrak, Caltrans, and SCRRA regarding this. This call will move this item forward.

02/11: LOSSAN staff will organize an initial joint marketing staff meeting to be held in conjunction with the LOSSAN TAC meeting on March 10, 2011, in Metro.

04/11: Marketing staff from each LOSSAN corridor agency met in March to coordinate corridorwide marketing efforts. Quarterly meetings have been scheduled and regular reports will be provided to the LOSSAN Board.

Actions Required for Implementation: COMPLETE

Los Angeles–San Diego Limited Stop Express Service

LOSSAN Board Recommendation: Implement limited stop Pacific Surfliner express service.

Progress Notes:

09/10: The results of the modeling were discussed at the LOSSAN TAC. Amtrak is moving forward with the concept.

11/10: Additional modeling was completed that showed favorable results.

01/11: This service is scheduled for February 2011.
GOAL: Implement limited stop express service.

02/11: Staffs from Caltrans, Amtrak, SANDAG, NCTD, MTS, Los Angeles Metro, and Metrolink are coordinating marketing and public outreach activities for the service launch on February 15, 2011.

04/11: Initial express service implemented 2/15/11. This task is complete.

06/11: Additional express trains are envisioned in the longer term and are being modeled as part of the Business Case.

10/11: Ridership continues to build on the express train, but usage by Rail 2 Rail riders is constraining commensurate revenue growth, along with less than reliable on-time performance.

11/11: Amtrak has completed a six-month progress report, primarily due to the recurring poor on-time performance of the route.

Actions Required for Implementation: COMPLETE

On-Train Information

Original Description: Continue to encourage on-board explanation of delays on Metrolink, COASTER, and Surfliner trains. This improvement evolved to providing WiFi services onboard trains.

Progress Notes:

08/08: Need to define what level of information is needed and how frequent to provide.

12/08: San Luis Obispo Council of Governments (SLOCOG) has contacted Capitol Corridor Joint Powers Authority (CCJPA), whose research has raised questions regarding technical details and whether or not advertising as a revenue source is workable. CCJPA also investigating onboard Wi-Fi and will follow that effort for the Surfliners.

12/09: Wi-Fi internet access is being installed on all Surfliner trains in the business class cars. Installation is anticipated to be completed by February 2010.

01/10: By the end of February, flat panel displays will be installed onboard that will show news feeds, movies, and possibly advertisements.
02/10: Most Surfliner trains installed with Wi-Fi in business class; monitor installation will be complete in late spring.
03/10: Amtrak is working out technical issues with the onboard Wi-Fi.
05/10: Amtrak is improving the onboard Wi-Fi by installing exterior antennas and reengineered the software to automatically reset if there is a problem.
06/10: Exterior antennas have been installed on the Surfliner business class cars that improve reliability of the onboard Wi-Fi.
06/10: Amtrak is installing new point-of-sale equipment on the Surfliner café cars that will improve the food and beverage concessions service.
01/11: This item is substantially completed. The reliability is being improved.
03/11: The current WiFi system on Surfliner trains has been discontinued. A national system is being implemented that is in use as a pilot program. This should be installed by the end of the year on Surfliner trains.
04/11: Initial West Coast tests are being conducted in Northern California
06/11: Implementation is ongoing in Northern California. LOSSAN should advocate that Pacific Surfliner should be the next application. A progress report to the LOSSAN TAC and Board on the Northern California experience would be in order by Amtrak/CCJPA after they have three or four months experience.
Next Steps: monitor progress in Northern California and press for installation in Southern California as soon as possible.
09/11: WiFi equipment is being installed on Surfliner cars.
11/11: Service was launched statewide.

Actions Required for Implementation: COMPLETE.

Amtrak Bus and Metrolink Coordination

Original Description: Metrolink and Amtrak/Caltrans should discuss promotion of Metrolink/Thruway bus connections in their respective schedules. They also should discuss the potential for Thruway buses for making more stops so as to increase their utility for Metrolink riders.

Progress Notes:
08/08: Caltrans and Amtrak will discuss this further.
01/11: This will require meetings with operational and marketing staff to move forward. Strategic assessment will establish a list of individuals to be involved to move this forward.
04/11: Amtrak Thruway bus schedules have been integrated into the initial joint corridorwide Timetable.
06/11: The first course of action is to establish the high/low levels of ridership for connecting intercity passengers, especially to/from San Joaquin trains at Bakersfield, and to then plan the connections to be as time-friendly (convenient) as possible. The Business Case modeling effort is identifying Surfliner schedule changes that would improve the connecting times for bus passengers transferring from Bakersfield trains.
07/11: Business Case Train Schedule for 2014 is addressing improvement in these Bakersfield bus connections, resulting in significantly reduced 'waiting times' for most intercity bus riders, making connections to trains at Los Angeles Union Passenger Terminal.
GOAL: Reduce connecting times for rail passengers transported by bus from Bakersfield.
07/11: This item can now be considered 100 percent complete, with implementation in the near-term service plan of 2014.
01/12: January 9, 2012 schedule change improved Pacific Surfliner/San Joaquin bus connections.

Actions Required for Implementation: COMPLETE.

Minimize Dwell Times

Original Description: All operators in the corridor should investigate the potential for any improvements in the safe and expeditious boarding and alighting of passengers, which would help minimize dwell times consistently and allow scheduled run times to be reduced.

Progress Notes:

08/08: Amtrak currently is assessing recovering times.
Another solution might be to continue the station ambassador program to assist passengers and an informational campaign regarding how to handle baggage.

01/11: An assessment revealed that to have the resources for station ambassadors is cost prohibitive. The schedule has been developed to incorporate these dwell times to avoid delays. Looking for LOSSAN TAC and Board direction.

02/11: This was discussed with the Board at the 01/2011 meeting. It was referred back to the LOSSAN TAC for the 02/2011 meeting. A follow-up report will be given to the Board.

03/11: Amtrak does not see an advantage in cutting dwell times. This could negatively affect on-time performance. This will be addressed again once the modeling is completed and the business plan develops.

04/11: Amtrak is considering a survey of dwell times by station for weekdays and weekends.

06/11: Caltrans has expressed concern that a reduction in current 'dwell times' could worsen on-time performance. However, Amtrak and Union Pacific had a similar opinion when this was proposed on the Capitol Corridor. After a field survey, unneeded dwell time at stations was eliminated. The Capitol Corridor has both shorter dwells and shorter scheduled travel time AND the best on-time performance of any Amtrak service in the nation. Staff is working with Amtrak to conduct a dwell time survey.

09/11: Amtrak conducted a dwell time survey and determined that dwell times are not excessive. However, some dwell times will be reduced during the next schedule change.

01/12: January 9, 2012 schedule change reduces Pacific Surfliner dwell times.

Actions Required for Implementation: COMPLETE.

Freeway Changeable Message Signs

Original Description: Amtrak/Caltrans, NCTD/COASTER, and Metrolink should discuss the potential for putting train information on freeway Congestion Management System (CMS) facilities with Caltrans Districts having CMS in the LOSSAN Corridor.

Progress Notes:

08/08: Check how this is working in the Bay Area.

11/08: Rail staff inquired with Caltrans operations and needs some additional details from the LOSSAN TAC in terms of the type of messages, etc., before proceeding.

01/09: Division of Rail (DOR) staff will contact Caltrans District 4 to review the specific information that is posted and report back.

04/09: DOR staff has provided District 4 contact to LOSSAN staff for follow-up. Both SANDAG and OCTA staff will discuss as a pilot program with Districts 11 and 12.

06/10: SANDAG has identified freeway message signs on the I-5 corridor that provide opportunities for displaying train information. SANDAG is working with District 11 and OCTA is working with District 12 on proposals that will be submitted to Caltrans Headquarters for approval.

01/11: Determine the feasibility on the I-5 corridor in San Diego and Orange Counties and implement accordingly.

02/11: In San Diego, SANDAG and Caltrans District 11 staffs have discussed this. SANDAG is currently reviewing the map of current sign locations to determine which may be eligible and then will discuss with District 11.

03/11: OCTA met with Caltrans the week of February 21, 2011, to discuss utilizing the CMS to direct freeway drivers to train stations. A proposal is being developed and a meeting is scheduled in the near future. LOSSAN staff is collecting an inventory of sign locations throughout the corridor, including Caltrans Headquarters on the discussion will be a benefit in implementing a statewide system.

04/11: The rail operators need to craft succinct messages for a variety of circumstances covering roadway and rail operations in the event of the need for Caltrans to communicate with highway travelers who may need rail information as a travel option.

06/11: Caltrans is receptive and has asked for suggested language to use these electronic signs to assist drivers in identifying rail travel options, especially in the event of an accident or other highway blockage. Marty Tuttle of Caltrans reports that they are working with their District Office Traffic Operations. Use of the electronic signage to advise driver of the rail service option is 'doable' as long as there is no 'pure marketing' text.

07/11: Caltrans and Metrolink are working to implement a pilot program at Anaheim and Fullerton. Caltrans also made efforts to promote train travel on freeway message signs during the July 16-17 closure of the 405 freeway.

08/11: Caltrans is close to implementing a pilot program along I-5 between Orange and Los Angeles Counties. Signs would display train information when the freeway travel time is greater than train travel time.

11/11: Caltrans is progressing with the use of electronic highway message signs to assist motorists stuck in traffic that they have another option, the train. Orange County is likely to be the first candidate installation. Caltrans District 12 and Metrolink have agreed on the sign message and the pilot project in Orange County is progressing.

1/12: Caltrans and Metrolink implemented the variable message signs in December on highway I-5, providing motorists with train travel time compared to driving travel time. The test will be expanded to other Southern California locations.

Actions Required for Implementation: COMPLETE.

San Diego County Station Signage

Original Description: NCTD/COASTER appears to have an active program to provide directional signs. NCTD should work with local communities with stations to ensure adequate signage is in place, particularly on major streets that do not connect to/from Interstate 5 (I-5). With regard to Oceanside, Amtrak/Caltrans, Metrolink, and NCTD/COASTER should undertake a mutual conferencing or workshop process to identify both short term measures and longer term actions to coordinate information, signage, and public address announcements at that major facility.

This improvement evolved into an NCTD station wayfinding project, which will be implemented as capital improvements are implemented at the Oceanside Transit Center.

Progress Notes:

08/08: Staff level can discuss merits of static versus real-time message sign (considered to be a short-term improvement before Electronic Passenger Information System (EPIS).
Discuss combining trailblazing program ("train" signs approaching station instead of individual Metrolink, Amtrak).
Oceanside Transit Center may warrant special task force.

01/09: OCTA recommendations on signs may be applicable. Staff will coordinate.

01/11: An example of a sign has been provided to SANDAG and NCTD for review.
The team will work with NCTD to develop and prioritize sign installation for the COASTER system.
GOAL: Improved San Diego station signage as warranted.

02/11: NCTD has developed concepts for improved station signage at COASTER stations based on community surveys conducted in fall 2010. Staff is reviewing concepts with the Board this month.

06/11: The NCTD Board approved a staff recommendation to proceed on implementing station signage improvements at COASTER stations. A consultant has been selected and is under contract.

11/11: NCTD reports that new COASTER signage is being delivered and on-target to have installation completed in December 2011/January 2012.

1/12: NCTD will be installing improved way finding signage at Oceanside in January/February 2012.

Actions Required for Implementation: NCTD will complete the station signage improvements at the Oceanside Transit Center. Planned track capacity expansion at Oceanside also will impact signage.

Consolidated LOSSAN Corridor Timetable

Original Description: Develop a LOSSAN Corridor Consolidated Timetable, showing all trains in the corridor from San Luis Obispo to San Diego. The timetable should highlight potential connections between services, as discussed in the preceding section. The Timetable would be available online in an electronic format.

Progress Notes:

08/08: Need to discuss maintenance issues.

10/08: SANDAG did not receive funds for a grant application submitted to Caltrans or potential funds for the research tasks from the Federal Transit Administration's Transit Cooperative Research Program.

12/08: A placeholder was included in the SANDAG Economic Stimulus list for implementation of this and other corridor quick improvements.

08/09: NCTD, with assistance from SANDAG, is developing a work plan for this item, including a possible electronic version, by January 2010.

01/11: A meeting will be scheduled with Amtrak, Caltrans, Metrolink, and NCTD to discuss the implementation of this and the issues related to this. This meeting was to be scheduled for February 2011.

04/11: As of April 4, the meeting has not been held or scheduled between the designated agencies. However, a joint Timetable was developed as part of the LOSSAN Corridorwide Business Case. The TAC will continue to discuss this item in terms of a more customer-friendly version. A maintenance schedule also will be developed.

06/11: A consensus goal would be to have all rail schedule changes made on two dates per year, generally aligning with Amtrak's spring and fall timetable changes. To overcome the challenge and cost of production of only 'hard copy' paper Timetables, technical staff will need to investigate the concept of using a common master format/program for all agencies to electronically input schedule changes that will update the joint Timetable automatically. The LOSSAN marketing group also is investigating the format and maintenance issues.

06/11: Scheduling staff at Metrolink, COASTER, and Amtrak will coordinate their fall service change in October. TAC is to plan for common electronic version, available for the fall 2011 schedule change.

07/11: Station site visits revealed that some stations had sequential consolidated Timetables on display, identifying the "Next Train" arrival/departure by direction, and whether the train was Amtrak or commuter. Expansion and standardization to all stations is the near-term goal.

01/12: NCTD Staff has developed a draft timetable. The Joint timetable is scheduled for implementation during the next schedule change in the April/May timeframe.

Actions Required for Implementation: Amtrak, Caltrans, Metrolink, and NCTD marketing staff are developing concepts for a consolidated Timetable. Additional funding will be required for the added printing costs from the LOSSAN member agencies. NCTD will be contributing creative services and production costs.

The LOSSAN member agencies have completed 39 of the 46 station information surveys and develop recommendations for improvements. Caltrans, Amtrak, Metrolink, NCTD, local jurisdictions, and station owners will need to implement the recommendations.

Commuter Service to Underserved Markets

LOSSAN Board Recommendation: Enhance services to attract new passengers in underserved commuter markets between San Diego County and Orange County.

Progress Notes:

11/10: Alternatives for additional commuter rail service will be developed in December and first quarter 2011.

01/11: Part of the business case.

06/11: The Business Case will be identifying and evaluating commuter service to underserved markets.

07/11: The Business Case service schedule (Timetable) for 2014 has included these service improvements.

09/11: NCTD and Metrolink are developing plans to launch through commuter service north and south of Oceanside beginning as soon as spring 2012. The through special weekend Metrolink trains from Los Angeles to Solana Beach provided an opportunity to test operational coordination, and from all reports, the SCRRA and NCTD performed exceptionally well.

10/11: Operations modeling and ridership forecasting was completed on the short-term Business Case, including additional commuter trips to new markets.

11/11: Operations modeling for the long-term service plan was completed and presented to the LOSSAN Board of Directors in October. A ridership and revenue forecast is currently underway.

1/12: The 2030 ridership and revenue forecast was presented to the Board in December, staff is currently incorporating the major findings into the Strategic Implementation Plan.

Actions Required for Implementation: Metrolink and NCTD to develop an operating plan and revenue sharing agreement to operate trains through Oceanside.

Ventura to Santa Barbara Service

LOSSAN Board Recommendation: Develop new rail service between Ventura and Santa Barbara to relieve peak-period congestion on Highway 101.

Progress Notes:

09/10: Discussions are underway to have the 798/799 trains leave an hour earlier from San Diego. This would allow the intercity train to better serve commuter-friendly trips between Ventura and Santa Barbara. Modeling has been completed regarding this service.

11/10: Modeling is continuing. Caltrans DOR has indicated support of this service concept provided it makes sound business sense.

01/11: Modeling results pending LOSSAN TAC review. Included in near-term scenario of Business Case analysis.

03/11: There have been discussions between SBCAG, Metrolink, and Caltrans DOR regarding alternative methods to address this service. This is being looked at with the retiming.

04/11: Initial operating service pattern identified; layover site at East Ventura identified as preferable; initial contacts made with Metrolink regarding provision of equipment and operation of the service; contact made with Union Pacific regarding access and capital improvements required; North Goleta platform and possible stub track identified; Santa Barbara County initiated regional meeting; Caltrans is supportive of this effort and plans to funds Union Pacific Railroad requested improvements in conjunction with efforts to implement the 'Coast Daylight' between San Francisco and Los Angeles via San Luis Obispo.

06/11: Progress continues to be made. A determination is required to see whether or not an increase in current track capacity and/or other improvements are needed for a single weekday turn, and then modeling will test/confirm the performance.

Goal: Implementation by end of 2011/early 2012, in conjunction with the start of the Highway 101 reconstruction/widening.

07/11: Detailed site review was done, and no insurmountable issues revealed. Metrolink is preparing an updated operating proposal. Addressing liability insurance will be an issue, and there are options to satisfy this concern.

Some tie/surfacing work will be needed on the north leg of East Ventura Yard wye track, and Metrolink is reviewing the added layover needs. An acceptable site for the provision of a new passenger platform on a new stub-ended storage/layover track at North Goleta has been identified, and will be costed out. Coordination with Union Pacific, Metrolink, Caltrans, and the Counties of Santa Barbara and Ventura continues.

09/11: Metrolink has developed cost proposals for one train or two train operations between East Ventura and Goleta.

10/11: Union Pacific completed its internal capacity modeling and a report was submitted to SBCAG in late September, and is under review for next steps with Union Pacific. There are no 'deal killers' identified, but availability of capital funding for track capacity improvements are the key to implementation of both the Coast Daylight service and the Santa Barbara-East Ventura commuter service. Follow-up meetings with Union Pacific and SCRRA are planned.

12/11: SBCAG, Caltrans, and Union Pacific continue discussions.

Actions Required for Implementation: SBCAG and Ventura County Transit Center must coordinate on minor capital improvements at East Ventura, secure track rights with Union Pacific, develop operating plan with Metrolink, and provide operating subsidy possibly from highway mitigation funding.

Improved Distribution of Passenger Information at Joint Stations

Original Description: Metrolink, NCTD/COASTER, and Amtrak/Caltrans should consider working together to determine the best practices for providing customer information at stations.

Progress Notes:

08/08: Formal arrangement between operators/agencies needed in order to provide integrated information. Further discussion needed in terms of level of info and maintenance.

01/11: The goal is to provide more opportunities for the dissemination of information at applicable stations.

04/11: While Amtrak staff routinely answers basic service and operational questions from commuter customers as their time allows, more detailed information can only be provided by Amtrak staff when the intercity customer demands are minimal. All Amtrak stations provide a measure of connecting commuter rail and transit information, however; resources (paid or volunteer) are required in order to constantly monitor availability of all commuter rail and transit information at stations.

06/11: Volunteers provide extensive transit and Metrolink information at Santa Barbara and Van Nuys Stations already. In addition, about half of the 27 Pacific Surfliner stations have staffed stations with both local transit and Metrolink information available. The challenge is to keep that information current. LOSSAN TAC must be involved with Amtrak, Metrolink, COASTER, and rail advocacy organizations to start a 'test territory.'

07/11: During the week of June 20-24, staffed stations were visited to document the current availability of Metrolink and local transit information. Separate 'Report' has been distributed, with suggested check-list form and items to be observed. While provision of electronic Timetable/schedule information may reduce the need for 'hard copy' public Timetables at stations, printing of a consolidated, sequential Timetable for public posting at several locations at stations/platforms is essential. Examples already exist, and should be provided in a standardized, easily recognizable format at all stations. As was noted previously, the potential also exists for electronic 'kiosks' at all stations, where a customer could get comprehensive information on travel, as well as area maps, attractions, hotels, restaurants, special events, etc., in addition to train and transit information. Private 'marketing companies' may be interested in providing these kiosks at stations, as they do at hotels and airports. Again, the appearance, color, and graphics should be 'standardized' for easy recognition by customers.

09/11: LOSSAN Station Information SWAT Team Checklist surveys are being conducting in September. A final report will be completed in December.

11/11: Field surveys have been collected at all stations.

2/12: The assessment report is complete.

Airport Connections

Original Description: At a minimum, new airport connection services should be explored from the Anaheim to Los Angeles International Airport (LAX) and from the Santa Ana Station to John Wayne. Amtrak and MTS should discuss the potential for Amtrak riders getting a free transfer to the Airport Flyer for a ride to the airport, as COASTER riders can today. Also, operators should encourage the corridor airports near them to provide user-friendly links to their Web sites. A quick review of major airports' Web sites showed that San Diego, Burbank, and Orange County airports did have such links, LAX, Santa Barbara, and San Luis Obispo did not.

This improvement evolved to also include allowing Amtrak passengers to purchase Flyaway bus tickets from Union Station to LAX the same way they purchase any Amtrak California Thruway bus ticket (one transaction, but two coupons). Requires agreements on ticketing and revenue payments.

Progress Notes:

07/08: The City of Irvine is working with Los Angeles World Airports (LAWA) to implement an LAX Flyaway service at the Irvine Transportation Center.

08/08: Use San Diego work as potential pilot for a larger application.

10/09: The City of Irvine and LAWA will begin LAX Flyaway service from Irvine Station on November 16. 2009. One-way fares will be $25 with six trips in each direction per day.

12/09: SANDAG is working on advanced planning for an intermodal transit center at San Diego International Airport.

05/10: SANDAG is planning an intermodal transit center at San Diego International Airport. Possible improvements include a pedestrian bridge connecting the rail lines to the airport facility, grade separations, parking, and a high-speed rail station. The plan is will be complete by November 2010.

10/10: The Burbank-Glendale-Pasadena Airport Authority has submitted applications for construction of a $120 million Regional Intermodal Transportation Center (RITC) at Bob Hope Airport. The RITC will allow air, rail, bus, and rental car travelers to converge seamlessly at one central point.

10/10: SANDAG has completed initial planning on the Intermodal Transit Center at San Diego International Airport and will now prepare preliminary designs followed by formal environmental studies.

01/11: Irvine FlyAway is operational. The Intermodal Transportation Centers are progressing through advanced planning and scheduled for construction in 2013 (Burbank) and 2015 (San Diego). The LOSSAN TAC will check their progress periodically.

04/11: Amtrak requested to include Southern California "Flyaway" buses as part of their Amtrak ticket purchase.

06/11: Metrolink has agreed on a joint use ticket with the Flyaway bus to LAX. Amtrak has been requested to set up the LAX Flyaway service in its reservation system so that Amtrak passengers can purchase their Flyaway bus ticket as if the bus was an Amtrak California Thruway bus.

01/12: Metrolink and Los Angeles World Airports (LAWA) are in discussions to offer Metrolink monthly pass holders free transfers to LAX Flyaway buses. There are preliminary concepts in place to eventually sell LAX Flyaway tickets at Metrolink ticket.

Actions Required for Implementation: Amtrak and Metrolink must coordinate with LAWA to add the Union Station LAX Flyaway bus connection as an additional destination for rail trips. Funding agreements must be formalized.

Corridorwide Rail 2 Rail Program

LOSSAN Board Recommendation: Ensure that the Rail 2 Rail program continues, allowing monthly commuter rail pass holders to ride on Amtrak trains.

Progress Notes:

10/10: Rail 2 Rail service at various locations is being discussed. Overall Corridor efforts are not underway.

01/11: Metrolink Rail 2 Rail program currently undergoing analysis; COASTER Rail 2 Rail currently under discussions.

02/11: The Team reported the status of Rail 2 Rail at the 1/11 Board meeting. The Board referred this back to the LOSSAN TAC for further discussion.

03/11: NCTD has reached an agreement with Amtrak on their Rail 2 Rail service. This will be a separate cost to be able to use this service. The COASTER customer buys the monthly pass then buys a "step up" pass from Amtrak to use Rail 2 Rail. This has not yet been signed.

04/11: Awaiting results of Los Angeles County Metropolitan Transit Authority request to Amtrak to conduct surveys on the specific trains, which are reported to consistently have standees, and for which segment of the run that Amtrak is experiencing standees. The COASTER/Amtrak agreement has been signed and the program is scheduled to begin in June 2011.

06/11: The parties are awaiting response on the survey of impacted trains; then, an agreement will still be needed between Amtrak, Caltrans, and Metrolink.

07/11: Program has been extended on an interim basis; NCTD has completed its agreement with Caltrans for Rail 2 Rail, which will begin on August 1, 2011; Metrolink needs to conclude its agreement, but is awaiting results of an Amtrak audit, requested earlier this year.

08/11: Rail 2 Rail program is now available for COASTER passengers between Oceanside and San Diego. This task is partially complete.

08/11: Caltrans is meeting with local agencies to discuss Rail 2 Rail for Metrolink.

09/11: Amtrak will be conducting a standee assessment in September to help answer questions for the Metrolink Rail 2 Rail program.

11/11: Amtrak completed the standee assessment and provided the results to Metrolink. Agency management is currently discussing options for moving forward with the program.

Actions Required for Implementation: Metrolink and Caltrans must come to an agreement on the terms of a new Rail 2 Rail contract. Safety, overcrowding trains, and funding formulas must be decided.

Mutual Aid Agreement

Original Description: Metrolink and NCTD/COASTER should each formalize a mutual aid agreement with Amtrak/Caltrans.

Progress Notes:

08/08: Need to identify components of a formal agreement (currently, the only formal agreement is between the NCTD and SCRRA; consider including in Rail 2 Rail agreement.

01/11: NCTD working with Caltrans on the Rail 2 Rail agreement that includes this language.

06/11: While no formal agreements are currently 'in place,' Amtrak, Metrolink, and COASTER do cooperate on a 'mutual aid' basis when a train of any passenger operator is disabled. As train intensity/frequency increases along the LOSSAN Corridor, it will become increasingly important for personnel of each agency to be able to reference a formal Mutual Aid Agreement in these situations. Also, COASTER and Amtrak have agreed on a Rail 2 Rail program for San Diego County, and establishing a formal Mutual Aid Agreement between Metrolink and Amtrak might be an opportunity to renegotiate the Rail 2 Rail program for the Metrolink services.

07/11: Metrolink, Amtrak, and COASTER need to formalize the procedures, terms, and conditions of their 'mutual aid' in the event of a service disruption or mechanical failure on a train. This near-term agreement can only be implemented between and among the operating entities. The action they must collectively take has been identified. Mutual Aid will be addressed with the governance structure.

Actions Required for Implementation: Caltrans, Amtrak, Metrolink, and NCTD must formalize mutual aid agreements between their agencies.

Transfers

Original Description: All transit services connecting to trains in the LOSSAN Corridor should be encouraged to offer free transfers to train riders. Cost sharing agreements, where necessary between agencies, should be developed to support maximum ease of transfers.

Progress Notes:

08/08: Need further analysis on budget impacts.

08/09: Amtrak has concluded it cannot accept the liability of honoring non-Amtrak tickets.

01/11: The question of revenue and how this will be handled logistically needs to be discussed. The goal is to integrate regional fare policy and develop common fare media that are based in part on early implementation lessons in the corridor as appropriate (electronic revenue collection).

04/11: Sample Capitol Corridor Transit Transfer agreement obtained and circulated to the LOSSAN TAC for comment and future LOSSAN Board action to implement this program as extensively as possible on the LOSSAN Corridor.

06/11: While Caltrans has established free transit transfers for LOSSAN trains in San Luis Obispo and Santa Barbara, and the mechanisms (standard contracts and procedures) exist to implement a corridorwide transit transfer program, the major obstacle to implementing this is the lack of adequate state operating funds allocated to the LOSSAN service.

07/11: The only remaining obstacle to expanding implementation of “Transit Transfers” from the intercity Pacific Surfliner customers for ‘free’ connections is provision of funding for this purpose in the state operating budget for the Surfliners.

Actions Required for Implementation: Caltrans must identify and propose an additional funding item in the intercity rail budget to expand the state’s transit transfer program, as the current budget amount for such transfers is already at capacity. If additional funding is identified and made available for this purpose, Caltrans can then execute agreements with the remainder of the local transit operators along the LOSSAN corridor.

Mid-Day Service

Original Description: Negotiate with Amtrak and Caltrans to have one or two of the mid-day Surfliner trains make added stops in Orange County, and explore Ventura County Line service additions with Los Angeles and Ventura Counties as longer term options.

Progress Notes:

08/08: Consider an exercise with a "blank canvas" rail corridor - how would services be designed from scratch?

12/08: SA will develop a service vision for review by the LOSSAN TAC and Board of Directors.

01/11: OCTA is moving forward with their plans to implement enhanced mid-day service within the coming years.
The Strategic Assessment will be looking at additional service into other segments of the Corridor with the modeling of the coordinated Corridor.
GOAL: pending discussion.

04/11: Any additional intercity service will require the procurement of additional rolling stock by the State of California and/or Amtrak.

06/11: Existing Amtrak mid-day service stopping at additional ‘local commuter’ stations impacts the operating schedules and train cycling along the entire Corridor. The Business Case model can look at this possibility, but intercity travel time on the mid-day Amtrak trains making these local stops would become significantly longer. Provision of Orange County mid-day commuter service with additional commuter frequencies is likely to remain the best option for enhanced mid-day travel choices, thereby keeping the Amtrak trains as a faster, limited stop corridor service. While the Federal Railroad Administration recently announced that California would receive federal grant funds to acquire at least 15 additional California cars for the state’s three intercity rail routes, including cars for the LOSSAN Corridor, these additional cars will not arrive for three to four years, and will likely first be used to increase capacity of existing crowded trains.

07/11: Metrolink Service Expansion Program began on July 5, 2011, with the addition of six trips on the Orange County line. More mid-day service is planned in the future.

Actions Required for Implementation: Metrolink and OCTA have identified mid-day service enhancements but no implementation timeframe has been set due to limited demand and reduced operating funds.

Passenger Information at Stations

Original Description: Given that EPIS will respond to passengers' need for train information both at stations and via the internet, no further immediate action appears necessary at this time. Once the system is in place and working, Metrolink and Caltrans should consider expanding it on an expedited basis to include Surfliner trains within Metrolink's service area.

Progress Notes:

08/08: Since May, staff has conducted monthly conference calls (LOSSAN, Metrolink, Amtrak, Caltrans, and the SLOCOG to discuss implementation and integration issues.
Need to check implementation at COASTER stations.

01/09: Staff continues to coordinate, Amtrak currently investigating Twitter text messaging for Amtrak train status; potential for state funds for integration work at joint stations to be on hold.

04/09: Staff will schedule a follow-up meeting for this group in May.

07/09: Amtrak announced that the next generation of Passenger Information Display System (PIDS) signs (4-line signs) will be delivered in October with installation at all stations by the end of the year.

10/09: Amtrak launched the Pacific Surfliner Twitter service, which provides train status updates via mobile phone text messages to people who sign up for the free service. Amtrak and Caltrans are looking into marketing the Twitter service.

03/10: Amtrak will be installing new 4-line PIDS signs at non-Metrolink stations in March and April.

04/10: Amtrak installed 4-line PIDS signs at all non-Metrolink Surfliner stations with the exception of Santa Barbara. Amtrak is working with the City of Santa Barbara to install the signs and the installation is expected in the next few weeks. All of the shared Metrolink/Surfliner Stations will be upgrading to the new Metrolink PIDS signs that are anticipated to be installed within eight to twelve months.

06/10: All 4-line PIDS signs at all non-Metrolink Surfliner stations have been installed and are operational.

11/10: Metrolink will be installing message boards in 2011. COASTER implementation is to be determined.

01/11: Metrolink is working with a vendor to install EPIS on their trains. They are looking at testing the system in the next several months. Installation will take approximately one year.

02/11: It was reported at the February LOSSAN TAC meeting that the EPIS system is not moving forward. Metrolink is integrating the customer information system with their Positive Train Control (PTC) program.

04/11: Since PTC is an evolving project on the Los Angeles Basin rail lines, this program has been terminated as an independent stand-alone installation, and is being consolidated and integrated with the PTC system installation and procurement. Agencies involved in the PTC procurement will establish a delivery and installation schedule, with a new 'turn on' target date for PTC and E-passenger Info System.

Actions Required for Implementation: Digital message signs are installed at all stations; however, there are separate systems and signs at shared stations. Metrolink will be launching a new passenger information system at some point in the future in conjunction with PTC. Amtrak train information would need to be incorporated into a single system.

Ticketing

Original Description: Metrolink, Amtrak/Caltrans, and NCTD/COASTER should investigate the potential for selling COASTER tickets through the new ticket vending machines (TVMs).

This improvement evolved into implementation of Amtrak's new E-ticketing program on the Surfliner corridor. Integration of the corridor systems is a longer term goal.

Progress Notes:

08/08: Additional technical details and costing should be analyzed.

11/09: Joint ticketing and electronic fare collection have been identified as an action item in the SA. SANDAG, Metro, and Ventura County Transportation Commission have committed to Cubic contactless smart card technology. Amtrak will be using a different system.

02/10: Amtrak will be implementing a new E-ticketing technology that will bring airline style ticketing to intercity rail travel. It has not been determined how Amtrak E-ticketing will address Rail 2 Rail passengers.

01/11: GOAL: Integrate regional fare policy and develop common fare media that are based in part on early implementation lessons in the corridor as appropriate (electronic revenue collection).
Metrolink is developing an online ticketing service. This is getting integrated with the ticket vending machines.

04/11: Amtrak E-ticketing implementation to start on Capitol Corridor.

06/11: Progress is being made to look at opportunities for joint ticketing that benefit riders, as well as protect the revenues for the funding partners of the services. The advancement of the E-ticketing system in Northern California may provide joint ticketing opportunities that currently are difficult or impossible to implement and still satisfy the financial criteria of all participating parties.

09/11: Amtrak has launched E-ticketing on the Capitol Corridor, which will be followed by a nationwide roll-out. Some ticket types, like multiride tickets, will not be available with E-ticketing due to the potential for fraud.

10/11: The LOSSAN TAC will hear an update from Amtrak at its November 3, 2011, meeting.

Actions Required for Implementation: There are two steps identified in this process. The short-term solution is successful implementation of Amtrak's E-ticketing on Surfliner trains. The longer term solution is to address an integrated regional fare policy and common fare media.

Impact of Schedule Changes on Local Transit

Original Description: Given the anticipated changes to train schedules, particularly on Metrolink, local transit providers in the LOSSAN Corridor should be asked to regularly review their timetables to optimize the potential for good transit-rail connections wherever possible. In particular, OCTA where possible should time bus arrival at stations 15 minutes prior to scheduled train arrivals and bus departures 15 minutes after scheduled train arrivals as a means of facilitating bus-to-rail transfers.

Progress Notes:

08/08: Rail infrastructure drives headways; bus schedules are timed.
Consider a further analysis of bus-rail connections in the corridor.

01/11: This item will be part of the overall business plan. A review of the bus schedules related to the train station stops will be done. The incorporation of train schedule changes with bus service will be examined.

06/11: Discussion has started, and the challenges are complex and many: the frequency of transit schedule changes (some mandated by labor agreements) and the necessity of keeping all data and information up-to-date. As a 'first step' it will be helpful to establish a 'Base Case' of existing transit services at each LOSSAN Corridor Station. Initially, identifying the operating agency, the route number/destination (or rail line and destination), the peak frequency in minutes, off-peak frequency should provide adequate information to assess viability as a dependable 'connecting service.' Then, when a train schedule change occurs, at least the magnitude of the impacts to connecting local transit (bus and rail) can be estimated.

07/11: One element that will facilitate 'timely local transfers' is as much advance notice of a train schedule change as possible to the local transit agency provider, and what those changes in train service will be. The local transit provider can then evaluate if changes are needed, and the feasibility/cost effectiveness of any changes needed to the local transit operation.

Actions Required for Implementation: Amtrak, Metrolink, NCTD, and the local transit operators that serve LOSSAN train stations must coordinate schedule changes and improve timed transit connections.

WiFi at Stations

Original Description: Amtrak/Caltrans, Metrolink, and NCTD/COASTER should jointly explore the cost-effectiveness of WiFi service options at station locations.

Progress Notes:

08/08: Assess one system between operators.
01/09: Review completed.
04/09: In March, the SBCAG began providing free WiFi at regional transit centers including the Santa Barbara rail station.
01/11: Some stations do not have the infrastructure installed for this service. This will be discussed further in February to move this forward. A prioritization plan will be reviewed to establish the stations that this will be installed in.
04/11: Major stations currently have Wi-Fi centers, with limited application at other outlying locations.
06/11: Staff will be identifying which stations should have Wi-Fi based on characteristics of that station. More long-distance vs. commuters, long layovers/transfers, etc.
07/11: The existing Wi-Fi at stations is adequate. There is no need to pursue Wi-Fi at additional stations especially once on-board Wi-Fi is available. This Item has been dropped.

Actions Required for Implementation: Improvement no longer considered for implementation.

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C. LOSSAN Corridorwide Station Information Assessments Summary

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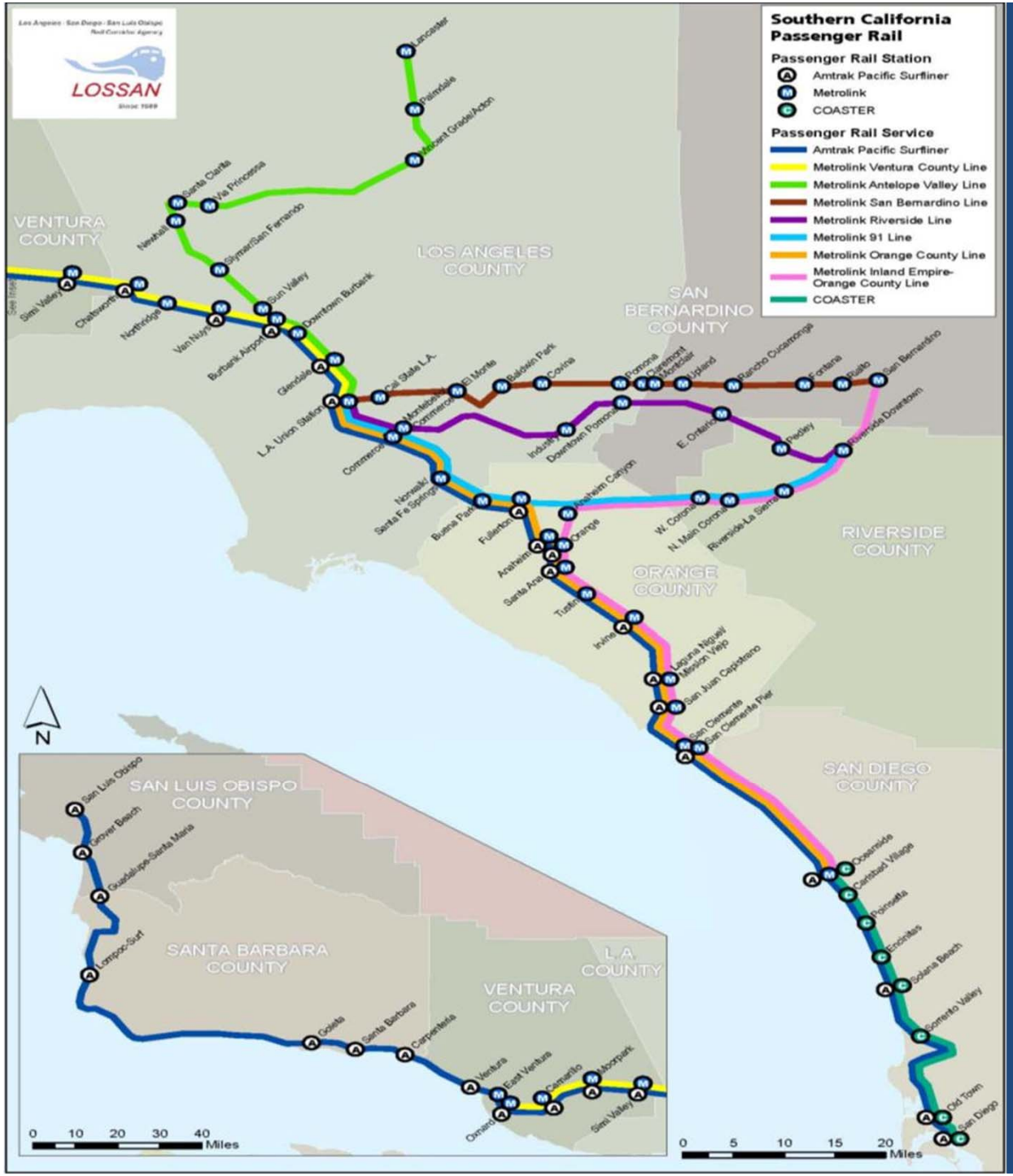
LOSSAN CORRIDORWIDE STATION INFORMATION ASSESSMENT

March 5 , 2012

LOSSAN
Los Angeles - San Diego - San Luis Obispo Rail Corridor Agency

METHODOLOGY

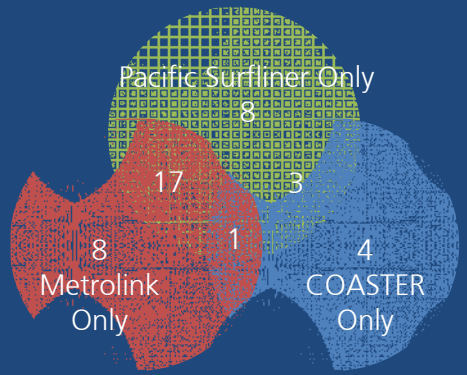
- Data Collection: August-November 2011
- Small teams of staff and volunteers assessed each station.
- Volunteers: Familiar/Unfamiliar
- More than 70 different attributes surveyed
  - Navigating the Journey
  - Overall Station Score (Scale of 1-5)



LOSSAN CORRIDOR

- 41 LOSSAN Corridor Stations
- 5 Riverside Stations
- Joint train stations

Rail Services at LOSSAN Stations



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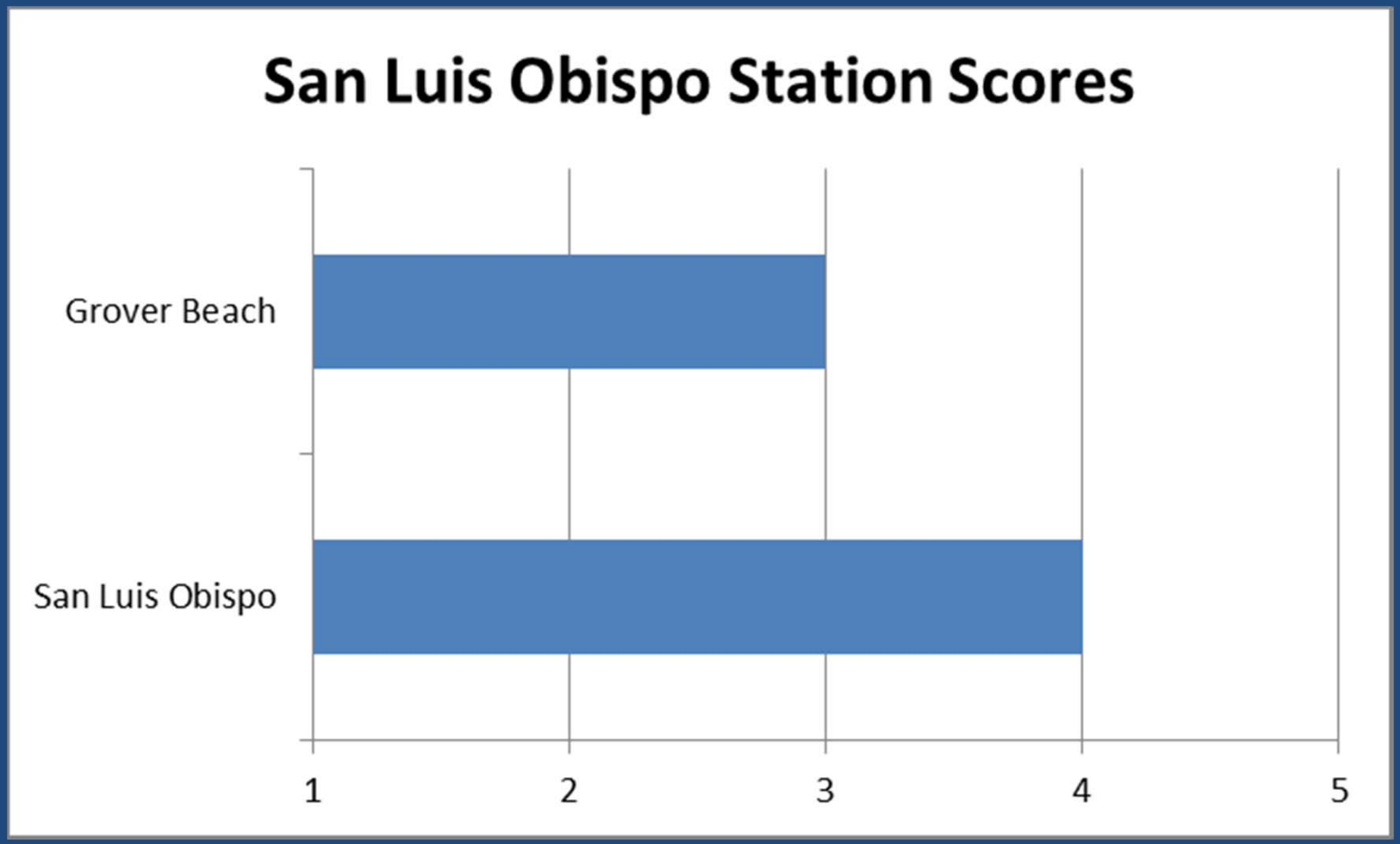
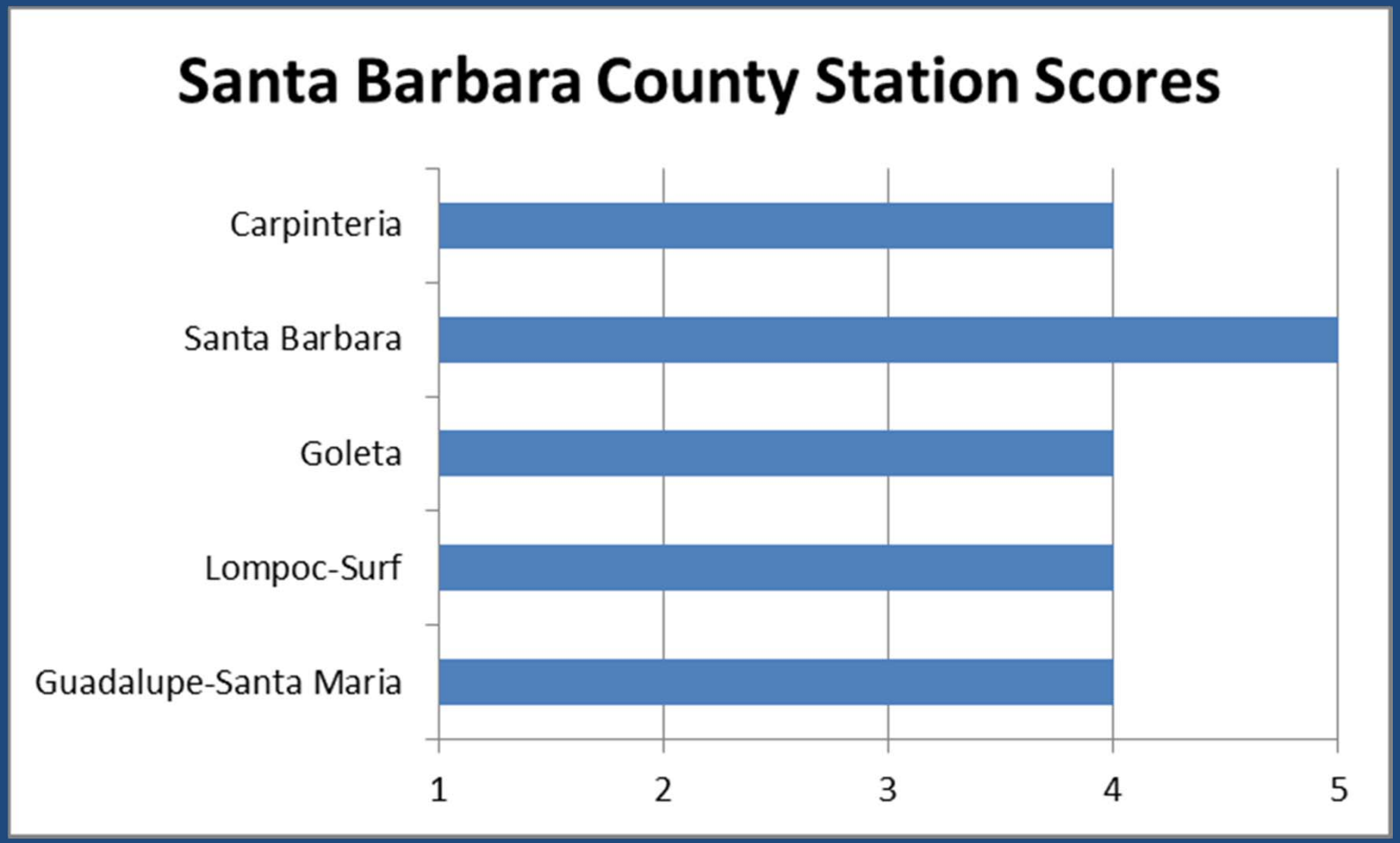
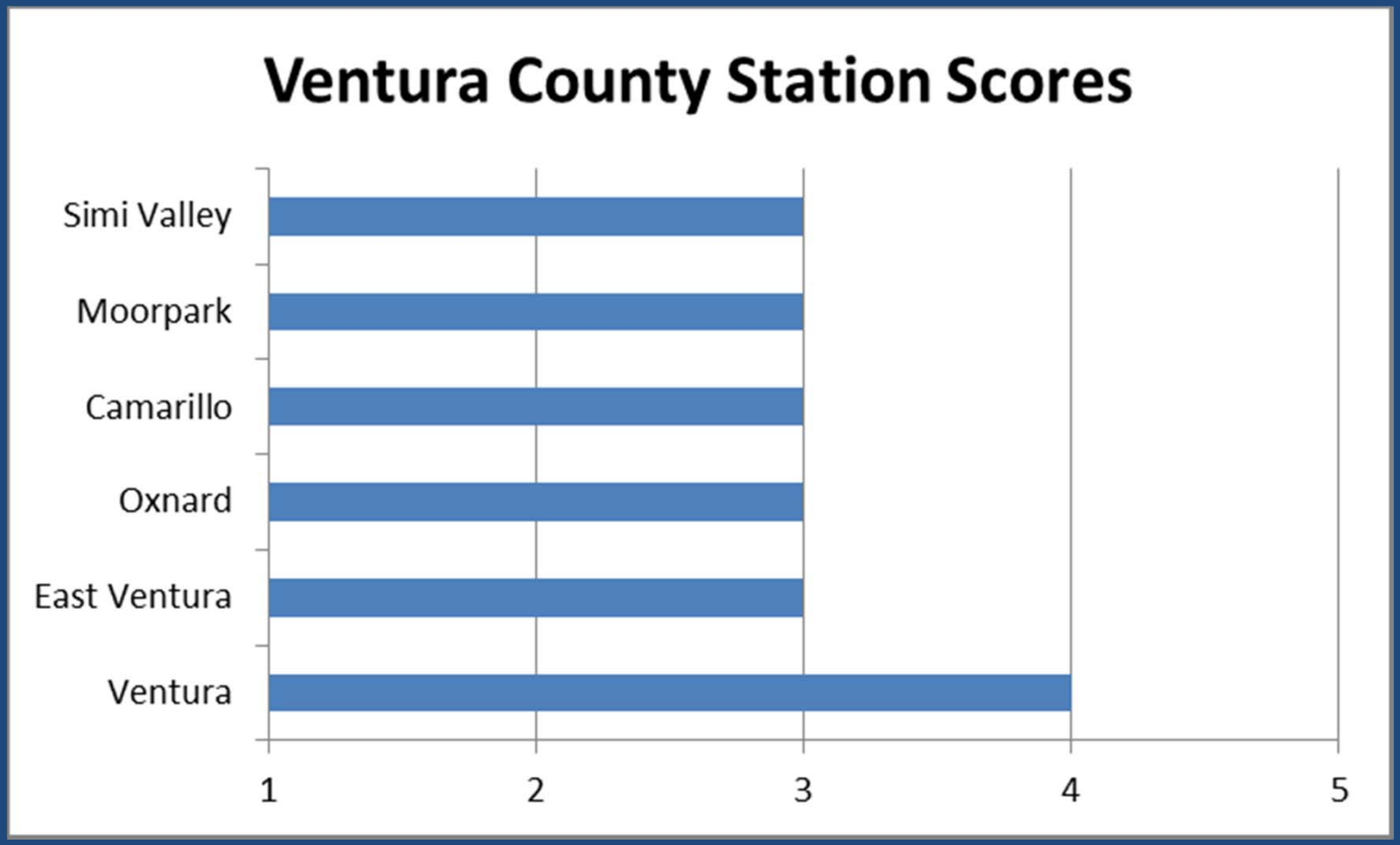
Overall Assessment



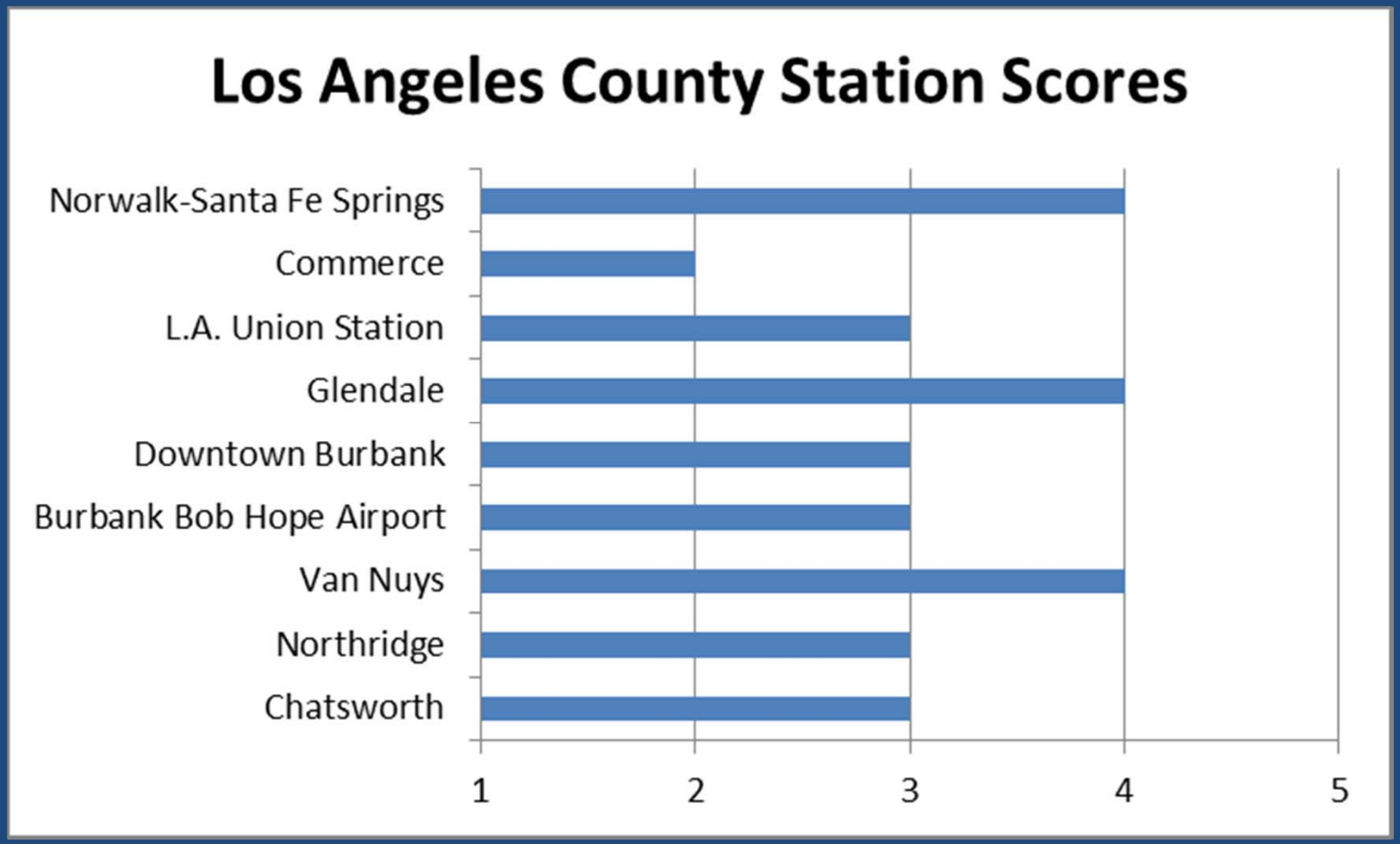
Overall Assessment



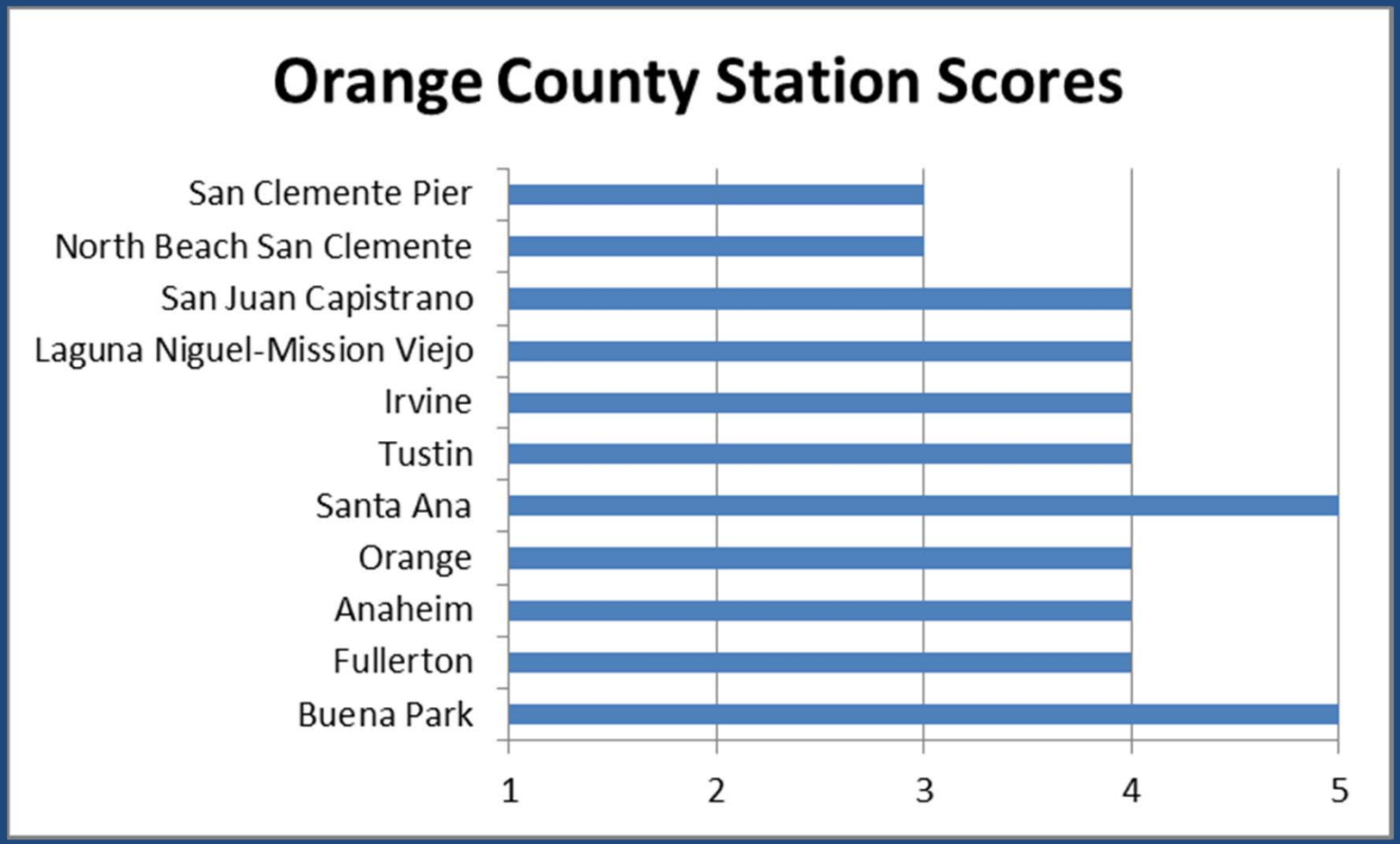
Overall Assessment



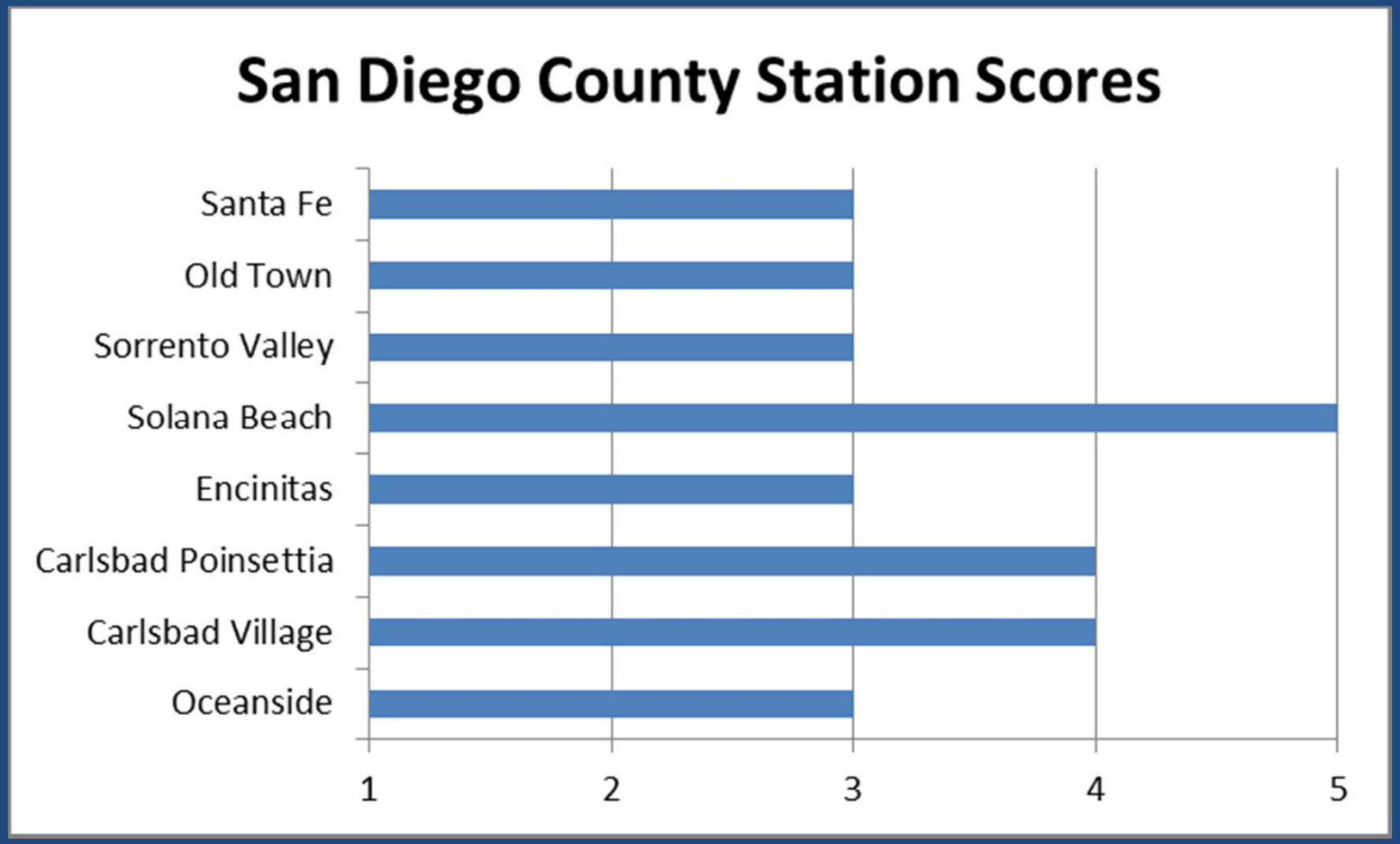
Overall Assessment



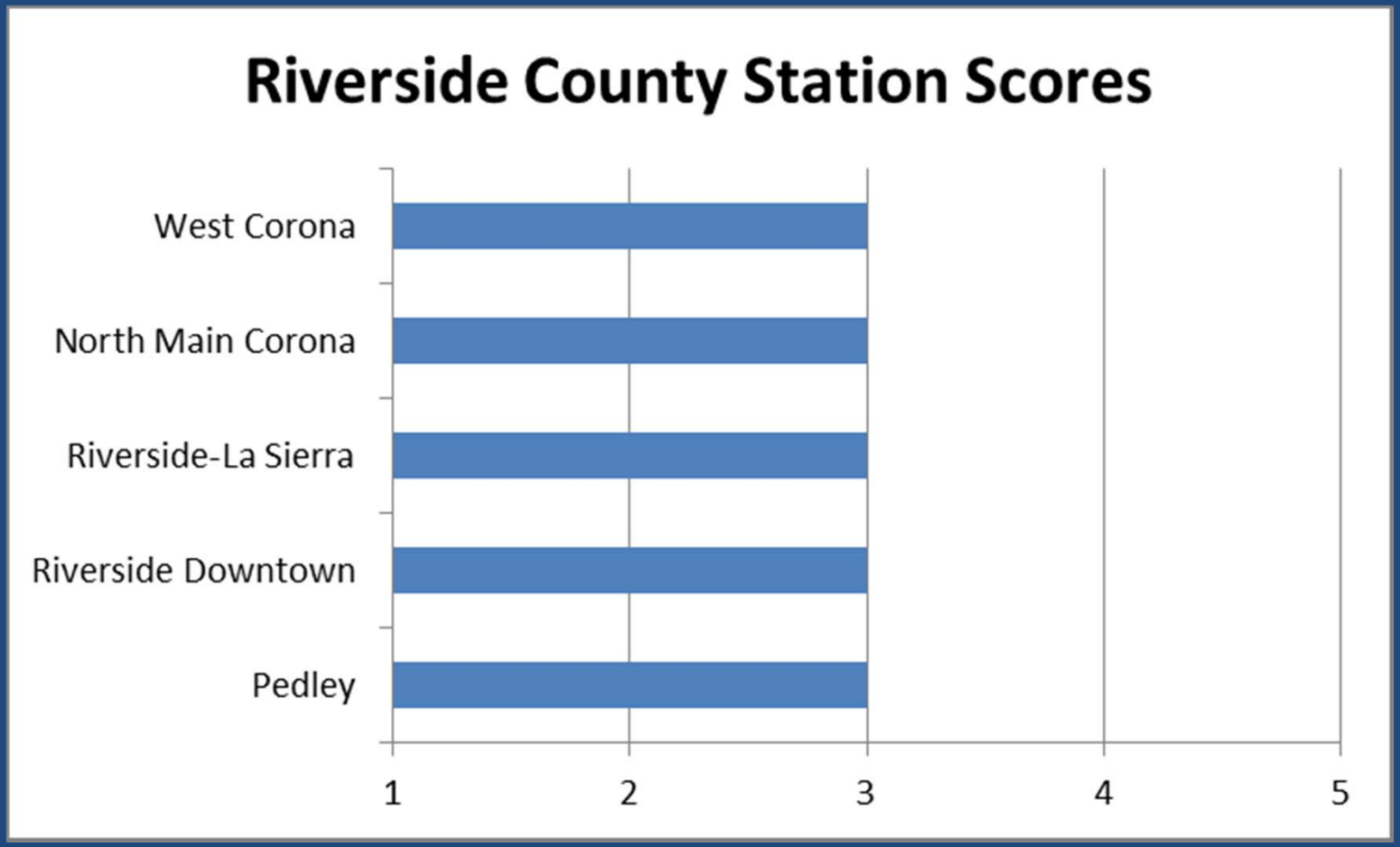
Overall Assessment



Overall Assessment



Overall Assessment



Faded Signage

Old Town Station

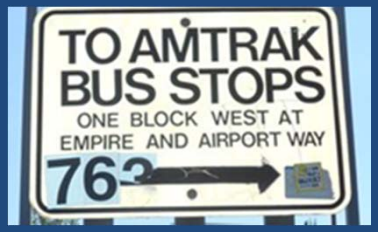
Oxnard Station

Carlsbad Poinsettia Station

Downtown Burbank Station

San Clemente Pier Station

Solana Beach Station



Burbank Bob Hope
Airport Station

Santa Fe Station

Obstructed Signage

Anaheim Station

Glendale Station

Anaheim Station

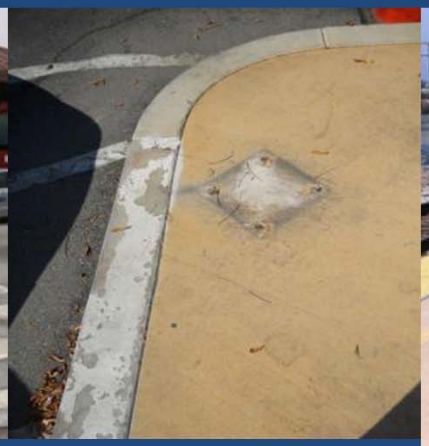
Simi Valley Station

Guadalupe Station

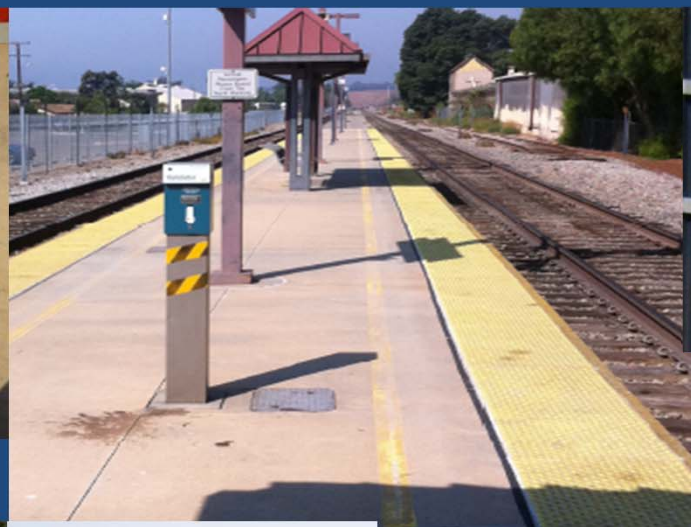
Carlsbad Village Station

Deficient Maintenance

Oxnard Station



Northridge Station



Santa Fe Station

Sorrento Valley Station

Commerce Station

Van Nuys Station

Moorpark Station

Lompoc Station

Deficient Maintenance Cont.

Burbank Bob Hope Airport Station / Carlsbad Village Station

Glendale Station

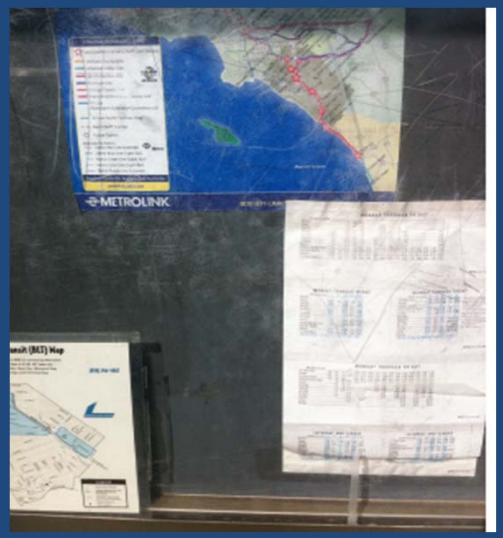
Sorrento Valley Station

Santa Barbara Station

Ventura Station

Guadalupe Station

Outdated Information



Simi Valley Station

Sorrento Valley Station

Carlsbad Poinsettia Station

Carlsbad Village Station

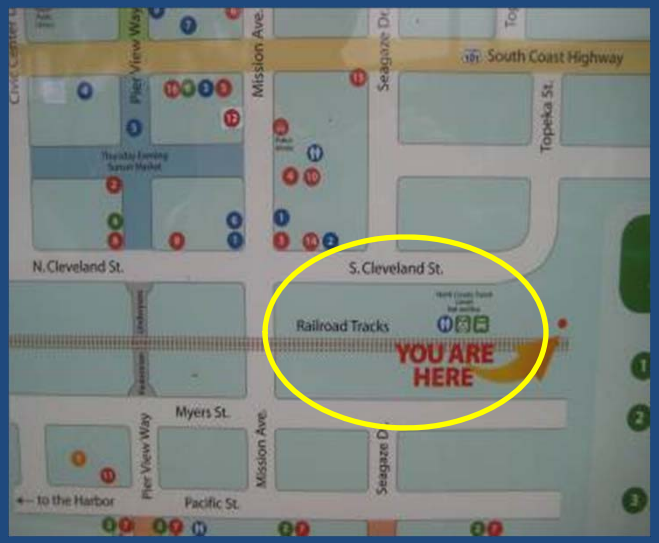
Carlsbad Poinsettia Station

Sorrento Valley Station

Contradictory Information

Oceanside Station

Old Town Station



Oceanside Station

Needed Amenities

Camarillo Station

Lompoc-Surf Station

Old Town Station

Parking Signage

Burbank Bob Hope Airport Station

Union Station

San Clemente
North Beach Station

Downtown Burbank Station

Fullerton Station

Burbank Bob Hope
Airport Station

Riverside- La Sierra
Station

Good Signage

Solana Beach Station

Glendale Station

Oceanside Station

Santa Fe Station

Solana Beach Station

Old Town Station

Carlsbad Village Station

Old Town Station

Fullerton Station

Carlsbad Poinsettia Station

Passenger Information

Solana Beach Station

Carpinteria Station

Downtown Burbank Station

Ventura Station

Old Town Station

Van Nuys Station

Carpinteria Station

Access to TVM's and Platform Signage

Pedley Station

Carlsbad Village Station

Solana Beach Station

Laguna Niguel-Mission Viejo Station

Solana Beach Station

Irvine Station

Solana Beach Station

Van Nuys Station

Norwalk-Santa Fe Station

Solana Beach Station

Downtown Burbank Station

Summary

- 3 stations received 5’s out of 46 train stations.
- Findings document a need for improvement.
- Assessment can be use as a tool for station owners and operators.

D. Detailed Business Case Analysis (Ridership Forecasts and Operations Modeling)

D.1. Final Short-Term 2014 Operations Analysis

D.2. Short-Term 2014 Ridership and Revenue Projections

D.3. Final Long-Term 2030 Operations Analysis

D.4. Long-Term 2030 Ridership and Revenue Projections

D.5. Ridership and Revenue Methodology and Assumptions

D.6. LOSSAN SIP Project Evaluation Criteria

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D.1. Final Short-Term 2014 Operations Analysis

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LOS ANGELES-SAN DIEGO-SAN LUIS OBISPO

STRATEGIC IMPLEMENTATION PLAN

SHORT-TERM BUSINESS CASE OPERATIONS ANALYSIS

TECHNICAL MEMORANDUM

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November 14, 2011

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1.0 EXECUTIVE SUMMARY

In January 2010, a Strategic Assessment was prepared of the LOSSAN corridor that included an initial proposal for near-term, mid-term, and long-term passenger rail service improvements for the corridor. The LOSSAN Joint Powers Board is currently undertaking the next phase of work, the preparation of a Strategic Implementation Plan, which includes the development of a business case for future service alternatives.

The business case that has been developed and agreed to for the short-term (2013-2014) by the corridor agencies involves the modeling of both ridership and operational scenarios. Three scenarios were initially developed for ridership modeling, with the scenario identified as presenting the most robust return on ridership being selected for operational simulations in the development of a conceptual service plan.

The Version 3A scenario met the overall ridership objectives and was agreed to by the Project Working Group as the preferred alternative for operations modeling. A concept level analysis of passenger rail operations along the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor was conducted using the Version 3A service plan to assess its feasibility to operate while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the corridor.

Service level assumptions were based on service increases perceived to be achievable from a policy and funding standpoint for COASTER, Metrolink and Amtrak's Pacific Surfliner, and agreed to by the operators or corridor agencies. Operating assumptions for this analysis also included a consolidated equipment cycle for COASTER and Metrolink trainsets to address the rolling stock fleet needs for through commuter service between Los Angeles and San Diego.

The simulations conducted for this analysis included rail corridor infrastructure improvements that are currently funded and/or already under construction. This includes:

- Los Angeles Union Station Platform 7
- Primary Completion of BNSF Triple Track
- CP Stadium Crossovers and Turnout
- Santa Margarita River Bridge Replacement and Double Track
- Oceanside Thru-Track
- Carlsbad Second Track Extension
- Sorrento Valley Double Track
- Sorrento to Miramar Phase 1
- San Diego Crossovers

The 2014 Short-Term service plan was modeled using the Berkeley Simulation Software Rail Traffic Controller (RTC) to determine the feasibility of the assumed infrastructure to support the desired future train volumes. In summary, results of the operations analysis are as follows:

- The results of the simulation revealed the assumed infrastructure for 2014 along the LOSSAN corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the corridor, with one exception, as follows:
    - Additional infrastructure improvements were revealed to be necessary at East Ventura to support the operation of, and overnight layover for, the desired Ventura-Santa Barbara commuter trainset.

- A second platform at the Van Nuys Station and the completion of second track between Control Point (CP) Berson and CP Raymer are recommended to improve reliability in corridor.

- Allowing some trains, during the mid-day, to layover at Keller Yard as an alternate to the Central Maintenance Facility (CMF) can help in reducing the opposing movements of non-revenue trains into and out of Los Angeles Union Station, to and from the CMF and other nearby layover facilities, and subsequently help protect the overall capacity of the terminal.

- The analysis of the simulation indicated that the proposed track configura,tion represented for the Oceanside Transit Center has the potential to cause “new” conflicts associated with passenger operations on main track one (platform 1). To mitigate this conflict, most Metrolink trains were “turned” on track 2 (in the simulation), which is the same operation as currently exists today.

Further details of the analysis and results are presented in this report.

2.0 INTRODUCTION

In January 2010, a Strategic Assessment was prepared of the LOSSAN corridor that included an initial proposal for near-term, mid-term, and long-term passenger rail service improvements for the corridor. The LOSSAN Joint Powers Board is currently undertaking the next phase of work, the preparation of a Strategic Implementation Plan, which includes the development of a business case for future service alternatives.

The business case that has been developed and agreed to for the short-term (2013-2014) by the corridor agencies involves the modeling of both ridership and operational scenarios. Three scenarios were initially developed for ridership modeling, with the scenario identified as presenting the most robust return on ridership being selected for operational simulations in the development of a conceptual service plan.

A summary description of the three scenarios considered for the short-term is provided below. In each case, the scenarios were initially based on the service levels and trainset cycles that existed as of May 9, 2011.

- Version 1: This scenario added three new Orange County Intra-County roundtrips between Fullerton and Laguna Niguel, three new Los Angeles-San Diego commuter trains (modifications of existing Metrolink schedules), three new COASTER roundtrips between San Diego and Oceanside, and one new commuter-friendly roundtrip between East Ventura and Goleta to the existing 2011 service levels. In addition, this version reduces overall intercity service on the Pacific Surfliner to 11 roundtrips, seven day a week (as compared to the existing timetable, which presents an additional roundtrip on Friday, Saturday and Sunday).

- Version 2: This scenario added one new IEOC Line roundtrip between the Inland Empire and Laguna Niguel, two additional roundtrips on Saturday and Sunday for the Pacific Surfliner, and two new Orange County Intra-County roundtrips between Fullerton and Laguna Niguel to the Version 1 scenario.

- Version 3A: This scenario added three new 91/Perris Valley Line (PVL) trains and one additional roundtrip Monday through Friday for the Pacific Surfliner, (with one new limited stop Pacific Surfliner) to the Version 2 scenario. In addition, new schedules were considered for both the PVL trains and the Pacific Surfliners.

    - Version 3: The Version 3 scenario initially identified based the intercity service on the existing timetable. At the agreement of the Project Working Group (PWG), a modified intercity schedule was developed and presented by the California Department of Transportation and Amtrak to consider better connection times at Los Angeles Union Station with the thruway bus service between the Pacific Surfliner and San Joaquin services. This modified intercity service plan was then incorporated into a new Version 3A scenario to distinguish it from the original scenario composed and presented to the PWG.

The Version 3A scenario met the overall ridership objectives and was agreed to by the PWG as the preferred alternative for operations modeling. This report presents a summary of the analysis conducted on Version 3A of the short-term service plan scenario prepared in collaboration with the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Technical Advisory Committee (TAC) and PWG.

3.0 SERVICE DESIGN CRITERIA

This section outlines the criteria established for guiding the service design of the three scenarios for short-term, implementable service increases along the LOSSAN corridor. The following criteria were crafted from the general direction obtained from the PWG and TAC.

- Provide additional limited stop service between Los Angeles and San Diego;

- Provide commuter-friendly passenger rail service between Ventura and Santa Barbara counties;
- Include additional Orange County Intra-County service between Laguna Niguel and Fullerton; and
- Provide up to three additional Metrolink/COASTER frequencies between logical, but currently underserved markets, without regard to political organizational boundaries (county lines, agency boundaries, etc)

4.0 SIMULATION MODEL APPLICATION

The Berkeley Simulation Software Rail Traffic Controller (RTC) model (Model) was selected as the platform on which to conduct the operations analysis for the LOSSAN Corridor Business Case. The Model was selected because it provides a variety of analytical and reporting capabilities encompassing the range of information required for this analysis and can realistically simulate higher-speed train operations in a mixed-use operational environment (intercity, commuter and freight services). The advantage of the Model is that it is designed as a flexible tool that can be further modified, refined and upgraded as needed to evaluate different operational and infrastructure assumptions and configurations.

Referencing the service design criteria established by the members of the LOSSAN TAC and PWG, as well as the BNSF Railway (BNSF) and Union Pacific Railroad (UPRR) train count information, the Model was used to simulate a 2014 service scenario operating on the assumed infrastructure envisioned to be complete by 2014 on the LOSSAN Corridor.

The Model accurately simulates passenger and freight operations based on train set performance characteristics along a specified corridor, including different geometric parameters and infrastructure configurations.

5.0 INPUT & ASSUMPTIONS

This section identifies the principal input and assumptions used to develop and simulate the Version 3A service scenario for 2014. The key input and assumptions for these runs, which is described in detail below, include:

- Train Characteristics
- Infrastructure Assumptions
- Operating Assumptions and Service Plan

5.1 TRAIN CHARACTERISTICS

Train set performance characteristics and consist composition define the type of rail vehicle fleet that will be used in the services along the corridor. For this model case, these parameters were based on the existing consists and train set equipment, as follows:

- For commuter services, trains are powered by General Motors F59PHI and Motive Power MP36PH locomotives capable of achieving maximum operating speeds of 110mph and 90mph, respectively.
- For intercity services, trains are powered by General Motors F59PHI locomotives capable of achieving a maximum operating speed of 110mph.

- For freight services, trains are powered by a range of motive power, typically the General Electric Dash 9-44CW and General Motors GP-38 locomotives capable of achieving maximum operating speeds that approach 70mph.

For purposes of simulating the cases described above, the train set performance characteristics (i.e. tractive effort curve, braking effort curve, weight, etc.) were based on representative consists as agreed upon by the PWG, Metrolink, Amtrak, or COASTER operations staff for each passenger and freight train classification. These configurations are conservative assumptions that are representative of typical consists are operating or are planned to be operated on the Corridor. Specific consist assumptions are described in more detail under the Operational Assumptions section of this chapter.

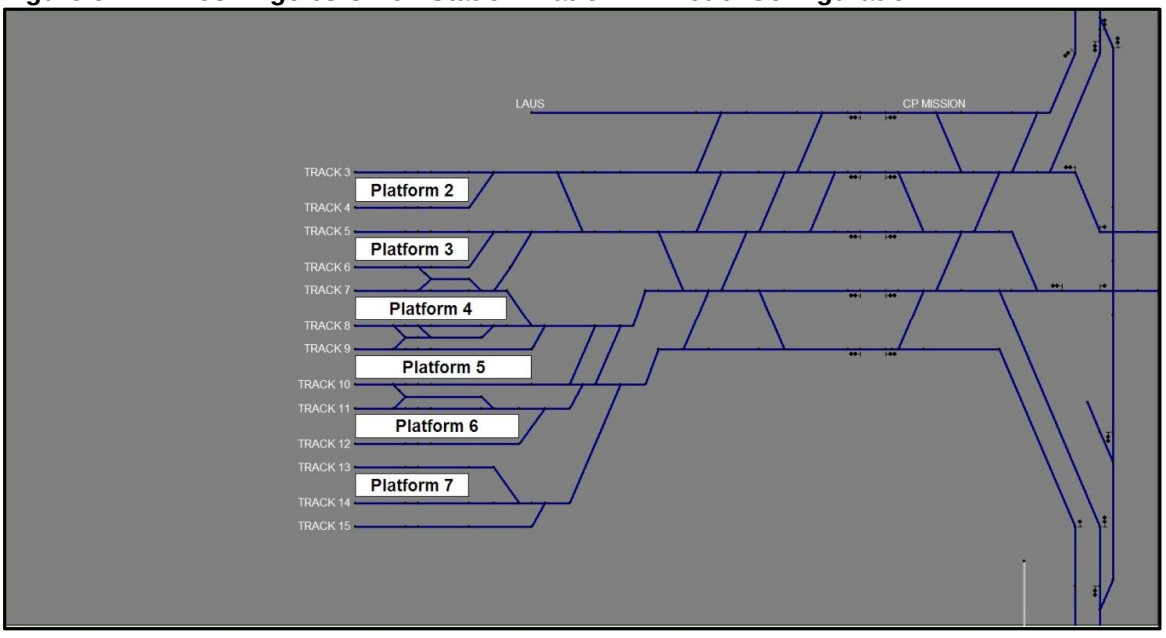
5.2 INFRASTRUCTURE ASSUMPTIONS

The PWG defined various infrastructure improvements that would be in construction or completed by 2014. These projects were identified by the PWG and incorporated into the model for the purpose of simulating their effect on operations under the Version 3A service scenario. The infrastructure configurations for these improvements were based on available (conceptual or final) designs of the projects as presented by the sponsoring agency. A summary of the infrastructure improvements that have been coded into the RTC model and simulated as part of this short-term operations analysis is presented below.

Los Angeles Union Station Platform 7

The reconstruction of Los Angeles Union Station's Platform 7 is currently underway. Platform 7 was one of the station's original boarding platforms and was removed from service more than 35 years ago. The improvements assumed as part of this project include the restoration of tracks 13, 14, and 15, and passenger access/egress from these tracks to and from the main Station area. These enhancements are intended to allow for more efficient processing of the anticipated increase in passenger volumes into and out of Los Angeles as well as customer comfort and convenience.

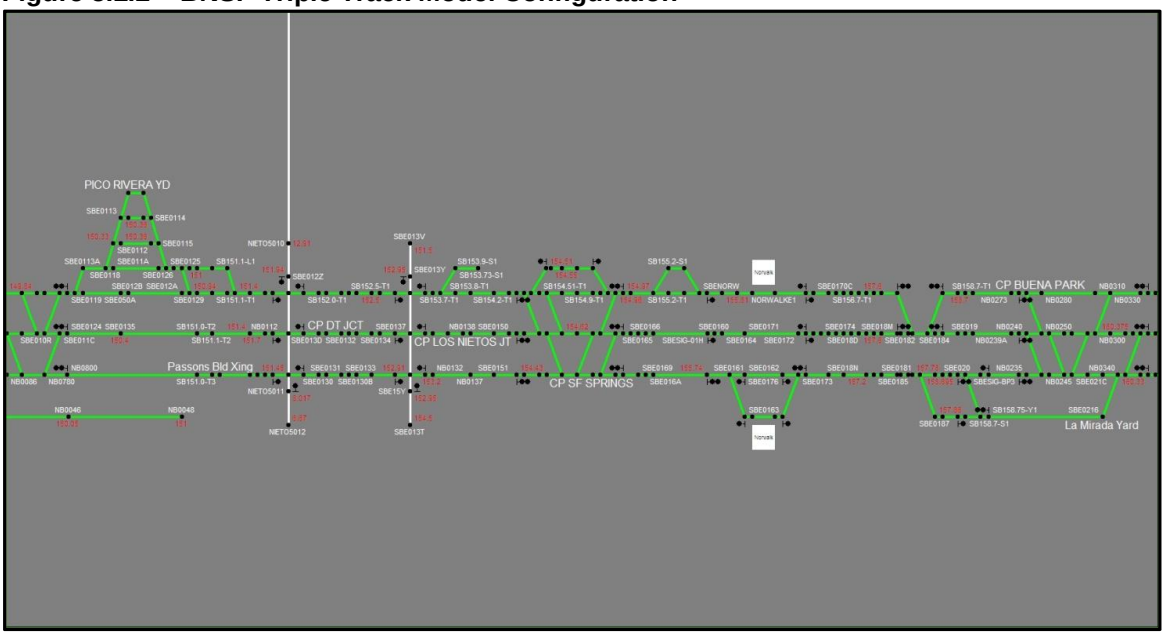
Figure 5.2.1 – Los Angeles Union Station Platform 7 Model Configuration



Substantial Completion of BNSF Third Main Track

It was agreed by members of the PWG that the triple track project currently underway along the BNSF San Bernardino Subdivision would be substantially complete by 2014. The only exception could be the segment located at the crossing of Rosecrans and Marquardt Avenues in the City of La Mirada and the California Public Utilities Commission (CPUC) at the time of this analysis indicated that they would not approve modification of existing at-grade crossing to accommodate third track. This segment of the corridor currently lacks the funding necessary for grade separation of this crossing. The configuration as agreed to by the PWG and coded into the model, assumes a 200 to 300 foot section of double track along the 21 miles between Fullerton Junction and CP Soto.

Figure 5.2.2 – BNSF Triple Track Model Configuration



CP Stadium Crossovers and Turnout

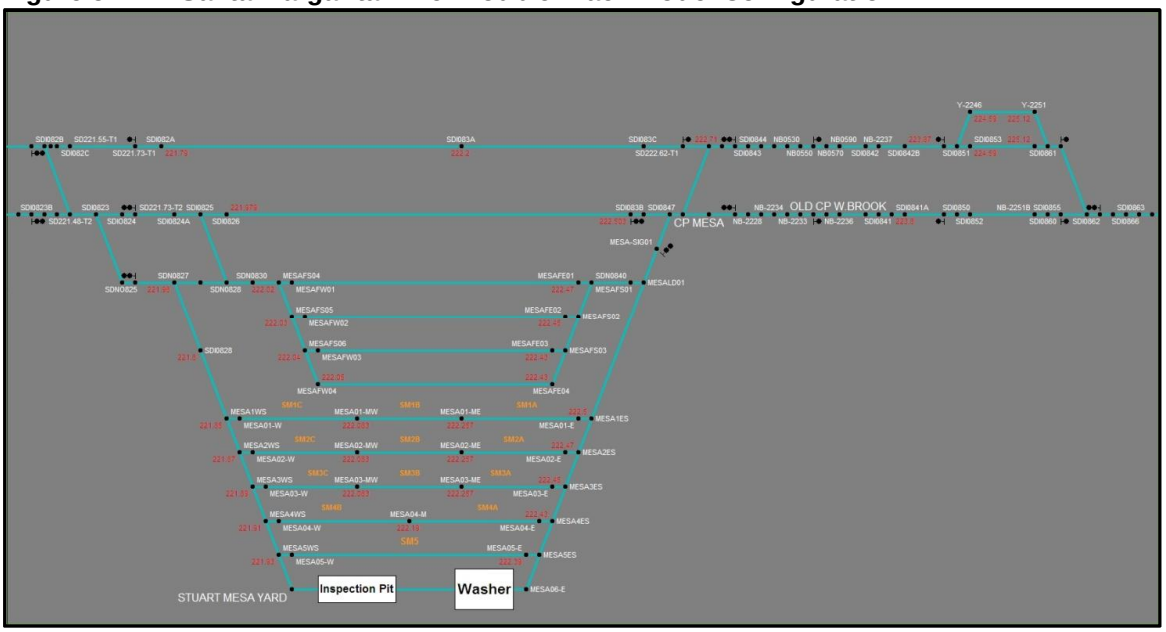
A new 40 miles per hour (mph) universal crossover was assumed immediately south (railroad timetable east) of the crossing of State College Boulevard. In addition to this universal crossover, the Union Pacific Railroad (UPRR) industry lead to the Santa Ana line would be powered, to eliminate the need for a freight train to stop on the State College Boulevard crossing while the train crew manually aligns the switch to the industries.

Figure 5.2.3 – CP Stadium Crossovers Model Configuration

Santa Margarita River Bridge Replacement and Double Track

The Santa Margarita River bridge replacement and double track project is currently under construction. When complete, in 2012, this project will have replaced the former single track steal truss bridge, located between the locations of existing CP Mesa and CP Westbrook, with two concrete viaducts, providing a two track operation across the Santa Margarita River. In addition, this project removes the existing CP Westbrook and makes modifications to the locations of CP Mesa and CP Stuart, which provide access and egress to the Stuart Mesa Maintenance Facility. This facility is the primary servicing facility for the COASTER commuter rail trains, and also provides overnight storage to Metrolink commuter trains.

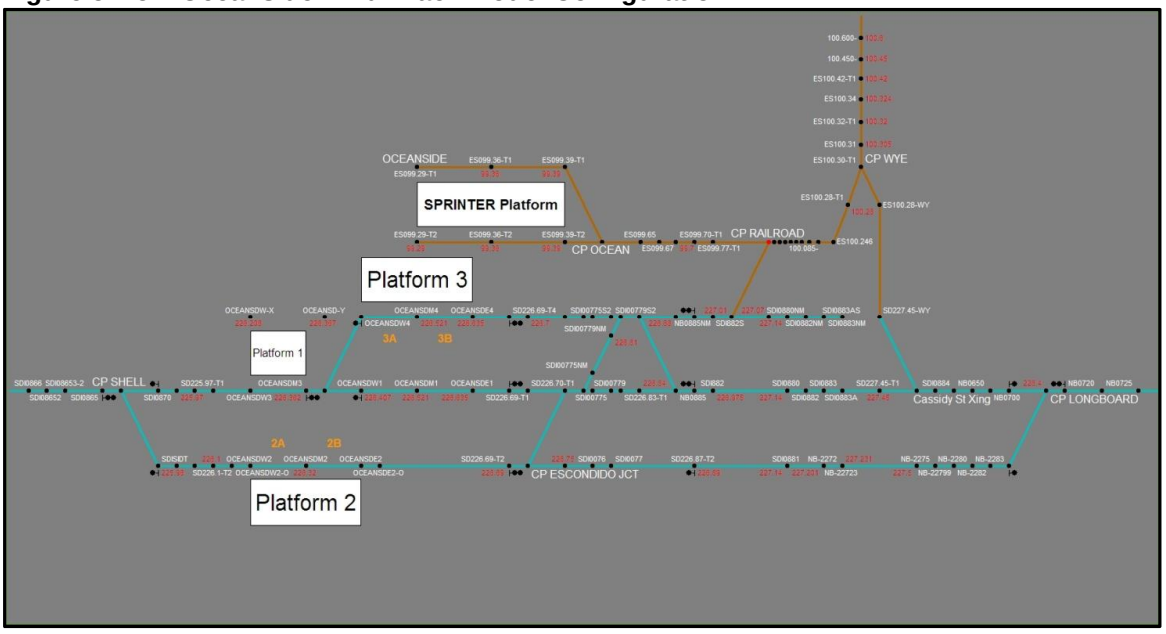
Figure 5.2.4 – Santa Margarita River Double Track Model Configuration



Oceanside Thru-Track

The Oceanside Thru-Track is a project being funded by the American Recovery and Reinvestment Act (ARRA) of 2009. This project will construct an additional station track at the Oceanside Transit Center (OTC) to allow both Metrolink and COASTER trains terminating at Oceanside to "turn" off of the mainline, minimizing conflicts with through Amtrak Pacific Surfliner intercity trains and "new" commuter trains. As currently being designed, the "thru-track" will be constructed on the east side of the railroad right-of-way, just south of the existing pedestrian underpass that connects Tracks 1 and 2. The southern end of the "thru-track" would rejoin the mainline at a modified CP Escondido Junction.

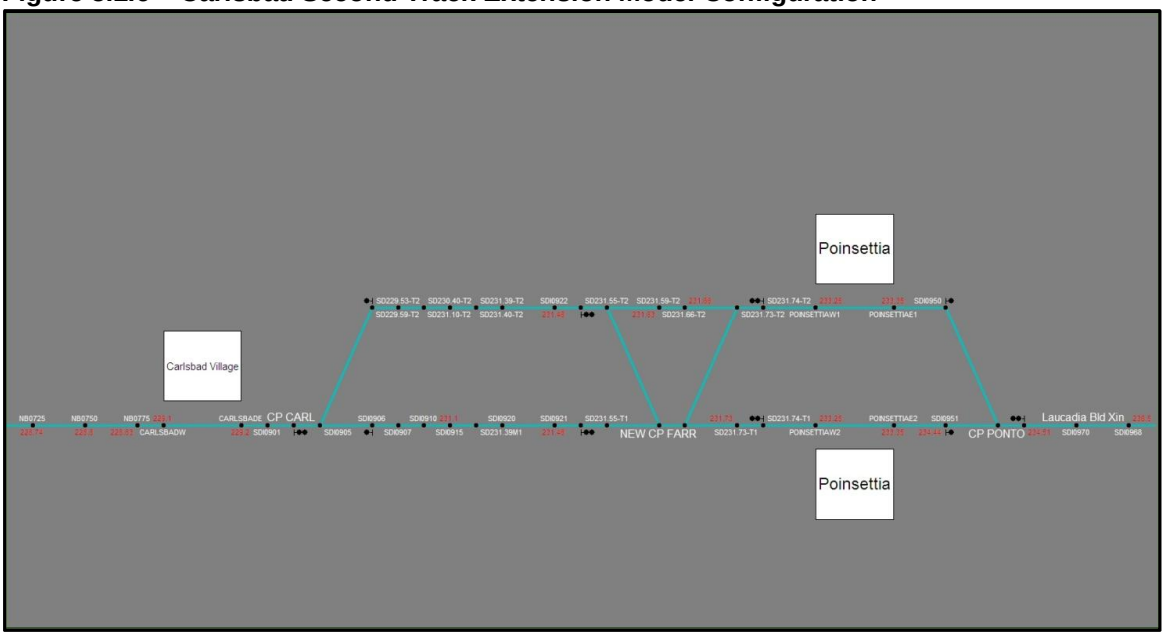
Figure 5.2.5 – Oceanside Thru-Track Model Configuration



Carlsbad Second Track Extension

The Carlsbad Second Track Extension project is currently under construction. When complete, this project will have extended the double track segment north of the Carlsbad Poinsettia COASTER station by an additional 1.8 miles to the location of the new CP Carl. The existing CP Farr will be relocated and retained as a new universal crossover.

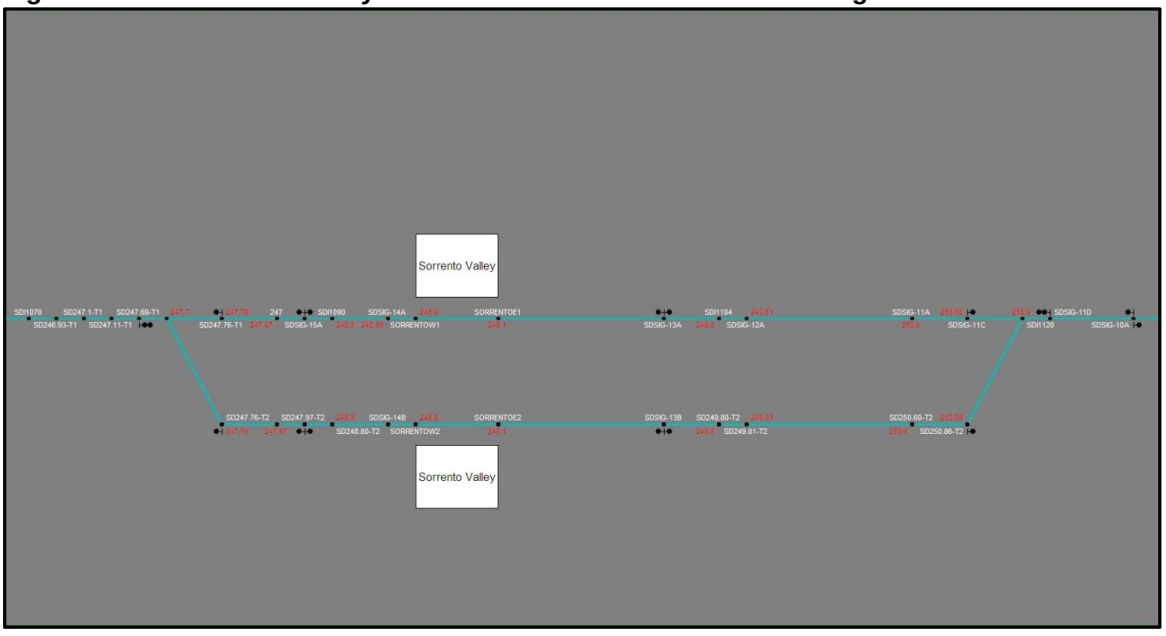
Figure 5.2.6 – Carlsbad Second Track Extension Model Configuration



Sorrento Valley Double Track and Sorrento to Miramar Phase 1

The Sorrento Valley Double Track and Sorrento to Miramar Phase 1 are actually two separate projects, both of which are currently in the design stage. When completed, the Sorrento Valley Double Track project will extend the existing double track approximately 1.1 miles to the north from the existing CP Torrey to just south of the Los Penasquitos Lagoon crossing. The Sorrento to Miramar Phase 1 project is the first stage of a double tracking and curve realignment program for the Sorrento grade. With a compensated grade listed at 2.2-percent, this is the steepest and one of the slowest segments along the entire LOSSAN Corridor. Phase 1 of this project extends the double track (geographically) south from CP Pines approximately 1.1 miles, and will also provide for some curve straightening and speed improvements.

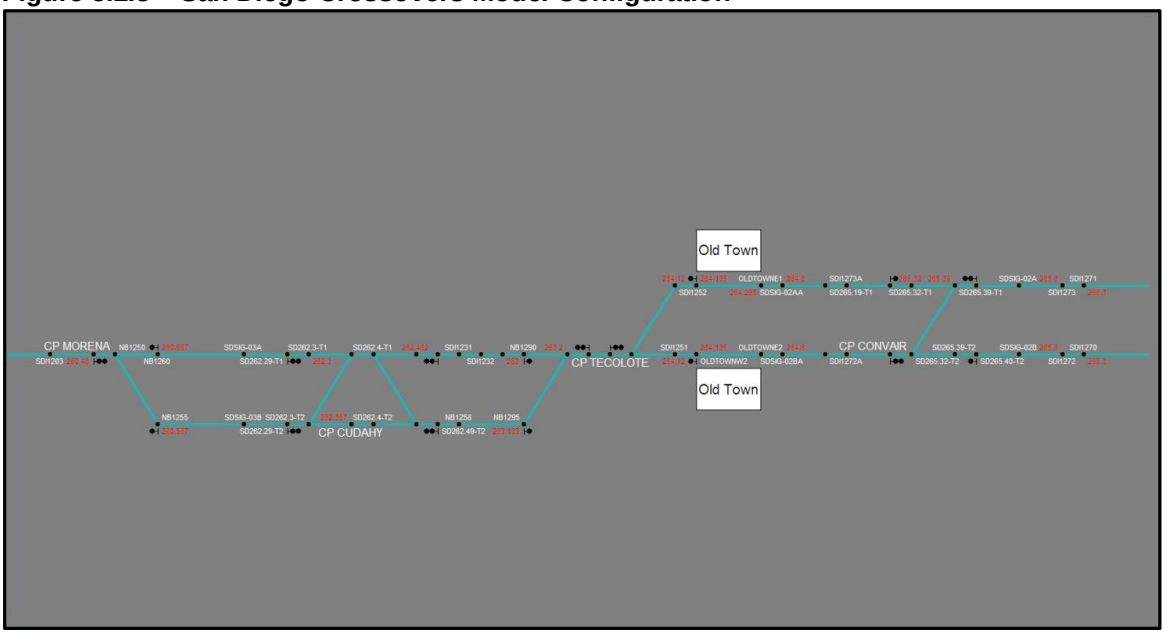
Figure 5.2.7 – Sorrento Valley and Sorrento to Miramar Model Configuration



San Diego Crossovers

The San Diego Crossovers are projects being funded by the American Recovery and Reinvestment Act (ARRA) of 2009. These projects will construct two crossovers in the City of San Diego to enhance the overall capacity of the corridor as it approaches the Santa Fe Depot terminal in downtown San Diego. The first is a universal crossover (CP Cudahy), to be located along the double track segment between CP Tecolote and CP Morena. The second will be CP Convair, a "left hand" crossover to be located south of the Old Town San Diego COASTER station, near the former Convair plant.

Figure 5.2.8 – San Diego Crossovers Model Configuration



5.3 OPERATIONAL ASSUMPTIONS

Before preparing the service plans to support feasible short-term service increases in the LOSSAN Corridor, basic operational assumptions were identified to help form the foundation from which all scenarios were developed. These assumptions included:

- Projects currently funded or under construction will be assumed as part of the infrastructure for the short-term scenario.
- Trainset equipment cycles based on existing rotations provided by Metrolink, Amtrak and NCTD (COASTER).
- Maximum length of "work day" for one crew cannot exceed 11 hours and 59 minutes.
- Crews report "on duty" 30 minutes before the initial departure from the lay-up yard.
- Minimum terminal turnaround time between two revenue-service trips is 15 minutes.
- Timetables represent weekday operations only along the LOSSAN corridor.
- UPRR freight train movements based on discussions and data obtained from observations made at the Metrolink Operations Center (MOC) in Pomona, California on June 30, 2011.

- BNSF freight train movements based on data obtained from observations made over a 24-hour / seven day week period in May 2007. Train movements presented to BNSF to ensure agreement that available information was still representative of 2011 volumes.

- Minimize adjustments to existing peak period commuter trains.

5.3.1 Service Increase Assumptions

The service increases that were assumed in the Version 3A service scenario and simulated in the model represent only weekday services and are based on the Service Design Criteria, outlined in Section 3.0 of this report, and agreed to by the TAC and PWG. Continuous coordination and collaboration occurred with the three passenger rail operators (Amtrak, Metrolink and COASTER) during the development of these assumptions to ensure the service increases proposed were implementable in the short-term.

Table 5.3.1 – Weekday Service Increase Assumptions

Operator	Line	2011 Base Line	2014 Version 3A
COASTER	Coast	22	28
Metrolink	Coast*	0	1
Metrolink/COASTER	LA-SD	0	3
Metrolink	Orange County	19	16**
Metrolink	OC Intra-County	0***	10
Metrolink	IEOC****	14	16
Metrolink	91/Perris Valley****	9	12
Metrolink	Antelope Valley****	30	30
Metrolink	Burbank-Bob Hope	11	11
Metrolink	Ventura County	20	20
Metrolink	Ventura-Santa Barbara	0	2
Amtrak	Pacific Surfliner (All Stop)	21	22
Amtrak	Pacific Surfliner (Limited Stop)	1	2
Amtrak	Coast Starlight****	2	2
Amtrak	Southwest Chief****	2	2
TOTAL		**151**	**177**

** Represents a late night Metrolink train operating from San Diego to Oceanside for overnight storage at Stuart Mesa Yard.*
*** No net reduction in service, three existing Orange County Line trains are replaced by three new LA-SD Commuter trains*
**** Base Line was set at May 9, 2011, prior to the July 5, 2011 start up of six new OC Intra-County trains*
***** Antelope Valley, 91/Perris Valley, Inland Empire Orange County (IEOC) Lines, Amtrak's Coast Starlight and Southwest Chief are included in this analysis because they operates along segments of the LOSSAN corridor .*

6.0 MODEL OUTPUT RESULTS

The operations simulation model built to represent the physical and service characteristics of the rail corridor between San Luis Obispo, Santa Barbara, Los Angeles and San Diego was upgraded from the network originally developed by Parsons Brinckerhoff (PB) for Amtrak's California 20-Year Rail System Improvement Plan, and subsequently updated for simulations conducted as part of the LOSSAN South Strategic Business Plan and the Orange County Transportation Authority (OCTA) Metrolink Service Expansion Program. The purpose for updating the model was to determine the feasibility of the infrastructure projects indentified in this report to support the 2014 Version 3A service scenario developed in collaboration with the LOSSAN TAC and PWG.

This chapter summarizes the simulation outputs and observations from the model results utilizing updated train volumes and revised freight train operational assumptions that were obtained through extensive field reviews conducted in May of 2007 of the BNSF operations between Fullerton Junction and Hobart Yard and June of 2011 for the UPRR operations between Los Angeles and San Luis Obispo. These reviews were accomplished by direct discussion and observations of BNSF and UPRR train movements from Metrolink's Train Control facilities in Pomona, California.

Results of the simulation utilizing these infrastructure improvements found that the Version 3A service scenario developed to represent 2014 service levels can feasibly operate, with one exception. Based on the assumed infrastructure, it was identified that insufficient storage capacity will be available at East Ventura to accommodate the proposed Ventura to Santa Barbara commuter friendly service equipment during the desired overnight layover.

Throughout the corridor, capacity is limited. Service increases beyond the 2014 service assumptions identified in Version 3A of this analysis will be constrained without significant improvements to the signal network and track infrastructure, particularly north of Los Angeles. A bullet point summary of the observations, broken up by service segment, is presented below.

The associated stringlines and summary of delays incurred by passenger trains that were generated by the model, as well as the Version 3A timetable, and terminal track assignment assumptions that were used as input to the model are provided for reference in the Appendix of this report.

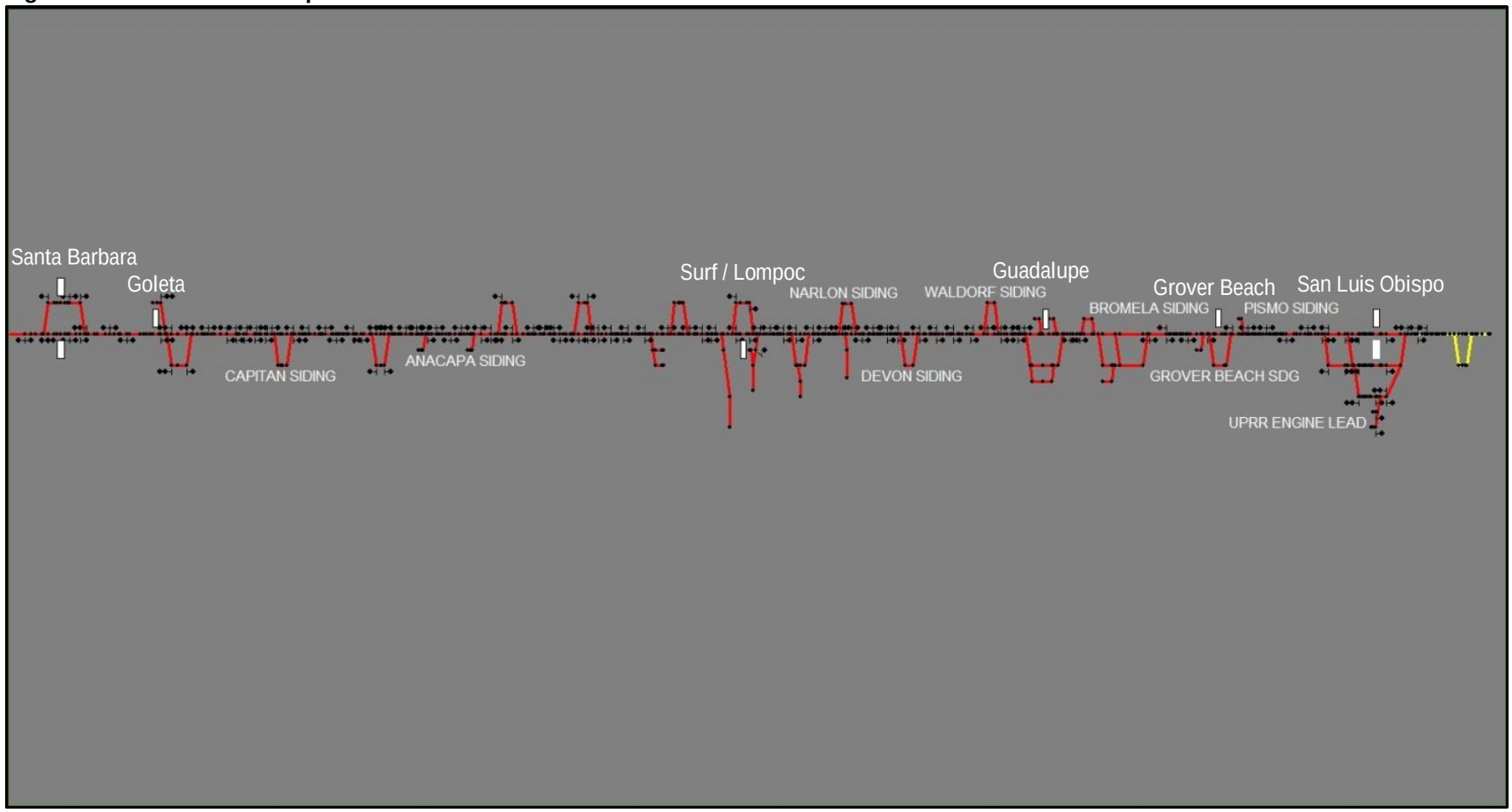
6.1.1 San Luis Obispo to Santa Barbara

Table 6.1.1 – San Luis Obispo to Santa Barbara Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	4	4	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	0
Amtrak Coast Starlight	2	2	0
UPRR Freight	6	6	0
TOTAL	**12**	**12**	**0**

The San Luis Obispo to Santa Barbara segment currently has, and is projected to have, the fewest number of passenger trains operating along the LOSSAN Corridor, with only six trains operating north of Goleta. This segment of the corridor is owned and operated by the UPRR with 84% of the segment still operated under Track Warrant Control (TWC), utilizing hand thrown or spring switches for the sidings. The remaining 16% of the segment has been upgraded to Centralized Traffic Control (CTC), and is dispatched by the UPRR.

Figure 6.1.1 – San Luis Obispo to Santa Barbara



The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the corridor.

The UPRR continues to operate limited freight service along this segment, with up to six trains each day during the week. One of these trains is the local that services the Lompoc industries and originates and terminates its work days from the yard in Guadalupe. This segment is part of the overall "Coast Line" for the UPRR and is primarily utilized by the freight operator as an "overflow" for their more heavily utilized valley lines through Fresno and Bakersfield and over the Tehachapi Mountains.

No additional passenger trains were assumed to operate in this segment for the short-term, but the continued use of TWC to operate trains in the territory was observed as continuing to impact on-time performance of the Amtrak trains operating along the segment. The continuing use of manual or spring switches along this segment requires additional "pad" or "recovery" time to remain in the Amtrak schedules.

6.1.2 Santa Barbara to East Ventura

Table 6.1.2 – Santa Barbara to East Ventura Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	10	10	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	0
Amtrak Coast Starlight	2	2	0
Metrolink Ventura-SB Commuter Train	0	2	2
UPRR Freight	4	4	0
TOTAL	**16**	**18**	**2**

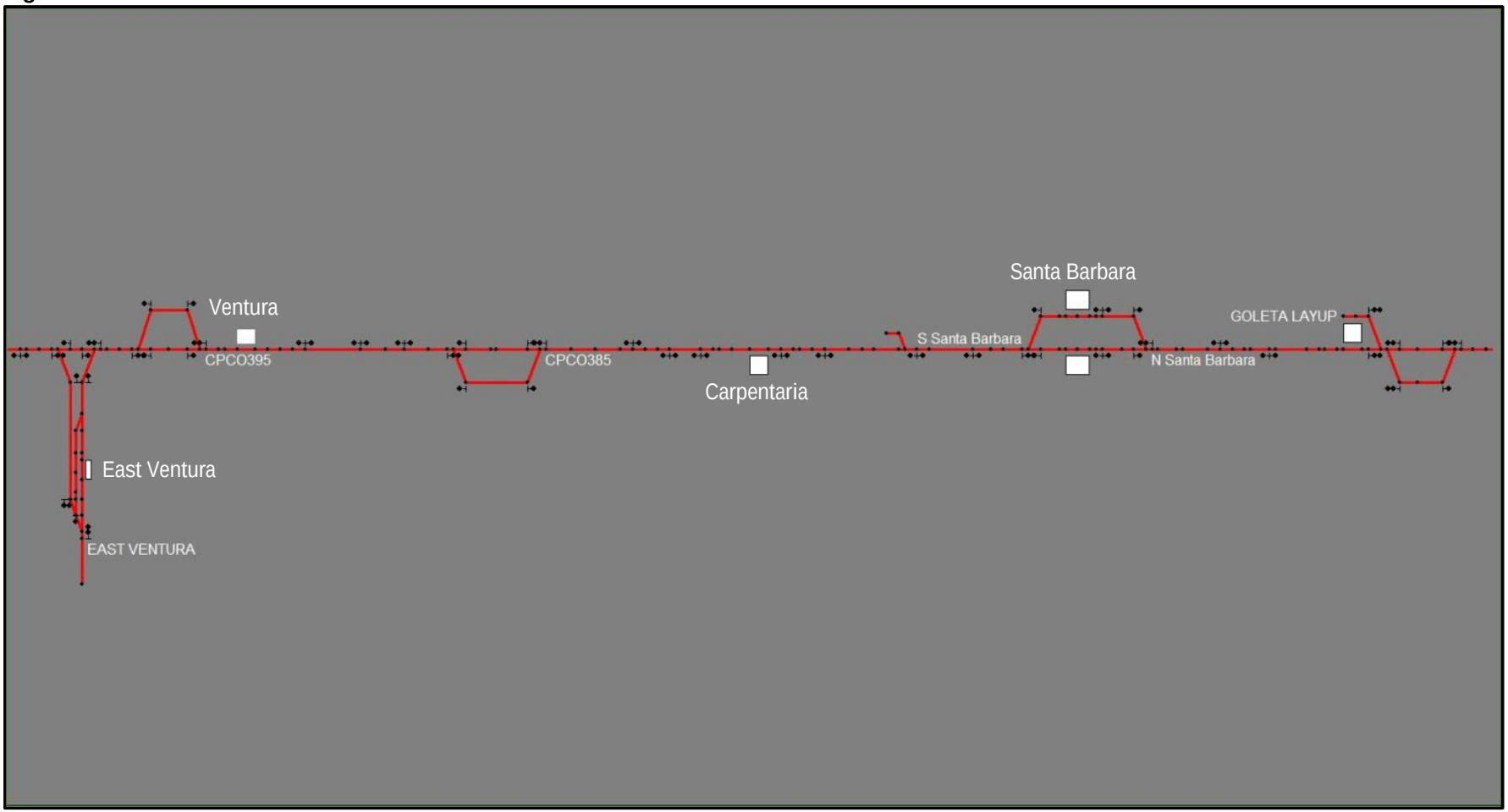
The Santa Barbara to East Ventura segment, as of May 2011, currently has 12 passenger trains serving this portion of the corridor. As with the San Luis Obispo to Santa Barbara section, this segment is owned and operated by the UPRR. The entire segment is operated using CTC, and is dispatched by the UPRR. The UPRR continues to operate limited freight service along this segment, operating up to four trains each day during the week.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN corridor cannot feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the corridor.

Limited service enhancements were assumed for 2014 for this section of the corridor. A new commuter-friendly train, assumed to be operated by Metrolink, was added from East Ventura to Santa Barbara/Goleta in the morning peak period and return from Santa Barbara/Goleta to East Ventura in the evening peak period. This service has been desired by this region for a number of years.

The analysis indicated that, in principal, it was feasible to accommodate this new train during the mid-day at the Amtrak layover facility in Goleta. However, this was based on two key assumptions, which included a maximum train length for this new commuter-friendly service of not more than six coaches and one locomotive and that Amtrak does not need to layover during the mid-day their nine car single level trainset at Goleta. The existing capacity of the layover track at Goleta is tight however and would be limited to storing at most two 5 car (or one six car and one four car) trainsets. In addition, mid-day switching moves would be necessary at this location to support Amtrak's mid-day layover requirements. These moves are necessary to ensure that the new commuter-friendly service does not get "blocked in" by Amtrak trains during their regular mid-day layover at Goleta.

Figure 6.1.2 – Santa Barbara to East Ventura



Observations at East Ventura however, reveal a storage capacity issue and the need for additional infrastructure improvements in order to feasibly operate the new commuter-friendly service. East Ventura is currently the northern terminal for existing Metrolink commuter trains operating to and from downtown Los Angeles. Metrolink currently stores three trainsets overnight at East Ventura (and it is anticipated that they will continue to store three trainsets overnight in the short-term). The existing storage capacity for these overnight trainsets is currently limited; the storage track adjacent to the station has approximately 1,310 feet of usable length for storage capacity, which provides for the ability to store one 3-car trainset and two 4-car trainsets. The new commuter service to Santa Barbara will require additional layup capacity in proximity to the station, to prevent the need for storing the train at the station platform. Metrolink's existing operating policy restricts the ability of trains to layover on the station track, in order to maintain the ability for this track to be kept clear for the occasional freight movement that may need to utilize the north leg of the Montalvo Wye.

In addition to the need for additional storage capacity, the north leg of the Montalvo Wye is in poor condition due to infrequent use. Tie and rail replacement would likely be necessary, as well as signal improvements to the control point managing access to the UPRR mainline before any new commuter-friendly service could begin operation to Santa Barbara or Goleta.

6.1.3 East Ventura to Moorpark

Table 6.1.3 –East Ventura to Moorpark Total Train Trips

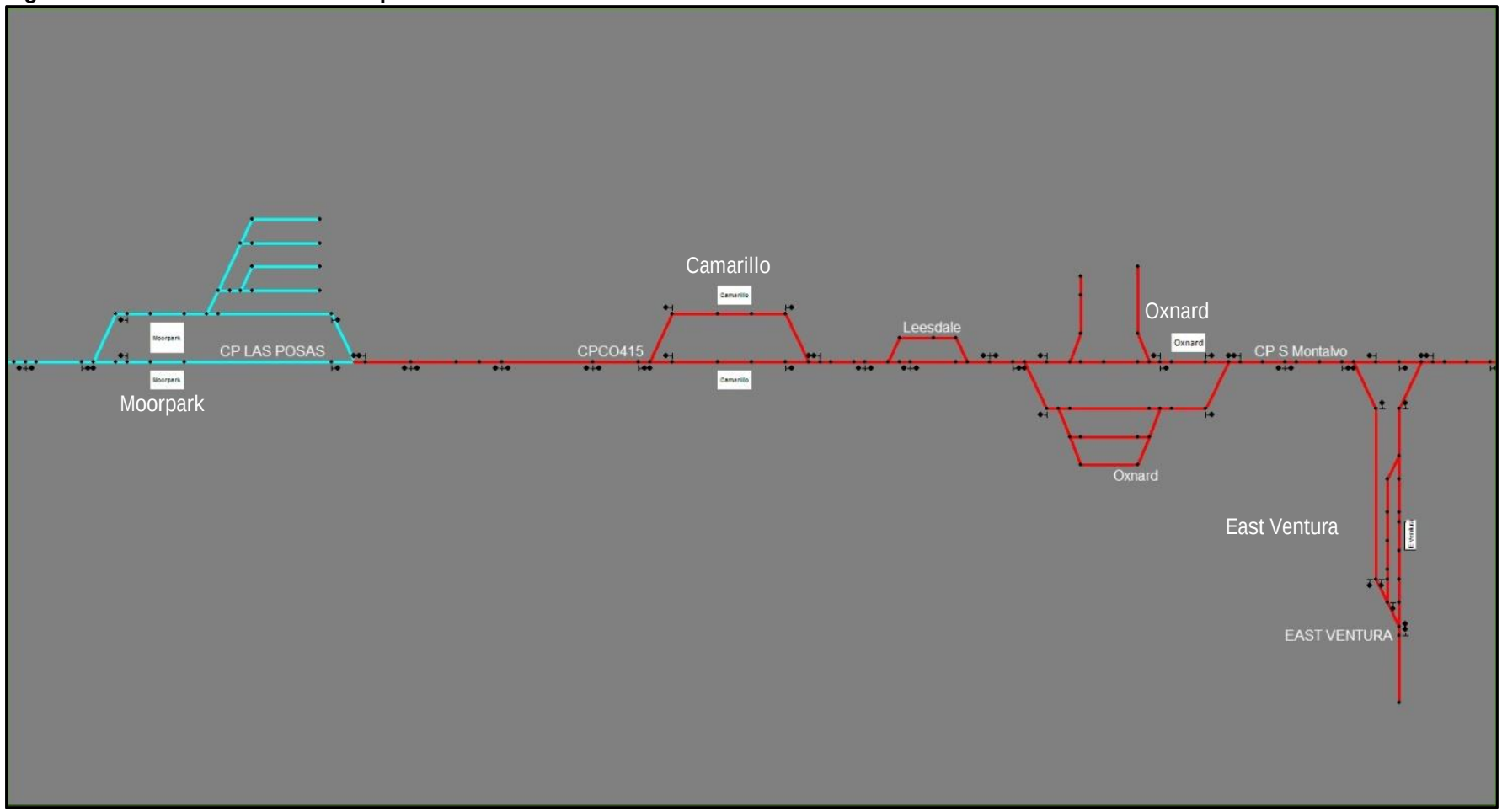
Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	10	10	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	0
Amtrak Coast Starlight	2	2	0
Metrolink Ventura County Line	6	6	0
UPRR Freight	6	6	0
TOTAL	**24**	**24**	**0**

The East Ventura to Moorpark segment is the northern most section of the Metrolink system along the LOSSAN corridor, with 18 passenger trains currently operating along this portion of the Corridor. As with the San Luis Obispo to Santa Barbara and Santa Barbara to East Ventura segments, this one is also owned and operated by the UPRR. The entire segment is operated using CTC, and is dispatched by the UPRR. The UPRR continues to operate limited freight service along this segment, operating up to four trains each day during the week.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

UPRR continues to operate limited freight service along this segment, operating up to six trains each day during the week. One of these trains is the local that services the Santa Paula industries and originates and terminates its work days from the yard in Oxnard. This segment is part of the overall "Coast Line" for the UPRR and is primarily utilized by the freight operator as an "overflow" for their more heavily utilized valley lines through Fresno and Bakersfield and over the Tehachapi Mountains.

Figure 6.1.3 – East Ventura to Moorpark



Since there are no planned infrastructure improvements identified for this segment, no additional passenger trains were assumed to operate in the short-term. The continued existence of large sections of single track, as well as the continued use of manually controlled switches for the Leesdale siding and a single platform at Oxnard, were observed as continuing to contribute to the delays incurred to both Amtrak and Metrolink trains operating "out of slot" along this segment. A total of 2.6 miles of this (approximately) 23 mile Corridor segment are double track and CTC controlled; unless additional capacity can be provided, any new trains that are added (on this segment) may require additional "pad" or "recovery" time to accommodate the time necessary for trains to "hold" for meets with other trains operating "out of slot", thereby lengthening travel times rather than reducing them.

6.1.4 Moorpark to Chatsworth

Table 6.1.4 – Moorpark to Chatsworth Total Train Trips

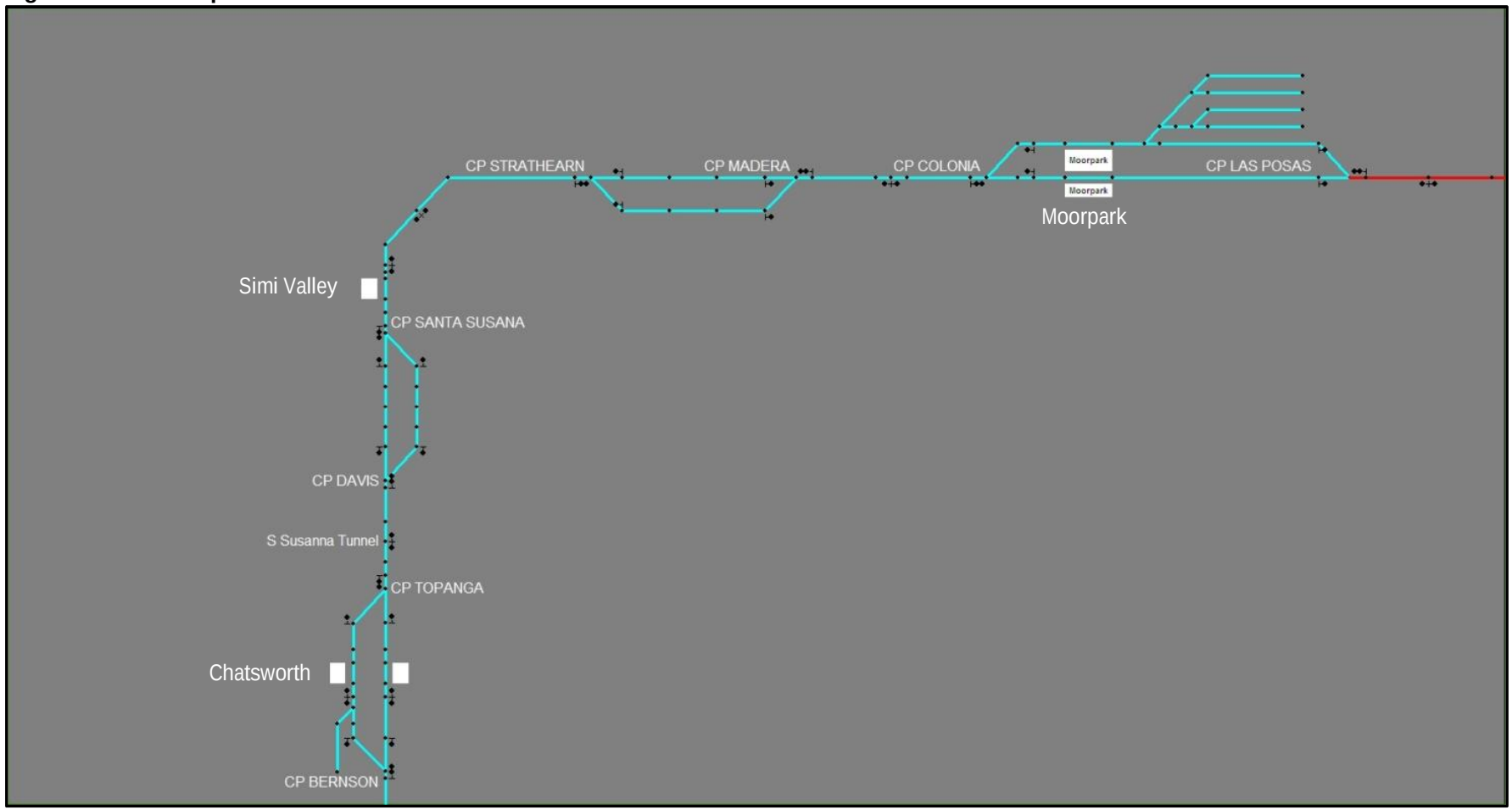
Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	10	10	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	0
Amtrak Coast Starlight	2	2	0
Metrolink Ventura County Line	14	14	0
UPRR Freight	6	6	0
TOTAL	**32**	**32**	**0**

The Moorpark to Chatsworth segment, as of May 2011, currently has 26 passenger trains serving this portion of the corridor. This segment is jointly owned by the Ventura County Transportation Commission (VCTC) and the Los Angeles County Metropolitan Transportation Authority (LA Metro). The mainline along this entire section is operated using CTC, and is dispatched by Metrolink. The UPRR maintains trackage rights along this segment and continues to operate limited freight service, operating up to six trains on a typical weekday.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operation of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

As with the segment between East Ventura and Moorpark, no infrastructure improvements were identified for this segment of the Corridor and subsequently no additional passenger trains were assumed to operate in the short-term. The continued existence of large sections of single track were observed as continuing to contribute to the delays incurred by both Amtrak and Metrolink trains operating "out of slot" along this segment. Unless additional capacity can be provided, any new trains that begin service in this segment may require additional "pad" or "recovery" time to accommodate the time that will be necessary for trains to "hold" for meets with other trains operating "out of slot", thereby lengthening travel times rather than reducing them.

Figure 6.1.4 – Moorpark to Chatsworth



6.1.5 Chatsworth to Burbank-Bob Hope Airport

Table 6.1.5 –Chatsworth to Burbank-Bob Hope Airport Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	10	10	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	0
Amtrak Coast Starlight	2	2	0
Metrolink Ventura County Line	20	20	0
UPRR Freight	6	6	0
TOTAL	**38**	**38**	**0**

The Chatsworth to Burbank-Bob Hope Airport segment, as of May 2011, has 32 passenger trains serving this portion of the corridor. This segment is owned by LA Metro. The mainline along this entire segment is operated using CTC, and is dispatched by Metrolink. The UPRR maintains trackage rights along this segment and continues to operate limited freight service, operating up to six trains on a typical day during the week.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operation of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

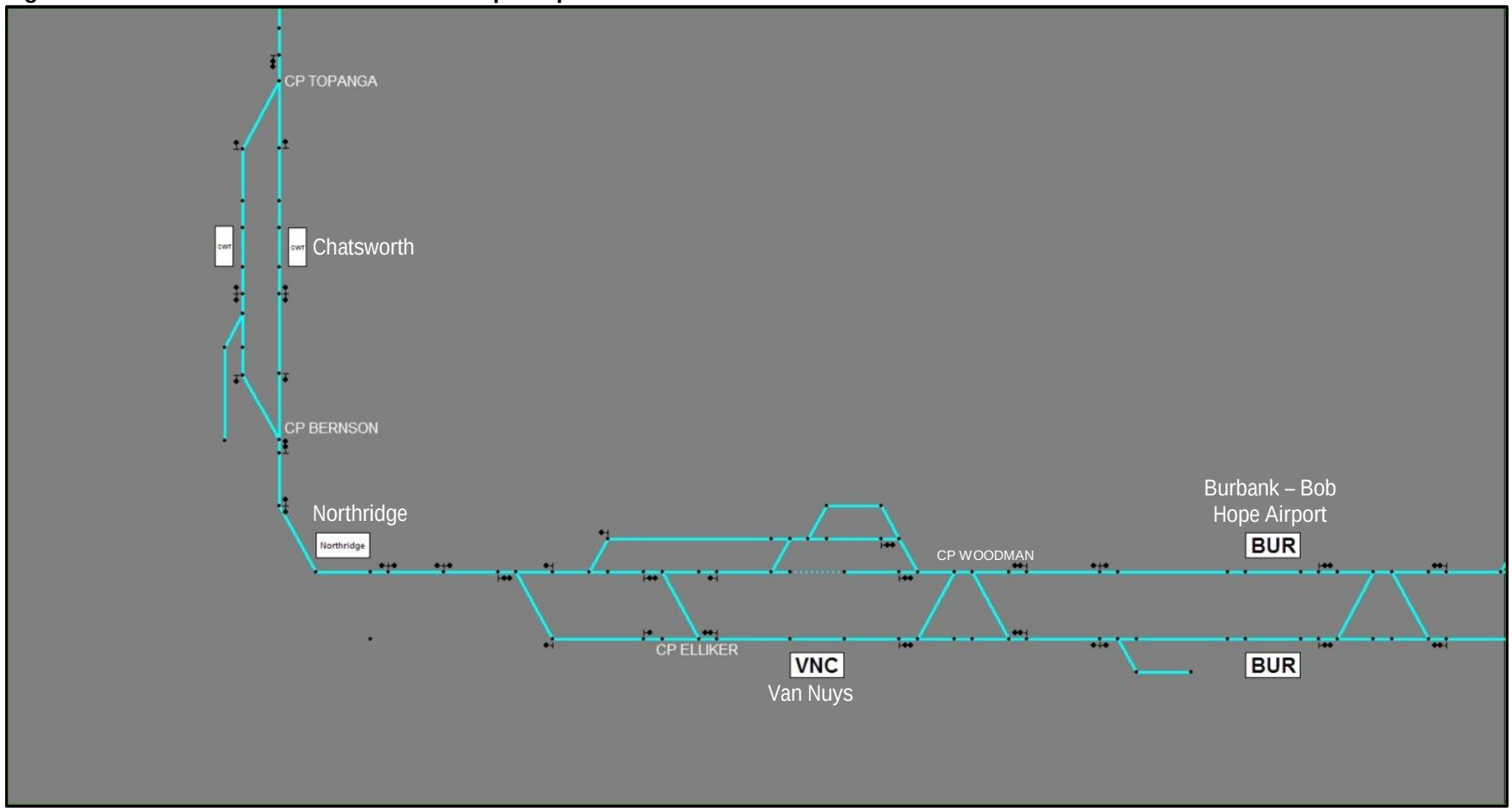
The portion of this segment between CP Bernson and CP Woodman (located just south of Van Nuys station) continues to create the greatest number of conflicts with operations along the Corridor. The delays associated with these conflicts would be mitigated by adding infrastructure in this area, specifically a second platform at the Van Nuys Station and the completion of double track between CP Bernson and CP Raymer.

Located within a multiple track segment of the Corridor, the single track platform at Van Nuys is the biggest contributor to delays in this section of the Corridor because all passenger trains stop at the Van Nuys station (both Amtrak and Metrolink). Consequently, trains routinely "hold out"[1] at either CP Woodman or CP Elliker for trains to clear the station platform at Van Nuys. While schedules have been developed to avoid this conflict, delays are typically incurred by trains arriving from the single track segments to the north, particularly for Amtrak trains arriving from points north of East Ventura. The delays associated with passenger trains operating over this segment was estimated to be cumulatively over 40 minutes each day. These delays often cause cascading delays to other trains in the Metrolink or Amtrak system, including those operating south of Los Angeles.

It is important to note that construction of a second platform at the Van Nuys station and the completion of double track between CP Bernson and CP Raymer are not identified as feasibly constructible in the short-term due to funding limitations. These projects have however received funding to complete the appropriate environmental documentation and to commence preliminary engineering.

[1] Refer to "Appendix A: Glossary of Terms" for the definition of this term.

Figure 6.1.5 – Chatsworth to Burbank-Bob Hope Airport



6.1.6 Burbank-Bob Hope Airport to Los Angeles Union Station

Table 6.1.6 – Burbank-Bob Hope Airport to Los Angeles Union Station Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	10	10	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	0
Amtrak Coast Starlight	2	2	0
Metrolink Ventura County Line	20	20	0
Metrolink Burbank-Bob Hope Turn	11	11	0
Metrolink Antelope Valley Line	30	30	0
UPRR Freight	11	11	0
TOTAL	**84**	**84**	**0**

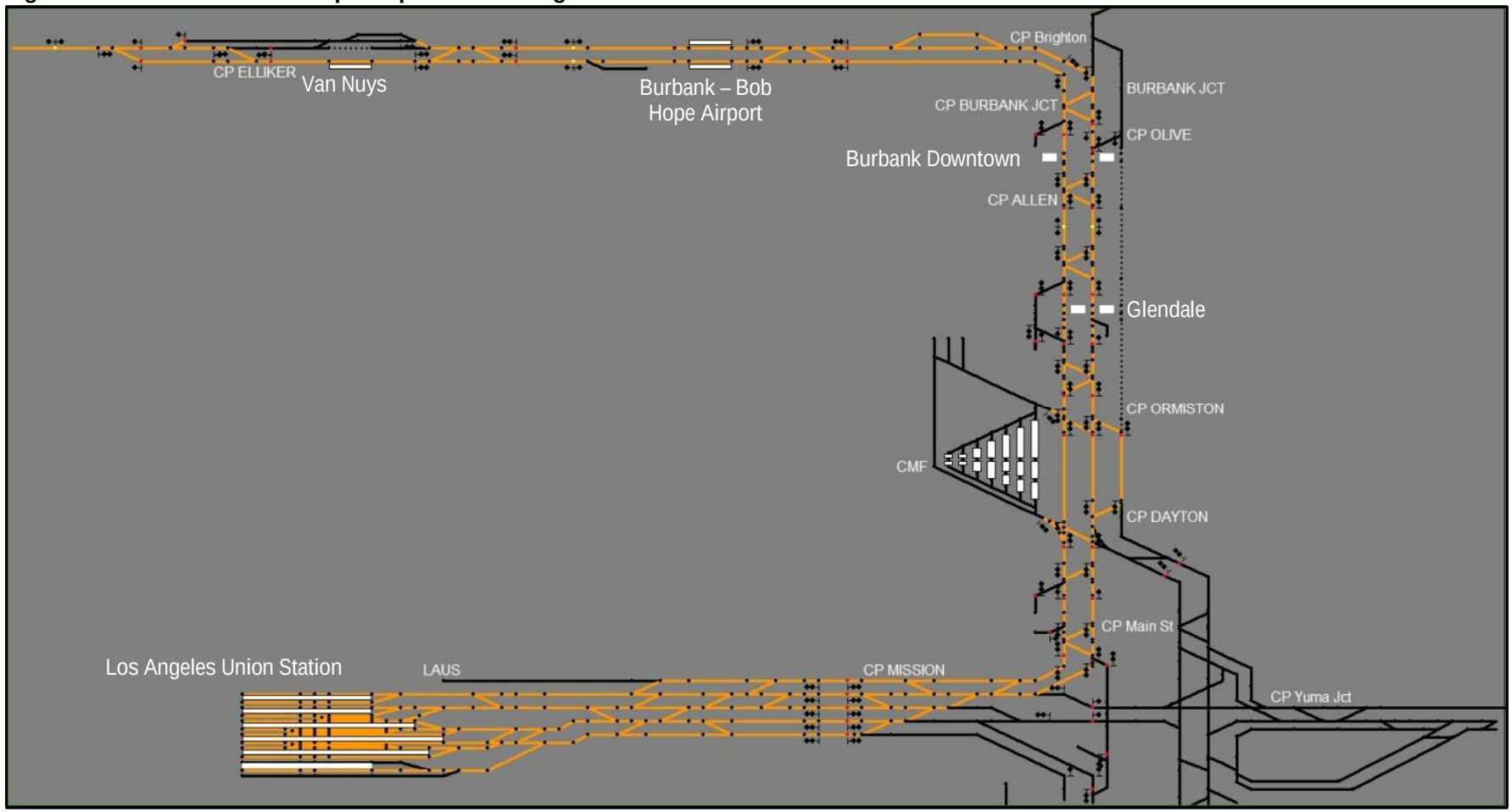
Note: These numbers do not include the non-revenue train movements between Los Angeles Union Station and Metrolink's Central Maintenance Facility.

The Burbank-Bob Hope Airport to Los Angeles Union Station segment, as of May 2011 has 73 passenger trains serving this portion of the corridor and is the most congested segment of the Corridor north of Los Angeles. This section is owned by LA Metro. The mainline along this entire segment is operated using CTC, and is dispatched by Metrolink. The UPRR maintains trackage rights along this segment and continues to operate freight service, operating up to 11 trains on a typical day during the week.

The results of the simulation indicate the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the corridor.

It is noteworthy that the results of simulations conducted on the 2014 volumes for this segment revealed continuing conflicts, primarily during the peak periods. These conflicts arose between revenue and non-revenue trains operating between Los Angeles Union Station and Metrolink's Central Maintenance Facility (CMF), located approximately 2.5 miles north of Los Angeles Union Station, along Metrolink's Valley Subdivision. The CMF is Metrolink's primary maintenance facility for its rolling stock fleet and most trains layover during the mid-day at this location for fueling and general maintenance. Of the total 248 train movements into and out of Los Angeles Union Station, 25-percent are non-revenue trains operating to or from the CMF. Simulations on these movements indicate the potential need to utilize the new Keller Yard as a mid-day layover location to minimize the conflicts created by these non-revenue trains using the crossovers at CP Mission, enroute to or from the CMF. Keller Yard is located along the West Bank of the River Subdivision, less than one mile from the platforms of LAUS. The move to and from the CMF creates conflicts with arriving or departing revenue trains along the San Bernardino, Riverside, Orange County and 91/Perris Valley Lines. While the revenue trains were given priority movement over the non-revenue trains, the non-revenue trains were "held" on one of the throat tracks that provide access to and from Los Angeles Union Station, thereby reducing the overall throughput and capacity utilization of the terminal. Allowing some trains during the mid-day to layover at Keller Yard can help in reducing these opposing movements and subsequently contribute to maximizing the overall capacity utilization of Los Angeles Union Station.

Figure 6.1.6 – Burbank-Bob Hope Airport to Los Angeles Union Station



In addition to rerouting some non-revenue trains to Keller Yard, some of those continuing to layover at CMF were routed along the East River to reduce the number of conflicts observed between CP Chavez and CP Dayton as both revenue and non-revenue trains heading north were creating conflicts with southbound revenue trains arriving to Los Angeles from points along the Ventura County and Antelope Valley Lines. Since a crossover does not currently exist between Track 3 and 4 at CP Dayton, trains are required to operate against the typical flow of traffic between CP Chavez and CP Dayton in order to access the switch into the CMF. While a new crossover is recommended to help minimize conflicts, these conflicts can also be mitigated by routing many of the non-revenue trains onto the East River, then crossing over Tracks 1 and 2 of the West Bank of the River Subdivision from Tracks 3 or 4 of the East Bank at CP Dayton, and into the CMF.

6.1.7 Los Angeles Union Station to Fullerton

Table 6.1.7 – Los Angeles Union Station to Fullerton Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	21	22	1
Amtrak Pacific Surfliner (Limited Stop)	1	2	1
Amtrak Southwest Chief	2	2	0
Metrolink/COASTER LA-SD Commuter Service	0	3*	3
Metrolink Orange County Line	19	16*	-3
Metrolink 91/Perris Valley Line	9	12	3
BNSF Freight	92	92	0
TOTAL	**144**	**149**	**5**

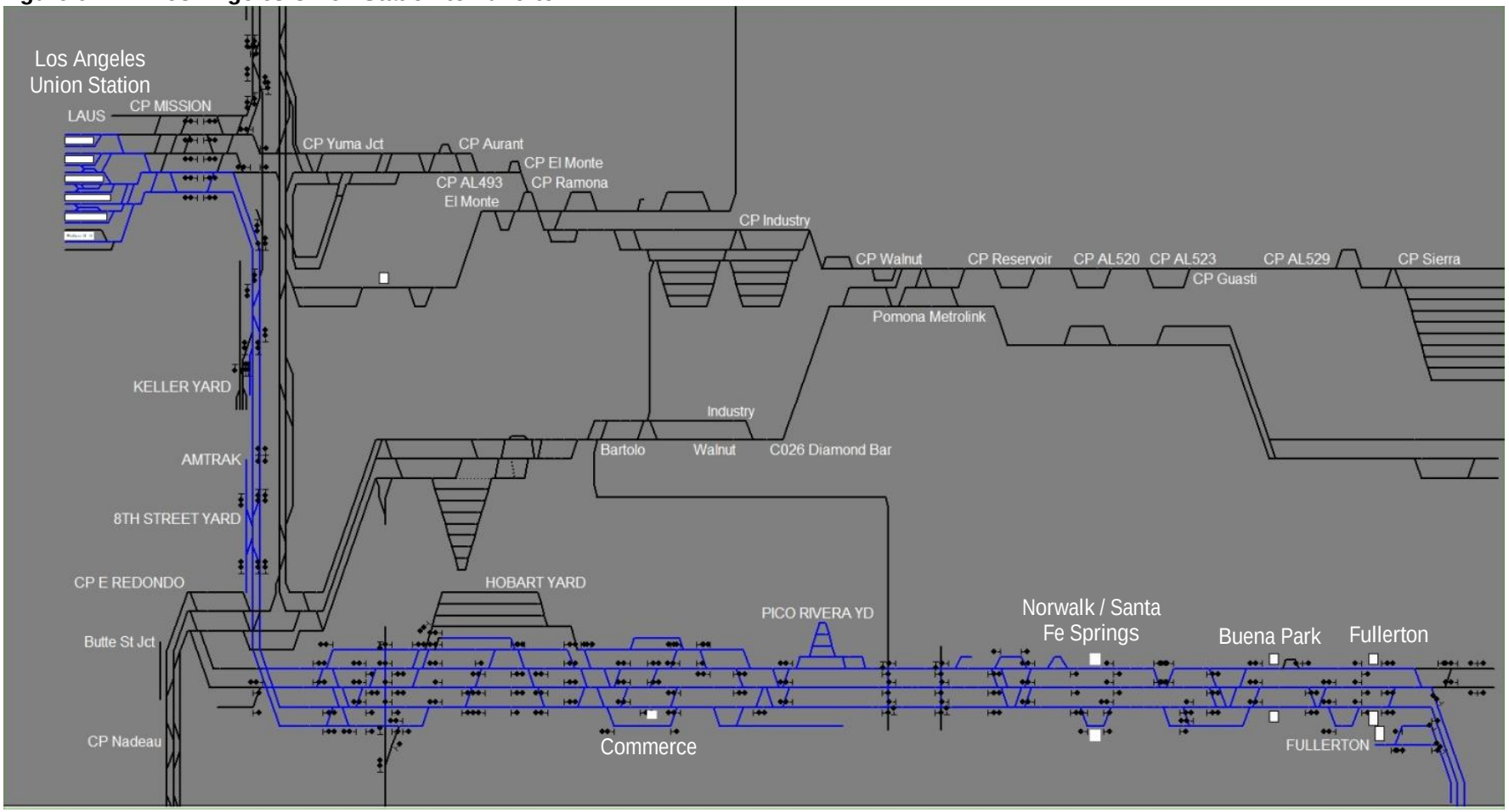
** No net reduction in service, three existing Orange County Line trains are replaced by three new LA-SD Commuter trains*

The Los Angeles Union Station to Fullerton segment, as of May 2011 has 52 passenger trains serving this portion of the Corridor and is considered to be the most congested segment of the entire LOSSAN Corridor, when freight trains are included. This segment is jointly owned by LA Metro along the River Subdivision (LAUS to CP Soto) and by BNSF Railway along the San Bernardino Subdivision (CP Soto to Fullerton Junction). The mainline along this entire section is operated using CTC, and is dispatched by Metrolink along the River Subdivision and BNSF along the San Bernardino Subdivision. The segment of the Corridor that is owned and dispatched by BNSF Railway is part of their transcontinental line that links the Ports of Los Angeles and Long Beach with the Midwestern and eastern United States. BNSF operates up to 92 trains per typical weekday through this segment of the Corridor.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the corridor.

Approximately 80-percent, or 20 miles (of the 25 miles) of this portion of the Corridor is assumed to be triple track by 2014. Some conflicts were observed along this segment each day and were primarily associated with the remaining double track section of the BNSF San Bernardino Subdivision in La Mirada. At this location, the majority of the delays were incurred by freight trains holding for other freight trains at this location, not for passenger trains. These conflicts were observed to have the potential to be mitigated through adjustments in the simulation, and did not appear to be a “fatal flaw” in the capacity of the infrastructure.

Figure 6.1.7 – Los Angeles Union Station to Fullerton



While it is acknowledged that the schedules for Metrolink are influenced by the needs of their member agencies, it was observed that further coordination is needed in developing the timetables that would account for the increase in service for the 91/Perris Valley Line or the OC Intra-County Line. The timetables provided for these services and used in the simulation model were developed by the appropriate member agencies and were not adjusted for the purpose of this modeling exercise. However, adjusting these new schedules to provide better connections in Fullerton can only help improve ridership by providing additional options to passengers between Orange, Riverside and Los Angeles Counties.

6.1.8 Fullerton to Orange

Table 6.1.8 – Fullerton to Orange Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	21	22	1
Amtrak Pacific Surfliner (Limited Stop)	1	2	1
Metrolink/COASTER LA-SD Commuter Service	0	3*	3
Metrolink Orange County Line	19	16*	-3
Metrolink OC Intra-County Line	0	10	10
BNSF Freight	4	4	0
UPRR Freight	2	2	0
TOTAL	**47**	**59**	**12**

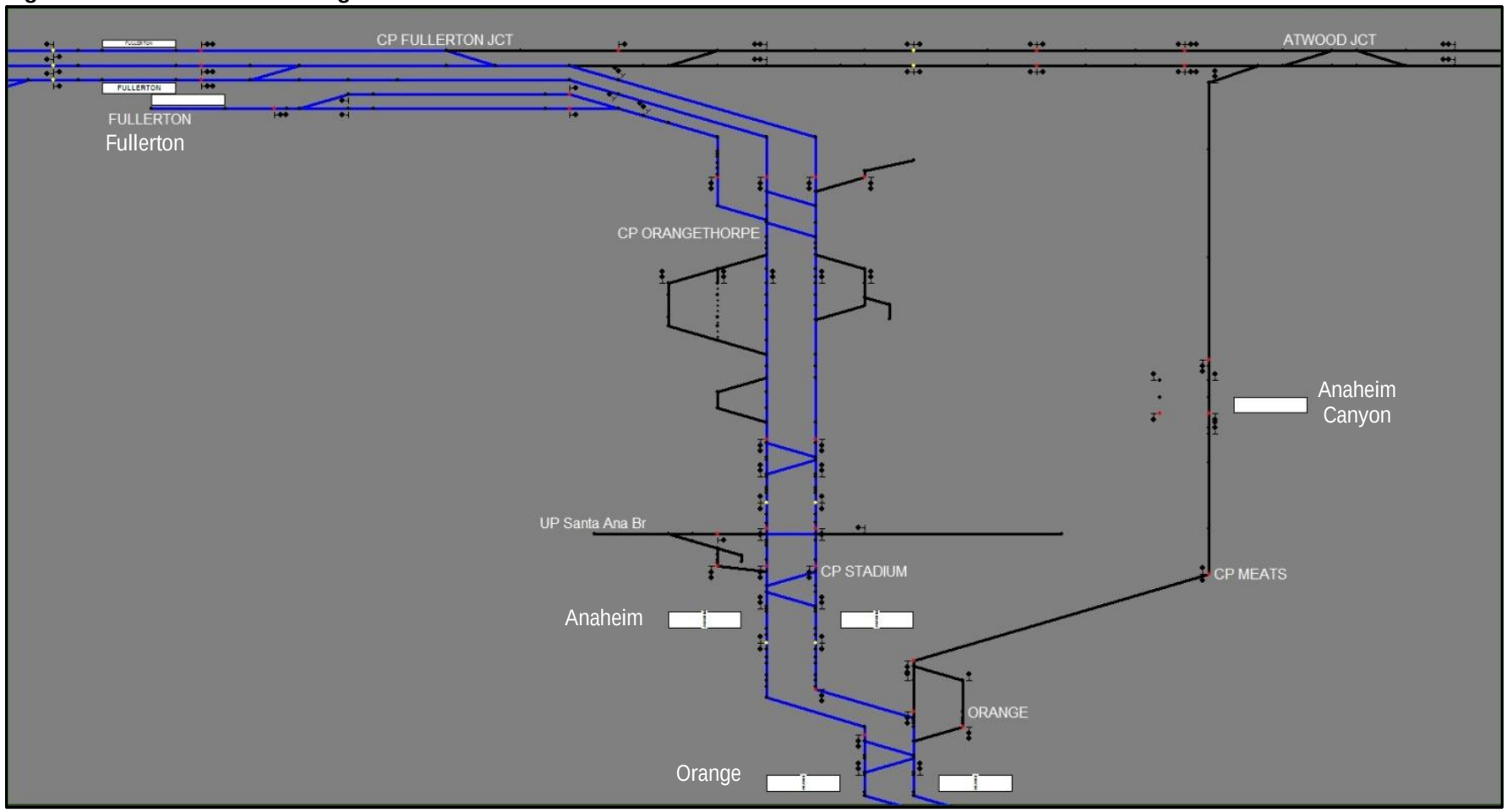
** No net reduction in service, three existing Orange County Line trains are replaced by three new LA-SD Commuter trains*

The Fullerton to Orange segment, as of May 2011, has 41 passenger trains serving this portion of the Corridor. This segment is owned by the OCTA. The mainline along this entire segment is operated using CTC, and is dispatched by Metrolink. The BNSF and UPRR both maintain trackage rights along this section and continue to operate limited freight service, operating up to a total of six trains on a typical day during the week.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

The construction of the CP Stadium crossovers and powered turnout helped to maintain reliable operations while incorporating the UPRR Costa Mesa local into the increasing volume of passenger trains along this section of the corridor. The CP Stadium crossover mitigates the need for reverse running the five mile distance from Santa Ana to Anaheim, which has the potential to cause delays to the new mid-day Metrolink and modified Amtrak services.

Figure 6.1.8 – Fullerton to Orange



6.1.9 Orange to Laguna Niguel / Mission Viejo

Table 6.1.9 – Orange to Laguna Niguel / Mission Viejo Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	21	22	1
Amtrak Pacific Surfliner (Limited Stop)	1	2	1
Metrolink/COASTER LA-SD Commuter Service	0	3*	3
Metrolink Orange County Line	19	16*	-3
Metrolink OC Intra-County Line	0	10	10
Metrolink IEOC Line	14	16	2
BNSF Freight	6	6	0
UPRR Freight	2	2	0
TOTAL	**63**	**77**	**14**

** No net reduction in service, three existing Orange County Line trains are replaced by three new LA-SD Commuter trains*

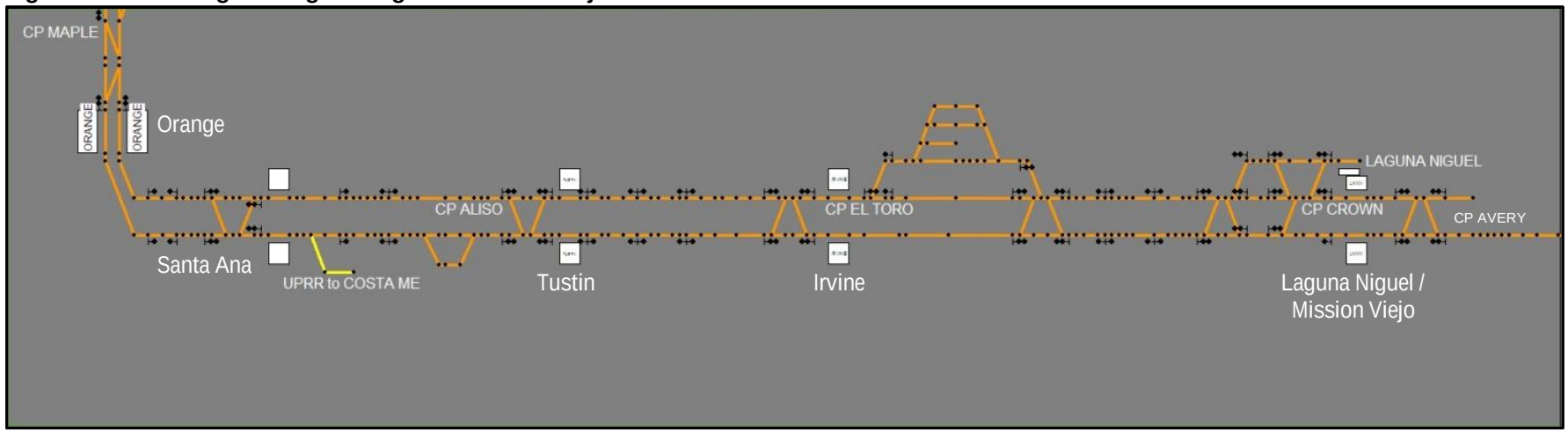
The Orange to Laguna Niguel / Mission Viejo segment, as of May 2011, has 55 passenger trains serving this portion of the corridor. This section is owned by the OCTA. The mainline along this entire segment is operated using CTC, and is dispatched by Metrolink. The BNSF and UPRR both maintain trackage rights along this segment and continue to operate limited freight service, operating up to a total of eight trains on a typical day during the week.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

The simulation provided a dynamic illustration of the delays cascading at CP Avery that are associated with trains traveling north from the single track segments in south Orange County and north San Diego County. The increase in the number of trains originating and terminating at the Laguna Niguel / Mission Viejo Metrolink station also created the necessity, at times, to operate trains left side (left handed) running through the station (standard operating practice today on Metrolink is to operate right side running). These “reverse” movements were associated with Pacific Surfliner trains, and were necessary to pass Metrolink trains “turning” on main track 1. During these occurrences, those Metrolink trains that were required to turn on main track one did so because the train did not have sufficient schedule time to “turnaround” on the pocket track adjacent to CP Avery while another train occupied the turnback track 1A.

Further conflicts were identified for those Metrolink trains that continued to turnaround at the Irvine station. With the goal of this analysis to provide implementable improvements within the next two to three years along the Corridor, the extension of service for existing trains from Irvine to Laguna Niguel / Mission Viejo would add approximately 40 minutes to the schedule and cycle for any given trainset. This adjustment would significantly alter the commute schedule for both the Orange County and IEOC Line trains, which currently operate at about 30 minute headways in the peak directions. Service extensions to Laguna Niguel / Mission Viejo should be reviewed as service on these lines is added to ensure the 30 minute frequencies are not impacted. It is important to note that as more trains are added to this segment of the corridor, the practice of turning trains on the main track at the Irvine Station during peak periods will become increasingly problematic.

Figure 6.1.9 – Orange to Laguna Niguel / Mission Viejo



6.1.10 Laguna Niguel / Mission Viejo to Oceanside

Table 6.1.10 – Laguna Niguel / Mission Viejo to Oceanside Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	21	22	1
Amtrak Pacific Surfliner (Limited Stop)	1	2	1
Metrolink/COASTER LA-SD Commuter Service	0	3*	3
Metrolink Orange County Line	10	7*	-3
Metrolink IEOC Line	6	6	0
BNSF Freight	4	4	0
TOTAL	**42**	**44**	**2**

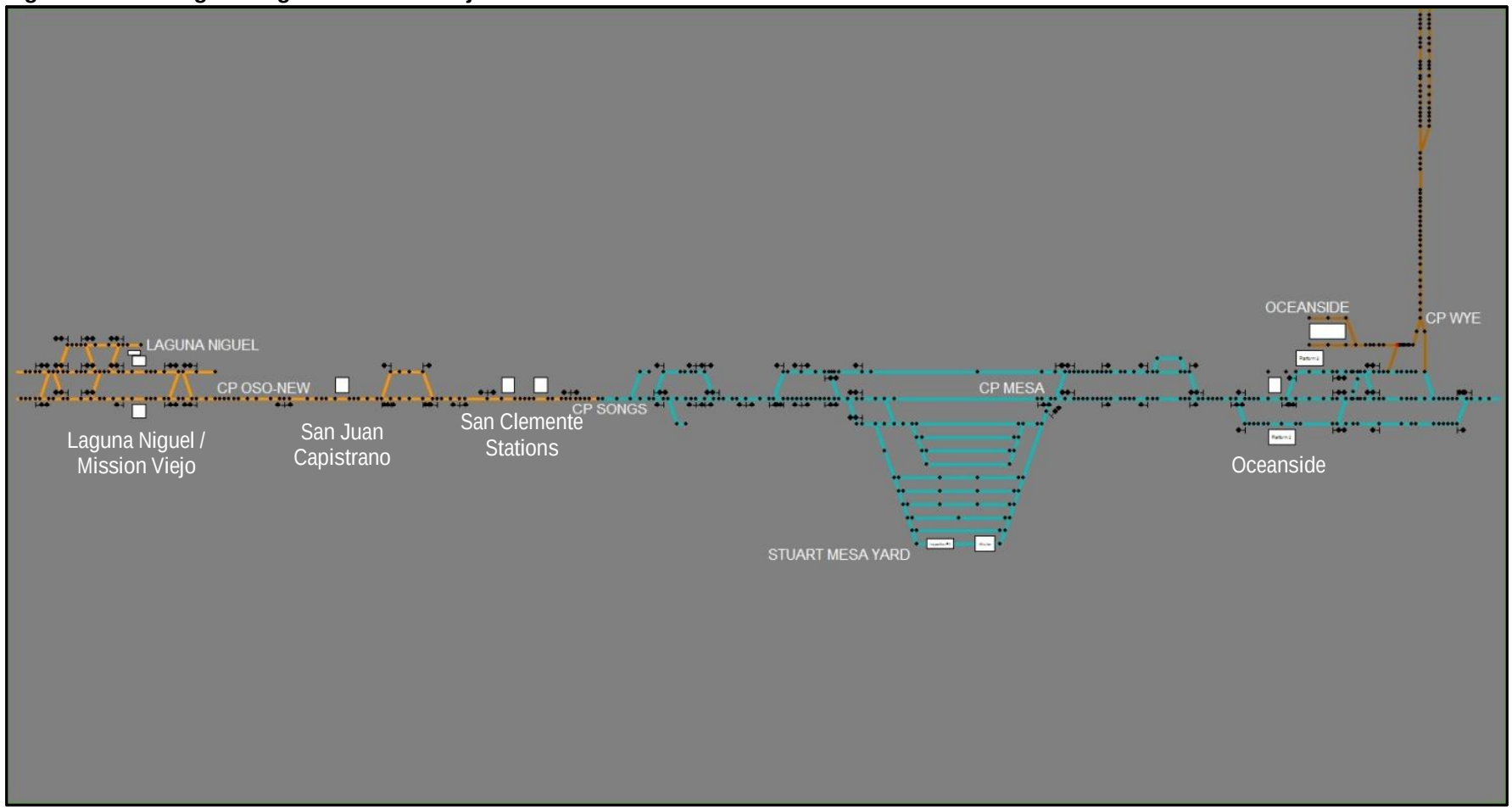
** No net reduction in service, three existing Orange County Line trains are replaced by three new LA-SD Commuter trains*

The Laguna Niguel / Mission Viejo to Oceanside segment, as of May 2011, has 38 passenger trains serving this portion of the Corridor. This segment is owned by the OCTA in Orange County, and the North County Transit District (NCTD) in San Diego County. The mainline along this entire segment is operated using CTC, and is dispatched currently by Metrolink. Beginning in October 2011, the San Diego County portion of this segment will be dispatched by NCTD. The BNSF Railway maintains trackage rights along this segment and continues to operate limited freight service, operating up to a total of four trains on a typical day during the week.

The results of the simulation indicate that the assumed infrastructure for 2014 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

The long sections of single track in south Orange County and through Camp Pendleton were observed as continuing to contribute to delays for both Amtrak and Metrolink trains operating “out of slot”. Unless additional capacity can be provided, any new trains that begin service in this segment may require additional “pad” or “recovery” time to accommodate the additional time that will be necessary for trains to “hold” for meets with other trains operating “out of slot”, thereby lengthening travel times rather than reducing them.

Figure 6.1.10 – Laguna Niguel / Mission Viejo to Oceanside



6.1.11 Oceanside to San Diego

Table 6.1.11 – Oceanside to San Diego Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	Service Growth
Amtrak Pacific Surfliner (All Stop)	21	22	1
Amtrak Pacific Surfliner (Limited Stop)	1	2	1
Metrolink/COASTER LA-SD Commuter Service	0	3	3
Metrolink Coast Line	0	1*	1
COASTER	22	28	6
BNSF Freight	6	6	0
TOTAL	**50**	**62**	**12**

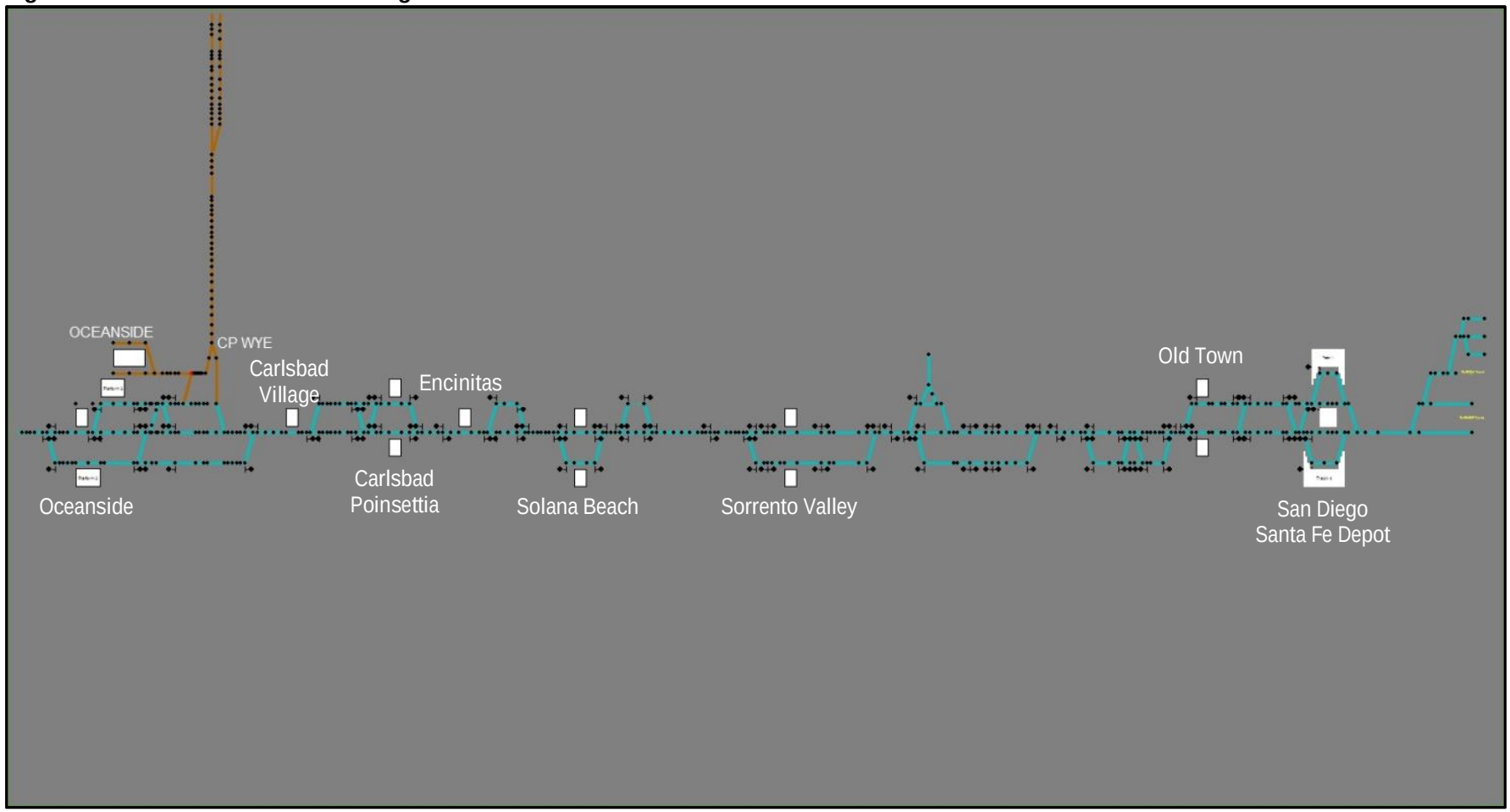
** This is a late night Metrolink train that operates between San Diego and Oceanside as the return to Train 608 that is extended to San Diego from Oceanside.*

The Oceanside to San Diego segment, as of May 2011, has 44 passenger trains serving this portion of the Corridor. This section is primarily owned by the North County Transit District (NCTD), with the portion of the corridor in the City of San Diego being owned by the San Diego Metropolitan Transit System (SDMTS). The mainline along this entire segment is operated using CTC, and is dispatched currently by Metrolink. Beginning in January 2012, this segment will be dispatched by NCTD. The BNSF Railway maintains trackage rights along this segment and continues to operate limited freight service, operating up to a total of six trains on a typical day during the week.

The results of the simulation indicate the assumed infrastructure for 2014 in this segment of the LOSSAN corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

The analysis of the simulation shows that, while additional capacity to the Oceanside Transit Center is necessary to support the short-term service plan, the proposed track configuration represented has the potential to cause “new” conflicts associated with passenger operations on main track one (platform 1). Metrolink trains using the new “thru” track must travel through the passenger platform area on main track one to enter or exit from the new track, constraining the potential capacity provided by the additional station track for Metrolink trains arriving from and departing to the north. During peak periods, this conflict was observed when Metrolink trains operating to or from the “stub” track were required to “hold” until COASTER trains operating to or from the Stuart Mesa Maintenance Facility departed platform 1. To mitigate this conflict, most Metrolink trains were “turned” on track 2, which is the same operating methodology that currently exists. Exceptions to this were when the assumed timetable has four trains serving the OTC at one time. During these instances, Metrolink and COASTER trainsets are both positioned on the “thru-track”, while Amtrak trains service the station platforms on both main tracks 1 and 2.

Figure 6.1.11 – Oceanside to San Diego



7.0 CONCLUSION

The infrastructure configurations and preferred timetable developed for the 2014 Short-Term scenario and approved by the LOSSAN TAC and PWG were reviewed and tested as part of this operations analysis. The results of the simulation indicated that the assumed infrastructure for 2014 for the LOSSAN Corridor can feasibly support the operations of the Version 3A timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor, with one exception. The exception that was identified was in East Ventura where insufficient storage capacity will be available to accommodate the proposed Ventura to Santa Barbara commuter friendly service equipment during the desired overnight layover. As such, a new storage siding will be necessary to support the addition equipment needs. This new storage siding identified for East Ventura would also need to be in conjunction with track and signal upgrades to the north leg of the Montalvo Wye.

Due diligence requires us to point out that daily railroad operations are extremely fluid and our simulations revealed that additional operational and infrastructure modifications, particularly north of Los Angeles, are necessary to support both scheduled and delayed operations. With the high percentage of single track along the LOSSAN Corridor north of Los Angeles, it can be easy for a train to become delayed and operate “out of slot”. This was demonstrated in the simulations, where on-time performance (OTP) for Metrolink’s Ventura County Line was identified as the lowest of all of the passenger services along the LOSSAN Corridor at 94.4%[1] for a typical operating day. One of the locations identified as having the high number of delays incurred between passenger trains as a result of single track infrastructure was at the Van Nuys Station and between CP Bernson and CP Raymer. There was approximately 30 minutes of cumulative delay between passenger trains observed on a typical day as a result of the single track in this area. Much of this delay is a result of on-time trains having to hold on a siding for “out of slot” trains to pass or service the Van Nuys Station, thereby making the previously on-time train late. In addition, a second platform at the Van Nuys Station and completion of double track between CP Bernson and CP Raymer will help to further reduce trip times by cutting some of the “pad” or “float” that is currently incorporated into schedules for both Metrolink and Amtrak to account for unanticipated delays incurred on the single track segments of the corridor.

A new left hand crossover is also recommended between CP Chavez and CP Dayton to assist in maintaining reliable operations between LAUS and the CMF during non-revenue movements for Metrolink. The existing configuration requires non-revenue train movements to the CMF to operate against the flow of traffic, particularly during the peak morning commute time.

South of Los Angeles, while the additional capacity at the Oceanside Transit Center was identified as necessary, the proposed design configuration for the “thru-track” at the Oceanside Transit Center, has the potential to contribute to cascading delays if the “thru-track” is utilized regularly by Metrolink. The current design of this “thru-track” can potentially "trap" a train that is turning, while another train utilizes the platform adjacent to main track 1. Mitigation for this in the short-term was to continue turning most Metrolink trains on main track 2. This solution however may prove to be impractical in the future as service levels continue to increase.

The significant level of remaining single track infrastructure along the entire LOSSAN Corridor will continue to be the most significant operational limitation having the greatest impact on performance, in particular the sections of single track through Ventura County and north Los Angeles County, as well as San Diego County and south Orange County. These single track segments continue to contribute to cascading delays across the entire corridor that occur when trains are not on schedule and operating “out of slot”.

[1] OTP based on scheduled times between initial origin station and final terminal station for each scheduled train.

APPENDIX A: GLOSSARY OF TERMS

This section provides an alphabetical listing of the technical terms used in this report.

BNSF

- BNSF is an abbreviation used to represent the BNSF Railway, which is a wholly owned subsidiary of the Burlington Northern Santa Fe Corporation, based out of Fort Worth, Texas. The holding company was formed by the September 22, 1995 merger of Burlington Northern, Incorporated and the Santa Fe Pacific Corporation.

CMF

- Abbreviation used for Metrolink's Central Maintenance Facility, located north of Los Angeles Union Station.

COASTER

- This is a commuter train service provided by the North County Transit District that runs north-south, serving eight stations between Oceanside and downtown San Diego.

Consist

- This is a term used to define what a trainset is comprised or made up of. Typical consists for Metrolink would be five bi-level cars and one diesel locomotive.

Control Point (CP)

- A Control Point is a signalized switch or crossing controlled remotely by a dispatcher at a central operations center.

Crossover

- A combination of two switches that connect two adjacent tracks.

Hold-Out

- A term used to describe when a train waits outside a station or other rail facility for another train that is servicing that station or facility. This typically occurs in single track territory when only one train can occupy the station or facility at a given time.

Junction

- This describes a location where multiple (2 or more) railroad subdivisions come together.

Out-of-Slot

- A term used to describe when a train is not operating within its assigned schedule.

Signal Block

- A length of track between consecutive signals.

Stringlines

- This term is used to describe an illustration where each line represents a single train and is measured against distance (Y axis) and time (X axis). This type of illustration is useful for identifying locations of train meets and schedule delays.

Subdivision

- A section of railroad controlled by UPRR, BNSF or Metrolink where trains are operated subject to specific time tables and special instructions.

Turnback

- A specific location usually associated with a terminal station, where trains can "turn". Turning in modern commuter and intercity rail operations, which typically operate "push-pull" equipment, involves the engineer moving from one end of the train to the other and performing designated brake and communication tests to ensure safe operations after "turning".

UPRR

- UPRR is an abbreviation used to represent the Union Pacific Railroad, which is a wholly owned subsidiary of the Union Pacific Corporation based out of Omaha, Nebraska. The Union Pacific Railroad is the largest and one of the oldest railroads in North America, having been incorporated in July of 1862.

Wye

- A wye, or triangular junction, is a triangular shaped arrangement of rail tracks with a switch or set of points at each corner. In mainline railroads, this can be used at a rail junction, where three rail lines join, in order to allow trains to pass from any line to any other line. Wyes can also be used for turning railway equipment.

APPENDIX B: STRINGLINE DIAGRAMS

Case: C:\RTC\SOCAL\LOSSAN-SIP\LOSSAN-SIP-2013-SHORT-REV2 Southern California Passenger Rail Network Dispatched by a prior run. Line: LOSSAN NORTH Train colors: Type

LOS ANGELES	0.13
GLENDALE	5.70
BUR-BOB HOPE	13.51
VAN NUYS	18.86
NORTHRIDGE	24.71
CHATSWORTH	28.51
SIMI VALLEY	36.16
MOORPARK	46.91
CAMARILLO	57.41
OXNARD	66.56
EAST VENTURA	70.76
VENTURA	76.59
CARPINTERIA	92.81
SANTA BARBARA	103.27
GOLETA	112.61
SURF / LOMPOC	171.16
GUADALUPE	197.56
GROVER BEACH	209.81
SAN LUIS OBISPO	221.96

SCAX100-ST-5
UPRR-OWPDO-5
UPRR-OWPDO-5
UPRR-OWPDO-5
AMTK774PS-ST-5
AMTK774PS-ST-5
AMTK774PS-ST-5
AMTK774PS-ST-5
AMTK799PS-ST-5
AMTK1ACS-ST-5
UPRR-GDLLPC-5

0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00

All times displayed in Pacific time RTC version: 2.70 L62L Run time: 10 August 2011 11:51:14

Case: C:\RTC\SOCAL\LOSSAN-SIP\LOSSAN-SIP-2013-SHORT-REV2 Southern California Passenger Rail Network Dispatched by a prior run. Line: LOSSAN NORTH Train colors: Type

LOS ANGELES	0.13
GLENDALE	5.70
BUR-BOB HOPE	13.51
VAN NUYS	18.86
NORTHRIDGE	24.71
CHATSWORTH	28.51
SIMI VALLEY	36.16
MOORPARK	46.91
CAMARILLO	57.41
OXNARD	66.56
EAST VENTURA	70.76
VENTURA	76.59
CARPINTERIA	92.81
SANTA BARBARA	103.27
GOLETA	112.61
SURF / LOMPOC	171.16
GUADALUPE	197.56
GROVER BEACH	209.81
SAN LUIS OBISPO	221.96

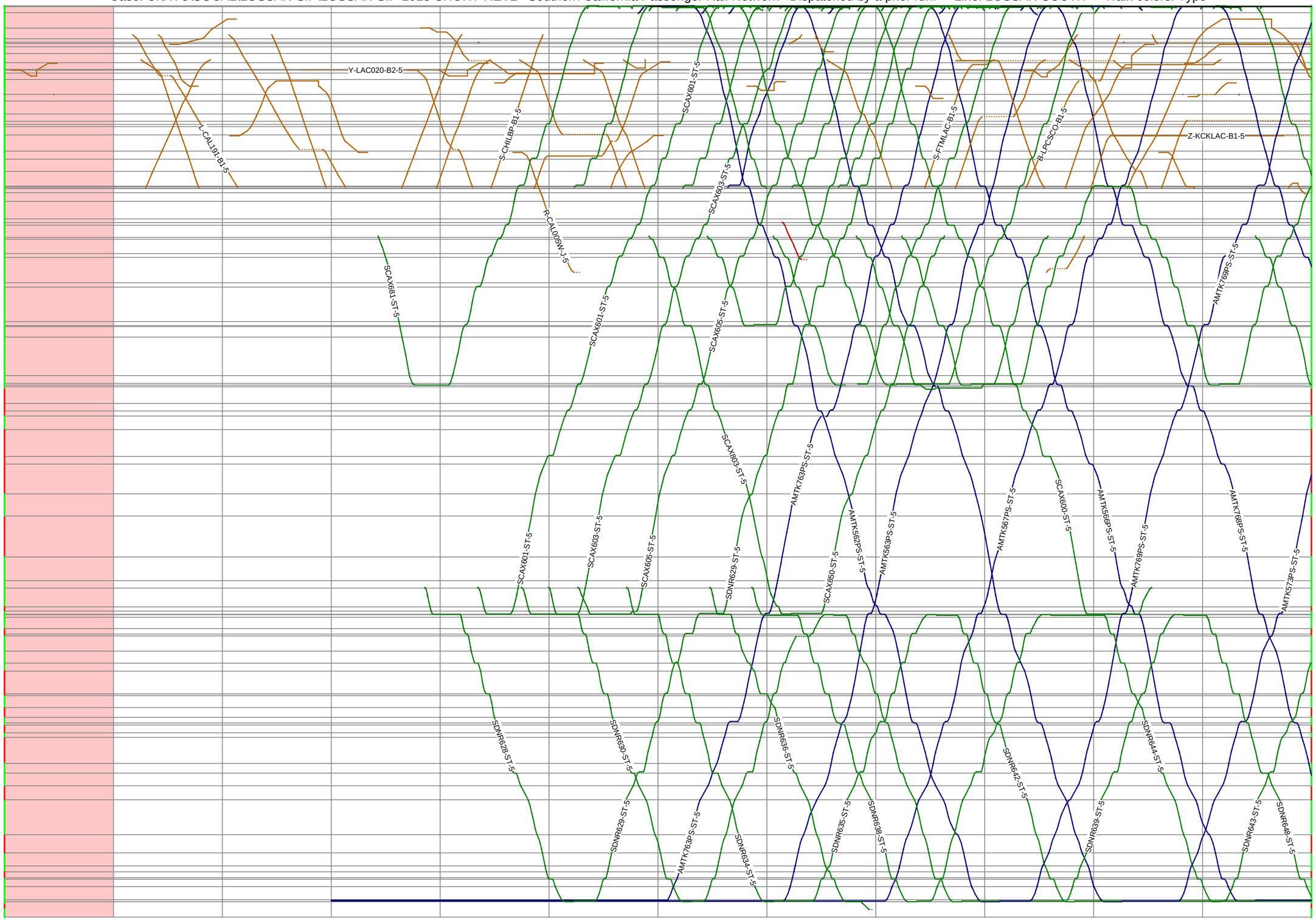
SCAX121-ST-5
SCAX121-ST-5
UPRR-LOF67-5
AMTK14CS-ST-5
AMTK11CS-ST-5
SCAX01004-ST-5
UPRR-ODOWP-5
AMTK14CS-ST-5
UPRR-LOF67-5
AMTK775PS-ST-5
UPRR-LOF66-5
AMTK790PS-ST-5
AMTK11CS-ST-5
UPRR-GDLLPC-5
UPRR-LOF66-5
UPRR-LOF67-5
AMTK14CS-ST-5
AMTK11CS-ST-5
UPRR-ODOWP-5
AMTK775PS-ST-5

12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

All times displayed in Pacific time RTC version: 2.70 L62L Run time: 10 August 2011 11:53:01

Case: C:\RTC\SOCAL\LOSSAN-SIP\LOSSAN-SIP-2013-SHORT-REV2 Southern California Passenger Rail Network Dispatched by a prior run. Line: LOSSAN SOUTH Train colors: Type

LOS ANGELES	0.13
COMMERCE	9.11
NORWALK	16.97
BUENA PARK	21.95
FULLERTON	25.82
ORANGE	33.39
SANTA ANA	36.00
TUSTIN	40.25
IRVINE	45.75
LAGUNA NIGUEL	54.27
SAN JUAN CAP	57.97
SAN CLEM PIER	65.58
OCEANSIDE	87.12
CARLSBAD VILLAGE	89.90
POINSETTIA	94.05
ENCINITAS	98.45
SOLANA BEACH	102.60
SORRENTO VALLEY	109.80
OLD TOWN	124.96
SAN DIEGO	128.19



0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00

THURSDAY

All times displayed in Pacific time RTC version: 2.70 L62L Run time: 10 August 2011 11:49:50

Case: C:\RTC\SOCAL\LOSSAN-SIP\LOSSAN-SIP-2013-SHORT-REV2 Southern California Passenger Rail Network Dispatched by a prior run. Line: LOSSAN SOUTH Train colors: Type

LOS ANGELES	0.13
COMMERCE	9.11
NORWALK	16.97
BUENA PARK	21.95
FULLERTON	25.82
ORANGE	33.39
SANTA ANA	36.00
TUSTIN	40.25
IRVINE	45.75
LAGUNA NIGUEL	54.27
SAN JUAN CAP	57.97
SAN CLEM PIER	65.58
OCEANSIDE	87.12
CARLSBAD VILLAGE	89.90
POINSETTIA	94.05
ENCINITAS	98.45
SOLANA BEACH	102.60
SORRENTO VALLEY	109.80
OLD TOWN	124.96
SAN DIEGO	128.19

12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 24:00

THURSDAY

All times displayed in Pacific time RTC version: 2.70 L62L Run time: 10 August 2011 11:50:34

APPENDIX C: 2014 VERSION 3A TIMETABLE

WEEKDAY SOUTHBOUND - San Luis Obispo ● Santa Barbara ● Burbank ● Los Angeles

Train Operator	No.	Freq.	San Luis Obispo	Grover Beach - Pismo Beach	Guadalupe	Santa Maria (IHOP)	Surf / Lompoc	Lompoc (Visitors Center)	Buellton (Burger King)	Solvang	Goleta	Santa Barbara	Santa Barbara	Carpinteria	Ventura	East Ventura	Oxnard	Camarillo	Moorpark	Simi Valley	Chatsworth	Northridge	Van Nuys	Burbank - Bob Hope Airport	Downtown Burbank	Glendale	Los Angeles[1]
			Dp	Dp	Dp	(B) Dp	Dp	(B) Dp	(B) Dp	(B) Dp	Dp	Ar	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar
Amtrak	A5804	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →		12:15 AM	12:30 AM
Amtrak	A5818	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →		2:05 AM	2:20 AM
Metrolink	M200	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →		5:30 AM	5:37 AM	5:53 AM
Metrolink	M100	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5:04 AM	5:17 AM	5:28 AM	5:33 AM	5:41 AM	5:49 AM	5:55 AM	6:02 AM	6:15 AM
Metrolink	M900	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6:13 AM	6:17 AM	6:23 AM	6:38 AM
Metrolink	M202	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			6:31 AM	6:38 AM	6:55 AM
Metrolink	M282	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Palmdale →			6:45 AM	---	7:00 AM
Metrolink	M102	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	5:25 AM	5:39 AM	5:49 AM	6:00 AM	6:13 AM	6:24 AM	6:29 AM	6:37 AM	6:45 AM	6:52 AM	6:59 AM	7:12 AM
Metrolink	M204	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			7:21 AM	7:28 AM	7:45 AM
Metrolink	M104	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	6:03 AM	6:17 AM	6:27 AM	6:38 AM	6:51 AM	7:02 AM	7:07 AM	7:15 AM	7:23 AM	7:30 AM	7:37 AM	7:50 AM
Metrolink	M206	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			7:51 AM	7:58 AM	8:15 AM
Metrolink	M106	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	6:42 AM	6:56 AM	7:06 AM	7:17 AM	7:30 AM	7:41 AM	7:46 AM	7:54 AM	8:02 AM	8:08 AM	8:15 AM	8:28 AM
Metrolink	M208	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			8:27 AM	8:33 AM	8:52 AM
Metrolink	M902	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8:35 AM	8:39 AM	8:45 AM	9:00 AM
Metrolink	M108	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8:25 AM	8:30 AM	8:38 AM	8:46 AM	8:52 AM	8:59 AM	9:15 AM
Amtrak/Metrolink	A768/M158	DAILY	4:00 AM	4:25 AM	---	4:50 AM	---	---	5:20 AM	5:30 AM	6:35 AM	6:30 AM	6:49 AM	7:03 AM	7:27 AM	---	7:41 AM	7:51 AM	8:05 AM	8:20 AM	8:35 AM	8:41 AM	8:51 AM	8:59 AM	9:04 AM	9:11 AM	9:25 AM
Metrolink	M110	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8:25 AM	8:38 AM	8:49 AM	8:54 AM	9:02 AM	9:10 AM	9:16 AM	9:23 AM	9:40 AM
Metrolink	M210	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Via Princessa →			9:34 AM	9:41 AM	10:00 AM
Metrolink	M284	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Santa Clarita →			10:10 AM	10:17 AM	10:30 AM
Amtrak	A5872	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →			10:45 AM
Metrolink	M212	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			10:28 AM	10:35 AM	10:50 AM
Metrolink	M112	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10:45 AM	10:50 AM	10:58 AM	11:06 AM	11:12 AM	11:21 AM	11:35 AM
Amtrak	A774	DAILY	7:30 AM	7:49 AM	8:04 AM	---	8:38 AM	---	---	---	9:45 AM	---	10:04 AM	10:23 AM	10:44 AM	---	10:58 AM	11:08 AM	---	11:38 AM	11:50 AM	---	12:02 PM	12:09 PM	---	12:19 PM	12:30 PM
Metrolink	M286	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Santa Clarita →			12:29 PM	12:35 PM	12:49 PM
Metrolink	M214	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			1:15 PM	1:22 PM	1:35 PM
Amtrak	A5802	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →			2:30 PM
Metrolink	M216	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			3:06 PM	3:13 PM	3:30 PM
Metrolink	M116	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2:25 PM	2:38 PM	2:49 PM	2:54 PM	3:02 PM	3:10 PM	3:16 PM	3:23 PM	3:40 PM
Metrolink	M904	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3:37 PM	3:41 PM	3:47 PM	4:00 PM
Amtrak	A4582	DAILY	---	---	---	---	---	---	---	---	---	---	12:55 PM	---	1:25 PM	---	1:50 PM	---	---	---	---	---	---	---	---	---	3:55 PM
Amtrak	A5812	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →			4:10 PM
Metrolink	M218	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Via Princessa →			3:56 PM	4:03 PM	4:20 PM
Metrolink	M906	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:15 PM	4:19 PM	4:25 PM	4:40 PM
Amtrak	A784/A4764	DAILY	10:20 AM	10:45 AM	---	11:10 AM	---	11:55 AM	12:15 PM	12:25 PM	1:50 PM	1:30 PM	2:03 PM	2:18 PM	2:42 PM	---	2:58 PM	3:09 PM	3:21 PM	3:37 PM	3:50 PM	---	4:16 PM	4:25 PM	---	4:38 PM	4:55 PM
Metrolink	M150	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:30 PM	4:35 PM	4:43 PM	4:55 PM	5:00 PM	5:06 PM	5:20 PM
Metrolink	M910	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5:05 PM	5:10 PM	5:15 PM	5:30 PM
Metrolink	M220	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Santa Clarita →			5:41 PM	5:48 PM	6:10 PM
Metrolink	M118	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:57 PM	5:10 PM	5:27 PM	5:32 PM	5:45 PM	5:53 PM	5:59 PM	6:06 PM	6:20 PM
Amtrak	A5814	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →			6:40 PM
Amtrak	A790	DAILY	1:35 PM	1:55 PM	2:11 PM	---	2:51 PM	---	---	---	3:57 PM	---	4:12 PM	4:27 PM	4:49 PM	---	5:07 PM	---	5:36 PM	5:54 PM	6:12 PM	---	6:25 PM	6:37 PM	---	6:50 PM	7:10 PM
Metrolink	M1004	M-F	---	---	---	---	---	---	---	---	5:20 PM	---	5:32 PM	5:47 PM	6:07 PM	6:22 PM	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M222	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Lancaster →			7:50 PM	7:57 PM	8:16 PM
Amtrak (Seattle)	A11	DAILY	3:20 PM	---	---	---	---	---	---	---	---	---	6:02 PM	---	---	---	7:08 PM	---	---	7:51 PM	---	---	8:25 PM	8:33 PM	---	---	9:00 PM
Amtrak	A796/4796	DAILY	3:40 PM	4:10 PM	---	4:35 PM	---	---	5:05 PM	5:15 PM	6:50 PM	6:40 PM	7:06 PM	7:21 PM	7:42 PM	---	7:56 PM	8:06 PM	---	8:38 PM	8:50 PM	---	9:06 PM	9:13 PM	---	9:23 PM	9:45 PM
Amtrak	A5816	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Bakersfield →			9:50 PM

Shading Key

Thruway and Connecting Services
Metrolink Train Service
Coaster Train Service
Amtrak Pacific Surfliner Train Service

Symbols Key

AM	Time symbol for morning
PM	Time symbol for afternoon or evening
(B)	Station only served by thruway bus services
	Bus Stop
	Rail Transit Connection
(BFD)	Thruway Bus Route to/from Bakersfield
1	Connection to LA Metro Red & Gold Lines: * Red Line - 4 & 6 min peak / 5 & 7 min off peak * Gold Line - 7 & 8 min peak / 12 min off peak
2	Connection to NCTD Sprinter: * SPRINTER - 30 min all day
3	Connection to San Diego Trolley: * Blue Line - 7 & 8 min peak / 15 min off peak * Orange Line - 15 min all day *(America Plaza)*

SHORT-TERM (2013-2014) TIMETABLE

VERSION 3A

LOSSAN Strategic Implementation Plan

WEEKDAY NORTHBOUND - Los Angeles ● Burbank ● Santa Barbara ● San Luis Obispo

Train Operator	No. Freq.	Los Angeles [1]	Glendale	Downtown Burbank	Burbank - Bob Hope Airport	Van Nuys	Northridge	Chatsworth	Simi Valley	Moorpark	Camarillo	Oxnard	East Ventura	Ventura	Carpinteria	Santa Barbara	Santa Barbara	Goleta	Buellton (Burger King)	Solvang	Lompoc (Visitors Center)	Surf / Lompoc	Santa Maria (IHOP)	Guadalupe	Grover Beach - Pismo Beach	San Luis Obispo
		Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar	Dp	Dp	(B) Dp	(B) Dp	(B) Dp	Dp	(B) Dp	Dp	Dp	Ar
Amtrak	A5801 DAILY	4:10 AM	4:25 AM	→	To Bakersfield		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M1001 M-F	---	---	---	---	---	---	---	---	---	---	---	6:55 AM	7:04 AM	7:24 AM	---	7:38 AM	7:50 AM	---	---	---	---	---	---	---	---
Metrolink	M901 M-F	5:38 AM	5:48 AM	5:54 AM	6:01 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M201 M-F	6:30 AM	6:41 AM	6:47 AM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A5813 DAILY	7:35 AM	→	To Bakersfield		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M101 M-F	6:50 AM	7:00 AM	7:06 AM	7:11 AM	7:22 AM	7:30 AM	7:37 AM	7:52 AM	8:10 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M103 M-F	7:15 AM	7:25 AM	7:31 AM	7:36 AM	7:43 AM	8:00 AM	8:10 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M203 M-F	7:30 AM	7:40 AM	7:46 AM	→	To Via Princessa		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak/Metrolink	A799/M153 DAILY	7:35 AM	7:48 AM	---	8:00 AM	8:10 AM	8:19 AM	8:26 AM	8:45 AM	8:57 AM	9:10 AM	9:21 AM	---	9:35 AM	9:57 AM	10:20 AM	10:22 AM	10:32 AM	---	---	---	11:38 AM	---	12:19 PM	12:36 PM	1:00 PM
Metrolink	M903 M-F	8:00 AM	8:10 AM	8:16 AM	8:25 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M281 M-F	8:10 AM	8:19 AM	8:25 AM	→	To Santa Clarita		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M905 M-F	8:25 AM	8:35 AM	8:41 AM	8:50 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M907 M-F	8:50 AM	9:00 AM	9:06 AM	9:15 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A763/A4763 DAILY	9:05 AM	9:17 AM	---	9:27 AM	9:37 AM	---	9:49 AM	10:01 AM	---	10:22 AM	10:33 AM	---	10:50 AM	11:11 AM	11:36 AM	11:42 AM	11:50 AM	12:25 PM	12:30 PM	---	---	---	---	1:35 PM	2:00 PM
Metrolink	M205 M-F	9:20 AM	9:30 AM	9:36 AM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M107 M-F	9:50 AM	10:00 AM	10:06 AM	10:11 AM	10:18 AM	10:26 AM	10:35 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak (Seattle)	A14 DAILY	10:25 AM	---	---	10:44 AM	10:55 AM	---	---	11:19 AM	---	---	11:52 AM	---	---	---	---	12:48 PM	---	---	---	---	---	---	---	---	3:30 PM
Metrolink	M283 M-F	10:45 AM	10:55 AM	11:01 AM	→	To Santa Clarita		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M207 M-F	11:20 AM	11:30 AM	11:36 AM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A769/A4769 DAILY	12:30 PM	12:42 PM	---	12:52 PM	1:02 PM	---	1:14 PM	1:26 PM	1:39 PM	1:53 PM	2:04 PM	---	2:17 PM	2:40 PM	3:03 PM	3:10 PM	3:15 PM	---	---	---	---	4:35 PM	---	---	5:20 PM
Amtrak	A4759 DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3:10 PM	---	3:55 PM	4:00 PM	4:30 PM	---	---	5:05 PM	5:30 PM	---
Metrolink	M109 M-F	1:00 PM	1:10 PM	1:18 PM	1:23 PM	1:30 PM	1:38 PM	1:45 PM	1:57 PM	2:15 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A5817 DAILY	1:15 PM	→	To Bakersfield		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M209 M-F	1:55 PM	2:05 PM	2:11 PM	→	To Via Princessa		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A775 DAILY	3:10 PM	3:22 PM	---	3:32 PM	3:42 PM	---	3:54 PM	4:10 PM	---	4:31 PM	4:42 PM	---	4:55 PM	5:20 PM	5:44 PM	5:46 PM	5:57 PM	---	---	---	7:13 PM	---	7:50 PM	8:06 PM	8:35 PM
Metrolink	M909 M-F	3:05 PM	3:15 PM	3:21 PM	3:30 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M153 M-F	3:20 PM	3:30 PM	3:36 PM	3:41 PM	3:48 PM	3:56 PM	4:02 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A5803 DAILY	3:20 PM	→	To Bakersfield		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M115 M-F	3:35 PM	3:45 PM	3:51 PM	3:56 PM	4:03 PM	4:11 PM	4:18 PM	4:30 PM	4:47 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M211 M-F	3:45 PM	3:55 PM	4:01 PM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M213 M-F	4:00 PM	4:10 PM	4:16 PM	→	To Santa Clarita		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M117 M-F	4:25 PM	4:35 PM	4:41 PM	4:46 PM	4:53 PM	5:01 PM	5:08 PM	5:20 PM	5:32 PM	5:43 PM	5:53 PM	6:12 PM	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M911 M-F	4:33 PM	4:43 PM	4:49 PM	4:58 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M215 M-F	4:45 PM	4:55 PM	5:01 PM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M119 M-F	5:10 PM	5:20 PM	5:26 PM	5:31 PM	5:38 PM	5:46 PM	5:53 PM	6:05 PM	6:17 PM	6:28 PM	6:38 PM	6:57 PM	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M285 M-F	5:35 PM	---	5:49 PM	→	To Palmdale		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M217 M-F	5:50 PM	6:00 PM	6:06 PM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M121 M-F	5:55 PM	6:05 PM	6:11 PM	6:16 PM	6:23 PM	6:31 PM	6:38 PM	6:50 PM	7:08 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M219 M-F	6:30 PM	6:40 PM	6:46 PM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M123 M-F	6:40 PM	6:50 PM	6:56 PM	7:01 PM	7:08 PM	7:16 PM	7:23 PM	7:35 PM	7:47 PM	7:58 PM	8:14 PM	8:37 PM	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A5885 DAILY	6:55 PM	→	To Bakersfield		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A785/A4785 DAILY	7:10 PM	7:22 PM	---	7:32 PM	7:42 PM	---	7:54 PM	8:06 PM	---	8:32 PM	8:43 PM	---	9:01 PM	9:22 PM	9:41 PM	9:47 PM	10:00 PM	10:30 PM	10:35 PM	---	---	11:15 PM	---	11:40 PM	12:05 AM
Metrolink	M221 M-F	7:40 PM	7:50 PM	7:56 PM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A589/A4589 DAILY	9:10 PM	9:25 PM	---	---	9:45 PM	---	10:05 PM	10:25 PM	10:40 PM	10:50 PM	11:00 PM	---	11:15 PM	11:30 PM	11:50 PM	---	12:05 AM	---	---	---	---	---	---	---	---
Metrolink	M223 M-F	9:15 PM	9:25 PM	9:31 PM	→	To Lancaster		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A5811 DAILY	1:45 AM	2:00 AM	→	To Bakersfield		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Shading Key

Thruway and Connecting Services
Metrolink Train Service
Coaster Train Service
Amtrak Pacific Surfliner Train Service

Symbols Key

AM	Time symbol for morning
PM	Time symbol for afternoon or evening
(B)	Station only served by thruway bus services
	Bus Stop
	Rail Transit Connection
(BFD)	Thruway Bus Route to/from Bakersfield
1	Connection to LA Metro Red & Gold Lines: * Red Line - 4 & 6 min peak / 5 & 7 min off peak * Gold Line - 7 & 8 min peak / 12 min off peak
2	Connection to NCTD Sprinter: * SPRINTER - 30 min all day
3	Connection to San Diego Trolley: * Blue Line - 7 & 8 min peak / 15 min off peak * Orange Line - 15 min all day *(America Plaza)*

WEEKDAY SOUTHBOUND - Los Angeles ● Fullerton ● Irvine ● Oceanside ● San Diego

Train Operator	No.	Freq.	Los Angeles[1]	Commerce	Norwalk - Santa Fe Springs	Buena Park	Fullerton	Anaheim	Orange	Santa Ana	Tustin	Irvine	Laguna Niguel - Mission Viejo	San Juan Capistrano	San Clemente North Beach	San Clemente Pier	Oceanside[2]	SPRINTER Connections		Oceanside[2]	Carlsbad Village	Carlsbad - Poinsettia	Encinitas	Solana Beach	Sorrento Valley	Old Town San Diego	San Diego[3]
			Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar	Ar	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar
Amtrak	A5804	DAILY	12:40 AM	---	---	---	1:15 AM	---	---	1:30 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C628	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:11 AM	4:15 AM	4:21 AM	4:27 AM	4:33 AM	4:42 AM	5:02 AM	5:10 AM
Amtrak	A5818	DAILY	2:30 AM	---	---	---	3:05 AM	---	---	3:20 AM	---	3:40 AM	---	3:55 AM	---	---	---	---	---	4:30 AM	---	---	---	4:50 AM	---	---	5:15 AM
Coaster	C630	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*4:56 AM*	---	5:16 AM	5:20 AM	5:26 AM	5:32 AM	5:38 AM	5:47 AM	6:07 AM	6:15 AM
Coaster	C634	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*5:56 AM*	---	6:00 AM	6:04 AM	6:11 AM	6:17 AM	6:23 AM	6:33 AM	6:52 AM	7:00 AM
Coaster	C636	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*5:26 AM*	---	6:40 AM	6:44 AM	6:50 AM	7:00 AM	7:06 AM	7:16 AM	7:36 AM	7:42 AM
Metrolink	M803	M-F	---	---	---	From San Bernardino →			5:57 AM	6:03 AM	6:09 AM	6:18 AM	6:26 AM	6:32 AM	6:43 AM	---	7:10 AM	---	*7:33 AM*	---	---	---	---	---	---	---	---
Coaster	C638	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*6:56 AM*	---	7:17 AM	7:22 AM	7:28 AM	7:34 AM	7:40 AM	7:51 AM	8:11 AM	8:18 AM
Coaster	C640	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*7:26 AM*	---	7:42 AM	7:47 AM	7:53 AM	7:58 AM	8:03 AM	8:13 AM	8:36 AM	8:42 AM
Metrolink	M805	M-F	---	---	---	From San Bernardino →			6:29 AM	6:35 AM	6:41 AM	6:53 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A562	DAILY	6:20 AM	---	---	---	6:49 AM	6:57 AM	---	7:05 AM	---	7:16 AM	---	7:29 AM	---	---	8:03 AM	*7:56 AM*	*8:33 AM*	8:05 AM	---	---	---	8:21 AM	---	---	9:00 AM
Metrolink	M700	M-F	6:25 AM	-	6:46 AM	6:52 AM	6:59 AM →		To Riverside		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M807	M-F	---	---	---	From San Bernardino →			7:05 AM	7:11 AM	7:17 AM	7:26 AM	7:40 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M682	M-F	6:45 AM	---	7:06 AM	7:12 AM	7:19 AM	7:28 AM	7:33 AM	7:39 AM	7:45 AM	7:54 AM	8:05 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C642	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*8:26 AM*	---	8:45 AM	8:50 AM	8:56 AM	9:01 AM	9:07 AM	9:17 AM	9:38 AM	9:48 AM
Metrolink	M815	M-F	---	---	---	From Riverside →			7:51 AM	7:57 AM	8:03 AM	8:12 AM	8:25 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A564	DAILY	7:20 AM	---	---	---	7:50 AM	7:58 AM	---	8:06 AM	---	8:21 AM	---	8:36 AM	---	---	9:08 AM	*8:56 AM*	*9:33 AM*	9:10 AM	---	---	---	9:26 AM	---	---	10:05 AM
Metrolink	M809	M-F	---	---	---	From Riverside →			8:16 AM	8:22 AM	8:28 AM	8:37 AM	8:50 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M600	M-F	8:00 AM	---	8:21 AM	8:27 AM	8:34 AM	8:43 AM	8:47 AM	8:53 AM	8:59 AM	9:08 AM	9:16 AM	9:22 AM	9:36 AM	---	10:00 AM	---	*10:03 AM*	---	---	---	---	---	---	---	---
Coaster	C644	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*9:56 AM*	---	10:06 AM	10:11 AM	10:17 AM	10:22 AM	10:28 AM	10:38 AM	10:59 AM	11:06 AM
Amtrak	A566	DAILY	8:30 AM	---	---	---	9:00 AM	9:09 AM	9:13 AM	9:20 AM	---	9:30 AM	9:40 AM	9:46 AM	---	9:57 AM	10:23 AM	*9:56 AM*	*10:33 AM*	10:25 AM	---	---	---	10:42 AM	---	---	11:20 AM
Coaster	C648	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*10:56 AM*	---	11:02 AM	11:07 AM	11:13 AM	11:20 AM	11:25 AM	11:36 AM	11:56 AM	12:03 PM
Amtrak/Metrolink	A768/M158	DAILY	9:40 AM	---	---	---	10:10 AM	10:21 AM	---	10:30 AM	---	10:40 AM	---	10:57 AM	---	11:07 AM	11:30 AM	*11:26 AM*	*11:33 AM*	11:32 AM	---	---	---	11:46 AM	---	---	12:25 PM
Metrolink	M636	M-F	---	---	---	---	10:20 AM	10:29 AM	10:34 AM	10:40 AM	10:46 AM	10:55 AM	11:04 AM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C650	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*12:26 PM*	---	12:30 PM	12:35 PM	12:41 PM	12:46 PM	12:52 PM	1:02 PM	1:23 PM	1:30 PM
Metrolink	M851	M-F	---	---	---	From Riverside →			11:31 AM	11:37 AM	11:43 AM	11:51 AM	11:59 AM	12:04 PM	12:16 PM	---	12:50 PM		*1:03 PM*	---	---	---	---	---	---	---	---
Amtrak	A572	DAILY	11:10 AM	---	---	---	11:40 AM	11:49 AM	---	11:58 AM	---	12:11 PM	---	12:25 PM	---	---	1:01 PM	*12:56 PM*	*1:03 PM*	1:03 PM	---	---	---	1:19 PM	---	---	1:55 PM
Metrolink	M702	M-F	11:30 AM	---	11:51 AM	11:57 AM	12:04 PM →		To Riverside		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M811	M-F	---	---	---	From San Bernardino →			12:29 PM	12:35 PM	12:41 PM	12:50 PM	12:58 PM	1:10 PM	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C652	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*1:56 PM*	---	2:00 PM	2:05 PM	2:11 PM	2:16 PM	2:22 PM	2:32 PM	2:53 PM	3:00 PM
Amtrak	A774	DAILY	12:45 PM	---	---	---	1:15 PM	1:24 PM	---	1:33 PM	---	1:46 PM	---	1:59 PM	---	---	2:31 PM	*2:26 PM*	*2:33 PM*	2:33 PM	---	---	---	2:48 PM	---	---	3:25 PM
Metrolink	M638	M-F	---	---	---	---	1:30 PM	1:39 PM	1:44 PM	1:50 PM	1:56 PM	2:05 PM	2:14 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C654	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*2:26 PM*	---	2:50 PM	2:55 PM	3:01 PM	3:07 PM	3:12 PM	3:24 PM	3:44 PM	3:51 PM
Coaster	C656	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*3:26 PM*	---	3:34 PM	3:40 PM	3:47 PM	3:54 PM	4:00 PM	4:09 PM	4:31 PM	4:37 PM
Metrolink	M684	M-F	2:25 PM	---	2:46 PM	2:52 PM	2:59 PM	3:08 PM	3:13 PM	3:19 PM	3:25 PM	3:34 PM	3:45 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A580	DAILY	3:05 PM	---	---	---	3:35 PM	3:43 PM	---	3:51 PM	---	4:01 PM	---	4:14 PM	---	---	4:48 PM	*4:26 PM*	*5:03 PM*	4:50 PM	---	---	---	5:08 PM	---	---	5:50 PM
Coaster	C660	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	*4:56 PM*	---	5:01 PM	5:06 PM	5:13 PM	5:18 PM	5:26 PM	5:36 PM	5:56 PM	6:03 PM
Coaster/Metrolink	C662/M602	M-F	3:20 PM	3:34 PM	3:44 PM	3:51 PM	3:57 PM	4:06 PM	4:10 PM	4:16 PM	4:22 PM	4:29 PM	4:37 PM	4:44 PM	4:55 PM	---	5:22 PM	*5:26 PM*	*5:33 PM*	5:24 PM	5:29 PM	5:35 PM	5:41 PM	5:47 PM	5:58 PM	6:19 PM	6:25 PM
Metrolink	M813	M-F	---	---	---	From Riverside →			4:24 PM	4:31 PM	4:37 PM	4:45 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M704	M-F	3:30 PM	---	3:51 PM	3:57 PM	4:04 PM →		To Riverside		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M686	M-F	3:50 PM	4:04 PM	4:14 PM	4:20 PM	4:27 PM	4:36 PM	4:41 PM	4:47 PM	4:53 PM	5:00 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A582/A4582	DAILY	4:15 PM	---	---	---	---	4:50 PM	---	---	---	5:08 PM	---	---	---	---	5:58 PM	*5:26 PM*	*6:03 PM*	6:00 PM	---	---	---	6:16 PM	---	---	6:52 PM
Metrolink	M640	M-F	---	---	---	---	4:50 PM	4:59 PM	5:03 PM	5:09 PM	5:15 PM	5:23 PM	5:35 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M706	M-F	4:20 PM	---	4:41 PM	4:47 PM	4:54 PM →		To Riverside		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M604	M-F	4:30 PM	4:44 PM	4:54 PM	5:00 PM	5:07 PM	5:16 PM	5:20 PM	5:26 PM	5:32 PM	5:41 PM	5:49 PM	5:56 PM	6:08 PM	---	6:37 PM	---	*7:03 AM*	---	---	---	---	---	---	---	---
Metrolink	M688	M-F	4:50 PM	---	5:11 PM	5:17 PM	5:24 PM	5:33 PM	5:38 PM	5:44 PM	5:50 PM	5:59 PM	6:15 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A784/A4764	DAILY	5:10 PM	---	---	---	5:40 PM	5:49 PM	---	5:58 PM	---	6:11 PM	---	6:25 PM	---	---	6:55 PM	*6:26 PM*	*7:03 PM*	6:57 PM	---	---	---	7:13 PM	---	---	7:50 PM
Metrolink	M708	M-F	5:30 PM	---	5:51 PM	5:57 PM	6:04 PM →		To Riverside		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M606	M-F	5:40 PM	5:54 PM	6:04 PM	6:10 PM	6:17 PM	6:26 PM	6:30 PM	6:36 PM	6:42 PM	6:51 PM	6:59 PM	7:06 PM	7:18 PM	---	7:46 PM	---	*8:03 PM*	---	---	---	---	---	---	---	---
Amtrak	A586	DAILY	6:10 PM	---	---	---	6:40 PM	6:49 PM	---	6:58 PM	---	7:11 PM	---	7:25 PM	---	---	7:55 PM	*7:26 PM*	*8:03 PM*	7:57 PM	---	---	---	8:13 PM	---	---	8:50 PM
Amtrak (Chicago)	A4	DAILY	6:15 PM	---	---	---	6:50 PM →		To Chicago		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M710	M-F	6:20 PM	---	6:41 PM	6:47 PM	6:54 PM →		To Riverside		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M608	M-F	6:30 PM	---	6:51 PM	6:57 PM	7:04 PM	7:13 PM	7:17 PM	7:23 PM	7:29 PM	7:38 PM	7:46 PM	7:53 PM	8:05 PM	---	8:32 PM	*8:26 PM*	*8:33 PM*	8:40 PM	8:45 PM	8:51 PM	8:57 PM	9:08 PM	9:18 PM	9:38 PM	9:46 PM
Metrolink	M642	M-F	---	---	---	---	7:45 PM	7:54 PM	7:58 PM	8:04 PM	8:10 PM	8:18 PM	8:30 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A790	DAILY	7:30 PM	---	---	---	8:00 PM	8:08 PM	---	8:17 AM	---	8:30 AM	---	8:43 PM	---	---	9:14 PM	---	---	9:16 PM	---	---	---	9:29 PM	---	---	10:05 PM
Metrolink	M644	M-F	---	---	---	---	10:00 PM	10:09 PM	10:13 PM	10:19 PM	10:25 PM	10:33 PM	10:41 PM	10:47 PM	10:56 PM	---	11:25 PM	---	---	---	---	---	---	---	---	---	---
Amtrak	A796/4796	DAILY	10:10 PM	---	---	---	10:40 PM	10:49 PM	---	10:58 PM	---	11:09 PM	---	11:23 PM	---	---	11:53 PM	---	---	11:55 PM	---	---	---	12:11 AM	---	12:40 AM	12:50 AM

Shading Key

Thruway and Connecting Services
Metrolink Train Service
Coaster Train Service
Amtrak Pacific Surfliner Train Service

Symbols Key

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PM	Time symbol for afternoon or evening
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	Bus Stop
	Rail Transit Connection
(BFD)	Thruway Bus Route to/from Bakersfield
1	Connection to LA Metro Red & Gold Lines: * Red Line - 4 & 6 min peak / 5 & 7 min off peak * Gold Line - 7 & 8 min peak / 12 min off peak
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WEEKDAY NORTHBOUND - San Diego ● Oceanside ● Irvine ● Fullerton ● Los Angeles

Train Operator	No.	Freq.	San Diego[3]	Old Town San Diego	Sorrento Valley	Solana Beach	Encinitas	Carlsbad - Poinsettia	Carlsbad Village	Oceanside[2]	SPRINTER Connections		Oceanside[2]	San Clemente Pier	San Clemente North Beach	San Juan Capistrano	Laguna Niguel - Mission Viejo	Irvine	Tustin	Santa Ana	Orange	Anaheim	Fullerton	Buena Park	Norwalk - Santa Fe Springs	Commerce	Los Angeles[1]
			Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar	Ar	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar
Amtrak	A5801	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3:00 AM	---	---	3:20 AM	---	---	---	4:00 AM
Metrolink	M681	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:05 AM	4:14 AM	4:22 AM	4:28 AM	4:33 AM	4:37 AM	4:46 AM	4:53 AM	5:00 AM	---	5:28 AM
Metrolink	M701	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Riverside →			5:19 AM	5:26 AM	5:34 AM	---	6:00 AM
Amtrak	A5813	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5:30 AM	---	---	5:50 AM	---	---	---	6:35 AM
Metrolink	M601	M-F	---	---	---	---	---	---	---	---	---	---	4:39 AM	---	5:02 AM	5:11 AM	5:17 AM	5:26 AM	5:33 AM	5:40 AM	5:45 AM	5:49 AM	5:58 AM	6:04 AM	6:12 AM	---	6:40 AM
Metrolink	M703	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Riverside →			6:19 AM	6:26 AM	6:34 AM	---	7:00 AM
Metrolink	M603	M-F	---	---	---	---	---	---	---	---	*4:56 AM*	---	5:16 AM	-	5:39 AM	5:48 AM	5:54 AM	6:03 AM	6:10 AM	6:17 AM	6:22 AM	6:26 AM	6:35 AM	6:41 AM	6:49 AM	6:59 AM	7:20 AM
Amtrak (Chicago)	A3	DAILY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Chicago →			6:45 AM	---	---	---	8:15 AM
Metrolink	M605	M-F	---	---	---	---	---	---	---	---	*5:26 AM*	---	5:45 AM	---	6:09 AM	6:18 AM	6:24 AM	6:33 AM	6:40 AM	6:47 AM	6:52 AM	6:56 AM	7:05 AM	7:11 AM	7:19 AM	7:29 AM	7:50 AM
Metrolink	M705	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Riverside →			7:19 AM	7:26 AM	7:34 AM	---	8:00 AM
Metrolink	M683	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7:05 AM	7:13 AM	7:19 AM	7:24 AM	7:28 AM	7:36 AM	7:43 AM	7:50 AM	---	8:15 AM
Metrolink	M707	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Riverside →			7:44 AM	7:51 AM	7:59 AM	---	8:25 AM
Coaster/Metrolink	C629/M607	M-F	5:25 AM	5:30 AM	5:52 AM	6:00 AM	6:05 AM	6:11 AM	6:19 AM	6:26 AM	*6:26 AM*	*6:33 AM*	6:36 AM	---	6:59 AM	7:08 AM	7:14 AM	7:23 AM	7:31 AM	7:37 AM	7:42 AM	7:46 AM	7:55 AM	8:02 AM	8:09 AM	8:19 AM	8:40 AM
Amtrak	A763/A4763	DAILY	6:05 AM	---	---	6:44 AM	---	---	---	6:59 AM	*6:56 AM*	*7:03 AM*	7:01 AM	---	---	7:34 AM	---	7:48 AM	---	7:59 AM	---	8:08 AM	8:17 AM	---	---	---	8:50 AM
Metrolink	M685	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7:55 AM	8:04 AM	8:12 AM	8:18 AM	8:23 AM	8:27 AM	8:36 AM	8:43 AM	8:50 AM	9:01 AM	9:25 AM
Metrolink	M850	M-F	---	---	---	---	---	---	---	---	*7:26 AM*	---	7:30 AM	---	7:53 AM	8:02 AM	8:09 AM	8:18 AM	8:25 AM	8:32 AM	8:37 AM	→	To Riverside	---	---	---	---
Coaster	C631	M-F	6:25 AM	6:30 AM	6:52 AM	7:00 AM	7:05 AM	7:10 AM	7:16 AM	7:26 AM	---	*7:33 AM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A563	DAILY	7:09 AM	---	---	7:42 AM	---	---	---	7:55 AM	*7:26 AM*	*8:03 AM*	7:57 AM	---	---	---	---	8:37 AM	---	---	---	8:55 AM	---	---	---	---	9:35 AM
Metrolink	M687	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8:40 AM	8:49 AM	8:56 AM	9:02 AM	9:07 AM	9:11 AM	9:20 AM	9:26 AM	9:34 AM	-	10:02 AM
Metrolink	M800	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9:05 AM	9:14 AM	9:20 AM	9:26 AM	9:31 AM	→	To San Bernardino		---	---	---
Metrolink	M637	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9:20 AM	9:29 AM	9:36 AM	9:43 AM	9:48 AM	9:52 AM	10:04 AM	---	---	---	---
Coaster	C635	M-F	7:25 AM	7:30 AM	7:53 AM	8:05 AM	8:10 AM	8:16 AM	8:22 AM	8:30 AM	---	*8:33 AM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A567	DAILY	8:05 AM	---	---	8:39 AM	---	---	---	8:54 AM	*8:56 AM*	*9:03 AM*	8:56 AM	---	---	9:27 AM	9:34 AM	9:44 AM	---	9:54 AM	9:59 AM	10:04 AM	10:13 AM	---	---	---	10:45 AM
Coaster	C637	M-F	8:30 AM	8:37 AM	8:58 AM	9:08 AM	9:13 AM	9:19 AM	9:25 AM	9:40 AM	---	*10:03 AM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A769/A4769	DAILY	9:25 AM	---	---	10:01 AM	---	---	---	10:14 AM	*9:56 AM*	*10:33 AM*	10:16 AM	---	---	10:45 AM	---	11:03 AM	---	11:15 AM	---	11:24 AM	11:34 AM	---	---	---	12:10 PM
Metrolink	M639	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11:20 AM	11:29 AM	11:36 AM	11:43 AM	11:48 AM	11:52 AM	12:04 PM	---	---	---	---
Coaster	C639	M-F	9:43 AM	9:49 AM	10:13 AM	10:21 AM	10:26 AM	10:32 AM	10:38 AM	10:45 AM	---	*11:03 AM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A573	DAILY	10:47 AM	---	---	11:24 AM	---	---	---	11:37 AM	*11:26 AM*	*12:03 PM*	11:39 AM	---	---	12:10 PM	---	12:28 PM	---	12:39 PM	---	12:48 PM	12:58 PM	---	---	---	1:35 PM
Coaster	C643	M-F	11:12 AM	11:18 AM	11:39 AM	11:47 AM	11:54 AM	12:00 PM	12:06 PM	12:14 PM	---	*12:33 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A775	DAILY	12:15 PM	---	---	12:51 PM	---	---	---	1:04 PM	*12:26 PM*	*1:03 PM*	1:06 PM	---	---	1:37 PM	---	1:53 PM	---	2:04 PM	---	2:13 PM	2:23 PM	---	---	---	2:55 PM
Metrolink	M909	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M802	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	1:48 PM	1:54 PM	2:03 PM	2:10 PM	2:17 PM	2:22 PM	→	To Riverside	---	---	---	---
Coaster	C645	M-F	12:35 PM	12:40 PM	1:01 PM	1:11 PM	1:18 PM	1:24 PM	1:30 PM	1:36 PM	---	*2:03 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M709	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Riverside →			3:51 PM	4:07 PM	4:15 PM	---	4:39 PM
Coaster	C647	M-F	1:18 PM	1:24 PM	1:48 PM	1:56 PM	2:01 PM	2:07 PM	2:13 PM	2:20 PM	---	*2:33 PM*	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A579	DAILY	1:40 PM	---	---	2:14 PM	---	---	---	2:30 PM	*1:56 PM*	*2:33 PM*	2:32 PM	---	---	3:05 PM	---	3:20 PM	---	3:30 PM	---	3:38 PM	3:49 PM	---	---	---	4:20 PM
Metrolink	M812	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3:15 PM	3:24 PM	3:31 PM	3:38 PM	3:43 PM	→	To Riverside	---	---	---	---
Metrolink	M641	M-F	---	---	---	---	---	---	---	---	---	---	2:57 PM	---	3:24 PM	3:33 PM	3:38 PM	3:47 PM	3:54 PM	4:00 PM	4:05 PM	4:09 PM	4:20 PM	---	---	---	---
Metrolink	M804	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:00 PM	4:10 PM	4:17 PM	4:24 PM	4:29 PM	→	To San Bernardino	---	---	---	---
Coaster	C651	M-F	2:10 PM	2:15 PM	2:37 PM	2:45 PM	2:51 PM	2:57 PM	3:04 PM	3:10 PM	---	*3:33 PM*	-	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M609	M-F	---	---	---	---	---	---	---	---	*2:56 PM*	---	3:23 PM	---	3:46 PM	4:05 PM	4:10 PM	4:19 PM	4:27 PM	4:32 PM	4:37 PM	4:41 PM	4:49 PM	4:57 PM	5:03 PM	---	5:30 PM
Amtrak	A583	DAILY	2:55 PM	---	---	3:32 PM	---	---	---	3:47 PM	*3:26 PM*	*4:03 PM*	3:49 PM	4:09 PM	---	4:20 PM	---	4:34 PM	---	4:45 PM	---	4:54 PM	5:05 PM	---	---	---	5:40 PM
Metrolink	M711	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	From Riverside →			5:21 PM	5:26 PM	5:34 PM	---	6:00 PM
Metrolink	M806	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4:55 PM	5:02 PM	5:08 PM	5:13 PM	→	To San Bernardino	---	---	---	---
Metrolink	M689	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5:10 PM	5:17 PM	5:22 PM	5:27 PM	5:31 PM	5:39 PM	5:46 PM	5:53 PM	---	6:20 PM
Metrolink	M808	M-F	---	---	---	---	---	---	---	---	*3:56 PM*	---	4:20 PM	-	4:43 PM	5:10 PM	5:20 PM	5:29 PM	5:36 PM	5:43 PM	5:48 PM	→	To San Bernardino	---	---	---	---
Coaster	C653	M-F	3:40 PM	3:46 PM	4:06 PM	4:16 PM	4:22 PM	4:28 PM	4:35 PM	4:41 PM	---	*5:03 PM*		---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A785/A4785	DAILY	4:10 PM	---	---	4:45 PM	---	---	---	4:58 PM	*4:26 PM*	*5:03 PM*	5:00 PM	5:23 PM	---	5:33 PM	---	5:47 PM	---	5:58 PM	---	6:06 PM	6:15 PM	---	---	---	6:50 PM
Metrolink	M643	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5:50 PM	5:59 PM	6:05 PM	6:11 PM	6:16 PM	6:20 PM	6:31 PM	---	---	---	---
Coaster	C655	M-F	4:23 PM	4:30 PM	4:52 PM	5:00 PM	5:06 PM	5:12 PM	5:18 PM	5:24 PM	---	*5:33 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M810	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6:30 PM	6:39 PM	6:46 PM	6:53 PM	6:58 PM	→	To Riverside	---	---	---	---
Coaster	C657	M-F	4:52 PM	4:57 PM	5:18 PM	5:27 PM	5:33 PM	5:40 PM	5:46 PM	5:54 PM	---	*6:03 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C661	M-F	5:27 PM	5:33 PM	5:55 PM	6:04 PM	6:10 PM	6:17 PM	6:24 PM	6:30 PM	---	*6:33 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Coaster	C663	M-F	6:18 PM	6:23 PM	6:47 PM	6:57 PM	7:02 PM	7:08 PM	7:14 PM	7:20 PM	---	*7:33 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A589/A4589	DAILY	6:35 PM	---	---	7:11 PM	---	---	---	7:25 PM	*6:56 PM*	*7:33 PM*	7:27 PM	---	---	8:02 PM	---	8:17 PM	---	8:30 PM	---	8:39 PM	8:50 PM	---	---	---	9:25 PM
Coaster	C665	M-F	7:03 PM	7:09 PM	7:29 PM	7:39 PM	7:46 PM	7:52 PM	7:58 PM	8:05 PM	---	*8:33 PM*	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Metrolink	M645	M-F	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8:50 PM	9:01 PM	9:08 PM	9:13 PM	9:18 PM	9:22 PM	9:35 PM	---	---	---	---
Amtrak	A595	DAILY	8:25 PM	---	---	9:00 PM	---	---	---	9:12 PM	---	*8:56 PM*	9:14 PM	---	---	9:45 PM	---	9:59 PM	---	10:11 PM	---	10:19 PM	10:29 PM	---	---	---	11:05 PM
Amtrak	A597	DAILY	9:15 PM	---	---	9:50 PM	---	---	---	10:03 PM	---	*8:56 PM*	10:05 PM	---	---	10:34 PM	---	10:50 PM	---	11:02 PM	---	11:10 PM	11:19 PM	---	---	---	11:55 PM
Metrolink	M673	M-F	10:00 PM	10:06 PM	10:26 PM	10:36 PM	10:43 PM	10:49 PM	10:55 PM	11:02 PM	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Amtrak	A5811	DAILY	10:15 PM	---	---	10:45 PM	---	---	---	---	---	---	11:15 PM	---	---	11:50 PM	---	12:05 AM	---	12:25 AM	---	---	12:45 AM	---	---	---	1:30 AM

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Thruway and Connecting Services
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Coaster Train Service
Amtrak Pacific Surfliner Train Service

Symbols Key

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APPENDIX D: ASSUMED 2014 TERMINAL TRACK ASSIGNEMENTS

Track 3	Yard				T2A	T2C		T6B											
	Platform	B	B	B	A	B	B	A	B	B	B								
	Ar	200	202	104	315	902	321	286	115Q	218	220								
		5:53 AM	6:55 AM	7:50 AM	8:40 AM	9:00 AM	12:30 PM	12:49 PM	3:15 PM	4:20 PM	6:10 PM								
	Dp	201	203	905	315Q	902Q	321Q/286Q		115	217	219								
		6:30 AM	7:30 AM	8:25 AM	8:55 AM	9:30 AM		1:15 PM	3:35 PM	5:50 PM	6:30 PM								
Track 4	Yard		T6A		T4A			T1A			T5A								T5B
	Platform	B	B	A	B	A	B	A	A	B	B	B	A	B	A	B	B	B	B
	Ar	100	282	204	206	208	905Q	110	284	109Q	214	909Q	216	213Q	911Q/215Q		150	118	222
		6:15 AM	7:00 AM	7:45 AM	8:15 AM	8:52 AM	9:20 AM	9:40 AM	10:30 AM	12:35 PM	1:35 PM	2:45 PM	3:30 PM	3:50 PM		4:11 PM	5:20 PM	6:20 PM	8:16 PM
	Dp	101	282Q	281	206Q	205	207	110Q	283	109	214Q	909	211	213	911	215	285	123	222Q
		6:50 AM	7:15 AM	8:10 AM	8:35 AM	9:20 AM	11:20 AM	9:48 AM	10:45 AM	1:00 PM	1:45 PM	3:05 PM	3:45 PM	4:05 PM	4:33 PM	4:45 PM	5:45 PM	6:40 PM	8:35 PM
Track 5	Yard					T3C	T1C		T6A										
	Platform	B	B	B	B	A	B	B	A	B	A	A	B						
	Ar	301	383	405	313	106	409	319	112	116	385	906	335						
		5:30 AM	6:45 AM	7:38 AM	8:20 AM	8:28 AM	9:38 AM	11:10 AM	11:35 AM	3:40 PM	4:05 PM	4:40 PM	8:15 PM						
	Dp	300	103	903	907	106Q	409Q	112Q/319Q		221	117	119	223						
		5:45 AM	7:15 AM	8:00 AM	8:50 AM	8:47 AM	10:05 AM		12:55 PM	7:40 PM	4:25 PM	5:10 PM	9:15 PM						
Track 6	Yard		T7B		T5A		T3B		T7A										
	Platform	B	A	B	A	B	A	B	A	B	A	B	A	B	A	A	B	B	
	Ar	681	900	403	102	605	705	317	210	382Q	209Q/155Q		404Q/408Q		411	410Q	689	337	
		5:28 AM	6:38 AM	7:05 AM	7:12 AM	7:50 AM	8:00 AM	9:45 AM	10:00 AM	12:25 PM		1:40 PM		3:45 PM	4:35 PM	5:35 PM	6:20 PM	9:15 PM	
	Dp	901	900Q	102Q/403Q		304	705Q	210Q/317Q		382	209	155	404	408	406	410	412	336	
		5:43 AM	7:00 AM		7:40 AM	9:02 AM	8:45 AM		10:15 AM	12:50 PM	1:55 PM	3:15 PM	4:15 PM	5:30 PM	4:55 PM	6:05 PM	6:35 PM	9:30 PM	
Track 7	Yard		T6B		T5B														
	Platform	B	A	B	A	B	A	B	A	B	B	B	A	B	A	A	B	B	
	Ar	701	305	309	311	C629	308Q/310Q		402Q/312Q		314Q	325	327	322Q	329	328Q	331	333	
		6:00 AM	7:03 AM	7:40 AM	8:00 AM	8:40 AM		10:40 AM		12:35 PM	1:55 PM	2:30 PM	3:30 PM	3:55 PM	4:50 PM	5:25 PM	5:55 PM	6:55 PM	
	Dp	701Q/305Q		309Q/311Q		107	308	310	402	312	314	316	318	322	326	328	330	332	
			7:25 AM		8:30 AM	9:50 AM	11:20 AM	12:20 PM	1:15 PM	1:20 PM	2:20 PM	3:20 PM	3:50 PM	4:38 PM	5:25 PM	5:45 PM	6:10 PM	7:10 PM	
Track 8	Yard				T4B		T1B		T7B										
	Platform	B	A	B	A	B	A	B	A	B	B	B	A	B	B	B	B		
	Ar	303	307	703	407	108	685	687	212	684Q	C662Q	686Q	604Q/688Q		910	334Q	387		
		6:20 AM	7:20 AM	7:00 AM	8:13 AM	9:15 AM	9:25 AM	10:02 AM	10:50 AM	2:10 PM	3:05 PM	3:35 PM		4:10 PM	5:30 PM	7:35 PM	10:15 PM		
	Dp	682	302	703Q/407Q		685Q/108Q		212Q/687Q		684	C662	686	604	688	121	334	386		
		6:45 AM	7:45 AM		8:40 AM		9:59 AM		11:15 AM	2:25 PM	3:20 PM	3:50 PM	4:30 PM	4:50 PM	5:55 PM	8:05 PM	11:00 PM		
Track 9	Yard			T3A															
	Platform	B	B	B	B	B	B	B	B	B	A	B	B	B	B				
	Ar	401	A799Q	707	A763	A768	702Q	A769	704Q	904	324Q/384Q		609	A785	A796				
		6:05 AM	6:45 AM	8:25 AM	8:50 AM	9:25 AM	11:00 AM	12:15 PM	3:00 PM	4:00 PM		4:45 PM	5:30 PM	6:50 PM	9:45 PM				
	Dp	700	A799	707Q	A763	A768	702	A769	704	320	324	384	608	A785	A796				
		6:25 AM	7:35 AM	8:43 AM	9:05 AM	9:40 AM	11:30 AM	12:30 PM	3:30 PM	4:20 PM	5:00 PM	5:15 PM	6:30 PM	7:10 PM	10:10 PM				
Track 10	Yard	T7A		T2B															
	Platform	B	B	B	B	B	A	A	B	B	B								
	Ar	601	603	683	A775	606Q	706Q	709	711	A11	A595								
		6:40 AM	7:20 AM	8:15 AM	2:55 PM	3:30 PM	3:56 PM	4:39 PM	6:00 PM	9:00 PM	11:05 PM								
	Dp	601Q	600	683Q	A775	606	706	708	710	A11Q	A595Q								
		6:55 AM	8:00 AM	9:00 AM	3:10 PM	5:40 PM	4:20 PM	5:30 PM	6:20 PM	9:35 PM	11:30 PM								

Track 11	Yard Platform	B	B	B	B	B	B	B	B										
	Ar	A562Q 5:53 AM	A564Q 6:30 AM	A1 8:30 AM	A774 12:30 PM	A573 1:35 PM	A4Q 5:05 PM	A790 7:10 PM	A597 11:59 PM										
	Dp	A562 6:20 AM	A564 7:20 AM	A1Q 10:55 AM	A774 12:45 PM	A582 4:15 PM	A4 6:15 PM	A790 7:30 PM	A597Q 12:30 AM										
Track 12	Yard Platform	B	B	B	B														
	Ar	A3 8:15 AM	A2Q 1:30 PM	A579 4:20 PM	A589 9:25 PM														
	Dp	A3Q 9:25 AM	A2 3:00 PM	A586 6:10 PM	A589Q 9:45 PM														
Track 13	Yard Platform	B	B	B	B														
	Ar	A566Q 7:40 AM	A14Q 8:40 AM	A567 10:50 AM	A583 5:40 PM														
	Dp	A566 8:30 AM	A14 10:25 AM	A580 3:05 PM	A583Q 6:40 PM														
Track 14	Yard Platform	B	B																
	Ar	A563 9:33 AM	A784 4:55 PM																
	Dp	A572 11:10 AM	A784 5:10 PM																

Track 1A	Yard Platform																		
	Ar	M807 7:40 AM	M682 8:05 AM	M809 8:50 AM	M638 2:14 PM	M684 3:45 PM	M640 5:35 PM	M688 6:15 PM	M642 8:30 PM										
	Dp	M685 7:55 AM	M687 8:40 AM	M637 9:20 AM	M812 3:15 PM	M804 4:00 PM	M643 5:50 PM	M810 6:30 PM	M645 8:50 PM										
Track 1	Yard Platform	RIV						AVY											
	Ar	M681Q 3:46 AM	M601 -	M603 -	M605 -	C629 -	M850 -	M800Q 9:01 AM	A567 -	M636 11:04 AM	M802 -	M641 -	M609 -	M808 -						
	Dp	M681Q 4:05 AM	M601 5:17 AM	M603 5:54 AM	M605 6:24 AM	C629 7:14 AM	M850 8:09 AM	M800 9:05 AM	A567 9:34 AM	M639 11:20 AM	M802 1:54 PM	M641 3:38 PM	M609 4:10 PM	M808 5:20 PM						
Track 2	Yard Platform		AVY																
	Ar	M803 -	M815 8:25 AM	M600 -	A566 -	M851 -	M811 -	C662 -	M604 -	M606 -	M608 -	M644 -								
	Dp	M803 6:26 AM	M815Q 8:28 AM	M600 9:16 AM	A566 9:40 AM	M851 11:59 AM	M811 12:58 PM	C662 4:37 PM	M604 5:49 PM	M606 6:59 PM	M608 7:46 PM	M644 10:41 PM								
Avery Pocket	Yard Platform																		
	Ar	M815Q 8:31 AM																	
	Dp	M800Q 8:58 AM																	

Track 1	Yard	SM1A	SM1B	SM1C	SM2A	SM2B			SM3A										
	Platform																		
	Ar	C628Q	C630Q	C634Q	C636Q	C638Q	C662	M608	M673										
		3:57 AM	5:04 AM	5:46 AM	6:34 AM	6:56 AM	5:26 PM	8:30 PM	11:02 PM										
	Dp	C628	C630	C634	C636	C638	C662	M608	M673Q										
		4:11 AM	5:18 AM	6:00 AM	6:40 AM	7:17 AM	5:38 PM	6:40 AM	11:08 PM										
Track 2	Yard	SM3A	SM3B	SM3C			SM2A	SM3A	SM2A	SM3A	SM3C	SM3B	SM4A						
	Platform	A	A	A	A	A	A	A	A	A	A	A	A						
	Ar	M601Q	M603Q	M605Q	C629	M803	M600	M851	M609Q	M808Q	M604	M606	M644						
		4:26 AM	4:51 AM	5:23 AM	6:26 AM	7:10 AM	10:00 AM	12:50 PM	2:59 PM	3:46 PM	6:37 PM	7:46 PM	11:25 PM						
	Dp	M601	M603	M605	C629	M850	M600Q	M851Q	M609	M808	M604Q	M606Q	M644Q						
		4:39 AM	5:16 AM	5:45 AM	6:36 AM	7:30 AM	10:10 AM	1:00 PM	3:23 PM	4:20 PM	6:47 PM	7:56 PM	11:35 PM						
Track 3	Yard								SM4A			SM2B	SM2A	SM1C	SM1B	SM1A			
	Platform	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A			
	Ar	C631	C635	C637	C639	C643	C645	C647	M641Q	C651	C653	C655	C657	C661	C663	C665			
		7:26 AM	8:30 AM	9:40 AM	10:50 AM	12:14 PM	1:36 PM	2:20 PM	2:18 PM	3:10 PM	4:41 PM	5:24 PM	5:54 PM	6:29 PM	7:24 PM	8:05 PM			
	Dp	C640	C642	C644	C648	C650	C652	C654	M641	C656	C660	C655Q	C657Q	C661Q	C663Q	C665Q			
		7:42 AM	8:49 AM	10:10 AM	11:02 AM	12:30 PM	2:00 PM	2:50 PM	2:57 PM	3:34 PM	5:01 PM	5:30 PM	6:00 PM	6:35 PM	7:30 PM	8:11 PM			

Track 1	Yard				MTS															
	Platform	B	B	B	B	B	B	B	B	B	B	B	B	B	B					
	Ar	C628	C630	C634	C636	C638	C642	C648	C650	C652	C654	C656	C660	C662	M608					
		5:10 AM	6:15 AM	7:00 AM	7:42 AM	8:18 AM	9:54 AM	12:03 PM	1:30 PM	3:00 PM	3:51 PM	4:37 PM	6:03 PM	6:42 PM	9:46 PM					
	Dp	C629	C631	C635	C636Q	C637	C643	C647	C651	C653	C655	C661	C663	C665	M673					
		5:25 AM	6:25 AM	7:25 AM	7:52 AM	8:30 AM	11:12 AM	1:18 PM	2:10 PM	3:40 PM	4:23 PM	5:27 PM	6:21 PM	7:03 PM	10:00 PM					
Track 2	Yard				MTS															
	Platform	B	B	B	B	B														
	Ar	-	C640	C644	C657Q	A790														
		-	8:42 AM	11:10 AM	4:37 PM	10:05 PM														
	Dp	A567	C639	C645	C657	-														
		8:05 AM	9:48 AM	12:35 PM	4:52 PM	-														
Track 3	Yard																			
	Platform	A	B	B	B	A	B	B	B	B	B	A	A	A						
	Ar	-	-	A562	A564	A566	A768	A572	A774	A580	A582	A784	A586	A796						
		-	-	9:00 AM	10:05 AM	11:20 AM	12:25 PM	1:55 PM	3:25 PM	5:50 PM	6:50 PM	7:50 PM	8:50 PM	12:50 AM						
	Dp	A763	A563	A769	A573	A775	A579	A583	A785	A589	-	A595	A597	-						
		6:05 AM	7:09 AM	9:25 AM	10:47 AM	12:15 PM	1:40 PM	2:55 PM	4:10 PM	6:35 PM	-	8:25 PM	9:15 PM	-						
Track 4	Yard																			
	Platform																			
	Ar																			
	Dp																			

APPENDIX E: AGENCY COMMENTS

APPENDIX E: LOSSAN SHORT-TERM OPERATIONS ANAYLSIS REPORT COMMENTS

LOSSAN Strategic Implementation Plan
Comment Review Form

Submittal Title: LOSSAN Short-Term Operations Analysis Report Date: August 19, 2011

Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
1	General	SANDAG Linda Culp	Please change "San Luis Obispo-Santa Barbara-Los Angeles-San Diego (LOSSAN)" to Los Angeles-San Diego-San Luis Obispo (LOSSAN) on inside cover, exec summary, other places.	8/31/2011	Comment addressed	Y
2	Page 1, Exec Summary	SANDAG Linda Culp	Should we add a sentence on that the purpose is to develop business case for new service in the corridor and that the biz case is part of the larger corridorwide strategic implementation plan? I'm happy to write if needed.	8/31/2011	A more thorough summary of the background and purpose of the operations analysis added to Exec Summary and Introduction.	Y
3	Page 1, Exec Summary	SANDAG Linda Culp	Should we add a bullet to the list under the 2014 service plan section briefly discussing that we evaluated 3 versions, etc. Then the next bullet would be your first bullet that refers to Version 3A.	8/31/2011	Comment addressed	Y
4	Page 1, Exec Summary	SANDAG Linda Culp	Should we add a quick paragraph on what's in the Appendices at the end of the section?	8/31/2011	Appendices are referenced as appropriate in sections of report.	Y
5	Page 2, Intro	SANDAG Linda Culp	I believe the description of the 3 versions needs to be updated. For ex, Version 1 says there's a new limited stop Surfliner but that was in 3A. Also, we probably should mention the changes to Surfliners (V1 - reduction on F/Sa/Su, V2 - reduction on Sa/Su, V3A - increase. Then mention schedule enhancements in V3A)	8/31/2011	Comment addressed	Y
6	Page 4, Infrastructure section	SANDAG Linda Culp	Overall I thought the graphics were a bit hard to read for us old people. I don't want to take up more room in the report, just wondering if there were any other ideas. And just a picky one - sometimes the graphic was going the opposite way from the figure name. For example, Figure 6.1.1 says "San Luis Obispo to Santa Barbara" and if I read left to right, the graphic goes from Santa Barbara to SLO.	8/31/2011	Graphics are snapshots of segments of the model, so manipulations of the graphics is limited. Changing "direction" of the figure is not possible without changing the layout of the model. Figures were enlarged however to make them easier to read.	Y
7	Page 6	SANDAG Linda Culp	"Santa Margarita River Bridge Replacement and Double Track", no "Crossing" in title or paragraph.	8/31/2011	Comment addressed	Y
8	Page 6, last paragraph	SANDAG Linda Culp	Typo in last paragraph, "Surfline"	8/31/2011	Comment addressed	Y
9	Page 8, 1st sentence	SANDAG Linda Culp	"... Miramar Phase 1 ARE two separate..."	8/31/2011	Comment addressed	Y
10	Page 10, Model Output Results	SANDAG Linda Culp	What is the LA to SD Rail Corridor Strategic Plan?	8/31/2011	Comment addressed. Should state "LOSSAN South Strategic Business Plan".	
11	Page 13, 2nd paragraph	SANDAG Linda Culp	Typo "sectjon"	8/31/2011	Comment addressed	Y
12	Page 15, 2nd paragraph	SANDAG Linda Culp	Typo "controlled;unless"	8/31/2011	Comment addressed	Y
13	Page 18, last paragraph	SANDAG Linda Culp	Typo "arosebetween"	8/31/2011	Comment addressed	Y
14	Page 19, 2nd paragraph	SANDAG Linda Culp	Should we explain "crossing over the main at the diamonds"	8/31/2011	Rewritten in attempt to clarify.	Y
15	Page 24, 2nd paragraph	SANDAG Linda Culp	Typo "slot".. Unless"	8/31/2011	Comment addressed	Y
16	Conclusion	SANDAG Linda Culp	Maybe we can talk at some point about your conclusion regarding the Oceanside Thru Track.	8/31/2011	Conclusion for OTC also documented in the OTC Operations Analysis prepared December 2010.	Y
17	Appendix A, "Subdivision" defn	SANDAG Linda Culp	Also include COASTER	8/31/2011	Comment addressed	Y
18	General	OCTA Michael Litschi	Change to "Los Angeles-San Diego-San Luis Obispo" (LOSSAN) on all references -- that's the previously established style.	9/1/2011	Comment addressed	Y
19	Page 1	OCTA Michael Litschi	Should add a paragraph in exec summary stating that three timetable versions were developed for ridership modeling and that the most robust service scenario (3a) was modeled for operations purposes.	9/1/2011	A more thorough summary of the background and purpose of the operations analysis added to Exec Summary and Introduction.	Y
20	Page 1, 2nd to last bullet	OCTA Michael Litschi	I would clarify that Keller Yard would be used as an alternate layover to Metrolink's central maintenance facility (CMF) and maybe add that term to glossary.	9/1/2011	Comment addressed	Y
21	Page 2	OCTA Michael Litschi	Description of versions should discuss Surfliner schedule adjustments and additional trains. Version 1 states "3 new LA-SD commuter trains," but that could be a little misleading since these are not additional frequencies, as least on Metrolink, just extensions.	9/1/2011	Comment addressed	Y
22	Page 3, section 5.0	OCTA Michael Litschi	Typo -- "the key input and assumptions for this runs..." these runs?	9/1/2011	Will correct.	Y

APPENDIX E: LOSSAN SHORT-TERM OPERATIONS ANAYLSIS REPORT COMMENTS

Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
23	Page 3, section 5.1	OCTA Michael Litschi	Just curious -- F59 is lower horsepower, but has lower top speed than MP36PH? Do "representative consists" include weight, etc of Metrolink's Rotem cars, which are much heavier than Bombardier?	9/1/2011	Locomotive characteristics based on manufacturer information. Weight of trainsets used in analysis were based on the seated capacity of a Bombardier car.	Y
24	Page 4, 1st paragraph	OCTA Michael Litschi	Missing comma after 13, 14 and 15, and passenger"	9/1/2011	Comment addressed	Y
25	Page 4, last paragraph	OCTA Michael Litschi	"the only exception could be" instead of would. ... maybe add "and CPUC has indicated that they would not approve modification of existing at-grade crossing to accommodate third track" but may need to check with LA folks to verify that.	9/1/2011	Comment addressed	Y
26	Pages 5-26, general map comment	OCTA Michael Litschi	Screen shots from RTC are very hard to read, and many of the later maps don't seem to show the stations, which would seem to be a basic element that would help folks know where they are.	9/1/2011	Scale is based on the zoom level within the model. All figures do show stations and platforms, however some are larger than others. Manipulations of the graphics is limited. Figures were enlarged however to make them easier to read.	Y
27	Page 6, 2nd paragraph	OCTA Michael Litschi	Surfline should be Surfliner; delete "service" in "new in commuter service trains.	9/1/2011	Comment addressed	Y
28	Page 9, section 5.3	OCTA Michael Litschi	For freight volumes, question could come up if 2011 volumes were good estimate for 2014, or if they were/should be escalated	9/1/2011	BNSF volumes were based on 2007 pre-recession levels of traffic, which are higher than 2011 volumes. UPRR data, while assuming 2011 volumes, shows a higher daily volume than exists in reality as not all of the trains assumed in simulation operate every day of the week. Therefore a more robust freight operation was represented in the 2014 simulations than exists in 2011.	Y
29	Page 10, table 5.3.1	OCTA Michael Litschi	Metrolink "coast" is confusing, isn't explained until later in the report as return metrolink equipment from SD-OSD. Maybe needs a footnote there?	9/1/2011	Comment addressed	Y
30	Page 10, section 6.0	OCTA Michael Litschi	"... upgraded from the network originally developed..." by who? BY PB??	9/1/2011	Yes. Comment addressed and clarified in report.	Y
31	Page 10, last paragraph	OCTA Michael Litschi	First sentence worded awkwardly -- try to rephrase	9/1/2011	Comment addressed	Y
32	Page 11, 1st full paragraph	OCTA Michael Litschi	Worded awkwardly. Do you mean that capacity is limited, with little room to for increased train traffic BEYOND THE SERVICE LEVELS IDENTIFIED IN VERSION 3A FOR 2014?"	9/1/2011	Comment addressed	Y
33	Page 11, general map comment on rest of document	OCTA Michael Litschi	No consistency between maps. Not all sidings named, no station names shown, assuming the black dots are signals? Maybe need a key to show what symbols on map mean. Assuming white rectangles are station platforms?	9/1/2011	Scale is based on the zoom level within the model. All figures do show stations and platforms. Siding names are all coded in, but sometimes overlaid by another name and not visible in graphic illustration. Manipulations of the graphics is limited. Figures were enlarged however to make them easier to read.	N
34	Page 13, 2nd paragraph	OCTA Michael Litschi	"section" misspelled	9/1/2011	Comment addressed	Y
35	Page 13, 2nd paragraph	OCTA Michael Litschi	Do we need to keep calling it "commuter-friendly" or can we just call it commuter now that looks like it will not be an Amtrak service?	9/1/2011	Term is to remain consistent with reference of service to-date.	Y
36	Page 15, 1st full paragraph	OCTA Michael Litschi	No additional passenger trains were assumed to operate because the agencies told you not to assume any, not because of infrastructure constraints, right?	9/1/2011	Correct. However, since additional service in this segment was not simulated it is not known whether infrastructure would be sufficient to support an increase in traffic.	Y
37	Page 15, last paragraph	OCTA Michael Litschi	Say on a typical weekday, rather than "day during the week" -- unless you're getting paid by the word.	9/1/2011	Comment addressed	Y
38	Page 16, 2nd paragraph	OCTA Michael Litschi	Same comment as above regarding connection between service levels and infrastructure	9/1/2011	Correct. However, since additional service in this segment was not simulated it is not known whether infrastructure would be sufficient to support an increase in traffic.	Y
39	Page 17, figure 6.1.5	OCTA Michael Litschi	Text references CP woodman, but it is not shown on map	9/1/2011	Comment addressed	Y
40	Page 18, table 6.1.6, footnote	OCTA Michael Litschi	How many non-rev train movements?	9/1/2011	25% of the total of 248 train movements, which would be 62 non-revenue movements.	Y
41	Page 18, figure 6.1.6	OCTA Michael Litschi	Where are the stations?	9/1/2011	Scale is based on the zoom level within the model. All figures do show stations and platforms, however some are larger than others. Manipulations of the graphics is limited. Figures were enlarged however to make them easier to read and station names were added with the help of text boxes.	Y
42	Page 18, last paragraph	OCTA Michael Litschi	Need space between words arose and between	9/1/2011	Comment addressed	Y

APPENDIX E: LOSSAN SHORT-TERM OPERATIONS ANAYLSIS REPORT COMMENTS

Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
43	Page 19, 1st paragraph	OCTA Michael Litschi	May want to explain where Keller Yard is in relation to LAUPT	9/1/2011	Comment addressed	Y
44	Page 19, 2nd paragraph	OCTA Michael Litschi	Do you want to recommend that the new crossover be constructed in this location?	9/1/2011	Yes. Recommendation added to section and conclusion.	Y
45	Page 19, table 6.1.7 (and all subsequent references)	OCTA Michael Litschi	Say LA-SD commuter service. Otherwise looks like LA County Sheriff's Department service.	9/1/2011	Comment addressed	Y
46	Page 20	OCTA Michael Litschi	Do you need to state the possibility of a double track segment at Rosecrans wasn't identified as a significant capacity issue, or maybe we don't want to call that out.	9/1/2011	Any fatal flaw identified in the simulation modeling is identified in the report, including the section between Los Angeles and Fullerton.	Y
47	Page 20, last paragraph	OCTA Michael Litschi	Any suggestions for better connections in Fullerton?	9/1/2011	Coordinating the desired timetables between 91/PVL lines and MSEP would increase travel options to/from Los Angeles and Orange County.	Y
48	Page 21, 1st paragraph	OCTA Michael Litschi	two periods after last word "week".	9/1/2011	Comment addressed	Y
49	Page 21, figure 6.1.8	OCTA Michael Litschi	No stations on map	9/1/2011	Scale is based on the zoom level within the model. All figures do show stations and platforms, however some are larger than others. Manipulations of the graphics is limited. Figures were enlarged however to make them easier to read and station names were added with the help of text boxes.	Y
50	Page 22, figure 6.1.9	OCTA Michael Litschi	No stations on map	9/1/2011	Scale is based on the zoom level within the model. All figures do show stations and platforms, however some are larger than others. Manipulations of the graphics is limited. Figures were enlarged however to make them easier to read and station names were added with the help of text boxes.	Y
51	Page 22, last paragraph	OCTA Michael Litschi	I'm not sure what you're saying here -- sounds like you're saying you told the model to assume something different than the timetable to extend trains scheduled to turn at Irvine to Laguna Niguel. Then the reference to 40 minutes to the schedule and cycle. Need to revisit/refine this paragraph.	9/1/2011	Sentence deleted to avoid confusion	Y
52	Page 23	OCTA Michael Litschi	Is October 2011 the cutover date for dispatching from Metrolink to NCTD in SD County? Didn't think it was that soon.	9/1/2011	Was October, but has since been pushed to January 2012.	Y
53	Page 24	OCTA Michael Litschi	Remove double period after "out of slot".	9/1/2011	There is only one period after "out of slot".	Y
54	Page 24, table 6.1.11	OCTA Michael Litschi	Maybe just say Metrolink/Coaster instead of Metrolink/Coast line	9/1/2011	NCTD officially refers to that segment as their "Coast Line". This is not to be confused with a COASTER train and therefore the naming convention should remain.	Y
55	Page 24	OCTA Michael Litschi	Does freight train count include Pac Sun or whatever the short line down there is called?	9/1/2011	Yes.	Y
56	Page 26, 1st paragraph	OCTA Michael Litschi	State "the 'preferred' timetable developed... and state version 3a was most robust service scenario. "commuter-friendly service" again	9/1/2011	Comment addressed	Y
57	Page 26, 2nd paragraph	OCTA Michael Litschi	Wording is a little funny -- "to support both scheduled and delayed operations". Last sentence of this paragraph virtually repeats last sentence of previous paragraph	9/1/2011	Changes made in section to clarify.	Y
58	Page 26, 3rd paragraph	OCTA Michael Litschi	You didn't do any randomization, I thought, but still had trains out of slot?	9/1/2011	Randomization relates to creating an artificial delay to test the recovery time of the system. Even without inserting randomization, conflicts with freight trains operating on the corridor can create delay for passenger trains…which was the case on the corridor north of Los Angeles.	Y
59	Appendix A	OCTA Michael Litschi	Helpful, but how did you choose terms to include in glossary -- seems like there are some more that could be added.	9/1/2011	Terms were chosen based on what may be considered the most pertinent terms to be explained.	
60	Appendix C	OCTA Michael Litschi	You either to explain this a lot better, or not include at all. How is 3A "feasible" if you have so many delayed trains. Will get back to board question on OTP. Is tip delay on a daily basis? First four show Amtrak trains with 9+ minute delays. Not sure what we accomplish by including this.	9/1/2011	See response to Comment 58. Appendix removed to avoid confusion.	Y
61	Cover	LA Metro Don Sepulveda	The LOSSAN Logo should be on this	9/20/2011	Comment addressed	Y
62	Page 1, Ex. Summary	LA Metro Don Sepulveda	Need a brief paragraph showing why this is being done	9/20/2011	A more thorough summary of the background and purpose of the operations analysis added to Exec Summary and Introduction.	Y

APPENDIX E: LOSSAN SHORT-TERM OPERATIONS ANAYLSIS REPORT COMMENTS

Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
63	Page 1, 2nd section - 1st bullet	LA Metro Don Sepulveda	Insert "…,as follow:" at end of last sentence.	9/20/2011	Comment addressed	Y
64	Page 1, 2nd section - 2nd bullet	LA Metro Don Sepulveda	Insert "CP" in before "Raymer"	9/20/2011	Comment addressed	Y
65	Page 1, 2nd section - 3rd bullet	LA Metro Don Sepulveda	Insert "..., to and from the Central Maintenance Facility and other nearby layover facilities,"	9/20/2011	Comment addressed	Y
66	Page 1, 2nd section - 4th bullet	LA Metro Don Sepulveda	Insert "operation" in last sentence to read "…which is the same operation as currently exists today."	9/20/2011	Comment addressed	Y
67	Page 2, Section 2.0 Introduction	LA Metro Don Sepulveda	Needs an introductory paragraph about why this is being done.	9/20/2011	A more thorough summary of the background and purpose of the operations analysis added to Exec Summary and Introduction.	Y
68	Page 2, 1st paragraph	LA Metro Don Sepulveda	"Version 3A of the 2013-2014": This needs to be introduced before specifically mentioned. There needs to be a better lead in. We need to think that somebody would read this as a stand alone document.	9/20/2011	A more thorough summary of the background and purpose of the operations analysis added to Exec Summary and Introduction.	Y
69	Page 2, 3rd paragraph	LA Metro Don Sepulveda	Change "developed" to say "considered"	9/20/2011	Comment addressed	Y
70	Page 2, 3rd paragraph	LA Metro Don Sepulveda	Does the term "initially based" mean that the basis has changed?	9/20/2011	Comment addressed	Y
71	Page 2, 1st bullet	LA Metro Don Sepulveda	Spell out the numbers less than 10.	9/20/2011	Comment addressed	Y
72	Page 2, 1st bullet	LA Metro Don Sepulveda	A "new" train "replacing" another? This needs to be clearer.	9/20/2011	Clarifications made to Version descriptions.	Y
73	Page 2, 3rd bullet	LA Metro Don Sepulveda	What happened to version 3? if this is the late change. then let's clarify.	9/20/2011	Version 3 description added for consistency.	Y
74	Page 2, last paragraph	LA Metro Don Sepulveda	Delete "the" in "the Model.	9/20/2011	Comment addressed	Y
75	Page 3, 2nd paragraph	LA Metro Don Sepulveda	Insert full written name for BNSF and UPRR acronyms.	9/20/2011	Comment addressed	Y
76	Page 13, 3rd paragraph	LA Metro Don Sepulveda	Spell out the numbers less than 10.	9/20/2011	Comment addressed	Y
77	Page 17, last paragraph	LA Metro Don Sepulveda	"constructable" is misspelled, it should be "constructible"	9/20/2011	Comment addressed	Y
78	Page 17, last paragraph	LA Metro Don Sepulveda	Note that the EIR/EIS and PE work will commence on this through a grant.	9/20/2011	Comment addressed	Y
79	Page 26, 3rd paragraph	LA Metro Don Sepulveda	Insert "CP" in before "Raymer"	9/20/2011	Comment addressed	Y
80	General	SBCAG Scott Spaulding	I want to be sure the Goleta layover track is capable of storing two six car trains off the main line as described. Amtrak has mentioned this but looking at aerial photos it seems tight.	9/20/2011	Language in report was clarified to state the capacity of the storage track based on what Amtrak has stated to date. May be updated once Amtrak goes out and measures the siding.	Y
81	Page 10 Table 5.3.1	SANDAG Danny Veeh	The *** footnote explains that the AVL operates only a portion of the LOSSAN Corridor. This footnote should also apply to the IEOC, 91/PVL, Coast Starlight, and Southwest Chief.	9/19/2011	Comment addressed	Y
82	Page 9	Caltrans Alan Miller	Terminal turnaround time for intercity trains should be longer than 15-minutes, about 25-30 minute minimum when possible.	9/13/2011	Simulation used a "minimum" of 15 minutes. This is not the same as scheduled turnaround time. The scheduled turnaround times were assumed to be betwene 20-30 minutes for intercity. Minimum refers to the turnaround times when trains arrive late.	Y
83	Page 10	Caltrans Alan Miller	Noted that BNSF freight volumes measured were in 2007 before drop-off in economy and freight traffic, while UP volumes done recently in slow economy.	9/13/2011	See response to Comment 28.	Y
84	Page 10	Caltrans Alan Miller	Noted that in each train volume table there were no increases in freight volume. Is there a basis for this assumption?	9/13/2011	See response to Comment 28.	Y
85	Page 12	Caltrans Alan Miller	Is there an estimate of the number of minutes that can be saved by going to CTC?	9/13/2011	No. The simulation model can only provide travel time by train given the available infrastructure. To compare against improvements associated with CTC, additional simulations that include CTC would need to be performed.	Y
86	Page 13	Caltrans Alan Miller	Is there a suggested capital improvement at Goleta that would prevent the need for the juggling of equipment?	9/13/2011	An additional storage track for the use of the Ventura-Santa Barbara service. This was not identified in the report however since the operation without the siding is "feasible" in the short term. The purpose of the short-term analysis was to determine the feasibility of the service assumptions presented.	Y

APPENDIX E: LOSSAN SHORT-TERM OPERATIONS ANAYLSIS REPORT COMMENTS

Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
87	Page 19	Caltrans Alan Miller	Where is Keller Yard located? East River?	9/13/2011	See response to Comment 43.	Y
88	Page 22	Caltrans Alan Miller	CP Avery is mentioned in the text but not shown in the diagram. This is the case on a few other text-chart pairs as well.	9/13/2011	Comment addressed	Y
89	Page 25	Caltrans Alan Miller	Is there a suggested change in the design of improvements at Oceanside that would allow for a more fluid operation than currently proposed?	9/13/2011	Yes. See response to Comment 16.	Y
90	Page 26	Caltrans Alan Miller	The first sentence of paragraph 2 seems to go with paragraph 3 and the rest of paragraph 2 seems to go with paragraph 1.	9/13/2011	Comment addressed	Y

D.2. Short-Term 2014 Ridership and Revenue Projections

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FY14 Forecast Results for Passenger Rail Services

(revised 7/21/11)

	FY14 Annual Totals											
	Baseline (current service)			Version 1*			Version 2*			Version 3*		
Routes	**Ridership**	**Ticket Revenue**	**Passenger Miles**	**Ridership**	**Ticket Revenue**	**Passenger Miles**	**Ridership**	**Ticket Revenue**	**Passenger Miles**	**Ridership**	**Ticket Revenue**	**Passenger Miles**
Amtrak Services												
Pacific Surfliner												
Business Class	298,400	$12,261,000	35,170,000	311,400	$12,914,000	37,550,000	311,400	$12,914,000	37,550,000	311,400	$12,914,000	37,550,000
Coach-Single Trip	1,886,200	$45,600,000	174,450,000	1,915,000	$46,792,000	180,120,000	1,915,000	$46,792,000	180,120,000	1,915,000	$46,792,000	180,120,000
Coach-Multiride	817,800	$4,364,000	34,680,000	805,300	$4,163,000	34,360,000	799,900	$4,129,000	34,220,000	801,400	$4,133,000	34,230,000
SUBTOTAL	3,002,400	$62,225,000	244,300,000	3,031,700	$63,869,000	252,030,000	3,026,300	$63,835,000	251,890,000	3,027,800	$63,839,000	251,900,000
San Joaquin	1,120,900	$40,415,000	164,610,000	1,124,700	$40,491,000	165,170,000	1,124,700	$40,491,000	165,170,000	1,124,700	$40,491,000	165,170,000
Coast Starlight	435,500	$42,049,000	227,840,000	436,800	$42,090,000	228,090,000	436,800	$42,090,000	228,090,000	436,800	$42,090,000	228,090,000
SUBTOTAL-Amtrak	4,558,800	$144,689,000	636,750,000	4,593,200	$146,450,000	645,290,000	4,587,800	$146,416,000	645,150,000	4,589,300	$146,420,000	645,160,000
SUBTOTAL-Commuter	4,954,400	$30,305,000	148,950,000	5,172,900	$31,803,000	158,860,000	5,399,900	$32,924,000	165,230,000	5,370,800	$32,761,000	164,520,000
TOTAL	9,513,200	$174,994,000	785,700,000	9,766,100	$178,253,000	804,150,000	9,987,700	$179,340,000	810,380,000	9,960,100	$179,181,000	809,680,000

Train Frequencies (round trips)												
		Mon-Thu	Friday		Mon-Thu	Friday		Mon-Thu	Friday		Mon-Thu	Friday
San Diego-Los Angeles												
Amtrak		*11.0*	*12.0*		*11.0*	*11.0*		*11.0*	*11.0*		*11.0*	*11.0*
Commuter		-	-		*1.5*	*1.5*		*1.5*	*1.5*		*1.5*	*1.5*
San Diego-Oceanside												
Amtrak		*11.0*	*12.0*		*11.0*	*11.0*		*11.0*	*11.0*		*11.0*	*11.0*
Commuter		*11.0*	*11.0*		*13.0*	*13.0*		*16.0*	*16.0*		*16.0*	*16.0*
Oceanside-Los Angeles												
Amtrak		*11.0*	*12.0*		*11.0*	*11.0*		*11.0*	*11.0*		*11.0*	*11.0*
Commuter		*5.0*	*5.0*		*5.0*	*5.0*		*5.0*	*5.0*		*5.0*	*5.0*
Los Angeles-Oxnard												
Amtrak		*5.0*	*5.0*		*5.0*	*5.0*		*5.0*	*5.0*		*5.0*	*5.0*
Commuter		*3.0*	*3.0*		*3.0*	*3.0*		*3.0*	*3.0*		*3.0*	*3.0*
Ventura-Santa Barbara												
Amtrak		*5.0*	*5.0*		*5.0*	*5.0*		*5.0*	*5.0*		*5.0*	*5.0*
Commuter		-	-		*1.0*	*1.0*		*1.0*	*1.0*		*1.0*	*1.0*

These forecasts are based solely upon information available to AECOM as of 7/21/11.

These forecasts are provided for the sole use of Amtrak and Caltrans. They are not intended for disclosure in a financial offering statement.

Notes:

* Proposed future consolidated LOSSAN schedules (prepared June 2011) and Caltrans/Amtrak proposed 11 train Pacific Surfliner schedule and associated San Joaquin adjustments (prepared July 2011

** Includes only Metrolink service to LOSSAN markets; includes 100% of any future Metrolink trains that run through to San Diego

*** Includes 100% of any future Coaster trains that run through to Los Angeles

**** No change in Commuter services assumed for weekends

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D.3. Final Long-Term 2030 Operations Analysis

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LOS ANGELES-SAN DIEGO-SAN LUIS OBISPO

CORRIDORWIDE STRATEGIC IMPLEMENTATION PLAN

LONG-TERM BUSINESS CASE OPERATIONS ANALYSIS

TECHNICAL MEMORANDUM

Prepared by:

Parsons Brinckerhoff
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Prepared for:

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March 1, 2012

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1.0 EXECUTIVE SUMMARY

In January 2010, a Strategic Assessment of the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor was completed that included an initial proposal for near-term, mid-term, and long-term passenger rail service improvements for the Corridor. (See Figure 1.0.1 for a map of the LOSSAN Corridor.) The LOSSAN Joint Powers Board (JPB) is currently undertaking the next phase of work, the preparation of a Strategic Implementation Plan, which includes the development of a business case for future service alternatives. The goals established for the Corridorwide Strategic Implementation Plan study are to:

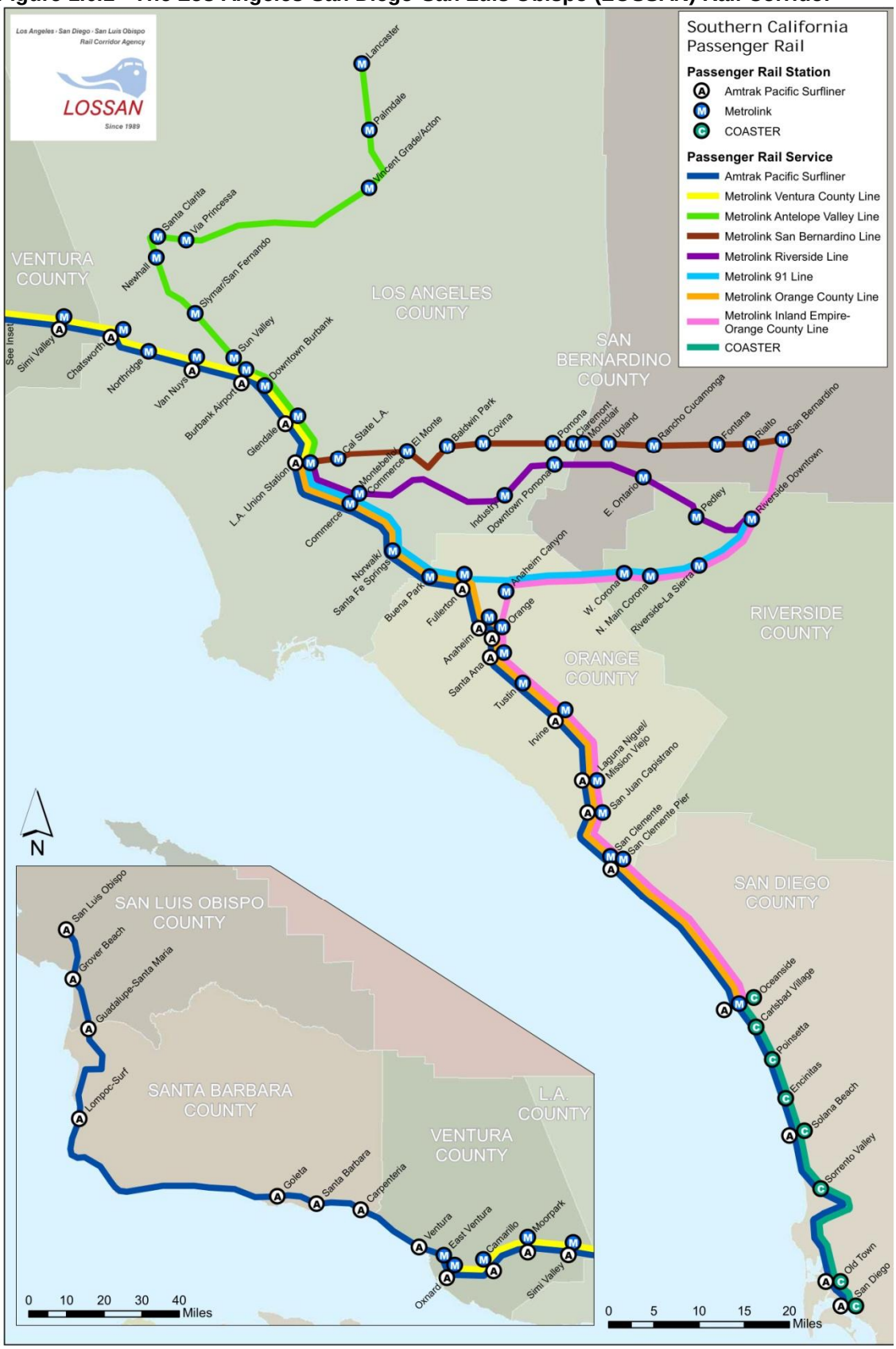
- Collectively provide for the necessary infrastructure to support more peak period trains, faster through-express trains and additional service improvements that meet current and future rail service demands both north and south of Los Angeles Union Station.
- Integrate and implement a regional fare policy and develop a common fare media that is based in part on early implementation lessons in the corridor (electronic revenue collection).
- Integrate and/or coordinate operations and develop more efficient operating schedules and dispatching for corridor services.
- Implement a strategy for seamless rail travel in the corridor.
- Collaborate to identify and establish new services for un-served and underserved markets.
- Integrate and improve traveler information and standardized to the extent possible.
- Coordinate with Long-Distance Passenger Rail and connecting Motorcoach Services.

The purpose of this report is to evaluate and report on the rail operations modeling results and capital needs identification in support of the business case for the Strategic Implementation Plan, which focuses on the addressing the first and third goal identified above.

The business case that has been defined and will be agreed to by the Corridor agency members of the LOSSAN JPB for the long-term (2030) is, in part, dependant on the results of modeling the projected ridership, service and operational scenarios. Three scenarios were identified for ridership and service/operations modeling that focused on assumed terminal and connection locations for the proposed high speed train (HST) system as described in the California High Speed Train Project (CHSTP) and how conventional passenger rail operations (ie. Metrolink, COASTER and Amtrak) could better facilitate rail to rail connections with the statewide HST network. These scenarios included:

- *Version 1: No High Speed Train Service* – In this version, no high speed train (HST) service is assumed in the Los Angeles or San Diego Metropolitan regions. This version would be based on the service levels and stopping patterns agreed to by the Project Working Group (PWG) for the Pacific Surfliner, Metrolink and COASTER. This version will assume the completion of the infrastructure projects identified by the Project Working Group (PWG) as "likely" for each county.
- *Version 2: HST Blended Service* – This version assumes HST service will terminate in the San Fernando Valley and assumes as its base, the infrastructure and service plan assumptions identified in Version 1.. This analysis will then “build” off of Version 1 to address the anticipated capacity and service levels increases associated with the extension of the HST into the Los Angeles metropolitan region.
- *Version 3: Dedicated Passenger Track* – This version assumes the extension of the HST service to Anaheim. For this version, it was assumed that a new 2-track dedicated passenger corridor would be constructed between Los Angeles and Fullerton to be shared by the HST, Pacific Surfliner and Los Angeles-Orange County commuter trains. South of Fullerton to Anaheim, an upgrade to the existing track and corridor was assumed to support the joint operation of HST, Pacific Surfliner and Los Angeles-Orange County commuter operations.

Figure 1.0.1 - The Los Angeles-San Diego-San Luis Obispo (LOSSAN) Rail Corridor



A concept level analysis of passenger rail operations along the LOSSAN Corridor was conducted on the Version 1 scenario to assess the feasibility of the assumed 2030 service plan to maintain or improve operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

Service level assumptions were based on increases identified as feasible from a policy and funding standpoint for COASTER, Metrolink and Amtrak's Pacific Surfliner, and agreed to by the PWG. It should be noted that the 2030 service levels presented for this analysis may not currently be covered in the operators' financially-constrained long-term funding scenarios. Operating assumptions for this analysis also included a consolidated rolling stock/equipment cycle plan for COASTER and Metrolink trainsets to address the vehicle fleet needs for "through" commuter service operating between Los Angeles, San Diego and Riverside Counties without the need for transfers. The service planning goals established for this operations analysis by the PWG included:

- Additional commuter and intercity services consistent with state and regional plans
- Additional through-commuter service between Los Angeles and San Diego
- Introduction of the Coast Daylight service between Los Angeles and San Francisco
- Additional commuter service between Ventura and Santa Barbara
- New San Diego stops at Intermodal Transportation Center, Del Mar Fairgrounds, and Convention Center
- Express COASTER service
- Peak period intercity trains converted to limited stop express services
- Integration of future high-speed train service

An initial service plan was developed and presented to the PWG for review and approval prior to being applied in the simulation model for validation against the assumed 2030 infrastructure.

The simulations conducted for this analysis included 30 infrastructure improvements with a combined estimated total cost of $2.037 billion in current dollars, which can feasibly be funded by 2030. These projects are distributed throughout the rail corridor as follows:

- 14 projects in San Diego County with an estimated total cost of $883 million
- 3 projects in Orange County with an estimated total cost of $105 million
- 4 projects in Los Angeles County with an estimated total cost of $844 million
- 5 projects in Ventura County with an estimated total cost of $115 million
- 4 projects in Santa Barbara and San Luis Obispo Counties with an estimated total cost of $90 million

The 2030 Long-Term service plan was modeled using the Berkeley Simulation Software Rail Traffic Controller (RTC) to determine the feasibility of the assumed infrastructure to support the desired future train volumes.

The initial service plan as presented to the PWG was found to be infeasible due to the sections of single track that were assumed to remain in place south of Los Angeles. Completing a second track along the entire length of the Corridor is not envisioned to be feasible by 2030, given the number of environmentally and politically sensitive areas; consequently, a number of iterations to the service plan were tested to identify a service pattern that could feasibly operate along the corridor given the infrastructure assumptions assumed by the PWG. Overall, this revised service plan was able to achieve most of the original service goals and was found to be feasible assuming a few additional infrastructure recommendations, which included:

- Extension of Serra siding in Orange County south approximately 1 mile into Dana Point

- Extension of double track north of Control Point (CP) San Onofre in San Diego County by approximately 1.3 miles

A number of train movement conflicts were observed along the BNSF Railway (BNSF) San Bernardino Subdivision (CP Soto to Fullerton Junction), many of which could potentially be mitigated through dispatching changes, where trains are dispatched differently than presented in the simulation model. Such changes to dispatching could include pocketing freight trains for overtakes or reverse running passenger trains along segments of the corridor, where passenger trains operate on the opposite track than they typically would. In the latter case, effective public address systems and message boards and/or signage would be needed to ensure passengers are aware of the change in advance.

However, dispatching changes may not be possible for all observed conflicts and additional infrastructure may be necessary to help address some of the conflicts related to the "backup" of freight trains waiting to enter into Hobart or Commerce intermodal yards. It is important to note that these two yards are located on the San Bernardino Subdivision, which is owned and operated by the BNSF and is their primary transcontinental corridor connecting the Ports of Los Angeles and Long Beach (via the Alameda Corridor) with the rest of the country. A portion of this subdivision is included within the LOSSAN Corridor and supports the operation of Amtrak's Southwest Chief and Pacific Surfliner trains and Metrolink's Orange County and 91 Line trains.

Despite the recommended infrastructure projects summarized above, the remaining sections of single track assumed in 2030 south of Los Angeles, located in San Juan Capistrano, San Clemente and Del Mar, will also continue to create challenges for operators as they attempt to keep trains running on time in order to make their meets. Any deviation from the train schedules, including late yard departures, signal problems, or rolling stock mechanical issues, could cause cascading delays along the Corridor, including to the segment north of Los Angeles.

As with the southern portion of the Corridor, the initial service plan for the northern segment, as presented to the PWG, was found to be infeasible given the numerous sections of single track that remained. The results of the modeling and analysis indicated that in order to reliably operate this initial service plan, between 18 and 20 miles of additional double track between Los Angeles and San Luis Obispo would be required, in addition to the projects already identified by the PWG.

The full extent of additional double track needed to reliably operate these service levels is not envisioned to be feasible to construct by 2030 given the expected limitations on funding and the number of environmentally and politically sensitive areas. Consequently, a number of iterations to the service plan were tested in the model to identify a service plan that could feasibly operate along the Corridor given the infrastructure assumptions assumed by the PWG. Overall, this revised service plan was found to be feasible assuming several additional infrastructure improvements, including approximately 9 to 12 miles of new double track and several station modifications north of Los Angeles, in addition to the projects already identified by the PWG. These additional infrastructure improvements are detailed in Section 6.0 of this Analysis and were tested through the iterative modeling process.

2.0 INTRODUCTION

The long term operations analysis was prepared in collaboration with the Los Angeles-San Diego-San Luis Obispo (LOSSAN) Technical Advisory Committee (TAC) and Project Working Group (PWG). This report presents the results of the analysis performed on the proposed service plan for 2030. The purpose of this analysis is; 1) to develop a workable passenger rail service plan for 2030, and 2) to identify the infrastructure requirements needed as service increases.

The business case that has been developed and agreed upon by the Corridor agencies for the long-term (2030) involves the modeling of both ridership and operational scenarios. Three scenarios were developed for ridership and operations modeling that focused on assumed terminal and connection locations for the HST and methods by which conventional passenger rail operations (i.e. Metrolink, COASTER and Amtrak) could better establish “rail to rail” connections with the statewide HST network. These scenarios included:

- *Version 1: No High Speed Train Service* – In this version, no high speed train (HST) service is assumed in the Los Angeles or San Diego Metropolitan regions. This version would be based on the service levels and stopping patterns agreed to by the Project Working Group (PWG) for the Pacific Surfliner, Metrolink and COASTER. This version will assume the completion of the infrastructure projects identified by the Project Working Group (PWG) as "likely" for each county.
- *Version 2: HST Blended Service* – This version assumes HST service will terminate in the San Fernando Valley. This version will focus on the potential increase in conventional intercity and commuter service levels and infrastructure capacity (as compared to Version 1) that may be necessary to operate a reliable feeder/distributer service to connect the LOSSAN Corridor with the southern terminus of the initial HST dedicated alignment in the San Fernando Valley.
- *Version 3: Dedicated Passenger Track* – This version assumes the extension of the HST service to Anaheim. For this version, it was assumed that a new 2-track dedicated passenger corridor would be constructed between Los Angeles and Anaheim Fullerton to be shared by the HST, Pacific Surfliner and Metrolink Los Angeles-Orange County Line commuter trains. South of Fullerton to Anaheim, , and an upgrade to the existing track and corridor was assumed to support the joint operation of HST, Pacific Surfliner and Los Angeles-Orange County commuter operations. Freight service and the Metrolink Perris Valley and 91 Line trains would continue to operate on the existing BNSF Railway (BNSF) triple track alignment between Fullerton and Los Angeles. This version has already been studied in part between Los Angeles and San Diego as part of the California High Speed Train Project (CHSTP). North of Los Angeles, the infrastructure presented in Version 1 would be assumed since the HST is anticipated to be on its own dedicated alignment. South of Anaheim, it is again assumed that the conventional passenger trains would operate on the infrastructure presented in Version 1, since the HST is not anticipated to operate further south than Anaheim on the LOSSAN Corridor.

The PWG requested that the California High-Speed Rail Authority take the lead in completing the operations analysis for Versions 2 and 3. The analysis for Version 2 is pending further development of the proposed high-speed rail service plan for southern California and therefore not included in this document. A previous analysis performed along the LOSSAN corridor between Los Angeles and San Diego already assumed the infrastructure identified in Version 3, and were included in the Draft of the Los Angeles to San Diego Rail Corridor Service Rationalization Analysis Report completed in February 2010. However, additional simulations or analysis may be necessary to determine the operational feasibility of service north of Los Angeles under this Version.

This report presents a summary of the analysis conducted on the Version 1 scenario. This scenario was selected for initial analysis by the PWG in order to provide a “base case” in comparing the potential service plan and infrastructure modifications required to support operations under the Version 2 and 3 scenarios.

3.0 SERVICE DESIGN CRITERIA

This section outlines the guiding principles that provided the basis for the service design of the three scenarios for long term, implementable service increases along the LOSSAN Corridor. The following criteria were defined based on the direction provided by the PWG and TAC.

- Most peak period Pacific Surfliner trains become limited stop trains between Los Angeles and San Diego. Stops are San Diego, Solana Beach, Oceanside, Irvine, Anaheim, and Los Angeles.
- One round trip Pacific Surfliner train north of Los Angeles becomes limited stop. All other Pacific Surfliner trains have a new stop at Moorpark.
- Fullerton remains a shared stop between commuter and intercity passenger trains. Norwalk remains a commuter station only.
- Because of the higher level of commuter rail service, Pacific Surfliner trains no longer serve Laguna Niguel or Orange stations. San Juan Capistrano remains a Surfliner stop.
- Limited stop Commuter service can be allowed between Fullerton and Los Angeles, alternating between Orange County Line and Perris Valley Line trains.
- Limit commuter operations between Ventura and Santa Barbara Counties to 2 equipment sets
- Commerce station to remain with service provided by a limited number of Orange County Line commuter trains.

4.0 SIMULATION MODEL APPLICATION

The Berkeley Simulation Software Rail Traffic Controller (RTC) model (the Model) was selected as the platform on which to conduct the operations analysis for the LOSSAN Corridor Business Case. The Model was selected because it provides a variety of analytical and reporting capabilities encompassing the range of information required for this analysis and realistically simulates higher-speed train operations in a mixed-use operational environment (intercity, commuter and freight services). The advantage of the Model is that it is designed as a flexible tool that can be further modified, refined and upgraded as needed to evaluate different operational and infrastructure assumptions and configurations.

Referencing the service design criteria established by the members of the LOSSAN TAC and PWG, as well as the BNSF and Union Pacific Railroad (UPRR) train count information, the Model was used to simulate a 2030 service scenario operating on the assumed infrastructure envisioned to be complete by 2030 on the LOSSAN Corridor.

The Model accurately simulates passenger and freight operations based on train set performance characteristics along a specified corridor, including different geometric parameters and infrastructure configurations.

5.0 INPUT & ASSUMPTIONS

This section identifies the principal inputs and assumptions used to develop and simulate the service scenario for 2030. The key inputs and assumptions include:

- Train Performance Characteristics
- Infrastructure Assumptions
- Operating Assumptions and Service Plan

5.1 TRAIN PERFORMANCE CHARACTERISTICS

Train set performance characteristics and consist composition define the type of rail vehicle fleet that will be used in the services along the Corridor. For this model case, these parameters were based on the existing consists and train set equipment, as follows:

- For commuter services, trains are powered by General Motors F59PHI and Motive Power MP36PH locomotives capable of achieving maximum operating speeds of 110mph and 90mph, respectively.
- For intercity services, trains are powered by General Motors F59PHI locomotives capable of achieving a maximum operating speed of 110mph.
- For freight services, trains are powered by a range of motive power, typically the General Electric Dash 9-44CW and General Motors GP-38 locomotives capable of achieving maximum operating speeds that approach 70mph.

For purposes of simulating the cases described above, the train set performance characteristics (i.e. tractive effort curve, braking effort curve, weight, etc.) were based on representative consists as agreed upon by the PWG, Metrolink, Amtrak, or COASTER operations staff for each passenger and freight train classification. These configurations are conservative assumptions that are representative of typical consists currently operating on or planned to be operated on the Corridor. Specific consist assumptions are described in more detail under the Operational Assumptions section of this chapter.

5.2 INFRASTRUCTURE ASSUMPTIONS

The PWG defined infrastructure improvements that could feasibly be funded prior to, and constructed by, 2030. These projects were identified by the PWG and incorporated into the model for purposes of simulating their effect on operations under the 2030 service plan. The specific configuration(s) of these projects were conceptualized using the best railroad design practices for the region, since many had not yet been designed or gone beyond conceptual engineering. A summary of the infrastructure improvements that have been coded into the RTC model and simulated as part of this long-term operations analysis is presented below.

5.2.1 San Luis Obispo County

CTC Installation

Currently, rail traffic along most of the corridor in San Luis Obispo County is dispatched using Track Warrant Control (TWC). Turnouts for sidings in this section are typically hand operated or spring switches (not powered), which require additional time to allow the train crew to manually align switches to correctly route trains into sidings during meets with trains operating in the opposing direction.

The installation of Centralized Traffic Control (CTC) will establish remotely controlled power switches that provide expeditious access to the sidings used for meets between trains, improving the overall safety, travel time and reliability of operations between Santa Barbara and San Luis Obispo.

5.2.2 Santa Barbara County

Island CTC Installation

As with San Luis Obispo County, rail traffic north of the Santa Barbara Station is dispatched using Track Warrant Control (TWC). Turnouts for sidings in this section are typically hand operated or spring switches (not powered), which require additional time to allow for the train crew to manually align switches to correctly route trains into sidings during meets.

The installation of "islands" or "pockets" of CTC will establish remotely controlled power switches that provide expeditious access to the sidings used for meets between trains, improving the overall safety, travel time and reliability of operations between Santa Barbara and San Luis Obispo. Those locations where "islands" of CTC were assumed to be constructed are based on the list of projects presented in the *LOSSAN North Corridor Strategic Plan* (completed in October 2007), and includes:

- Capitan Siding
- Concepcion Siding
- Honda Siding
- Tangair Siding
- Narlon Siding
- Devon Siding
- Waldorf Siding
- Guadalupe Siding

North Goleta Station and Siding

This project envisions the construction of a new "stub-ended" station track on the west side of the existing Elwood siding, located about 1 mile north (railroad west) of the current Goleta Amtrak Station. This new station is intended to be the northern terminal of the proposed Ventura-Santa Barbara commuter rail service. This facility is expected to better serve the businesses and office parks in north Goleta, by having a station located within better proximity to these employment centers. The siding associated with this station would provide a location for trains to turn or layup during the midday, allowing them (the trains) to remain "clear" of the UPRR mainline. For this study, it is assumed that the siding would be long enough to store up to two 5-car passenger trainsets.

Ortega Siding

The Ortega Siding is located approximately 6 miles south of the Santa Barbara Amtrak Station. This siding was taken out of service following damage sustained during severe weather, but has remained a stub track facing toward north (railroad west). This project would rebuild the siding as a new 2-mile double-ended controlled siding where trains can meet and pass between the Carpinteria and Santa Barbara Stations. This would provide needed capacity and operating flexibility to what is currently constrained by 15 miles of continuous single-track territory with no passing sidings.

5.2.3 Ventura County

CP Las Posas to MP 423 Second Main Track

This project would extend the existing Moorpark Siding north (railroad west) by approximately 3.5 miles to the Milepost 423. In order to allow more than 1 train to occupy each track within the extended siding at this location, new intermediate signals would be installed west of the Moorpark Station. This is expected to improve the reliability of the rail service by reducing the length of the existing single-track section while

potentially improving the travel time. This would facilitate reducing the amount of schedule ”pad” that is currently in place to compensate for delays that may occur as a result of late trains operating on the single track segment.

Leesdale Siding Extension

As the initial phase of a continuous second main track construction between Camarillo and Oxnard Stations, this project envisions the upgrade to the existing 3,700 foot long Leesdale Siding, which is currently accessed with hand-thrown turnouts, and extending the siding southward (railroad east) by 1.5 miles to Las Posas Road. This siding modification would also install high-speed remotely controlled power switches at each end of the extended siding. It is assumed that this project will increase the track capacity in this section by improving the reliability of rail service as a result of improved timeliness of meets and passes between the existing sidings near the Camarillo Station and Oxnard Stations.

Oxnard to Camarillo Second Main Track

This project would be Phase 2 of the second main track construction that connects the existing sidings at the Camarillo Station and Oxnard Station. It (the project) would connect the Camarillo, Leesdale, and Oxnard sidings and create approximately 9 miles of continuous double-track through Ventura County. As a part of this project, a universal crossover would be installed north of the Camarillo Station for additional operational flexibility.

Seacliff Siding Extension and Curve Realignment

The Seacliff siding project would extend the existing 1 mile long Seacliff siding north (railroad west) to MP 383.8 to provide approximately 2.5 miles of second main track. This project would include the realignment of a curve near MP 384.5 to allow for additional speed increases in this section and to minimize the impacts of storm run-off.

5.2.4 Los Angeles County

Los Angeles Union Station (LAUS) Run-Thru Tracks

Currently, the track layout for Los Angeles Union Station (LAUS) is based on the original 1939 stub-ended terminal configuration where all trains serving the station arrive and depart through the same set of tracks, requiring every train that serves LAUS to “turn”. This stub-ended layout requires additional tracks compared to that of a through-running configuration (with similar service levels) because of the additional time required for trains to occupy station platform tracks (during the turnaround process). The Union Station Run-Thru Tracks project would construct a new approach to the station from the south (over US Route 101) and provide a connection to the existing platform tracks from 3 through 6. This would reduce the overall dwell time at the station for through trains (i.e. Pacific Surfliner trains or through-routed Metrolink trains), making additional capacity available to service the projected increase in train volumes in 2030. It should also be noted that work is underway by the California High Speed Rail Authority (CHSRA) and the Los Angeles County Metropolitan Transportation Authority (LA Metro) on a LAUS Master Plan. Once complete, this document may recommend additional changes to the track or platform configuration of the station.

CP Raymer to CP Bernson Second Main Track

The segment of the Corridor between CP Raymer (MP 453.1) and CP Bernson (MP 446.8) is one of the last remaining segments of single track on Metrolink’s Ventura County Line in the San Fernando Valley and is recognized as an existing bottleneck location for the LOSSAN North Corridor. As part of this project, modifications to the Northridge station would be necessary to construct a new platform to serve the new second track.

Van Nuys Station Second Platform

The Van Nuys Station is currently located along a double track section of the Corridor; however, there is only one station platform. As a result, this section of the corridor is operated as if it were a single track segment since trains operating in both directions must "share" the same platform. This project assumes the construction of a second platform at the current location of the Van Nuys Station.

It should be noted that an existing UPRR freight yard is located immediately opposite the existing station that could potentially restrict the ability to expand the existing station. Should future studies conclude it to be infeasible to expand the existing station, additional solutions will need to be identified that could include relocating the Van Nuys Station to an alternate location in the future.

5.2.5 Orange County

Laguna Niguel to San Juan Capistrano Passing Siding

The remaining single track segments in south Orange County are some of the largest remaining bottleneck locations for the southern portion of the LOSSAN Corridor. This project would be the first step in addressing the capacity issue associated with the single track in Orange County by constructing a passing siding immediately south of the existing CP Avery. This siding would be about 1.8 miles in length and provide a location for trains to meet between the existing Serra Siding and the current southern termination point of double track at Laguna Niguel. The siding would end prior to reaching the developed area of the historic district in the City of San Juan Capistrano.

Irvine 3rd Main Track Extension

This project would provide an 8.5-mile long section of triple track in the "heart" of Orange County. The segment would be located between the Red Hill Avenue crossing in the City of Tustin and CP Bake in the City of Lake Forest. The passenger platforms at Irvine and Tustin Stations also would be modified to provide access/egress to and from the new third main track. This length of triple track will be capable of supporting limited stop service, overtakes, and short-turning of trains off the mainline.

Anaheim Canyon Station Double Track

While not on the LOSSAN Corridor, the double tracking of the Anaheim Canyon Station provides significant benefit to the LOSSAN Corridor. Located along Metrolink's Olive Subdivision, this station improvement would provide a capacity improvement to the Olive subdivision, which connects Riverside with Orange and San Diego Counties. Currently, the Olive Subdivision is single track, which means that trains would need to wait on either end of the subdivision for opposing trains to clear. This configuration has the potential to cause delays on the LOSSAN Corridor, as trains are "held" in Orange. With the assumed increase in service of the Inland Empire – Orange County (IEOC) Line trains between Riverside, Orange and San Diego Counties, providing additional capacity to the Olive Subdivision will be important to maintaining the operational reliability of the LOSSAN Corridor.

5.2.6 San Diego County

CP San Onofre to CP Pulgas Double Track

This project envisions the construction of a second main track between CP San Onofre (MP 212.3) and CP Pulgas (MP 218.3) eliminating the single-track section between 2 existing sidings. As a part of the project, CP Pulgas is assumed to be relocated to the mid-point of this new double-track section near MP 216.4 and converted to a control point (CP) with a universal crossover.

CP Eastbrook to CP Shell Double Track

This double tracking project also includes the replacement of an existing aging single-track ballast-deck-through-girder bridge over the San Luis Rey River near the Oceanside Station. In combination with the CP San Onofre to CP Pulgas Double Track Project, completion of this improvement would establish a fully double tracked railroad between CP Songs (MP 209.2) and the Oceanside Station, a distance of over 18 miles. As a part of this project, CP Shell is assumed to be upgraded to a control point (CP) with a universal crossover that allows trains to traverse between main tracks as they arrive at or depart from the Oceanside Station.

Carlsbad Village Double Track

This project assumes the completion of the second main track between CP Longboard (MP 228.4) and CP Carl (MP 229.5). Since conceptual designs for this project were not available at the time of this analysis, the following assumptions were made with regard to the infrastructure configuration:

- A second passenger platform would be constructed at the Carlsbad Village COASTER Station.
- CP Longboard would be "retired", with a new left-hand crossover to be located at CP Escondido Junction.

CP Ponto to CP Moonlight and CP Moonlight to CP Swami Double Track

These projects envision the completion of the second main track through the City of Encinitas between CP Ponto (MP 234.5) and CP Swami (MP 238.0). Since conceptual designs for these projects were not available at the time of this analysis, the following assumptions were made with regards to the infrastructure configuration:

- A second passenger platform would be constructed at the Encinitas COASTER Station
- A new control point (CP) with a universal crossover would be installed near Leucadia Boulevard in the City of Encinitas.

CP Cardiff to CP Craven Double Track

This project assumes the completion of the second main track between CP Cardiff (MP 239.6) and CP Craven (MP 241.1). Since conceptual designs for this project were not available at the time of this analysis, the following assumptions were made based on previous discussion with NCTD staff.

- CP Craven would be "retired" and a single left-hand crossover would be constructed at the current location of CP Cardiff.

San Dieguito Bridge Double Track

This project envisions the replacement of an existing single-track trestle over San Dieguito Bridge with a new double-track bridge. When complete, this improvement would extend the second main track from CP Valley (MP 242.2) south (railroad east) to CP Crosby (MP 243.3). It was assumed that the existing Del Mar Siding would remain as a controlled siding at its current location. A seasonal Del Mar Fairgrounds platform was not assumed as part of this infrastructure assumption since only year-round stops were included.

Sorrento to Miramar Phase 2 Double Track

This improvement would be Phase 2 of the project to complete the double-tracking along the Sorrento grade between CP Pines (MP 249.8) and CP Miramar (MP 252.9).

CP Tecolote to CP Friar Double Track

This project would close the existing double-track "gap" between CP Tecolote (MP 263.2) and CP Friar (MP 264.1) near the Old Town Station. When completed, this improvement would be a part of a 19.5-mile continuous double-track section from Sorrento Valley and downtown San Diego.

San Diego Airport Intermodal Transportation Center

A proposed intermodal station presented by the San Diego Association of Governments would have a new station constructed approximately 1.8 miles north of the Santa Fe Depot in downtown San Diego to service travelers arriving or departing from the San Diego Airport. This station would be serviced by both commuter and intercity rail operations.

San Diego Convention Center Station

A proposed extension of limited commuter service presented by the San Diego Association of Governments (SANDAG) and NCTD would have some trains extending south of the Santa Fe Depot in downtown San Diego (the current terminus of passenger rail service) to a new San Diego Convention Center station located approximately 0.70 miles south of the Santa Fe Depot along Harbor Boulevard.

5.3 OPERATIONAL ASSUMPTIONS

Before preparing the service plans capable of supporting feasible long-term service increases in the LOSSAN Corridor, basic operational assumptions were identified to help form the foundation from which all the scenarios were developed. These assumptions included:

- Projects that could feasibly be funded and constructed by 2030 will be assumed as part of the infrastructure for the long-term scenario.
- Maximum length of "work day" for one crew cannot exceed 11 hours and 59 minutes.
- Crews report "on duty" 30 minutes before the initial departure from the lay-up yard.
- Minimum terminal turnaround time between two revenue-service trips is 15 minutes.
- Timetables represent weekday operations only along the LOSSAN Corridor.
- UPRR freight train movements are based on discussions and data obtained from observations made at the Metrolink Operations Center (MOC) in Pomona, California on June 30, 2011 and increased at an assumed rate of 2% per year until 2030.
- BNSF freight train movements are based on data obtained from observations made over a 24-hour / seven day week period in May 2007, and increased at an assumed rate of 2% per year until 2030. This assumed rate increase is consistent with previous studies conducted along the LOSSAN Rail Corridor that included freight operations.

5.3.1 Service Increase Assumptions

The service increases that were assumed in the service scenario and simulated in the model represent only weekday services and are based on the Service Design Criteria, outlined in Section 3.0 of this report, and agreed to by the TAC and PWG. The service increase assumptions that were modeled as part of this analysis are summarized on Table 5.3.1. Continuous coordination and collaboration occurred with the three passenger rail operators (Amtrak, Metrolink and COASTER) during the development of these assumptions to ensure the service increases proposed were implementable in the long-term. While deemed feasible, it should be noted that all of the 2030 service levels presented for simulation by the PWG may not currently be covered in the operators' financially-constrained long-term funding scenarios.

As part of this service plan, two "modified" services have been incorporated into the corridor. These include through commuter trains operated (without transfers) between Los Angeles and San Diego (LA-SD) and between the Inland Empire and San Diego (IE-SD). These services were created in an attempt to; 1) reduce congestion at the Oceanside Transit Center from the termination of trains operating from the Inland Empire, Los Angeles and San Diego, and 2) to help cater to those passengers who currently transfer from one commuter service to another in Oceanside. These new "through" commuter services are incorporated into the total commuter train count desired for 2030 by the PWG for operation in Los Angeles, Orange, Riverside and San Diego Counties and are not seen as an "independent" service.

Table 5.3.1 – Weekday Service Increase Assumptions

Operator	Line	2011 Base Line	2014	2030 Proposed Service
COASTER	Coast	22	28	40
Metrolink	Coast	0	1	0
Metrolink/COASTER	LA-SD*	0	3	10
Metrolink/COASTER	IE-SD*	0	0	4
Metrolink	Orange County	19	16	18
Metrolink	OC Intra-County	0	10	14
Metrolink	IEOC	14	16	24
Metrolink	91/Perris Valley	9	12	32
Metrolink	Antelope Valley	30	30	46
Metrolink	Burbank-Bob Hope	11	11	8
Metrolink	Ventura County	20	20	36
Metrolink	Ventura-Santa Barbara	0	2	8
Amtrak	Pacific Surfliner (All Stop)**	21	22	28
Amtrak	Pacific Surfliner (Limited Stop)**	1	2	8
Amtrak	Coast Starlight	2	2	2
Amtrak	Southwest Chief	2	2	2
Amtrak	Sunset Limited	0	0	2
TOTAL		**151**	**177**	**282**

** These trains are based on the operating assumption to include a consolidated rolling stock/equipment cycle plan for COASTER and Metrolink trainsets to address the vehicle fleet needs for "through" commuter service operating between Los Angeles, San Diego and Riverside Counties without the need for transfers.*
*** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

6.0 MODEL OUTPUT RESULTS

The operations simulation model built to represent the physical and service characteristics of the Corridor between San Luis Obispo, Santa Barbara, Los Angeles and San Diego was updated from the network originally developed by Parsons Brinckerhoff for Amtrak's California 20-Year Rail System Improvement Plan, and subsequently updated for simulations conducted as part of the Los Angeles to San Diego Rail Corridor Strategic Business Plan and the Orange County Transportation Authority (OCTA) Metrolink Service Expansion Program. The purpose for updating the model was to determine the feasibility of the infrastructure projects indentified in this report to support the Version 1 2030 service scenario developed in collaboration with the LOSSAN TAC and PWG. This operational modeling helps demonstrate the viability of the service levels identified by the TAC and PWG. It also provides basis for a capital project action plan so that agency stakeholders can prioritize their future corridor capital investments.

This chapter summarizes the simulation outputs and observations from the model results utilizing the 2030 passenger train volumes agreed to by the PWG and increased freight train assumptions that were based on data obtained through extensive field reviews conducted in May of 2007 of the BNSF operations between Fullerton Junction and Hobart Yard and June of 2011 for the UPRR operations between Los Angeles and San Luis Obispo. These reviews were accomplished by direct discussion and observations of BNSF and UPRR train movements from Metrolink's Train Control facilities in Pomona, California.

An initial Version 1 service plan was prepared using the design criteria set forth by the PWG. However, when coded into the model and simulated, this initial Version 1 service plan was found to be infeasible. From this initial simulation, it was determined that in order to reliably operate the service plan, full double track of the Corridor would be required between Los Angeles and San Diego and between 18 and 20 miles of additional infrastructure beyond what was already identified by the PWG would be necessary north of Los Angeles. The development of this initial service plan did not take into consideration the remaining capacity constraints on the Corridor but instead based the service on "clock faced" departures and arrivals from LAUS.

As a result, a number of iterations to the service plan were tested to identify a plan that could feasibly operate along the Corridor given the infrastructure assumptions assumed by the PWG. A revised service plan was identified and found to be more feasible and realistic considering the additional infrastructure recommendations that were identified. A summary of the observations and recommended infrastructure improvements, broken up by service segment, is presented below.

The associated Version 1 timetable and terminal track assignment assumptions that were used as input to the model are provided for reference in the Appendix of this report.

6.1.1 San Luis Obispo to Goleta

Table 6.1.1 – San Luis Obispo to Goleta Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014 to 2030)
Amtrak Pacific Surfliner (All Stop)	4	4	5*	1
Amtrak Pacific Surfliner (Limited Stop)	0	0	3*	3
Amtrak Coast Starlight	2	2	2	0
UPRR Freight	6	6	8	2
TOTAL	**12**	**12**	**18**	**6**

** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

The UPRR owns and dispatches this segment of the corridor. The total miles of additional double tracking recommended for this segment of the corridor beyond the improvements provided by the PWG is approximately six miles. These improvements focused on four primary projects, which include:

- CTC installation for the Surf/Lompoc siding.
- 3.5 mile extension of second track north of the Grover Beach station and the construction of a second platform at Grover Beach. The revised service plan for 2030 that was developed and utilized for this development creates meets for two Pacific Surfliners and both train 14 and 11 (the Coast Starlights) at the Grover Beach station.
- 1.2 mile extension of second track north of the Waldorf siding, just south of the Guadalupe Station. The extension of this siding not only allows for moving meets between Pacific Surfliner trains, but also extends the siding for possible meets with UPRR freight traffic.
- 1-mile extension of second track south of Devon siding.
- 0.5 mile extension of second track north of Capitan siding.

6.1.2 Goleta to East Ventura

Table 6.1.2 – Goleta to East Ventura Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	10	10	10*	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	4*	4
Amtrak Coast Starlight	2	2	2	0
Metrolink Ventura-SB Commuter Train	0	2	8	6
UPRR Freight	4	4	6	2
TOTAL	**16**	**18**	**30**	**12**

** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

The UPRR owns and dispatches this segment of the corridor. The total miles of additional double tracking recommended for this segment of the corridor beyond the improvements provided by the PWG is between 1.5 to four miles. These improvements focused on three primary projects, which include:

- 1.2 mile extension of proposed Ortega siding. Several intercity trains still hold on the Ortega siding for meets with trains operating in the opposing direction. This additional capacity would allow for moving meets of these trains.
- Second track for west leg of Montalvo Wye. The distance for this additional improvement can vary between 0.5 to 3.5 miles (as far north as the Ventura Siding), with 0.5 miles being the minimum recommended improvement and the longer addition contributing to greater service reliability. During peak periods, up to three trains at a time were observed to operate through this area, which included a Ventura County Line train entering into the south leg of the wye heading to the East Ventura station, a southbound Pacific Surfliner operating through the west leg of the wye enroute to Oxnard and a Ventura-Santa Barbara commuter train operating along the north leg of the wye headed towards North Goleta. While the existing configuration could support the operation, additional capacity is recommended to mitigate trains operating “out of slot”.
- Additional infrastructure will be required for the East Ventura station. Currently, the station can support three trainsets stored overnight. The service plan as simulated requires as many as six trainsets to be stored overnight; four in support of the Ventura County Line and two in support of the Ventura – Santa Barbara commuter service.

6.1.3 East Ventura to Moorpark

Table 6.1.3 –East Ventura to Moorpark Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	10	10	10*	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	4*	4
Amtrak Coast Starlight	2	2	2	0
Metrolink Ventura County Line	6	6	18	12
UPRR Freight	6	6	8	2
TOTAL	**24**	**24**	**42**	**18**

** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

The UPRR owns and dispatches this segment of the corridor. No additional track capacity projects are recommended for this segment of the corridor beyond the improvements provided by the PWG.

With all of the assumed infrastructure improvements, the remaining single-track section in this segment of the Corridor would be less than 10 miles, leaving more than a half of the territory double tracked. The operational analysis suggests that on the main line of the corridor between East Ventura and Moorpark, the improved infrastructure should be adequate to accommodate the assumed service levels. The extended double track near Camarillo and Moorpark appeared to create additional track capacity that allows all scheduled trains to meet and pass with no or very minor delays in this section.

While no additional track capacity was identified as necessary, a second platform at the Oxnard station is recommended to allow for train meets. The track through the station is already double tracked, but due to the location of a freight yard on the east side of the right-of-way, only a single platform is provided. This in effect forces the passenger trains to operate as if the segment was single track.

6.1.4 Moorpark to Chatsworth

Table 6.1.4 – Moorpark to Chatsworth Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	10	10	10*	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	4*	4
Amtrak Coast Starlight	2	2	2	0
Metrolink Ventura County Line	14	14	36	22
UPRR Freight	6	6	8	2
TOTAL	**32**	**32**	**60**	**28**

** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

This segment of the corridor is owned by the Ventura County Transportation Commission (VCTC) within Ventura County and LA Metro in Los Angeles County and the line is dispatched by Metrolink. The total miles of additional double tracking recommended for this segment of the corridor beyond the improvements provided by the PWG is 1.6 miles. This improvement focused on the following project:

- 1.6 mile extension of the Santa Susana siding, through the Simi Valley station. This would also require a second platform at Simi Valley. There are several meets that occur at this location, where northbound trains hold for southbound trains. An adjustment to the timetable was not identified as a

feasible solution due to conflicts that would otherwise then occur at other locations along the corridor should any adjustment to the assumed service plan be made.

6.1.5 Chatsworth to Burbank-Bob Hope Airport

Table 6.1.5 –Chatsworth to Burbank-Bob Hope Airport Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	10	10	10*	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	4*	4
Amtrak Coast Starlight	2	2	2	0
Metrolink Ventura County Line	20	20	36	16
UPRR Freight	6	6	8	2
TOTAL	**38**	**38**	**60**	**22**

** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

This segment of the corridor is owned by LA Metro and dispatched by Metrolink. Analysis of the simulation suggests that the completion of a second track through this segment (between CP Raymer and CP Bernson) improves the reliability of future service compared with the reliability of both the existing and short-term conditions. However, the increases in freight traffic assumed in 2030 do present the possibility for conflicts as freight trains depart from or enter into the freight yard at the old GMCO facility, located adjacent to the Van Nuys Station. The GM facility is no longer there, but the yard continues to be used and there is no indication from UPRR on discontinuing use of the yard at this time. Since the yard is accessible from only Main Track 1, the section of track between CP Raymer and CP Bernson would need to be treated as a single-track section for freight operations. One option for mitigating this conflict would be to construct a universal crossover at CP Raymer so that the freight yard becomes accessible from both main tracks.

6.1.6 Burbank-Bob Hope Airport to Los Angeles Union Station

Table 6.1.6 – Burbank-Bob Hope Airport to Los Angeles Union Station Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	10	10	10*	0
Amtrak Pacific Surfliner (Limited Stop)	0	0	4*	4
Amtrak Coast Starlight	2	2	2	0
Metrolink Ventura County Line	20	20	36	16
Metrolink Burbank-Bob Hope Turn	11	11	8	-3
Metrolink Antelope Valley Line**	30	30	46	16
UPRR Freight***	11	11	18	7
TOTAL	**84**	**84**	**124**	**40**

** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

***This service splits off of the LOSSAN Corridor at Burbank Junction and heads towards Palmdale and Lancaster.*

****Some of these trains split off of the LOSSAN Corridor at Burbank Junction and head towards Palmdale and Lancaster.*
Note: These numbers do not include the non-revenue train movements between Los Angeles Union Station and Metrolink's Central Maintenance Facility. While these trains are anticipated to affect available capacity on the corridor, a detailed analysis on equipment manipulation options to include the San Bernardino and Riverside Line services is required to determine the actual impact these non-revenue movements may have on corridor capacity.

This segment of the corridor is owned by LA Metro and dispatched by Metrolink. While no additional track capacity was identified as necessary, Burbank Junction was identified as being constrained as a result of the

volume of service projected for 2030. Burbank Junction is where the Ventura County Line and Pacific Surfliner trains operating to and from Ventura, Santa Barbara and San Luis Obispo Counties merge services to and from LAUS with the Antelope Valley Line trains operating to and from Palmdale and Lancaster. During a morning peak hour, as many as 16 trains were assumed to operate through Burbank Junction (9 inbound to Los Angeles and 7 outbound). Burbank Junction is where the Metrolink Antelope Valley Line (AVL) trains enter and leave the LOSSAN Corridor in their operation between Lancaster and Los Angeles. From this location to Los Angeles, the AVL trains share track with Metrolink Ventura County Line trains and Amtrak's Pacific Surfliner and Coast Starlight. Since Burbank Junction is an at-grade "interlocking" between two railroad subdivisions (or lines), conflicting movements were observed between trains traveling along these two lines when they "meet" at Burbank Junction. This "meet" forces one train to hold until the other train clears the Junction, forcing the train that was "held" to become delayed and operate "out of slot".

With the volume of service operating through Burbank Junction, particularly during the peak periods, this leaves little room for any freight operations. While minimal, freight operations do currently occur during the trailing edge of peak periods on some days, particularly associated with the switching yard adjacent to the former GM facility in Van Nuys. The volume of passenger service during and trailing the peak periods shifted freight operations in the simulation to times further away from the peak periods to more midday and late evening hours.

In addition, due to the large volume of passenger rail service that was provided in the 2030 service plan, the eight Burbank Turn trains assumed initially in the service plan had to be removed in order to ensure reliable operations. With the assumed volume of Ventura County Line and Pacific Surfliner trains operating through the Burbank-Bob Hope Airport station to and from LAUS, there was insufficient capacity at the Burbank-Bob Hope Airport station to accommodate the "turning" of trains. Currently, Burbank Turn trains operate as a connecting service between LAUS and the Burbank Bob-Hope Airport station. With the assumed levels of service for 2030 increasing 80-percent on the Ventura County Line and 40-percent on the Pacific Surfliner, the Burbank Turn trains were no longer seen as necessary and were removed from the service plan to mitigate the conflicts being caused at the Burbank-Bob Hope Airport when trying to "turn" these trains.

In order to evaluate the viability of the Ventura County and Pacific Surfliner service increases as a substitute for the current Burbank Turn trains, a schedule comparison analysis is summarized in Table 6.1.7 and a more detailed comparison matrix is provided in Appendix C. The summary presented in Table 6.1.7 illustrates that the morning and afternoon peak period service levels for the LAUS-Burbank/Bob Hope Airport service are generally comparable between existing and proposed 2030 service levels. Additionally, the 2030 service plan provides more trips in general between the two locations as well as a wider span of service hours when compared to today's schedules.

Table 6.1.7 – Comparison of Service Levels at Burbank-Bob Hope Airport (Existing vs. 2030 Service)

Services to/from Burbank-Bob Hope Airport Station	Total AM Peak Period Trains*	Total PM Peak Period Trains**	Total Daily Trains	Daily Service Span (HH:MM)	Total Hours of Service (HH:MM)
2011 Inbound to LAUS	8	7	21	5:49AM – 9:45PM	15:56
2011 Outbound from LAUS	8	8	22	5:39AM – 7:32PM	13:54
2030 Inbound from LAUS	8	6	26	5:07AM – 9:41PM	16:34
2030 Outbound from LAUS	7	7	26	6:10AM – 10:21PM	16:11

** AM Peak Period is any passenger trip between LAUS and Burbank-Bob Hope Airport operating between 6:00 AM and 9:00 AM*
*** PM Peak Period is any passenger trip between LAUS and Burbank-Bob Hope Airport operating between 3:00 PM and 6:00 PM*

6.1.7 Los Angeles Union Station to Fullerton

Table 6.1.8 – Los Angeles Union Station to Fullerton Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	21	22	28	6
Amtrak Pacific Surfliner (Limited Stop)	1	2	8	6
Amtrak Southwest Chief	2	2	2	0
Amtrak Sunset Limited	0	0	2	2
Metrolink/COASTER LA-SD Commuter Service	0	3*	10	7
Metrolink Orange County Line	19	16*	18	2
Metrolink 91/Perris Valley Line	9	12	32	20
BNSF Freight	82	82	118	36
TOTAL	**134**	**139**	**218**	**79**

** No net reduction in service, three existing Orange County Line trains are replaced by 3 new LA-SD Commuter trains*

This segment of the corridor is owned by LA Metro, along the West River Bank of the River Subdivision and the BNSF along the San Bernardino Subdivision. Metrolink is responsible for dispatching of operations along the West River Bank and the BNSF along the San Bernardino Subdivision.

Operations in this corridor are currently dominated by freight traffic and it is anticipated that this pattern will continue in the future. While the proposed service plan was identified as being feasible, due to the volume of freight operations along this segment, delays to passenger trains will continue to be a risk to reliability along this segment of the LOSSAN corridor as BNSF balances their freight operations with the peak period passenger commute needs. While assumptions were made for increased service along the BNSF by 2030, actual economic conditions determine freight volumes and will ultimately drive the need for additional infrastructure projects along this segment of the corridor.

Based on the assumptions made in this analysis, no additional infrastructure projects were identified as being necessary to support passenger operations along this segment of the corridor.

6.1.8 Fullerton to Orange

Table 6.1.9 – Fullerton to Orange Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	21	22	28	6
Amtrak Pacific Surfliner (Limited Stop)	1	2	8	6
Metrolink/COASTER LA-SD Commuter Service	0	3*	10	7
Metrolink Orange County Line	19	16*	18	2
Metrolink OC Intra-County Line	0	10	14	4
BNSF Freight	4	4	4	0
UPRR Freight	2	2	2	0
TOTAL	**47**	**59**	**84**	**25**

** No net reduction in service, three existing Orange County Line trains are replaced by 3 new LA-SD Commuter trains*

As part of the 2030 service plan, the Fullerton to Orange segment is anticipated to have 78 passenger trains serving this portion of the Corridor. This segment is owned by the OCTA and is dispatched by Metrolink. The BNSF and UPRR both maintain trackage rights along this section and it was assumed that they would continue to operate limited freight service.

The results of the simulation indicate that the assumed infrastructure for 2030 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 1 timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor. No additional infrastructure improvements were identified as necessary or recommended for this segment.

6.1.9 Orange to Laguna Niguel / Mission Viejo

Table 6.1.10 – Orange to Laguna Niguel / Mission Viejo Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	21	22	28	6
Amtrak Pacific Surfliner (Limited Stop)	1	2	8	6
Metrolink/COASTER LA-SD Commuter Service	0	3*	10	7
Metrolink/COASTER IE-SD Commuter Service	0	0	4	4
Metrolink Orange County Line	19	16*	18	2
Metrolink OC Intra-County Line	0	10	14	4
Metrolink IEOC Line	14	16	24	8
BNSF Freight	6	6	8	2
UPRR Freight	2	2	2	0
TOTAL	**63**	**77**	**116**	**39**

** No net reduction in service, three existing Orange County Line trains are replaced by 3 new LA-SD Commuter trains*

As part of the 2030 service plan, the Orange to Laguna Niguel / Mission Viejo segment is anticipated to have 106 passenger trains serving this portion of the Corridor. This segment is owned by the OCTA and is dispatched by Metrolink. The BNSF and UPRR both maintain trackage rights along this section and it was assumed that they would continue to operate limited freight service.

The results of the simulation indicate that the assumed infrastructure for 2030 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 1 timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

However, with passenger operations in this segment increased by nearly 85-percent over existing volumes, the ability to slot freight traffic into the corridor becomes more difficult. In order to facilitate freight operations, freight trains were routinely “pocketed” where possible to allow passenger trains to pass or overtake the freight train.

In addition, no capacity issues were identified with the Laguna Niguel / Mission Viejo (LNMV) Station Turnback Facility, despite relocating the existing CP Avery pocket track approximately 0.5 miles further south (railroad east) as part of the Laguna Niguel to San Juan Capistrano passing siding project. The equipment cycles assumed for the LNMV station under the Version 1 2030 service plan, presented sufficient turnaround time to mitigate the increased time necessary to travel the additional distance to turn in this relocated “pocket” track. No additional infrastructure improvements were identified as necessary or recommended for this segment.

6.1.10 Laguna Niguel / Mission Viejo to Oceanside

Table 6.1.11 – Laguna Niguel / Mission Viejo to Oceanside Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	21	22	28	6
Amtrak Pacific Surfliner (Limited Stop)	1	2	8	6
Metrolink/COASTER LA-SD Commuter Service	0	3*	10	7
Metrolink/COASTER IE-SD Commuter Service	0	0	4	4
Metrolink Orange County Line	10	7*	4	-3
Metrolink IEOC Line	6	6	0	-6
BNSF Freight	4	4	6	2
TOTAL	**42**	**44**	**60**	**16**

** No net reduction in service, three existing Orange County Line trains are replaced by 3 new LA-SD Commuter trains*

As part of the 2030 service plan, the Laguna Niguel / Mission Viejo to Oceanside segment is anticipated to have 54 passenger trains serving this portion of the Corridor. This segment is owned by the OCTA in Orange County and dispatched by Metrolink. In San Diego County, this segment is owned and dispatched by North County Transit District (NCTD). The BNSF maintains trackage rights along this section and it was assumed that they would continue to operate limited freight service.

The results of the simulation indicate that the assumed infrastructure for 2030 in this segment of the LOSSAN Corridor can feasibly support the operations of the revised Version 1 timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor.

However, despite the investment assumed in double tracking the corridor in 2030, the Laguna Niguel to Oceanside segment continues to have the majority of the single track within the South Corridor. The long sections of single track in south Orange County and through north Camp Pendleton were observed as continuing to have the potential to exacerbate delays for trains already operating “out of slot” as well as cause additional trains to run late due to the “domino effect”. This was assumed to remain one of two single track segments of the southern LOSSAN corridor in the 2030 Long-Term Operations Analysis and because of this, this segment had the greatest influence in the development of the 2030 service plan. A schedule was required that focused not on clock faced departures, but on making the “meets” that would be necessary around the remaining single track segments.

To assist in mitigating the potential delays, it is recommended that the Serra siding be lengthened south by approximately one mile, to the Beach Road crossing in Dana Point and for double track to continue north of CP Songs in San Diego County by one to 1.5 miles. These capacity improvements will help in allowing trains more opportunities for “moving meets” in south Orange County and north San Diego County, rather than holding for the opposing train.

Unless additional capacity can be provided, any new trains that begin service in this segment may require additional “pad” or “recovery” time to accommodate the additional time that will be necessary for trains to “hold” for meets with other trains operating “out of slot”, thereby lengthening travel times rather than reducing them.

6.1.11 Oceanside to San Diego

Table 6.1.12 – Oceanside to San Diego Total Train Trips

Operator / Line	May 2011 Volume	2014 Volume	2030 Volume	Service Growth (2014-2030)
Amtrak Pacific Surfliner (All Stop)	21	22	28	6
Amtrak Pacific Surfliner (Limited Stop)	1	2	8	6
Metrolink/COASTER LA-SD Commuter Service	0	3	10	7
Metrolink/COASTER IE-SD Commuter Service	0	0	4	4
Metrolink Coast Line	0	1*	0	-1
COASTER	22	28	40	12
BNSF Freight	6	6	8	2
TOTAL	**50**	**62**	**98**	**36**

** This is a late night Metrolink train that operates between San Diego and Oceanside as the return to Train 608 that is extended to San Diego from Oceanside in 2014, which is replaced by the increase in Metrolink/Coaster LA-SD Commuter service in 2030.*

As part of the 2030 service plan, the Oceanside to San Diego segment is anticipated to have 90 passenger trains serving this portion of the Corridor. This segment is owned by the NCTD north of the City of Del Mar and by San Diego Metropolitan Transit System (SDMTS) within the City of San Diego. The entire segment is dispatched by NCTD. The BNSF maintains trackage rights along this section and it was assumed that they would continue to operate limited freight service.

The results of the simulation indicate that the assumed infrastructure for 2030 in this segment of the LOSSAN Corridor can feasibly support the operations of the Version 1 timetable while maintaining or improving operational flexibility, reliability, performance, and capacity for rail operations along the Corridor, with one exception. The dense passenger operations that are projected to operate in this segment of the corridor in 2030 precluded the ability to operate “express” COASTER commuter trains between Oceanside and San Diego. These trains were originally identified in the service planning goals established for the corridor by the PWG. The travel time differences between the local (all stop) commuter trains and the express (limited stop) trains created conflicts associated with the remaining single track in Del Mar. In order to avoid meets near this single track segment, the timetable was initially laid out with the intention of using repetitive departures each hour so that meets between trains were predictable and occurred at approximately the same location throughout the day. As the service plan was refined to reflect the desired stopping pattern variations requested for both commuter and intercity trains it was quickly identified that the number of different stopping patterns being included in the timetable prevented a repeatable pattern from being identified and subsequently created conflicts that were associated with the single track in Del Mar. A number of iterations were run in the model in an attempt to identify a repetitive timetable capable of supporting express COASTER trains however, it was concluded that in order to preserve the ability of the corridor to support reliable operations, express COASTER trains would need to be removed from the 2030 service plan.

In addition, with passenger operations in this segment increased by 96-percent over existing volumes, the ability to slot freight traffic into the corridor becomes more difficult. In order to facilitate freight operations, freight trains were routinely “pocketed” where possible to allow passenger trains to pass or overtake the freight train.

Despite the investment assumed in double tracking the corridor in 2030, the Oceanside to San Diego segment continues to have single track through the City of Del Mar. This section of single track was observed as continuing to have the potential to contribute to delays for both intercity and commuter trains operating “out of slot”. This is the second of two single track segments of the southern LOSSAN Corridor in the 2030 Long-Term Operations Analysis. No mitigation was identified for this capacity need beyond the

"tunnel" alternative identified in the Los Angeles to San Diego (LOSSAN) Proposed Rail Corridor Improvements Final Program Environmental Impact Report / Environmental Impact Statement (Finalized in 2007) and the LOSSAN Corridor Strategic Plan. Two tunnel alternatives have been identified in these past studies, one traveling under Camino Del Mar within the City of Del Mar (Milepost 243.6 to 246.0) and the other traveling under Interstate 5 (Milepost 243.3 to 247.9). Regional funding for any tunnel option is not anticipated before the 2041 – 2050 time horizon.

No additional capacity was identified as necessary for this segment, beyond the completion of double track through the City of Del Mar. Operations were identified as feasible in downtown San Diego, both at the Santa Fe Depot and the new convention center station. Sufficient capacity for the 90 passenger trains was provided on Tracks 1, 2 and 3 of the Santa Fe Depot to continue to allow BNSF to operate trains through the depot on Track 4 during mid-day periods. In addition, no additional storage tracks were identified as necessary in the SDMTS yard, where COASTER trains currently layover during the mid-day.

7.0 CONCLUSION

The service level assumptions simulated as part of the 2030 Long-Term scenario and approved by the LOSSAN TAC and PWG were reviewed and tested against the agreed to infrastructure assumptions for this analysis. The results of the simulation indicated that elimination of the assumed Burbank-Bob Hope trains identified for service in 2030 is necessary to preserve operational reliability of the Ventura County Line and Pacific Surfliner services. In addition, the remaining single track in Del Mar (San Diego County) coupled with the dense passenger operations that are projected to operate between Oceanside and San Diego in 2030 precluded the ability to operate "express" COASTER commuter trains. As a result, the total service levels assumed for 2030 were reduced by a total of eight trains north of Los Angeles. There was no reduction in the number of trains assumed south of Los Angeles. The revised service levels are reflected in Table 7.0.1 below.

Table 7.0.1 – Revised Weekday Service Increase Assumptions

Operator	Line	2011 Base Line	2014	2030 Proposed Service
COASTER	Coast	22	28	40
Metrolink	Coast	0	1	0
Metrolink/COASTER	LA-SD*	0	3	10
Metrolink/COASTER	IE-SD*	0	0	4
Metrolink	Orange County	19	16	18
Metrolink	OC Intra-County	0	10	14
Metrolink	IEOC	14	16	24
Metrolink	91/Perris Valley	9	12	32
Metrolink	Antelope Valley	30	30	46
Metrolink	Burbank-Bob Hope	11	11	0**
Metrolink	Ventura County	20	20	36
Metrolink	Ventura-Santa Barbara	0	2	8
Amtrak	Pacific Surfliner (All Stop)	21	22	28***
Amtrak	Pacific Surfliner (Limited Stop)	1	2	8***
Amtrak	Coast Starlight	2	2	2
Amtrak	Southwest Chief	2	2	2
Amtrak	Sunset Limited	0	0	2
TOTAL		**151**	**177**	**274**

** These trains are based on the operating assumption to include a consolidated rolling stock/equipment cycle plan for COASTER and Metrolink trainsets to address the vehicle fleet needs for "through" commuter service operating between Los Angeles, San Diego and Riverside Counties without the need for transfers.*

*** Was initially assumed to be 8 trains, but initial simulations identified insufficient capacity to turn trains on mainline at Burbank-Bob Hope Airport. Increase in level of frequency of Ventura County Line trains assumed sufficient to meet demands of passengers despite elimination of this service.*

**** Includes suggested timeslots for proposed Coast Daylight service between Los Angeles and San Francisco. Based on previous discussions, this includes timeslots for 1 overnight train in each direction and 1 daytime train in each direction.*

In addition, the infrastructure configurations approved by the LOSSAN TAC and PWG were reviewed and tested as part of this operations analysis. The results of the simulation indicated that the assumed infrastructure for 2030 for the LOSSAN Corridor can feasibly support the operations of the Version 1 timetable while maintaining operational flexibility, reliability, performance, and capacity for rail operations along the Corridor;however additional recommendations to improve system reliability were identified in most corridor segments and are summarized in Table 7.0.2.

The additional infrastructure projects recommended as part of this operations analysis are summarized in the table below and totaled between nine and 12 miles of second main track and station improvements in the northern corridor and between two and three miles of additional second main track in the southern corridor.

Table 7.0.2 – Additional Recommended Infrastructure Projects for 2030

County	Description	Length (miles)
San Luis Obispo	Extension of second track north of the Grover Beach station and the construction of a second platform.	3.5
Santa Barbara	Extension of second track north of the Waldorf siding, just south of the Guadalupe Station.	1.2
Santa Barbara	Extension of second track south of Devon siding	1.0
Santa Barbara	Extension of second track north of Capitan siding	0.5
Santa Barbara	Extension of proposed Ortega Siding	1.2
Ventura	Second track for west leg of Montalvo Wye, could be as far north as the Ventura Siding.	0.5 to 3.5
Ventura	Station modifications or relocation of East Ventura Station to support additional layover of trains overnight	N/A
Ventura	Add Oxnard Station north platform	N/A
Ventura	Extension of the Santa Susana siding, through the Simi Valley station	1.6
Los Angeles	Universal crossover at CP Raymer	N/A
Orange	Extension to the south of the Serra siding	1.0
San Diego	Extension of second track north of CP Songs	1.0 to 1.5
Total		**11.5 to 15**

Due diligence requires us to note that in a planning level document such as this operations analysis, the infrastructure improvements identified are based on a specific service plan. These infrastructure project recommendations may change depending on the preferred service plan ultimately chosen for implementation in 2030.

In addition, the UPRR has noted that the RTC simulations contained in this study were prepared and conducted without specific input from or validation by the Union Pacific Railroad. Any change to or increase in passenger service on Union Pacific tracks or right-of-way is subject to an independent determination by the Union Pacific of any necessary capacity or other requirements consistent with Union Pacific's then current Union Pacific Commuter Access Principles.

Furthermore, the significant level of remaining single track infrastructure along the entire LOSSAN Corridor will continue to be the most significant operational limitation having the greatest impact on performance, in particular the sections of single track through Ventura County and north Los Angeles County, as well as San Diego County and south Orange County. These single track segments will continue to have the potential to contribute to cascading delays across the entire corridor that occur when trains are not on schedule and operating “out of slot”.

Despite the remaining segments of single track, significant travel time improvements were observed in each of the primary corridor segments when compared to existing (2011) travel times. Based on the model outputs of the simulation conducted using the modified service plan and additional infrastructure projects identified above, the projected improvements in travel time are:

- San Luis Obispo to Los Angeles (Intercity) – 14%
- Los Angeles to San Diego (Intercity) – 6%
- Oceanside to San Diego (Commuter) – 7%

These improvements reflect the benefits of the capital investment assumed over the next 20 years.

APPENDIX A: GLOSSARY OF TERMS

This section provides an alphabetical listing of the technical terms used in this report.

BNSF

- BNSF is an abbreviation used to represent the BNSF Railway, which is a wholly owned subsidiary of the Burlington Northern Santa Fe Corporation, based out of Fort Worth, Texas. The holding company was formed by the September 22, 1995 merger of Burlington Northern, Incorporated and the Santa Fe Pacific Corporation.

COASTER

- This is a commuter train service provided by the North County Transit District that runs north-south, serving eight stations between Oceanside and downtown San Diego.

Consist

- This is a term used to define what a trainset is comprised or made up of. Typical consists for Metrolink would be 5 bi-level cars and 1 diesel locomotive.

Control Point (CP)

- A Control Point is a signalized switch or crossing controlled remotely by a dispatcher at a central operations center.

Crossover

- A combination of two switches that connect two adjacent tracks.

Hold-Out

- A term used to describe when a train waits outside a station or other rail facility for another train that is servicing that station or facility. This typically occurs in single track territory when only one train can occupy the station or facility at a given time.

Junction

- This describes a location where multiple (2 or more) railroad subdivisions come together.

Layup

- Term used to describe a train being stored at a particular location for a preset amount of time. This is typically in reference to the action many railroad operators do to trains during the midday, in between rush hour peaks service, when fewer trains are required to operate.

Metrolink

- This is the commuter rail service provided by the Southern California Regional Rail Authority that operates lines in several corridors, including the LOSSAN corridor between Oceanside and Ventura, as well as service to Riverside and San Bernardino.

Out-of-Slot

- A term used to describe when a train is not operating within its assigned schedule.

Pacific Surfliner

- Service name of the intercity train service operated by Amtrak in the LOSSAN corridor between San Diego and San Luis Obispo.

Pocketing

- The dispatching procedure of placing one train on a siding to allow another train to pass.

Signal Block

- A length of track between consecutive signals.

Stringlines

- This term is used to describe an illustration where each line represents a single train and is measured against distance (Y axis) and time (X axis). This type of illustration is useful for identifying locations of train meets and schedule delays.

Subdivision

- A section of railroad controlled by UPRR, BNSF, Metrolink, or NCTD where trains are operated subject to specific time tables and special instructions.

Turn

- Term used to describe the action taken at a terminal station where train operators switch ends to depart in the opposite direction. This is typical of any "push-pull" commuter or intercity operation where the locomotive remains on one end of the train and the other end is comprised of a control car. The locomotive then either pulls the train or pushes the train depending on the direction of travel.

Turnback

- A specific location usually associated with a terminal station, where trains can "turn". Turning in modern commuter and intercity rail operations, which typically operate "push-pull" equipment, involves the engineer moving from one end of the train to the other and performing designated brake and communication tests to ensure safe operations after "turning".

UPRR

- UPRR is an abbreviation used to represent the Union Pacific Railroad, which is a wholly owned subsidiary of the Union Pacific Corporation based out of Omaha, Nebraska. The Union Pacific Railroad is the largest and one of the oldest railroads in North America, having been incorporated in July of 1862.

Wye

- A wye, or triangular junction, is a triangular shaped arrangement of rail tracks with a switch or set of points at each corner. In mainline railroads, this can be used at a rail junction, where three rail lines join, in order to allow trains to pass from any line to any other line. Wyes can also be used for turning railway equipment.

APPENDIX B: 2030 VERSION 1 TIMETABLE

WEEKDAY SOUTHBOUND - San Luis Obispo ● Santa Barbara ● Burbank ● Los Angeles

Train Operator	No.	San Luis Obispo	Grover Beach - Pismo Beach	Guadalupe	Santa Maria (IHOP)	Surf / Lompoc	Lompoc (Visitors Center)	Solvang	Buellton (Burger King)	North Goleta	Goleta	Santa Barbara	Santa Barbara	Carpinteria	Ventura	East Ventura	Oxnard	Camarillo	Moorpark	Simi Valley	Chatsworth	Northridge	Van Nuys	Burbank - Bob Hope Airport	Downtown Burbank	Glendale	Los Angeles
		Dp	Dp	Dp	(B) Dp	Dp	(B) Dp	(B) Dp	(B) Dp	Dp	Dp	Ar	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar
Commuter	VC01W															3:48 AM	4:01 AM	4:11 AM	4:22 AM	4:34 AM	4:46 AM	4:53 AM	5:00 AM	5:07 AM	5:12 AM	5:19 AM	5:29 AM
Commuter	VC02W																		5:00 AM	5:11 AM	5:23 AM	5:28 AM	5:36 AM	5:43 AM	5:48 AM	5:54 AM	6:04 AM
Commuter	AV01W																		From Santa Clarita/Palmdale/Lancaster					→	6:07 AM	6:13 AM	6:24 AM
Commuter	VC03W															4:53 AM	5:07 AM	5:17 AM	5:28 AM	5:40 AM	5:52 AM	5:57 AM	6:05 AM	6:12 AM	6:17 AM	6:24 AM	6:34 AM
Commuter	AV02W																		From Santa Clarita/Palmdale/Lancaster					→	6:27 AM	6:34 AM	6:44 AM
Commuter	AV03W																		From Santa Clarita/Palmdale/Lancaster					→	6:40 AM	6:47 AM	6:57 AM
Commuter	VC04W																		6:00 AM	6:11 AM	6:23 AM	6:28 AM	6:36 AM	4:43 AM	6:48 AM	6:55 AM	7:05 AM
Commuter	AV04W																		From Santa Clarita/Palmdale/Lancaster					→	6:55 AM	7:02 AM	7:12 AM
Commuter	AV05W																		From Santa Clarita/Palmdale/Lancaster					→	7:09 AM	7:16 AM	7:26 AM
Commuter	VC05W															5:48 AM	6:01 AM	6:11 AM	6:23 AM	6:35 AM	6:47 AM	6:53 AM	7:00 AM	7:07 AM	7:16 AM	7:24 AM	7:34 AM
Commuter	AV06W																		From Santa Clarita/Palmdale/Lancaster					→	7:25 AM	7:32 AM	7:42 AM
Commuter	VC06W																		6:46 AM	6:56 AM	7:09 AM	7:15 AM	7:22 AM	7:29 AM	7:34 AM	7:40 AM	7:50 AM
Amtrak	CD/PS04E	3:43 AM	-	4:14 AM	-	4:45 AM	-	-	-	-	5:43 AM	5:56 AM	5:58 AM	-	6:29 AM	-	6:41 AM	6:53 AM	-	7:19 AM	7:32 AM	-	-	7:48 AM	-	7:58 AM	8:09 AM
Commuter	AV07W																		From Santa Clarita/Palmdale/Lancaster					→	8:00 AM	8:07 AM	8:17 AM
Commuter	AV08W																		From Santa Clarita/Palmdale/Lancaster					→	8:08 AM	8:16 AM	8:26 AM
Commuter	VC07W															6:50 AM	7:03 AM	7:13 AM	7:25 AM	7:39 AM	7:51 AM	7:57 AM	8:05 AM	8:12 AM	8:18 AM	8:25 AM	8:35 AM
Commuter	AV09W																		From Santa Clarita/Palmdale/Lancaster					→	8:27 AM	8:34 AM	8:44 AM
Commuter	VC08W																		7:54 AM	8:05 AM	8:18 AM	8:24 AM	8:31 AM	8:38 AM	8:43 AM	8:49 AM	8:59 AM
Commuter	AV10W																		From Santa Clarita/Palmdale/Lancaster					→	8:55 AM	9:02 AM	9:12 AM
Commuter	AV11W																		From Santa Clarita/Palmdale/Lancaster					→	9:19 AM	9:25 AM	9:36 AM
Commuter	VC09W															8:12 AM	8:27 AM	8:37 AM	8:51 AM	9:03 AM	9:15 AM	9:21 AM	9:28 AM	9:35 AM	9:41 AM	9:47 AM	9:58 AM
Commuter	VSB01W									7:21 AM	7:25 AM	7:36 AM	7:38 AM	7:49 AM	8:07 AM	8:19 AM											
Amtrak	PS07E										7:57 AM	8:08 AM	8:10 AM	8:23 AM	8:42 AM	-	8:56 AM	9:08 AM	9:22 AM	9:38 AM	9:52 AM	-	10:03 AM	10:12 AM	-	10:22 AM	10:34 AM
Commuter	VC10W															9:43 AM	9:56 AM	10:06 AM	10:19 AM	10:31 AM	10:43 AM	10:49 AM	10:56 AM	11:03 AM	11:08 AM	11:15 AM	11:25 AM
Commuter	AV12W																		From Santa Clarita/Palmdale/Lancaster					→	11:17 AM	11:24 AM	11:34 AM
Amtrak	PS09E										10:47 AM	10:58 AM	11:00 AM	-	11:31 AM	-	11:43 AM	11:55 AM	-	12:21 PM	12:34 PM	-	-	12:50 PM	-	1:00 PM	1:11 PM
Commuter	AV13W																		From Santa Clarita/Palmdale/Lancaster					→	1:07 PM	1:15 PM	1:25 PM
Commuter	VC11W															11:58 AM	12:11 PM	12:21 PM	12:32 PM	12:44 PM	12:56 PM	1:02 PM	1:09 PM	1:16 PM	1:21 PM	1:28 PM	1:38 PM
Commuter	AV14W																		From Santa Clarita/Palmdale/Lancaster					→	2:07 PM	2:14 PM	2:25 PM
Amtrak	PS11E										12:33 PM	12:44 PM	12:46 PM	1:03 PM	1:23 PM	-	1:35 PM	1:47 PM	2:01 PM	2:15 PM	2:28 PM	-	2:39 PM	2:48 PM	-	2:58 PM	3:10 PM
Commuter	AV15W																		From Santa Clarita/Palmdale/Lancaster					→	3:07 PM	3:15 PM	3:25 PM
Commuter	VC12W															1:56 PM	2:09 PM	2:19 PM	2:30 PM	2:42 PM	2:54 PM	3:00 PM	3:07 PM	3:14 PM	3:19 PM	3:26 PM	3:36 PM
Commuter	AV16W																		From Santa Clarita/Palmdale/Lancaster					→	3:52 PM	3:58 PM	4:09 PM
Amtrak	PS13E	11:40 AM	11:58 AM	12:13 PM	-	12:45 PM	-	-	-	-	1:47 PM	2:02 PM	2:04 PM	2:14 PM	2:34 PM	-	2:46 PM	2:58 PM	3:12 PM	3:26 PM	3:39 PM	-	3:51 PM	3:59 PM	-	4:09 PM	4:21 PM
Commuter	VC13W																		3:30 PM	3:45 PM	3:57 PM	4:03 PM	4:10 PM	4:17 PM	4:22 PM	4:28 PM	4:38 PM
Commuter	AV17W																		From Santa Clarita/Palmdale/Lancaster					→	4:27 PM	4:34 PM	4:45 PM
Commuter	AV18W																		From Santa Clarita/Palmdale/Lancaster					→	5:07 PM	5:14 PM	5:25 PM
Commuter	VC14W																		4:30 PM	4:43 PM	4:54 PM	5:00 PM	5:07 PM	5:14 PM	5:19 PM	5:25 PM	5:35 PM
Commuter	AV19W																		From Santa Clarita/Palmdale/Lancaster					→	5:27 PM	5:35 PM	5:45 PM
Commuter	AV20W																		From Santa Clarita/Palmdale/Lancaster					→	5:38 PM	5:44 PM	5:55 PM
Commuter	VC15W																		5:00 PM	5:11 PM	5:24 PM	5:30 PM	5:37 PM	5:44 PM	5:48 PM	5:56 PM	6:06 PM
Commuter	AV21W																		From Santa Clarita/Palmdale/Lancaster					→	6:02 PM	6:09 PM	6:19 PM
Amtrak	CD/PS15E	1:49 PM	2:07 PM	2:23 PM	-	2:56 PM	-	-	-	-	3:54 PM	4:09 PM	4:11 PM	4:22 PM	4:41 PM	-	4:53 PM	5:09 PM	5:23 PM	5:37 PM	5:50 PM	-	6:02 PM	6:10 PM	-	6:20 PM	6:31 PM
Commuter	VC16W																		5:40 PM	5:57 PM	6:09 PM	6:14 PM	6:22 PM	6:29 PM	6:34 PM	6:40 PM	6:51 PM
Commuter	VSB02W									4:02 PM	4:13 PM	4:24 PM	4:26 PM	4:36 PM	4:55 PM	5:07 PM											
Commuter	AV22W																		From Santa Clarita/Palmdale/Lancaster					→	7:07 PM	7:14 PM	7:25 PM
Amtrak	AMTK11CS	2:48 PM	-	-	-	-	-	-	-	-	-	5:37 PM	5:39 PM	-	-	-	5:54 PM	-	-	6:41 PM	-	-	7:11 PM	7:20 PM	-	-	7:40 PM
Commuter	VC17W																		6:49 PM	7:03 PM	7:15 PM	7:21 PM	7:28 PM	7:35 PM	7:41 PM	7:47 PM	7:57 PM
Commuter	VSB03W									5:19 PM	5:22 PM	5:33 PM	5:35 PM	5:51 PM	6:09 PM	6:21 PM											
Amtrak	PS18E	4:45 PM	5:03 PM	5:18 PM	-	5:50 PM	-	-	-	-	6:48 PM	7:01 PM	7:03 PM	7:15 PM	7:35 PM	-	7:47 PM	7:59 PM	8:13 PM	8:27 PM	8:40 PM	-	8:51 PM	9:00 PM	-	9:10 PM	9:22 PM
Commuter	VC18W															8:03 PM	8:12 PM	8:23 PM	8:35 PM	8:47 PM	8:58 PM	9:04 PM	9:11 PM	9:18 PM	9:24 PM	9:30 PM	9:41 PM
Commuter	VSB04W									7:10 PM	7:21 PM	7:32 PM	7:34 PM	7:49 PM	8:08 PM	8:20 PM											
Commuter	AV23W																		From Santa Clarita/Palmdale/Lancaster					→	9:37 PM	9:44 PM	9:54 PM

Ventura County Line	18
Antelope Valley Line	23
Burbank Turn	0
Ventura-Goleta Commuter Service	4
Pacific Surfliner	5
Coast Daylight / Pacific Surfliner	2
Long Distance	1

WEEKDAY SOUTHBOUND - Los Angeles ● Fullerton ● Irvine ● Oceanside ● San Diego

Train Operator	No.	Los Angeles	Commerce	Norwalk - Santa Fe Springs	Buena Park	Fullerton	Anaheim	Orange	Santa Ana	Tustin	Irvine	Laguna Niguel - Mission Viejo	San Juan Capistrano	San Clemente North Beach	San Clemente Pier	Oceanside	Oceanside	Carlsbad Village	Carlsbad - Poinsettia	Encinitas	Solana Beach	Sorrento Valley	Old Town San Diego	AirportTransportation Center	San Diego	San Diego	Convention Center
		Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar	Dp	Ar
Commuter	SD01E																3:55 AM	4:04 AM	4:09 AM	4:14 AM	4:19 AM	4:27 AM	4:46 AM	4:49 AM	4:54 AM		
Commuter	SD02E																4:55 AM	5:04 AM	5:09 AM	5:14 AM	5:19 AM	5:27 AM	5:46 AM	5:49 AM	5:54 AM		
Commuter	SD03E																5:35 AM	5:44 AM	5:49 AM	5:54 AM	5:59 AM	6:10 AM	6:29 AM	6:32 AM	6:36 AM	6:38 AM	6:42 AM
Commuter	IEOC01E		From San Bernardino/Riverside					4:08 AM	4:13 AM	4:19 AM	4:25 AM	4:37 AM															
Commuter	SD04E																5:55 AM	6:06 AM	6:11 AM	6:16 AM	6:21 AM	6:29 AM	6:48 AM	6:51 AM	6:55 AM		
Commuter	IESD01E		From San Bernardino/Riverside					5:10 AM	5:15 AM	5:21 AM	5:27 AM	5:37 AM	5:42 AM	5:52 AM	-	6:13 AM	6:18 AM	6:24 AM	6:29 AM	6:35 AM	6:40 AM	6:49 AM	7:09 AM	7:12 AM	7:16 AM	7:18 AM	7:24 AM
Commuter	SD05E																6:40 AM	6:49 AM	6:54 AM	6:59 AM	7:04 AM	7:12 AM	7:31 AM	7:34 AM	7:39 AM		
Amtrak	PS01E	5:14 AM	-	-	-	5:42 AM	5:50 AM	-	5:59 AM	-	6:10 AM	-	6:25 AM	-	-	6:55 AM	6:57 AM	-	-	-	7:13 AM	-	-	7:43 AM	7:49 AM		
Commuter	SD06E																7:11 AM	7:21 AM	7:26 AM	7:31 AM	7:36 AM	7:44 AM	8:03 AM	8:06 AM	8:11 AM		
Commuter	IEOC02E		From San Bernardino/Riverside					5:35 AM	5:40 AM	5:46 AM	5:52 AM	6:02 AM															
Commuter	IEOC03E		From San Bernardino/Riverside					6:05 AM	6:10 AM	6:16 AM	6:22 AM	6:34 AM															
Commuter	PVL01E	5:52 AM	-	6:11 AM	6:18 AM	6:23 AM	To Riverside/Perris Valley																				
Commuter	SD07E																7:29 AM	7:39 AM	7:44 AM	7:49 AM	7:54 AM	8:02 AM	8:21 AM	8:24 AM	8:29 AM		
Commuter	IEOC04E		From San Bernardino/Riverside					6:35 AM	6:40 AM	6:46 AM	6:52 AM	7:02 AM															
Commuter	PVL02E	6:22 AM	-	6:42 AM	-	6:52 AM	To Riverside/Perris Valley																				
Commuter	SD08E																7:55 AM	8:04 AM	8:09 AM	8:14 AM	8:19 AM	8:27 AM	8:46 AM	8:49 AM	8:54 AM		
Commuter	LASD01E	6:34 AM	-	6:54 AM	7:00 AM	7:05 AM	7:12 AM	7:16 AM	7:21 AM	7:27 AM	7:34 AM	7:44 AM	7:50 AM	8:00 AM	-	8:21 AM	8:26 AM	8:30 AM	8:36 AM	8:42 AM	8:47 AM	8:56 AM	9:16 AM	9:19 AM	9:25 AM	9:27 AM	9:31 AM
Amtrak	PS02E	6:14 AM	-	-	-		6:47 AM	-	-	-	7:04 AM	-	-	-	-	7:47 AM	7:49 AM	-	-	-	8:04 AM	-	-	-	8:39 AM		
Commuter	IEOC05E		From San Bernardino/Riverside					7:00 AM	7:05 AM	7:11 AM	7:17 AM	7:29 AM															
Commuter	OC01E	6:44 AM	6:57 AM	7:07 AM	7:13 AM	7:18 AM	7:25 AM	7:29 AM	7:34 AM	7:40 AM	7:47 AM	7:57 AM															
Commuter	IEOC06E		From San Bernardino/Riverside					7:40 AM	7:45 AM	7:51 AM	7:57 AM	8:09 AM															
Amtrak	PS03E	7:14 AM	-	-	-		7:48 AM	-	-	-	8:05 AM	-	-	-	-	8:49 AM	8:51 AM	-	-	-	9:06 AM	-	-	-	9:41 AM		
Commuter	IESD02E		From San Bernardino/Riverside					8:04 AM	8:09 AM	8:15 AM	8:21 AM	8:31 AM	8:36 AM	8:45 AM	-	9:08 AM	9:13 AM	9:17 AM	9:23 AM	9:28 AM	9:34 AM	9:43 AM	10:02 AM	10:06 AM	10:11 AM		
Commuter	PVL03E	6:59 AM	-	7:18 AM	7:25 AM	7:30 AM	To Riverside/Perris Valley																				
Commuter	MSEP01E					8:14 AM	8:21 AM	8:25 AM	8:31 AM	8:37 AM	8:44 AM	8:53 AM															
Amtrak	PS04E	8:16 AM	-	-	-	8:42 AM	8:50 AM	-	9:01 AM	-	9:12 AM	-	9:27 AM	-	-	9:59 AM	10:01 AM	-	-	-	10:16 AM	-	-	10:46 AM	10:52 AM		
Commuter	OC02E	8:27 AM	8:41 AM	8:51 AM	8:57 AM	8:02 AM	9:09 AM	9:13 AM	9:18 AM	9:24 AM	9:31 AM	9:47 AM															
Commuter	SD09E																10:44 AM	10:48 AM	10:53 AM	10:58 AM	11:03 AM	11:11 AM	11:30 AM	11:33 AM	11:38 AM		
Amtrak	PS05E	9:14 AM	-	-	-	9:42 AM	9:50 AM	-	9:59 AM	-	10:10 AM	-	10:26 AM	-	-	10:57 AM	10:59 AM	-	-	-	11:15 AM	-	-	11:45 AM	11:52 AM		
Commuter	PVL04E	9:29 AM	-	9:50 AM	9:56 AM	10:01 AM	To Riverside/Perris Valley																				
Commuter	MSEP02E					10:09 AM	10:16 AM	10:20 AM	10:26 AM	10:32 AM	10:39 AM	10:51 AM															
Commuter	SD10E																11:44 AM	11:48 AM	11:53 AM	11:58 AM	12:03 PM	12:11 PM	12:30 PM	12:33 PM	12:38 PM		
Amtrak	PS06E	10:14 AM	-	-	-	10:43 AM	10:51 AM	-	11:00 AM	-	11:12 AM	-	11:27 AM	-	-	11:57 AM	11:59 AM	-	-	-	12:17 PM	-	-	12:47 PM	12:53 PM		
Commuter	IEOC07E		From San Bernardino/Riverside					11:05 AM	11:10 AM	11:15 AM	11:22 AM	11:34 AM															
Commuter	LASD02E	10:34 AM	-	10:53 AM	11:00 AM	11:05 AM	11:12 AM	11:16 AM	11:21 AM	11:27 AM	11:34 AM	11:44 AM	11:49 AM	11:58 AM	-	12:20 PM	12:25 PM	12:29 PM	12:34 PM	12:40 PM	12:46 PM	12:55 PM	1:15 PM	1:18 PM	1:23 PM	1:25 PM	1:30 PM
Amtrak	PS07E	11:16 AM	-	-	-	11:42 AM	11:50 AM	-	12:00 PM	-	12:11 PM	-	12:26 PM	-	-	12:59 PM	1:01 PM	-	-	-	1:16 PM	-	-	1:46 PM	1:52 PM		
Commuter	PVL05E	11:29 AM	-	11:50 AM	11:57 AM	12:02 PM	To Riverside/Perris Valley																				
Commuter	MSEP03E					12:09 PM	12:16 PM	12:20 PM	12:26 PM	12:32 PM	12:39 PM	12:51 PM															
Commuter	SD11E																1:29 PM	1:33 PM	1:38 PM	1:43 PM	1:48 PM	1:56 PM	2:15 PM	2:18 PM	2:23 PM		
Amtrak	PS08E	12:14 PM	-	-	-	12:43 PM	12:51 PM	-	1:00 PM	-	1:12 PM	-	1:27 PM	-	-	1:59 PM	2:01 PM	-	-	-	2:17 PM	-	-	2:47 PM	2:53 PM		
Commuter	IEOC08E		From San Bernardino/Riverside					1:05 PM	1:10 PM	1:15 PM	1:22 PM	1:34 PM															
Commuter	LASD03E	12:34 PM	-	12:54 PM	1:00 AM	1:06 AM	1:13 AM	1:17 PM	1:22 PM	1:28 PM	1:35 PM	1:45 PM	1:50 PM	1:59 PM	-	2:21 PM	2:26 PM	2:30 PM	2:35 PM	2:41 PM	2:46 PM	2:56 PM	3:15 PM	3:19 PM	3:24 PM		
Amtrak	PS09E	1:16 PM	-	-	-	1:43 PM	1:52 PM	-	2:01 PM	-	2:12 PM	-	2:28 PM	-	-	3:00 PM	3:02 PM	-	-	-	3:17 PM	-	-	3:47 PM	3:54 PM		
Commuter	PVL06E	1:29 PM	-	1:48 PM	1:55 PM	2:00 PM	To Riverside/Perris Valley																				
Commuter	MSEP04E					2:09 PM	2:16 PM	2:20 PM	2:26 PM	2:32 PM	2:39 PM	2:51 PM															
Commuter	SD12E																3:12 PM	3:16 PM	3:21 PM	3:26 PM	3:31 PM	3:39 PM	3:58 PM	4:01 PM	4:06 PM		
Commuter	SD13E																3:42 PM	3:46 PM	3:51 PM	3:56 PM	4:01 PM	4:10 PM	4:29 PM	4:32 PM	4:37 PM		
Amtrak	PS10E	2:14 PM	-	-	-	2:44 PM	2:52 PM	-	3:01 PM	-	3:13 PM	-	3:27 PM	-	-	3:59 PM	4:01 PM	-	-	-	4:16 PM	-	-	4:46 AM	4:52 AM		
Commuter	IEOC09E		From San Bernardino/Riverside					3:05 PM	3:10 PM	3:15 PM	3:22 PM	3:34 PM															
Commuter	OC03E	2:45 PM	2:57 PM	3:06 PM	3:13 PM	3:18 PM	3:25 PM	3:29 PM	3:34 PM	3:40 PM	3:47 PM	3:59 PM															
Commuter	SD14E																4:19 PM	4:23 PM	4:28 PM	4:33 PM	4:38 PM	4:47 PM	5:06 PM	5:09 PM	5:14 PM		
Commuter	SD15E																4:44 PM	4:48 PM	4:53 PM	4:58 PM	5:03 PM	5:12 PM	5:31 PM	5:34 PM	5:39 PM		
Amtrak	PS11E	3:15 PM	-	-	-	3:41 PM	3:49 PM	-	3:58 PM	-	4:10 PM	-	4:25 PM	-	-	4:56 PM	4:58 PM	-	-	-	5:14 PM	-	-	5:43 PM	5:50 PM		
Commuter	OC04E	3:24 PM	3:36 PM	3:46 PM	3:52 PM	3:57 PM	4:04 PM	4:08 PM	4:13 PM	4:19 PM	4:26 PM	4:38 PM															
Commuter	PVL07E	3:39 PM	-	3:59 PM	4:06 PM	4:11 PM	To Riverside/Perris Valley																				
Commuter	OC05E	3:54 PM	-	4:18 PM	-	4:27 PM	4:33 PM	4:38 PM	4:43 PM	4:49 PM	4:56 PM	5:06 PM															
Commuter	SD16E																5:24 PM	5:30 PM	5:35 PM	5:40 PM	5:44 PM	5:53 PM	6:12 PM	6:15 PM	6:19 PM		
Commuter	PVL08E	4:09 PM	-	4:28 PM	4:34 PM	4:40 PM	To Riverside/Perris Valley																				
Commuter	SD17E																5:49 PM	5:53 PM	5:58 PM	6:03 PM	6:08 PM	6:16 PM	6:35 PM	6:38 PM	6:43 PM		
Amtrak	PS12E	4:14 PM	-	-	-		4:52 PM	-	-	-	5:10 PM	-	-	-	-	5:53 PM	5:55 PM	-	-	-	6:14 PM	-	-	-	6:49 PM		
Commuter	MSEP05E					4:49 AM	4:57 PM	5:01 PM	5:07 PM	5:12 PM	5:19 PM	5:32 PM															
Commuter	PVL09E	4:29 PM	-	4:49 PM		4:58 PM																					
Commuter	LASD04E	4:36 PM	-	4:55 PM	5:02 PM	5:07 PM	5:14 PM	5:18 PM	5:23 PM	5:29 PM	5:36 PM	5:46 PM	5:52 PM	6:02 PM	-	6:23 PM	6:28 PM	6:32 PM	6:38 PM	6:44 PM	6:49 PM	6:58 PM	7:18 PM	7:22 PM	7:27 PM		
Commuter	OC06E	4:47 PM	4:59 PM	5:08 PM	-	5:18 PM	5:25 PM	5:29 PM	5:34 PM	5:40 PM	5:47 PM	5:59 PM															
Commuter	PVL10E	4:59 PM	-	5:18 PM	5:24 PM	5:30 PM	To Riverside/Perris Valley																				
Commuter	IEOC10E		From San Bernardino/Riverside					5:45 PM	5:50 PM	5:55 PM	6:02 PM	6:12 PM															
Commuter	SD18E																6:46 PM	6:50 PM	6:55 PM	7:00 PM	7:05 PM	7:14 PM	7:33 PM	7:36 PM	7:41 PM		
Amtrak	PS13E	5:14 PM	-	-	-	5:40 PM	5:48 PM	-	5:58 PM	-	6:09 PM	-	6:24 PM	-	-	6:55 PM	6:57 PM	-	-	-	7:13 PM	-	-	7:43 PM	7:49 PM		
Commuter	IEOC11E		From San Bernardino/Riverside					6:09 PM	6:14 PM	6:20 PM	6:27 PM	6:38 PM															
Commuter	PVL11E	5:24 PM	-	5:44 PM	5:50 PM	5:55 PM	To Riverside/Perris Valley																				
Commuter	LASD05E	5:34 PM	-	5:55 PM	6:01 PM	6:06 PM	6:13 PM	6:17 PM	6:22 PM	6:28 PM	6:35 PM	6:45 PM	6:51 PM	7:00 PM	-	7:21 PM	7:26 PM	7:30 PM	7:36 PM	7:41 PM	7:47 PM	7:56 PM	8:16 PM	8:19 PM	8:25 PM		
Commuter	PVL12E	5:49 PM	-	6:08 PM	-	6:18 PM	To Riverside/Perris Valley																				
Amtrak	AMTK4SC	6:04 PM	-	-	-	6:42 PM	To Chicago																				
Amtrak	PS14E	6:15 PM	-	-	-		6:48 PM	-	-	-	7:06 PM	-	-	-	-	7:48 PM	7:50 PM	-	-	-	8:05 PM	-	-	-	8:40 PM		
Commuter	PVL13E	6:24 PM	-	6:44 PM	6:51 PM	6:56 PM	To Riverside/Perris Valley				12:09 AM																
Commuter	OC07E	6:34 PM	-	6:54 PM	7:01 PM	7:06 PM	7:13 PM	7:17 PM	7:22 PM	7:28 PM	7:35 PM	7:45 PM	7:51 PM	7:59 PM	-	8:21 PM											
Commuter	SD19E																8:29 PM	8:34 PM	8:39 PM	8:45 PM	8:51 PM	9:00 PM	9:20 PM	9:23 PM	9:28 PM		
Commuter	PVL14E	6:54 PM	-	7:13 PM	-	7:22 PM	To Riverside/Perris Valley																				
Commuter	IEOC12E		From San Bernardino/Riverside					7:35 PM	7:40 PM	7:46 PM	7:52 PM	8:04 PM															
Amtrak	PS15E	7:16 PM	-	-	-	7:45 PM	7:53 PM	-	8:02 PM	-	8:13 PM	-	8:27 PM	-	-	9:00 PM	9:02 PM	-	-	-	9:17 PM	-	-	9:47 PM	9:53 PM		
Commuter	PVL15E	7:24 PM	-	7:43 PM	7:49 PM	7:55 PM	To Riverside/Perris Valley																				
Commuter	MSEP06E					8:04 PM	8:11 PM	8:15 PM	8:21 PM	8:27 PM	8:34 PM	8:46 PM															
Commuter	SD20E																9:49 PM	9:53 PM	9:58 PM	10:03 PM	10:08 PM	10:16 PM	10:35 PM	10:38 PM	10:43 PM		
Amtrak	PS16E	8:14 PM	-	-	-	8:42 PM	8:50 PM	-	8:59 PM	-	9:10 PM	-	9:26 PM	-	-	9:57 PM	9:59 PM	-	-	-	10:14 PM	-	-	10:45 PM	10:52 PM		
Commuter	OC08E	8:29 PM	8:43 PM	8:53 PM	8:59 PM	9:04 PM	9:11 PM	9:15 PM	9:21 PM	9:27 PM	9:33 PM	9:46 PM															
Amtrak	PS17E	9:14 PM	-	-	-	9:42 PM	9:50 PM	-	9:59 PM	-	10:10 PM	-	10:26 PM	-	-	10:57 PM	10:59 PM	-	-	-	11:14 PM	-	-	11:44 PM	11:51 PM		
Commuter	PVL16E	9:24 PM	-	9:45 PM	9:52 PM	9:57 PM	To Riverside/Perris Valley																				
Commuter	MSEP07E					10:13 PM	10:18 PM	10:22 PM	10:28 PM	10:34 PM	10:41 PM	10:50 PM	10:56 PM	11:05 PM	-	11:26 PM											
Amtrak	PS18E	10:16 PM	-	-	-	10:42 PM	10:50 PM	-	10:59 PM	-	11:11 PM	-	11:26 PM	-	-	11:58 PM	12:00 AM	-	-	-	12:06 AM	-	-	12:46 AM	12:52 AM		
Amtrak	AMTK2SL	10:44 PM	-	-	-	11:19 PM	To New Orleans																				
Commuter	OC09E	11:39 PM	-	11:58 PM	12:04 AM	12:10 AM	12:17 AM	12:21 AM	12:26 AM	12:32 AM	12:39 AM	12:49 AM	12:54 AM	1:03 AM	-	1:25 AM											

Coaster	27
Orange County Line	14
Inland Empire Orange County Line	14
Perris Valley Line	16
Orange County MSEP	7
Pacific Surfliner	18
Long Distance	2

WEEKDAY NORTHBOUND - San Diego ● Oceanside ● Irvine ● Fullerton ● Los Angeles

Train Operator	No.	Convention Center Dp	San Diego Ar	San Diego Dp	Airport Transportation Center Dp	Old Town San Diego Dp	Sorrento Valley Dp	Solana Beach Dp	Encinitas Dp	Carlsbad - Poinsettia Dp	Carlsbad Village Dp	Oceanside Ar	Oceanside Dp	San Clemente Pier Dp	San Clemente North Beach Dp	San Juan Capistrano Dp	Laguna Niguel - Mission Viejo Dp	Irvine Dp	Tustin Dp	Santa Ana Dp	Orange Dp	Anaheim Dp	Fullerton Dp	Buena Park Dp	Norwalk - Santa Fe Springs Dp	Commerce Dp	Los Angeles Ar
Commuter	PVL01W																	From Riverside/Perris Valley				→	5:16 AM	5:21 AM	5:27 AM	-	5:49 AM
Commuter	OC01W																4:55 AM	5:04 AM	5:10 AM	5:17 AM	5:22 AM	5:26 AM	5:33 AM	5:39 AM	5:45 AM	5:55 AM	6:07 AM
Commuter	PVL02W																	From Riverside/Perris Valley				→	5:49 AM	-	5:58 AM	-	6:18 AM
Commuter	OC02W												4:46 AM	-	5:12 AM	5:21 AM	5:27 AM	5:37 AM	5:43 AM	5:50 AM	5:55 AM	5:59 AM	6:06 AM	8:12 AM	6:19 AM	-	6:42 AM
Amtrak	AMTK3SC																		From Chicago			→	6:15 AM	-	-	-	6:54 AM
Commuter	PVL03W																	From Riverside/Perris Valley				→	6:24 AM	-	6:36 AM	-	7:03 AM
Commuter	OC03W												5:15 AM	-	5:40 AM	5:49 AM	5:55 AM	6:04 AM	6:11 AM	6:17 AM	6:22 AM	6:27 AM	6:34 AM	6:39 AM	6:45 AM	-	7:06 AM
Commuter	PVL04W																						6:44 AM	-	6:56 AM	-	7:17 AM
Commuter	OC04W																6:19 AM	6:29 AM	6:35 AM	6:42 AM	6:47 AM	6:51 AM	6:58 AM	7:04 AM	7:10 AM	7:20 AM	7:33 AM
Commuter	IEOC01W																6:49 AM	6:59 AM	7:06 AM	7:12 AM	7:18 AM	→	To San Bernardino/Riverside				
Amtrak	PS01W			5:14 AM	-	-	-	5:47 AM	-	-	-	6:02 AM	6:04 AM	-	-	-	-	6:47 AM	-	-	-	7:06 AM	-	-	-	-	7:41 AM
Commuter	PVL05W																	From Riverside/Perris Valley				→	7:19 AM	7:24 AM	7:30 AM	-	7:52 AM
Commuter	LASD01W			5:30 AM	5:34 AM	5:37 AM	5:56 AM	6:05 AM	6:10 AM	6:15 AM	6:20 AM	6:24 AM	6:29 AM	-	6:50 AM	6:58 AM	7:02 AM	7:11 AM	7:16 AM	7:23 AM	7:27 AM	7:31 AM	7:38 AM	7:42 AM	7:48 AM	-	8:07 AM
Amtrak	AMTK1SL																		From New Orleans			→	7:48 AM	-	-	-	8:18 AM
Commuter	MSEP01W												6:34 AM	-	7:00 AM	7:09 AM	7:15 AM	7:25 AM	7:32 AM	7:39 AM	7:44 AM	7:48 AM	7:57 AM	↓			
Amtrak	PS02W			6:06 AM	-	-	-	6:39 AM	-	-	-	6:54 AM	6:56 AM	-	-	-	-	7:38 AM	-	-	-	-	7:56 AM	-	-	-	8:29 AM
Commuter	PVL06W																	From Riverside/Perris Valley				→	8:09 AM	8:14 AM	8:20 AM	-	8:42 AM
Commuter	OC05W																7:37 AM	7:49 AM	7:55 AM	8:02 AM	8:07 AM	8:11 AM	8:18 AM	8:24 AM	8:30 AM	8:44 AM	8:57 AM
Commuter	IEOC02W																7:49 AM	7:59 AM	8:06 AM	8:13 AM	8:18 AM	→	To San Bernardino/Riverside				
Commuter	LASD02W			6:30 AM	6:34 AM	6:37 AM	6:56 AM	7:05 AM	7:10 AM	7:15 AM	7:20 AM	7:24 AM	7:29 AM	-	7:48 AM	7:56 AM	8:01 AM	8:09 AM	8:15 AM	8:21 AM	8:26 AM	8:30 AM	8:36 AM	8:41 AM	8:47 AM	-	9:07 AM
Commuter	OC06W																8:19 AM	8:29 AM	8:35 AM	8:42 AM	8:47 AM	8:51 AM	8:58 AM	9:04 AM	9:10 AM	9:20 AM	9:33 AM
Amtrak	PS03W			7:04 AM	7:09 AM	-	-	7:39 AM	-	-	-	7:55 AM	7:57 AM	-	-	8:28 AM	-	8:42 AM	-	8:53 AM	-	9:02 AM	9:11 AM	-	-	-	9:43 AM
Commuter	PVL07W																	From Riverside/Perris Valley				→	9:19 AM	9:24 AM	9:30 AM	-	9:50 AM
Commuter	IEOC03W																8:39 AM	8:49 AM	8:56 AM	9:02 AM	9:08 AM	→	To San Bernardino/Riverside				
Commuter	MSEP02W																9:09 AM	9:19 AM	9:25 AM	9:32 AM	9:37 AM	9:41 AM	9:51 AM	↓			
Commuter	SD01W			7:34 AM	7:38 AM	7:41 AM	8:00 AM	8:09 AM	8:14 AM	8:19 AM	8:24 AM	8:28 AM															
Commuter	PVL08W																	From Riverside/Perris Valley				→	9:59 AM	10:04 AM	10:10 AM	-	10:30 AM
Commuter	SD02W			7:59 AM	8:03 AM	8:06 AM	8:25 AM	8:33 AM	8:38 AM	8:43 AM	8:48 AM	8:52 AM															
Amtrak	PS04W			8:11 AM	8:16 AM	-	-	8:46 AM	-	-	-	9:02 AM	9:04 AM	-	-	9:33 AM	-	9:48 AM	-	9:59 AM	-	10:08 AM	10:16 AM	-	-	-	10:46 AM
Commuter	LASD03W			8:30 AM	8:34 AM	8:37 AM	8:56 AM	9:05 AM	9:10 AM	9:15 AM	9:20 AM	9:24 AM	9:29 AM	-	9:50 AM	9:58 AM	10:03 AM	10:11 AM	10:17 AM	10:23 AM	10:28 AM	10:32 AM	10:38 AM	10:43 AM	10:49 AM	-	11:08 AM
Commuter	SD03W			8:54 AM	8:58 AM	9:01 AM	9:20 AM	9:29 AM	9:34 AM	9:39 AM	9:44 AM	9:48 AM															
Amtrak	PS05W			9:12 AM	9:17 AM	-	-	9:49 AM	-	-	-	10:05 AM	10:07 AM	-	-	10:37 AM	-	10:52 AM	-	11:03 AM	-	11:12 AM	11:20 AM	-	-	-	11:51 AM
Commuter	MSEP03W																11:09 AM	11:19 AM	11:25 AM	11:32 AM	11:37 AM	11:41 AM	11:51 AM	↓			
Commuter	SD04W			9:29 AM	9:33 AM	9:36 AM	9:55 AM	10:03 AM	10:09 AM	10:14 AM	10:18 AM	10:25 AM															
Commuter	PVL09W																	From Riverside/Perris Valley				→	11:59 AM	12:04 PM	12:10 PM	-	12:30 PM
Amtrak	PS06W			10:12 AM	10:17 AM	-	-	10:47 AM	-	-	-	11:03 AM	11:05 AM	-	-	11:35 AM	-	11:50 AM	-	12:01 PM	-	12:10 PM	12:18 PM	-	-	-	12:47 PM
Commuter	OC08W																12:09 PM	12:19 PM	12:25 PM	12:32 PM	12:37 PM	12:41 PM	12:48 PM	12:54 PM	1:00 PM	1:10 PM	1:24 PM
Commuter	SD05W			10:29 AM	10:33 AM	10:36 AM	10:55 AM	11:04 AM	11:09 AM	11:14 AM	11:19 AM	11:25 AM															
Commuter	IEOC04W																11:59 AM	12:09 PM	12:16 PM	12:23 PM	12:28 PM	→	To San Bernardino/Riverside				
Amtrak	PS07W			11:12 AM	11:17 AM	-	-	11:47 AM	-	-	-	12:03 PM	12:05 PM	-	-	12:34 PM	-	12:49 PM	-	1:00 PM	-	1:11 PM	1:19 PM	-	-	-	1:51 PM
Commuter	MSEP04W																1:09 PM	1:19 PM	1:25 PM	1:32 PM	1:37 PM	1:41 PM	1:51 PM	↓			
Commuter	SD06W			11:59 AM	12:03 PM	12:06 PM	12:25 PM	12:33 PM	12:39 PM	12:44 PM	12:48 PM	12:52 PM															
Commuter	PVL10W																	From Riverside/Perris Valley				→	1:57 PM	2:05 PM	2:12 PM	-	2:34 PM
Amtrak	PS08W			12:12 PM	12:17 PM	-	-	12:47 PM	-	-	-	1:03 PM	1:05 PM	-	-	1:34 PM	-	1:49 PM	-	2:00 PM	-	2:09 PM	2:17 PM	-	-	-	2:48 PM
Commuter	SD07W			12:59 PM	1:03 PM	1:06 PM	1:25 PM	1:33 PM	1:38 PM	1:43 PM	1:48 PM	1:55 PM															
Commuter	IEOC05W																2:09 PM	2:19 PM	2:26 PM	2:33 PM	2:38 PM	→	To San Bernardino/Riverside				
Amtrak	PS09W			1:12 PM	1:17 PM	-	-	1:47 PM	-	-	-	2:03 PM	2:05 PM	-	-	2:34 PM	-	2:49 PM	-	3:00 PM	-	3:11 PM	3:19 PM	-	-	-	3:52 PM
Commuter	LASD04W	1:15 PM	1:22 PM	1:30 PM	1:34 PM	1:37 PM	1:56 PM	2:05 PM	2:10 PM	2:15 PM	2:20 PM	2:24 PM	2:29 PM	-	2:51 PM	2:59 PM	3:04 PM	3:09 PM	3:18 PM	3:24 PM	3:29 PM	3:33 PM	3:39 PM	3:44 PM	3:49 PM	-	4:08 PM
Commuter	MSEP05W																3:24 PM	3:34 PM	3:40 PM	3:47 PM	3:52 PM	3:56 PM	4:06 PM	↓			
Amtrak	PS10W			2:12 PM	2:17 PM	-	-	2:47 PM	-	-	-	3:03 PM	3:05 PM	-	-	3:35 PM	-	3:50 PM	-	4:01 PM	-	4:10 PM	4:18 PM	-	-	-	4:48 PM
Commuter	PVL11W																	From Riverside/Perris Valley				→	4:29 PM	-	4:38 PM	-	5:01 PM
Commuter	IEOC06W																3:54 PM	4:04 PM	4:10 PM	4:16 PM	4:21 PM	→	To San Bernardino/Riverside				
Commuter	SD08W			2:44 PM	2:48 PM	2:51 PM	3:10 PM	3:18 PM	3:23 PM	3:28 PM	3:33 PM	3:40 PM															
Commuter	IEOC07W																4:24 PM	4:34 PM	4:41 PM	4:48 PM	4:53 PM	→	To San Bernardino/Riverside				
Amtrak	PS11W			3:14 PM	-	-	-	3:48 PM	-	-	-	4:04 PM	4:06 PM	-	-	-	-	4:48 PM	-	-	-	5:05 PM	-	-	-	-	5:44 PM
Commuter	IEOC08W																4:49 PM	4:59 PM	5:06 PM	5:13 PM	5:18 PM	→	To San Bernardino/Riverside				
Commuter	PVL12W																	From Riverside/Perris Valley				→	5:19 PM	5:24 PM	7:30 PM	-	5:50 PM
Commuter	LASD05W	3:18 PM	3:22 PM	3:30 PM	3:34 PM	3:37 PM	3:56 PM	4:04 PM	4:09 PM	4:14 PM	4:19 PM	4:23 PM	4:28 PM	-	4:49 PM	4:57 PM	5:02 PM	5:10 PM	5:16 PM	5:22 PM	5:27 PM	5:31 PM	5:38 PM	5:42 PM	5:48 PM	-	6:08 PM
Commuter	IEOC09W																5:19 PM	5:29 PM	5:36 PM	5:43 PM	5:48 PM	→	To San Bernardino/Riverside				
Commuter	SD09W			3:49 PM	3:53 PM	3:56 PM	4:15 PM	4:23 PM	4:28 PM	4:33 PM	4:38 PM	4:48 PM															
Amtrak	PS12W			4:04 PM	4:11 PM	-	-	4:42 PM	-	-	-	4:57 PM	4:59 PM	-	-	5:29 PM	-	5:43 PM	-	5:54 PM	-	6:03 PM	6:12 PM	-	-	-	6:44 PM
Commuter	PVL13W																	From Riverside/Perris Valley				→	6:19 PM	6:24 PM	6:30 PM	-	6:51 PM
Commuter	MSEP06W																5:49 PM	5:59 PM	6:05 PM	6:12 PM	6:17 PM	6:21 PM	6:31 PM	↓			
Commuter	IESD01W			4:34 PM	4:37 PM	4:40 PM	4:59 PM	5:07 PM	5:13 PM	5:18 PM	5:22 PM	5:26 PM	5:31 PM	-	5:52 PM	6:01 PM	6:05 PM	6:13 PM	6:19 PM	6:26 PM	6:31 PM	→	To San Bernardino/Riverside				
Commuter	IEOC10W																6:24 PM	6:34 PM	6:41 PM	6:47 PM	6:53 PM	→	To San Bernardino/Riverside				
Commuter	PVL14W																	From Riverside/Perris Valley				→	6:49 PM	-	6:58 PM	-	7:19 PM
Amtrak	PS13W			5:12 PM	-	-	-	5:46 PM	-	-	-	6:01 PM	6:03 PM	-	-	-	-	6:46 PM	-	-	-	7:03 PM	-	-	-	-	7:37 PM
Commuter	PVL15W																	From Riverside/Perris Valley				→	7:25 PM	7:31 PM	7:37 PM	-	7:57 PM
Commuter	OC07W																6:45 PM	6:59 PM	9:05 AM	7:12 PM	7:17 PM	7:21 PM	7:28 PM	7:36 PM	7:46 PM	7:57 PM	8:09 PM
Commuter	SD10W			4:57 PM	5:01 PM	5:04 PM	5:23 PM	5:31 PM	5:36 PM	5:41 PM	5:46 PM	5:53 PM															
Commuter	SD11W			5:34 PM	5:38 PM	5:41 PM	6:00 PM	6:08 PM	6:13 PM	6:18 PM	6:23 PM	6:32 PM															
Commuter	IEOC11W																7:14 PM	7:24 PM	7:30 PM	7:36 PM	7:41 PM	→	To San Bernardino/Riverside				
Commuter	PVL16W																	From Riverside/Perris Valley				→	7:49 PM	7:54 PM	8:00 PM	-	8:20 PM
Commuter	SD12W			5:55 PM	5:59 PM	6:02 PM	6:21 PM	6:30 PM	6:35 PM	6:40 PM	6:45 PM	6:52 PM															
Amtrak	PS14W			**6:05 PM**	**6:10 PM**	-	-	**6:40 PM**	-	-	-	6:56 PM	6:58 PM	-	-	**7:28 PM**	-	**7:43 PM**	-	**7:54 PM**	-	**8:03 PM**	**8:12 PM**	-	-	-	**8:44 PM**
Commuter	SD13W	6:05 AM	6:09 PM	6:17 PM	6:21 PM	6:24 PM	6:43 PM	6:51 PM	6:56 PM	7:01 PM	7:06 PM	7:13 PM															
Commuter	SD14W			6:34 PM	6:38 PM	6:41 PM	7:00 PM	7:08 PM	7:13 PM	7:18 PM	7:23 PM	7:30 PM															
Commuter	SD15W			**7:04 PM**	**7:08 PM**	**7:11 PM**	**7:30 PM**	**7:38 PM**	7:44 PM	7:49 PM	7:53 PM	8:00 PM															
Commuter	IEOC12W																8:24 PM	8:34 PM	8:41 PM	8:48 PM	8:53 PM	→	To San Bernardino/Riverside				
Amtrak	PS15W			7:12 PM	7:17 PM	-	-	7:47 PM	-	-	-	8:03 PM	8:05 PM	-	-	8:34 PM	-	8:49 PM	-	9:00 PM	-	9:09 PM	9:17 PM	-	-	-	9:48 PM
Commuter	IESD02W	**7:21 AM**	**7:30 PM**	**7:33 PM**	**7:37 PM**	**7:40 PM**	**7:59 PM**	**8:07 PM**	**8:12 PM**	**8:17 PM**	**8:22 PM**	**8:26 PM**	8:31 PM	-	8:52 PM	9:00 PM	9:05 PM	**9:13 PM**	**9:19 PM**	**9:26 PM**	**9:31 PM**	→	To San Bernardino/Riverside				
Commuter	MSEP07W																9:14 PM	**9:24 PM**	**9:30 PM**	**9:37 PM**	**9:42 PM**	**9:46 PM**	**9:56 PM**				
Commuter	SD16W			7:59 PM	8:03 PM	8:06 PM	8:25 PM	8:34 PM	8:39 PM	8:44 PM	8:49 PM	8:56 PM															
Amtrak	PS16W			**8:12 PM**	**8:17 PM**	-	-	**8:47 PM**	-	-	-	**9:03 PM**	9:05 PM	-	-	9:36 PM	-	**9:50 PM**	-	10:01 PM	-	10:10 PM	10:19 PM	-	-	-	10:49 PM
Commuter	SD17W			8:34 PM	8:38 PM	8:41 PM	9:00 PM	9:09 PM	9:14 PM	9:19 PM	9:24 PM	9:30 PM															
Commuter	OC09W																10:09 PM	10:16 PM	10:25 PM	10:32 PM	10:37 PM	10:41 AM	10:48 PM	10:54 PM	11:00 PM	11:10 PM	11:23 PM
Amtrak	PS17W			9:12 PM	**9:17 PM**	-	-	**9:47 PM**	-	-	-	10:03 PM	10:05 PM	-	-	10:36 PM	-	10:50 PM	-	11:01 PM	-	11:10 PM	11:22 PM	-	-	-	11:52 PM
Commuter	SD18W			9:29 PM	**9:33 PM**	**9:36 PM**	**9:55 PM**	**10:04 PM**	**10:09 PM**	**10:14 PM**	**10:19 PM**	**10:26 PM**															
Commuter	SD19W			9:59 PM	10:03 PM	10:06 PM	10:25 PM	10:33 PM	10:44 PM	10:48 PM	10:52 PM	11:05 PM															
Amtrak	PS18W			10:12 PM	10:17 PM	-	-	10:47 PM	-	-	-	11:03 PM	11:05 PM	-	-	11:34 PM	-	11:49 PM	-	12:00 AM	-	12:09 AM	12:17 AM	-	-	-	12:48 AM
Commuter	SD20W			10:59 PM	11:03 PM	11:06 PM	11:25 PM	11:33 PM	11:39 PM	11:44 PM	11:48 PM	12:07 AM															

Coaster	27
Orange County Line	14
Inland Empire Orange County Line	14
Perris Valley Line	16
Orange County MSEP	7
Pacific Surfliner	18
Long Distance	2

WEEKDAY NORTHBOUND - Los Angeles ● Burbank ● Santa Barbara ● San Luis Obispo

Train Operator	No.	Los Angeles	Glendale	Downtown Burbank	Burbank - Bob Hope Airport	Van Nuys	Northridge	Chatsworth	Simi Valley	Moorpark	Camarillo	Oxnard	East Ventura	Ventura	Carpinteria	Santa Barbara	Santa Barbara	Goleta	North Goleta	Buellton (Burger King)	Solvang	Lompoc (Visitors Center)	Surf / Lompoc	Santa Maria (IHOP)	Guadalupe	Grover Beach - Pismo Beach	San Luis Obispo
		Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Ar	Dp	Dp	Ar	Dp	Dp	Ar	(B) Dp	(B) Dp	(B) Dp	Dp	(B) Dp	Dp	Dp	Ar
Commuter	VSB01W												5:56 AM	6:10 AM	6:28 AM	6:41 AM	6:43 AM	6:52 AM	6:56 AM								
Commuter	VSB02W												6:53 AM	7:03 AM	7:20 AM	7:33 AM	7:35 AM	7:44 AM	7:48 AM								
Commuter	VC01W	6:10 AM	6:20 AM	6:26 AM	6:31 AM	6:38 AM	6:46 AM	6:53 AM	7:05 AM	7:17 AM	7:30 AM	7:40 AM	7:55 AM														
Commuter	AV01W	6:22 AM	6:32 AM	6:39 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC02W	6:30 AM	6:40 AM	6:46 AM	6:51 AM	6:58 AM	7:05 AM	7:11 AM	7:27 AM	7:38 AM																	
Commuter	AV02W	6:56 AM	7:06 AM	7:13 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VSB03W												8:49 AM	8:59 AM	9:17 AM	9:29 AM	9:31 AM	9:40 AM	9:44 AM								
Commuter	VC03W	7:19 AM	7:29 AM	7:35 AM	7:40 AM	7:47 AM	7:54 AM	8:00 AM	8:14 AM	8:25 AM	8:35 AM	8:45 AM	9:00 AM														
Commuter	AV03W	7:29 AM	7:39 AM	7:46 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC04W	7:38 AM	7:48 AM	7:54 AM	7:59 AM	8:06 AM	8:13 AM	8:19 AM	8:30 AM	8:41 AM																	
Amtrak	CD/PS01W	7:45 AM	7:55 AM	-	8:07 AM	8:16 AM	-	8:27 AM	8:39 AM	8:52 AM	9:04 AM	9:16 AM	-	9:28 AM	9:47 AM	10:01 AM	10:03 AM	10:16 AM	-	-	-	-	11:13 AM	-	11:45 AM	12:16 PM	12:37 PM
Commuter	AV04W	7:54 AM	8:04 AM	8:10 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	AV05W	8:14 AM	8:24 AM	8:31 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC05W	8:29 AM	8:39 AM	8:46 AM	8:51 AM	8:58 AM	9:05 AM	9:10 AM	9:25 AM	9:38 AM																	
Commuter	AV06W	8:37 AM	8:47 AM	8:54 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Amtrak	PS02W	8:44 AM	8:54 AM	-	9:05 AM	9:14 AM	-	9:25 AM	9:47 AM	9:59 AM	10:21 AM	10:33 AM	-	10:45 AM	10:21 AM	11:18 AM	11:20 AM	11:31 AM									
Commuter	VC06W	9:12 AM	9:23 AM	9:29 AM	9:34 AM	9:41 AM	9:48 AM	9:54 AM	10:05 AM	10:17 AM	10:27 AM	10:37 AM	10:53 AM														
Commuter	AV07W	9:39 AM	9:49 AM	9:56 AM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC07W	9:56 AM	10:06 AM	10:12 AM	10:17 AM	10:24 AM	10:31 AM	10:37 AM	10:52 AM	11:03 AM																	
Amtrak	AMTK14CS	10:35 AM	-	-	10:51 AM	11:02 AM	-	-	11:25 AM	-	-	11:55 AM	-	-	-	12:37 PM	12:39 PM	-	-	-	-	-	-	-	-	-	3:02 PM
Amtrak	PS04W	11:00 AM	11:10 AM	-	11:21 AM	-	-	11:39 AM	11:57 AM	-	12:14 PM	12:25 PM	-	12:38 PM	-	1:08 PM	1:10 PM	1:21 PM	-	-	-	-	2:19 PM	-	2:57 PM	3:12 PM	3:32 PM
Commuter	AV08W	11:49 AM	11:59 AM	12:05 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC08W	12:39 PM	12:49 PM	12:55 PM	1:00 PM	1:07 PM	1:14 PM	1:20 PM	1:31 PM	1:42 PM																	
Amtrak	PS06W	12:56 PM	1:06 PM	-	1:17 PM	1:25 PM	-	1:37 PM	1:49 PM	2:02 PM	2:14 PM	2:25 PM	-	2:41 PM	3:00 PM	3:14 PM	3:16 PM	3:27 PM	-	-	-	-	4:29 PM	-	5:01 PM	5:28 PM	5:48 PM
Commuter	AV09W	1:44 PM	1:54 PM	2:00 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	AV10W	2:24 PM	2:34 PM	2:41 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC09W	2:37 PM	2:47 PM	2:53 PM	2:58 PM	3:05 PM	3:12 PM	3:18 PM	3:34 PM	3:45 PM																	
Amtrak	PS08W	3:34 PM	3:44 PM	-	3:56 PM	4:05 PM	-	4:16 PM	4:29 PM	4:43 PM	4:55 PM	5:07 PM	-	5:20 PM	5:41 PM	5:55 PM	5:57 PM	6:08 PM									
Commuter	VSB04W												5:34 PM	5:48 PM	6:07 PM	6:20 PM	6:22 PM	6:31 PM	6:35 PM								
Commuter	AV11W	3:49 PM	3:59 PM	4:06 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	AV12W	4:16 PM	4:26 PM	4:33 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC10W	4:24 PM	4:34 PM	4:41 PM	4:46 PM	4:53 PM	5:00 PM	5:05 PM	5:19 PM	5:35 PM	5:46 PM	6:03 PM	6:18 PM														
Commuter	AV13W	4:34 PM	4:44 PM	4:51 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC11W	4:44 PM	4:54 PM	5:01 PM	5:06 PM	5:13 PM	5:20 PM	5:25 PM	5:45 PM	5:57 PM																	
Commuter	AV14W	4:54 PM	5:04 PM	5:11 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC12W	5:04 PM	5:14 PM	5:20 PM	5:25 PM	5:32 PM	5:39 PM	5:45 PM	6:04 PM	6:17 PM	6:27 PM	6:37 PM	6:51 PM														
Commuter	AV15W	5:11 PM	5:21 PM	5:28 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Amtrak	PS10W	5:34 PM	5:44 PM	-	5:56 PM	6:04 PM	-	6:16 PM	6:28 PM	6:41 PM	6:53 PM	7:04 AM	-	7:16 PM	7:40 PM	7:54 PM	7:56 PM	8:07 PM									
Commuter	AV16W	5:18 PM	5:28 PM	5:35 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC13W	5:25 PM	5:36 PM	5:42 PM	5:47 PM	5:54 PM	6:01 PM	6:07 PM	6:20 PM	6:31 PM																	
Commuter	AV17W	5:44 PM	5:54 PM	6:01 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC14W	5:55 PM	6:05 PM	6:11 PM	6:16 PM	6:23 PM	6:30 PM	6:36 PM	6:50 PM	7:04 PM	7:14 PM	7:24 PM	7:39 PM														
Commuter	AV18W	6:05 PM	6:15 PM	6:21 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	AV19W	6:10 PM	6:24 PM	6:31 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC15W	6:29 PM	6:40 PM	6:46 PM	6:51 PM	6:58 PM	7:05 PM	7:11 PM	7:24 PM	7:36 PM																	
Commuter	AV20W	6:49 PM	6:59 PM	7:06 PM																							
Commuter	VC16W	7:03 PM	7:13 PM	7:20 PM	7:25 PM	7:32 PM	7:39 PM	7:44 PM	7:56 PM	8:07 PM	8:18 PM	8:27 PM	8:42 PM														
Commuter	AV21W	7:13 PM	7:23 PM	7:31 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	AV22W	7:44 PM	7:54 PM	8:01 PM	→		To Santa Clarita/Palmdale/Lancaster																				
Commuter	VC17W	8:44 PM	8:54 PM	9:00 PM	9:05 PM	9:12 PM	9:19 PM	9:25 PM	9:36 PM	9:47 PM																	
Amtrak	CD/PS13W	8:19 PM	8:30 PM	-	8:41 PM	-	-	8:59 PM	9:11 PM	-	9:32 PM	9:43 PM	-	9:55 PM	-	10:24 PM	10:26 PM	10:39 PM	-	-	-	-	11:36 PM	-	12:08 PM	-	12:38 PM
Commuter	VC18W	9:59 PM	10:09 PM	10:16 PM	10:21 PM	10:28 PM	10:35 PM	10:40 PM	10:52 PM	11:03 PM																	
Commuter	AV23W	10:14 PM	10:24 PM	10:31 PM	→		To Santa Clarita/Palmdale/Lancaster																				

Ventura County Line	18
Antelope Valley Line	23
Burbank Turn	0
Ventura-Goleta Commuter Service	4
Pacific Surfliner	5
Coast Daylight / Pacifc Surfliner	2
Long Distance	1

APPENDIX C: SERVICE LEVELS AT BURBANK-BOB HOPE AIRPORT STATION

LOSSAN Strategic Implementation Plan Long Term Operations Analysis
Comparison of Service Levels and Options between LAUS and Burbank-Bob Hope Airport - Existing vs. 2030 Proposed Timetable

EXISTING SERVICE LEVELS:

INBOUND:

Service Operator:	M	M	M	M	M	M	M	Am	M	M	Am	M	M	M	Am	M	M	M	Am	Am	Am
Burbank-Bob Hope Airport	5:49am	6:13am	6:45am	7:23am	8:02am	8:35am	8:46am	8:59am	9:10am	11:06am	11:44am	3:10pm	3:37pm	4:15pm	4:22pm	4:55pm	5:05pm	5:53pm	6:37pm	6:48pm	9:23pm
LA Union Station	6:15am	6:38am	7:12am	7:50am	8:28am	9:00am	9:15am	9:25am	9:40am	11:35am	12:15pm	3:40pm	4:00pm	4:40pm	4:55pm	5:20pm	5:30pm	6:20pm	7:10pm	7:15pm	9:45pm

= AM Peak Period of approx. 6:00A - 9:00A
= PM Peak Period of approx. 3:00P - 6:00P
M = Metrolink
Am = Amtrak

OUTBOUND:

Service Operator:	M	M	M	Am	Am	M	M	M	Am	M	Am	M	Am	M	M	M	M	M	M	M	M	Am
LA Union Station	5:38am	6:50am	7:15am	7:35am	7:45am	8:00am	8:25am	8:50am	9:05am	9:50am	12:25pm	1:00pm	3:00pm	3:05pm	3:15pm	3:35pm	4:25pm	4:33pm	5:10pm	5:55pm	6:40pm	7:10pm
Burbank-Bob Hope Airport	6:01pm	7:11am	7:36am	8:00am	8:08am	8:25am	8:50am	9:15am	9:27am	10:11am	12:47pm	1:23pm	3:22pm	3:30pm	3:36pm	3:56pm	4:46pm	4:58pm	5:31pm	6:16pm	7:01pm	7:32pm

= AM Peak Period of approx. 6:00A - 9:00A
= PM Peak Period of approx. 3:00P - 6:00P
M = Metrolink
Am = Amtrak

2030 PROPOSED TIMETABLE:

INBOUND:

Service Operator:	M	M	M	M	M	M	Am	M	M	M	Am	M	Am	M	Am	M	Am	M	M	M	Am	M	Am	M	Am	M
Burbank-Bob Hope Airport	5:07am	5:43am	6:12am	6:43am	7:07am	7:29am	7:48am	8:12am	8:38am	9:35am	10:12am	11:03am	12:54pm	1:16pm	2:48pm	3:14pm	3:59pm	4:17pm	5:14pm	5:44pm	6:10pm	6:29pm	7:20pm	7:35pm	9:00pm	9:18pm
LA Union Station	5:29am	6:04am	6:34am	7:05am	7:34am	7:50am	8:09am	8:35am	8:59am	9:58am	10:34am	11:25am	1:16pm	1:38pm	3:10pm	3:36pm	4:21pm	4:38pm	5:35pm	6:06pm	6:31pm	6:51pm	7:40pm	7:57pm	9:22pm	9:41pm

= AM Peak Period of approx. 6:00A - 9:00A
= PM Peak Period of approx. 3:00P - 6:00P
M = Metrolink
Am = Amtrak

OUTBOUND:

Service Operator:	M	M	M	M	Am	M	Am	M	M	Am	Am	M	Am	M	Am	M	M	M	Am	M	M	M	M	M	Am	M
LA Union Station	6:10am	6:30am	7:19am	7:38am	7:45am	8:29am	8:44am	9:12am	9:56am	10:35am	10:54am	12:39pm	12:56pm	2:37pm	3:34pm	4:24pm	4:44pm	5:04pm	5:34pm	5:25pm	5:55pm	6:29pm	7:03pm	8:44pm	8:19pm	9:59pm
Burbank-Bob Hope Airport	6:31am	6:51am	7:40am	7:59am	8:07am	8:51am	9:05am	9:34am	10:17am	10:51am	11:15am	1:00pm	1:17pm	2:58pm	3:56pm	4:46pm	5:01pm	5:25pm	5:56pm	5:47pm	6:16pm	6:51pm	7:25pm	9:05pm	8:40pm	10:21pm

= AM Peak Period of approx. 6:00A - 9:00A
= PM Peak Period of approx. 3:00P - 6:00P
M = Metrolink
Am = Amtrak

APPENDIX D: AGENCY COMMENTS

APPENDIX D: LOSSAN LONG-TERM OPERATIONS ANALYSIS REPORT COMMENTS

LOSSAN Strategic Implementation Plan Submittal Title: Draft LOSSAN Long-Term Operations Analysis Report Date: December 28, 2011

Comment Review Form

General Comment No.	Agency Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
1	1	1	SCAG	Add space between parentheses and "is" in first sentence of second paragraph	1/19/2012	Comment addressed	Y
2	2	1	SCAG	Add space between "2030" and "distributed" in 6th paragraph	1/19/2012	Comment addressed	Y
3	3	1	SCAG	Version 2 includes the "phased implementation approach" to the CA HST system, but does not assume phased implementation improvements/projects in the baseline. The technical reasons for this should be listed at some point in the report.	1/19/2012	The baseline for this scenario are the projects already identified as feasible and necessary to support the base line service levels for 2030 (Version 1). Version 2 will identify what additional improvements are necessary to support feeder/distributre service in support of the HST. Text description of Version 2 rewritten to hopefully clarify this point.	Y
4	4	2	SCAG	Change "then" to "than" in the 3rd paragraph	1/19/2012	Comment addressed	Y
5	5	2	SCAG	Add the term "pocketing" to the project glossary	1/19/2012	Comment addressed, see Glossary	Y
6	6	1-2	SCAG	This is an executive summary, so it is obviously meant for non-specialists. The analytical purpose, methods, and goals of the work in this report should be explicitly discussed in 2-3 sentences in the first paragraph of the executive summary	1/19/2012	Comment addressed, see additional text	Y
7	7	3	SCAG	Regarding second bullet, see comment #3 above	1/19/2012	See response to comment 3.	Y
8	8	10	SCAG	RE: table 5.3.1 asterisk below table appears to relate to 2030 proposed Burbank Bob Hope service; however there are asterisks in the 2011 Base intra county OC, 2014 OC, and Antelope Valley Line cells that do not appear to be linked to any explanatory caption or text	1/19/2012	Comment addressed	Y
9	9	11	SCAG	The introductory text should more explicitly discuss, in 2-3 sentences, why operational modeling is important in LOSSAN business/implementation plan development, and how agency stakeholders can employ the results moving forward	1/19/2012	Comment addressed, see additional text	Y
10	10	12	SCAG	In section 6.1.2, bullet 2, the distance for improvements "can vary between .05 to 3.5 miles "Why is this so? What are the benefits of these strategies per the model output?	1/19/2012	The 0.5 miles is the minimum recommended improvement. The longer the additional capacity improvement, the greater benefit to service reliability. This has been clarified in the report.	Y
11	11	17	SCAG	Add "(LN/MV)" immediately after "Laguna Niguel / Mission Viejo Station Turnback Facility" in 3rd paragraph	1/19/2012	Comment addressed	Y
12	12	17	SCAG	Change "LMNV" to "LNMV" in second sentence of 3rd paragraph	1/19/2012	Comment addressed	Y
13	13	17	SCAG	Text in the 4th paragraph is somewhat confusing. Suggest re-wording for additional clarity (such as '*this segment is owned by OCTA in Orange County and dispatched by SCCRA, in San Diego County the track is owned and dispatched by NCTD*')	1/19/2012	Comment addressed, text reworded	Y
14	14	17	SCAG	Re: the final paragraph Is the single track in the Pendleton section "contributing" to additional trains running out of slot, or is it exacerbating (and extending delays) the situation when trains are already out of slot?	1/19/2012	Comment addressed, clarification added	Y
15	15	19	SCAG	There appears to be no output for scenarios 2 and 3. If those scenarios are going to be analyzed by another party in the future, shouldn't that be mentioned here?	1/19/2012	Text added: The PWG requested that the California High-Speed Rail Authority take the lead to complete the operations analysis and ridership/revenue forecast for Versions 2 and 3. That analysis is pending further development of the proposed high-speed rail service plan for southern California and therefore not included in this document.	Y
16	16	20	SCAG	The glossary is excellent. Great work. 1 comment – "Coaster" is a term that is defined, but "Metrolink" and "Surfliner" are terms that are not.	1/19/2012	Comment addressed, see Glossary	Y
17	CT-1	Schedule	Caltrans	Basic schedule is OK, meets goal of trains running once per hour; unfortunate that trains could not run more of a memory schedule, as trains on less of one than previous versions, but challenges of being overridden by operating needs of remaining single track understood, as well as changes in the pattern throughout the day due to skip-stops during peak hours; I do wish to confirm the total slots available for intercity regional service is 18 rt, and is not precluded by the two Amtrak long-distance rt's.	1/24/2012	The assumption made in this analysis was 36 trips (18 RT) Los Angeles-San Diego for the Pacific Surfliner. This is separate from the long distance trains assumed in the simulations.	Y
18	CT-2	Schedule	Caltrans	May be a good visual in timetable to add column at end of from:/to: for trains coming from or leaving the corridor, for ease of understanding, such as overnight/day coast trains, Metrolinks going to Riverside or Antelope Valley, Amtrak Long Distance;	1/24/2012	Notes have been added to the timetable to identify where a train is originating from or terminating at when entering or leaving the LOSSAN Corridor.	Y
19	CT-3	Page 1	Caltrans	Version 2: Seems unlikely that this could possibly assume "the same infrastructure and service assumptions", since the massive influx of transferring passengers will require a much higher level of service than Version 1 -- but perhaps I am misreading what the intent of the sentence is.	1/24/2012	See response to comment 3.	Y
20	CT-4	Page 1	Caltrans	Version 3: The description talks about "a new 2-track dedicated passenger corridor" between Los Angeles and Anaheim, but does not mention that full build-out of HSR will also require such a corridor between Los Angeles and Burbank Jct. and north over the Tehachapi Mountains.	1/24/2012	The description in the report does mention "North of Los Angeles, the infrastructure presented in Version 1 would be assumed since the HST is anticipated to be on its own dedicated alignment". Shared use of the HST corridor is not anticipated with conventional rail north of Los Angeles at this time.	Y
21	CT-5	Page 1	Caltrans	I think the order is wrong (geographically at least) LA-SD-SLO corridor; but maybe that's what it is referred to as.	1/24/2012	This is the official title in use.	Y

APPENDIX D: LOSSAN LONG-TERM OPERATIONS ANALYSIS REPORT COMMENTS

General Comment No.	Agency Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
22	CT-6	Page 2	Caltrans	¶3 - There could also be loading issues with passengers if trains come in on changing tracks, unless a PA system and signs clearly let passengers know in advance.	1/24/2012	Comment addressed, text added	Y
23	CT-7	Page 3	Caltrans	2.0 - Version 1 -- I may be reading this wrong, but in the Ex. Summary there was talk of the need for the additional miles of double track to make the 2030 plan workable, yet here it says it is only assuming the projects "likely" to be built are part of Version 1.	1/24/2012	The Executive Summary provides a summary of the findings from the entire report; Section 2.0 explains the initial assumptions for capital improvements for modeling purposes. Additional improvements are found to be needed to support reliable service based on PWG service assumptions, as discussed in Section 6.0, third paragraph.	Y
24	CT-8	Page 5	Caltrans	Top Bullet: This list of locomotives should either be expanded to what is out there or not mentioned at all.	1/24/2012	The list represents the locomotives assumed in the simulation model and is presented for documentation purposes. The list of passenger locomotives is consistent with available locomotive technology operating on the corridor today. While it could be assumed different technology may be operating by 2030, only known technologies can be simulated in the model.	Y
25	CT-9	Page 5	Caltrans	5.2.1 - The locations of these "Island CTC" installations is not given. The locations must be given in order to model, so they should be listed here.	1/24/2012	Comment acknowledged. Island CTC should actually be under Santa Barbara County and included in the model: - Capitan Siding - Concepcion Siding - Honda Siding - Tangair Siding - Narlon Siding - Devon Siding - Waldorf Siding - Guadalupe Siding and Station While not identified previous, based on this service plan island CTC would also be necessary for the Surf/Lompoc siding. This additional infrastructure has been isolated now in the final report as "new" infrastructure.	Y
26	CT-10	Page 5	Caltrans	Some opeational flexibility could be achieved, especially for expected events, if the station track were a through track rather than stub end.	1/24/2012	Assuming this is in reference to the North Goleta Station. While a "through" station would offer additional operational flexibility, the layout and configuration of the station as presented in this analysis was driven by the direction given by the Santa Barbara County Associated Governments (SBCAG).	Y
27	CT-11	Page 6	Caltrans	Not a mentioned item, but when I was out on a tour of the line last week, I was told by Amtrak personnel that the 2nd platform Camarillo station can't practically be used because the way the pedestrian connection was built constrains the ability of passengers to move to the other platform in a timely manner, so they don't use it. This should be addressed -- if not here, somewhere.	1/24/2012	Comment acknowledged. While pedestrian flow around stations is a critical component to a successful passenger rail service, review of this is outside the scope of this analysis, which focuses on rail operations and capacity requirements.	Y
28	CT-12	Page 7	Caltrans	Van Nuys 2nd Platform -- I'm a bit confused by the description as it implies a 2nd platform needs to be built, yet cannot be built. Instead, could a solution be described?	1/24/2012	Comment acknowledged. Text rewritten to help clarify issue.	Y
29	CT-13	Page 9	Caltrans	Heading of SD Airport Center is over a description of the Convention Center station.	1/24/2012	Comment addressed	Y
30	CT-14	Page 10	Caltrans	Is the pattern of Sunset Limited trains due to an assumption the train will move to the BNSF track in the future?	1/24/2012	RCTC is working with Amtrak, BNSF and UPRR to possibly reroute the Sunset Limited onto the BNSF at Colton Crossing so that it may provide service between the Coachella Valley and Riverside. The Sunset was rerouted to the BNSF in the model at the request of RCTC. This assumption was not rejected by Amtrak.	Y
31	1	10	SCRRA	Metrolink service between LAUS and Bubank-Bob Hope Airport was eliminated in the 2030 Proposed Service scenario. This is primarily a connection service for passengers commuting from the Inland Empire and Orange County to destinations in the Glendale/Burbank area. Therefore, timing and integration wtih connecting commuter trains is crucial for passenger mobility. Increased service on the Ventura County Line may not be a feasible substitute for the Burbank connecting trains. Future High Speed Train service in the region is unlikely to serve the same market.	1/24/2012	Please see additional footnote information on Table 5.3.1 and additional discussion and analysis of this issue in Section 6.1.6 and Appendix C.	Y
32	1	General Comments	UP	1. Regarding the proposed new or extended sidings north of LA - to have true utility for meeting and passing trains, sidings must be free and clear of any at grade road crossings.	1/20/2012	Agree. This should be true for all siding extensions presented that are not associated with a station. Where a second track / platform is recommended at a station it is to allow more than one passenger train to meet at the station and was not identified as necessary for "meets" with freight trains based on the assumed service plan.	Y

APPENDIX D: LOSSAN LONG-TERM OPERATIONS ANALYSIS REPORT COMMENTS

General Comment No.	Agency Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
33	2	General Comments	UP	2. I know we have discussed this point before, there needs to be an acknowledgement in this report that makes if clear to the reader that the RTC simulations contained in this study were prepared and conducted without input from or validation by Union Pacific Railroad. Any change to or increase in passenger service on Union Pacific tracks or right-of-way will be subject to an independent determination by Union Pacific of any necessary capacity or other requirements consistent with Union Pacific's then current Union Pacific Commuter Access Principles (current version attached).	1/20/2012	Comment addressed, disclaimer added in Section 7	Y
34	1	12	SBCAG	On page 12, 6.1.2, there is a mention of extending the Ortega siding by 1.2 miles and that trains currently hold here. There is no Ortega siding—it was destroyed about 20 years ago by a storm, but the reference might be to the Seacliff siding, where trains do hold.	1/19/2012	Please see Section 5.2.2 which indicates that the Ortega siding would be rebuilt as part of the initial set of infrastructure assumptions.	Y
35	2	6	SBCAG	Typo page 6, signal should be single	1/19/2012	Comment addressed	Y
36	3	13	SBCAG	Typo page 13, "between"	1/19/2012	Comment addressed	Y
37	4	14	SBCAG	Typo page 14, exiting should be existing	1/19/2012	Comment addressed	Y
38	5	6	SBCAG	Typo page 6, Carpinteria	1/19/2012	Comment addressed	Y
39	1	10	RCTC	On Table 5.3.1 there are several * in the table but only 1 footnote.	1/20/2012	Comment addressed	Y
40	2		RCTC	On The Long Term Timetable from Convention Center to LA, it says AM instead of PM on the 6:05 and 7:21 departures out of Conv Ctr.	1/20/2012	Comment noted, Timetable to be corrected.	Y
41	1		SLOCOG	Are you cutting the 7am ish train southbound out of SLO in the 2030 model? That's no good in my book …	1/18/2012	This change was part of the service plan discussed and agreed to by the PWG	Y
42	1	1/1.0	SANDAG	In the paragraph "Service level…" we should incorporate the overall service planning goals initially identified by the PWG: • Additional commuter and intercity services consistent with state and regional plans • Additional through commuter service between Los Angeles and San Diego • Introduction of the Coast Daylight service between Los Angeles and San Francisco • Additional commuter service between Ventura and Santa Barbara • New San Diego stops at Intermodal Transportation Center, Del Mar Fairgrounds, and Convention Center • Express COASTER service • Peak period intercity trains converted to limited stop express services • Integration of future high-speed train service	2/8/2012	Comment addressed, goals added	Y
43	2	2/1.0	SANDAG	"The initial service …" - although original service plan was found infeasible and after many iterations, we found one that was feasible, we should state that we were still able to attain most of the original service goals (Express COASTER service still a problem without Del Mar but didn't we adhere to all others?)	2/8/2012	Comment addressed	Y
44	3	2/1.0	SANDAG	"A number of …" - in terms of SB Sub, say "from a to b". Change "then presented" to "than"	2/8/2012	Comment addressed	Y
45	4	2/1.0	SANDAG	"As with the …" add "be" in … San Luis Obispo would be required.	2/8/2012	Comment addressed	Y
46	5	2/1.0	SANDAG	"Extension of Serra Siding **in Orange County** south approximately...	2/8/2012	Comment addressed	Y
47	6	3/2.0	SANDAG	~~This service scenario~~ … to **The long term operations analysis…**	2/8/2012	Comment addressed	Y
48	7	3/2.0	SANDAG	First paragraph: "the purpose of this anlaysis is **(1) to develop a workable passenger rail service plan for 2030 and (2)** to identify...	2/8/2012	Comment addressed	Y
49	8	3/2.0	SANDAG	In Version 1 paragraph, change TWG to PWG	2/8/2012	Comment addressed	Y
50	9	3/3.0	SANDAG	I don't believe "All" peak period Surfliner trains because limited stop, I think we were saying "Most". Please clarify	2/8/2012	Comment addressed	Y
51	10	7/5.2.4	SANDAG	Instead of "Union Station Run Thru" use LAUS Run-Thru …	2.8/12	Comment addressed	Y
52	11	7/5.2.4	SANDAG	Also in this top paragraph at the end, should we mention that work is underway by CHSRA and LA Metro on the LAUS Master Plan and that although this is the current configuration of the platforms, the master plan may recommend changes.	2/8/2012	Comment addressed	Y
53	12	8/5.2.6	SANDAG	Add "." after the bullets on this page for consistency.	2/8/2012	Comment addressed	Y
54	13	8/5.2.6	SANDAG	Ponto to Moonlight and Moonlight to Swami are currently separate projects. Maybe just change the title to reflect this and start the paragraph with "These projects…"?	2/8/2012	Comment addressed	Y
55	14	9/5.2.6	SANDAG	Change last sentence: A seasonal Del Mar Fairgrounds ~~station~~ **platform** was not assumed as part of this infrastructure assumption since only year-round stops were included.	2/8/2012	Comment addressed	Y
56	15	9/5.6	SANDAG	Change project title to "Sorrento to Miramar Phase 2 Double Track"	2/8/2012	Comment addressed	Y
57	16	9/5.2.6	SANDAG	You discuss the convention center platform under the section for the Airport ITC.	2/8/2012	Comment addressed	Y
58	17	10/5.3.1	SANDAG	Table 5.3.1 is not referenced in text	2/8/2012	Comment addressed	Y
59	18	10/5.3.1	SANDAG	Table 5.3.1 - should the 2nd line in table be included? Also the "**" and "***" are not defined.	2/8/2012	1st Comment: Yes, because it was used in the Short-Term Operations Analysis and this table is indented to present a comparsion between the various timeframes. 2nd Comment: Comment addressed	Y

APPENDIX D: LOSSAN LONG-TERM OPERATIONS ANALYSIS REPORT COMMENTS

General Comment No.	Agency Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
60	19	10/5/3/1	SANDAG	Should the assumptions for the Amtrak Long-Distance services be identified. Also, include a brief discussion of the assumptions for the Coast Daylight.	2/8/2012	Two of the identified "Pacific Surfliner" trains actually operate in possible timeslots for the Coast Daylight and could be assumed to be operating as the Coast Daylight. These include the 3:43AM and 1:49PM departure from SLO to LA and the 7:45AM and 8:19PM departure from LA to SLO. This allows for one midday train in each direction and one overnight train in each direction.	Y
61	20	10/6.0	SANDAG	Need to include the UPRR footnote in the report. Perhaps in this section or 4.0?	2/8/2012	Disclaimer added to Section 7 with other report caveats	Y
62	21	13/6.1.4	SANDAG	In several of these next sections you say the track owner and then "and the line is operated by Metrolink". In others you say ML is the dispatcher. We should be consistent. If it's operated, isn't Amtrak also an operator on the line?	2/8/2012	Comment addressed; changed "operated" to "dispatched" for clarification	Y
63	22	14/6.1.5	SANDAG	What does this mean: Analysis of the simulation suggested that the completion of second track thru this segment improves ths ervice over the reliability of both the exiting (existing?) and short-term conditions?	2/8/2012	Reword attempted for clarity	Y
64	23	14/6.1.5 and .6	SANDAG	Is there both a GEMCO and GM facility near the Van Nuys station or should these be the same?	2/8/2012	These are one and the same. The text has been clarified in the report.	Y
65	24	18/6.1.11	SANDAG	Correct references for reports: Los Angeles to San Diego (LOSSAN) Proposed Rail Corridor Improvements Final Program Environmental Impact Report / Environmental Impact Statement (Finalized in 2007) LOSSAN Corridor Strategic Business Plan	2/8/2012	Comment addressed	Y
66	25	Appendix A	SANDAG	Footer says this is "LOSSAN Strategic Implementation Plan". Also, should page numbers be "A" and "B"?	2/8/2012	Comment addressed	Y
67	26	Appendix A	SANDAG	Under definition of subdivision, add "NCTD"	2/8/2012	Comment addressed	Y
68	27	19/7.0	SANDAG	Section 6.1.3. discusses the recommendation for the Oxnard Station North Platform but this is not shown in Table 7.1.1	2/12/2012	Comment addressed, station improvement added to Table	Y
69	28	General	SANDAG	In an early presentation, we discussed travel time savings. I'm wondering why we didn't include in the draft report. For example, we showed these findings: Oceanside to San Diego (Commuter): 7% LA to San Diego (Intercity): 6% LA to San Luis Obispo (Intercity): 14%	2/12/2012	Comment acknowledged. Statistics added to Conclusion section of report.	Y
70	29	12/6.1.2	SANDAG	Shouldn't Santa Barbara be changed to Goleta?	2/16/2012	Agreed.	Y
71	30	13/6.1.4 14/6.1.5	SANDAG	2030 Intercity Volume shows 14 trains north of LA to Chatsworth then only 12 trains between Chatsworth and Goleta. Is there a Surfliner that turnsback at Chatsworth or is this a typo?	2/16/2012	Comment Acknowledged. This is a typo and has been corrected. There should be 14 intercity trains between Los Angeles and Goleta.	Y
72	31	14/6.1.6	SANDAG	Consider adding a footnote to Table 6.1.6 noting the services that split off at Burbank Jct. rather than go to Burbank Airport like the AVL and some freight.	2/16/2012	Comment addressed	Y
73	1	Page 1, 1st/2nd parag	OCTA	Strategic Assesment "completed" in January 2012, not "prepared"; missing space between (2030) and "is"; business case has not yet been agreed to by Corridor agencies, should state "will be"; change 1st sentence to state "results of modeling the PROJECTED ridership"	2/10/2012	Comment addressed	Y
74	2	Page 1, Sec 1.0	OCTA	Need to modify description of versions. Version 1 assumes no HST in corridor. Version 2 assumes HSR that terminates in San Fernando Valley. Version 3 assumes new dedidcated 2-track for HSR, Amtrak and OC Metrolink between Los Angeles and Fullerton, shared with existing track south to Anaheim.	2/10/2012	Comment addressed	Y
75	3	Page 1, 7th parag	OCTA	Service level assumptions based on increases identified as feasible, but not necessarily financially constrained	2/10/2012	Comment addressed	Y
76	4	Page 1, last parag	OCTA	Should state the projected/estimated/ROM cost for the 30 infrastructure projects. Also should used numeral 30 instead of word; missing space between "2030 distributed"	2/10/2012	Comment addressed	Y
77	5	Page 2, 2nd parag	OCTA	Second sentence should state "Completing a second track along ***the entire length of the*** Corridor is not envisioned…."	2/10/2012	Comment addressed	Y
78	6	page 3, Sec 2.0	OCTA	Description of versions needs to be rewritten to be more accurate. Should explicitly state no HSR is assumed in Version 1; Version 3 should state dedicated passenger corridor would be Los Angeles to Fullerton -- will not extend to Anaheim.	2/10/2012	Comment addressed	Y
79	7	page 6, 5.2.3	OCTA	1st paragraph should say "single" track segment, not "signal"	2/10/2012	Comment addressed	Y
80	8	page 7, first full sentence	OCTA	Begin Sentence with "This Stub-ended layout…" Correct double period at end of sentence	2/10/2012	Comment addressed	Y
81	9	page 7, 5.2.5	OCTA	First parag, last sentence, reword to say, "The siding would end prior to reaching the developed are of the historic district in the City of San Juan Capistrano.	2/10/2012	Comment addressed	Y
82	10	page 7, 5.2.5, second parag	OCTA	Thrid sentence should read … platforms at Irvine and Tustin Stations also would be modified…"	2/10/2012	Comment addressed	Y
83	11	page 8, 5.2.6, last parag	OCTA	Title of section states "San Diego Airport Intermodal Transportation Center", but description is of new southern terminus at Convention Center, which is not adjacent to airport	2/10/2012	Comment addressed	Y
84	12	page 9, 5.3.`	OCTA	Should state that desired service levels for 2030 were deemed feasible, but were not necessarily financially constrained	2/10/2012	Comment addressed	Y

APPENDIX D: LOSSAN LONG-TERM OPERATIONS ANALYSIS REPORT COMMENTS

General Comment No.	Agency Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
85	13	page 10	OCTA	Legend at bottom of chart needs to be updated. No explanation of ** and ***. Also should clarify if this is the original service plan agreed to by PWG or revised version that takes corridor constraints into account	2/10/2012	Comments addressed. Weekday service assumptions are clarified as those agreed to by the PWG. Explanation of reduction of 900 trains is presented in Section 6.1.6 and summarized in new service level table in "Conclusions".	Y
86	14	Sec 6.0	OCTA	No limited-stop Surfliners shown north of LA, which conflicts with service design criteria in 3.0; also, timetables at end of report show 14 Surfliners north of LA, not 12 as stated in tables 6.1.1-6.1.4	2/10/2012	Comments addressed. PS04E and PS04W are identified as limited stop in the timetable skipping Van Nuys, Moorpark & Carpinteria (which were agreed to by the PWG). There is an error in the timetable in that PS04W shows a stop in Moorpark, but this will be corrected in final report.	Y
87	15	Page 14, 6.1.5	OCTA	Second sentence has typos and needs to be rephrased to make sense: "the service over the reliability of both the **exiting". Next sentence:** Increases in freight traffic assumed in 2030 **"do" not "does**	2/10/2012	Comment addressed	Y
88	1		L.A. Metro	General comment - The report uses the number and the word spelling of the number in various places within the document. Suggest using the standard of the word spelling of the number for 0-10 and the number above that, including fractions.	2/13/2012	We have tried to catch these instances.	Y
89	2		L.A. Metro	General comment - There are several text editing errors throughout the document.	2/13/2012	Comment addressed - hopefully we have caught most of these in going through all the comments.	Y
90	3		L.A. Metro	General comment - It would be helpful if there were maps and other graphical data that could be referenced throughout the document.	2/13/2012	Reference Map added to Chapter 1, page 4.	Y
91	4		L.A. Metro	General comment - The use of the Pacific Surfliner with the definition of "Commuter trains" can be problematic. We do not want to establish the DNA of the LOSSAN service. The reality of this service is that at times the trains are used in both manners. While there is a specific definition or identifier of intercity, the reality is that with Rail 2 Rail and other means, intercity trains are used by rail commuters along this corridor.	2/13/2012	Agreed - In partial response, we have added definitions for all the services to the Glossary	Y
92	5		L.A. Metro	Page 2, Paragraph three, second sentence - suggest editing to say "…where passenger trains operate on the opposite track than they typically would."	2/13/2012	Comment addressed	Y
93	6		L.A. Metro	Page 2, third paragraph - Should define what the Hobart and Commerce yards are. Also, when talking about freight traffic, there should be a mention of the Alameda Corridor connection to this corridor and what that means.	2/13/2012	Comment addressed	Y
94	7		L.A. Metro	Page 2, fourth paragraph - Should mention that a deviation could include being late for spots due to mechanical and other issues. This is a problem now with trains late leaving their yards.	2/13/2012	Comment addressed	Y
95	8		L.A. Metro	Page 2, last paragraph - There should be a very brief discussion about what projects were identified and what that process was.	2/13/2012	Reference provided to Section 6 of report	Y
96	9		L.A. Metro	Page 3, second paragraph - The term "HST" is used. This needs to be defined.	2/13/2012	Defined on Page 1, second paragraph	Y
97	10		L.A. Metro	Page 3, first bullet - Was "TWG" supposed to be "PWG"?	2/13/2012	Yes, Comment Addressed	Y
98	11		L.A. Metro	Page 3, third bullet - There is a reference to the Metrolink Perris Valley Line. Unless Riverside is redefining all of the Riverside service between LAUS and Perris Valley as this line then this is misleading. It is my understanding that this is increased service to Riverside and that the Perris Valley Line is a subset.	2/13/2012	Comment acknowledged. The Perris Valley Line is the RCTC label for the service that will be extended to the Perris Valley. As it is currently envisioned, a number of trains that will be extended include many of the existing and future 91-Line trains. Additional reference to "91 Line" trains has been added to the text.	Y
99	12		L.A. Metro	Page 3 and 4 bullets - It appears that these define the service. However there is a later reference to a "LA-SD Commuter Train". It is not clear where that fits or what it is. Are the bullets indicative of the stations that are served now? Is this report stating that some station served now by a specific service will not be served by that service in the future?	2/13/2012	See response to L.A. Metro Question 26. The bulleted points in this section reflect a Service Design Criterion developed by the PWG and TAC to limit the number of stops on Pacific Surfliner Intercity service and replace service at those stations with a higher level of commuter service.	Y
100	13		L.A. Metro	Section 5.0, introductory sentence - "include:" is used twice.	2/13/2012	Comment addressed	Y
101	14		L.A. Metro	Section 5.0, general comment - Throughout this section it is mentioned to install CTC. However, this will have Positive Train Control installed by 2030. This should be addressed. Also, what is the impact of the installation of Positive Train Control on operations and speed?	2/13/2012	Comment acknowledged. PTC as it is envisioned today will be an overlay of the existing CTC signaling system and will simply enforce the wayside signal and/or cab signal indications. While there is some speculation at this time on whether or not PTC may actually slow down average speeds on passenger corridors, PTC was not assumed in the model to affect the speed or capacity of the corridors.	Y
102	15		L.A. Metro	Section 5.0, general comment - There is reference to infrastructure improvements at various segments. Suggest including who owns the tracks in this segment rather than making the reader wait until further in the document.	2/13/2012	Comment addressed.	Y
103	16		L.A. Metro	Page 6, top of page, end of sentence started on Page 5 - suggest changing "commuter" to "passenger".	2/13/2012	Comment addressed	Y
104	17		L.A. Metro	Page 7, first paragraph - There is a double period at the end of the first full sentence.	2/13/2012	Comment addressed	Y
105	18		L.A. Metro	Page 7, first paragraph - The last sentence mentions Pacific Surfliner trains, however, it would be beneficial for Metrolink trains to do this as well. Suggest rewording to show the real flexibility that this allows.	2/13/2012	Comment addressed	Y

APPENDIX D: LOSSAN LONG-TERM OPERATIONS ANALYSIS REPORT COMMENTS

General Comment No.	Agency Comment No.	Page #/Section Reference	Reviewer Agency	Comment	Date Received	Response	Comment Addressed (Y/N)
106	19		L.A. Metro	Page 7, second paragraph - The discussion of the CP Raymer to CP Bernson double track refers to this as "one of the last remaining segments of single track in the San Fernando Valley. It is suggested to restate this and not use that specific term. There are several other single track segments on another line that cloud this. If you state that this is on the LOSSAN Corridor in addition to what is said then that would help clarify.	2/13/2012	Comment acknowledged. Text rewritten to clarify on the "Metrolink's Ventura County Line in the San Fernando Valley".	Y
107	20		L.A. Metro	Page 7, last paragraph - Should define what IEOC means.	2/13/2012	Comment addressed	Y
108	21		L.A. Metro	Table 5.3.1 - Should add a reference to the timetables for details. There are locations of asterisks that do not make sense. The discussion note refers to Bob Hope Airport yet there are two separate asterisk references. The limited discussion about the service to Bob Hope Airport up to this point makes the note very confusing and indicates that we are not going to be serving this important destination as much as we do today. This needs to be clarified. Also, there are other asterisks that are not defined. This is the first reference of a LA-SD commuter train that does not currently exist. There needs to be discussion of what this is.	2/13/2012	Please see additional footnote information on Table 5.3.1 and additional discussion and analysis of this issue in Section 6.1.6 and Appendix C. Other comments addressed.	Y
109	22		L.A. Metro	Section 6.1 - There is a repeated use of "…operates this segment of corridor." in each of the opening paragraphs in this area. Suggest adding "the".	2/13/2012	Comment addressed	Y
110	23		L.A. Metro	Page 14, Section 6.1.5 - This is where the service to Bob Hope Airport should be addressed. The first sentence needs to state "…completion of a second track…". What are the allocated freight slots in this segment? How is that handled currently?	2/13/2012	Comment acknowledged. There is no limit to the number of slots that UPRR can use to operate trains. Limitations identified in shared use agreements typically focus on preserving passenger only operations during defined peak periods (which typically are 6AM to 9AM and 3PM to 6PM) and giving the host railroad (Metrolink) authority to approve the schedule of any freight operations on the corridor so long as it allows the freight railroad to continue to provide quality freight service.	Y
111	24		L.A. Metro	Page 14, Section 6.1.6 - The note under the table refers to trains between CMF and LAUS. Do these trains affect capacity? How is Burbank Junction a constraint? How do the AVL trains affect this segment? The last sentence needs a grammatical check. What GM Facility? Is this gone? The last sentence in this section refers to the shifting of freight operations. How is this done and what do the agreements state regarding this?	2/13/2012	Comment acknowledged. Text in report for this section clarified to better address questions presented.	Y
112	25		L.A. Metro	Page 15, Section 6.1.6 - This is the discussion of the service to Bob Hope Airport. The tone of this discussion implies that since it is difficult to turn trains because of the additional service to the north, the specific service to the airport is eliminated. This may not be the reality. Can this paragraph be restructured to state what is exactly happening and how this airport will be served? Any reduction of service to the airport is not acceptable.	2/13/2012	Please see additional footnote information on Table 5.3.1 and additional discussion and analysis of this issue in Section 6.1.6 and Appendix C. Other comments addressed.	Y
113	26		L.A. Metro	Page 15, Section 6.1.7 - What are the "LA-SD Commuter trains"? These are not discussed anywhere to this point.	2/13/2012	On Page 1, Section 1, the report states, "Operating assumptions for this analysis also included a consolidated rolling stock/equipment cycle plan for COASTER and Metrolink trainsets to address the vehicle fleet needs for "through" commuter service operating between Los Angeles, San Diego and Riverside Counties without the need for transfers." The LA-SD Commuter trains are examples of this interlining of services and equipment to improve corridor capacity as well as passenger connectivity.	Y
114	27		L.A. Metro	Page 15, Section 6.1.7, second paragraph - There should be a discussion of available slots and how the development of infrastructure is related to the available slots.	2/13/2012	The slots that will be available in 2030 are unknown at this time since negotiations are currently underway with the BNSF on this topic. Service levels simulated as part of this analysis reflect the levels of service presented and approved by the regional agencies, which are the agencies currently negotiating with BNSF.	Y
115	28		L.A. Metro	Page 17, Section 6.1.10 - It should be noted that the segment of the LOSSAN Corridor south of CP Songs will be dispatched by NCTD, it is not currently.	2/13/2012	Comment addressed	Y
116	29		L.A. Metro	Section 6.1.11 - What is meant by the note under the table? What is replacing this train?	2/13/2012	This is one of the Coaster-Metrolink interlined-trains for equipment efficiency that is implemented in the near-term plan but replaced by the increase in Metrolink/Coaster LA-SD Commuter service in 2030. Footnote clarified.	Y
117	30		L.A. Metro	Page 18, Section 6.1.11, last paragraph - Should explain what the "tunnel" alternative is.	2/13/2012	Comment addressed, explanation provided	Y

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D.4. Long-Term 2030 Ridership and Revenue Projections

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2030 Forecast Results for Passenger Rail Services

(revised 12/05/11)

Routes	2030 Annual Totals Unconstrained Base (current service) Ridership	Ticket Revenue (2014$)	Passenger Miles	2030 Annual Totals Long Range Version 1* Ridership	Ticket Revenue (2014$)	Passenger Miles	2030 Annual Increments Long Range Version 1* Ridership	Ticket Revenue (2014$)	Passenger Miles
Amtrak Services									
Pacific Surfliner**									
Business Class	385,800	$15,807,000	41,690,000	554,900	$23,462,000	64,850,000	169,100	$7,655,000	23,160,000
Coach-Single Trip	2,390,300	$56,588,000	215,830,000	3,215,300	$79,407,000	326,160,000	825,000	$22,819,000	110,330,000
Coach-Multiride	1,040,900	$5,930,000	51,960,000	977,100	$5,104,000	51,810,000	(63,800)	($826,000)	(150,000)
SUBTOTAL	3,817,000	$78,325,000	309,480,000	4,747,300	$107,973,000	442,820,000	930,300	$29,648,000	133,340,000
San Joaquin impacts							49,900	$933,000	8,540,000
Coast Starlight impacts							1,300	($149,000)	(830,000)
SUBTOTAL-Surfliner	3,817,000	$78,325,000	309,480,000	4,747,300	$107,973,000	442,820,000	930,300	$29,648,000	133,340,000
SUBTOTAL-Other Amtrak							51,200	$784,000	7,710,000
SUBTOTAL-Commuter	6,305,700	$41,177,000	189,580,000	10,448,700	$70,529,000	339,240,000	4,143,000	$29,352,000	149,660,000
TOTAL	10,122,700	$119,502,000	499,060,000	15,196,000	$178,502,000	782,060,000	5,124,500	$59,784,000	290,710,000

Train Frequencies (round trips)	Mon-Thu	Friday	Sat-Sun	Mon-Thu	Friday	Sat-Sun	Mon-Thu	Friday	Sat-Sun
San Diego-Los Angeles									
Amtrak	*11.0*	*12.0*	*12.0*	*18.0*	*18.0*	*18.0*	*7.0*	*6.0*	*6.0*
Commuter	-	-	-	*5.0*	*5.0*	-	*5.0*	*5.0*	-
San Diego-Oceanside									
Amtrak	*11.0*	*12.0*	*12.0*	*18.0*	*18.0*	*18.0*	*7.0*	*6.0*	*6.0*
Commuter	*11.0*	*11.0*	*4.0*	*27.0*	*27.0*	*10.0*	*16.0*	*16.0*	*6.0*
Oceanside-Los Angeles									
Amtrak	*11.0*	*12.0*	*12.0*	*18.0*	*18.0*	*18.0*	*7.0*	*6.0*	*6.0*
Commuter	*5.0*	*5.0*	*2.0*	*6.5*	*6.5*	*3.0*	*1.5*	*1.5*	*1.0*
Irvine-Los Angeles									
Amtrak	*11.0*	*12.0*	*12.0*	*18.0*	*18.0*	*18.0*	*7.0*	*6.0*	*6.0*
Commuter	*9.5*	*9.5*	*4.0*	*14.0*	*14.0*	*6.0*	*4.5*	*4.5*	*2.0*
Los Angeles-Oxnard									
Amtrak	*5.0*	*5.0*	*5.0*	*7.0*	*7.0*	*7.0*	*2.0*	*2.0*	*2.0*
Commuter	*3.0*	*3.0*	-	*8.0*	*8.0*	-	*5.0*	*5.0*	-
Ventura-Santa Barbara									
Amtrak	*5.0*	*5.0*	*5.0*	*7.0*	*7.0*	*7.0*	*2.0*	*2.0*	*2.0*
Commuter	-	-	-	*4.0*	*4.0*	-	*4.0*	*4.0*	-
Los Angeles-San Luis Obispo									
Amtrak	*2.0*	*2.0*	*2.0*	*4.0*	*4.0*	*4.0*	*2.0*	*2.0*	*2.0*

These forecasts are based solely upon information available to AECOM as of 12/05/11.

These forecasts are provided for the sole use of Amtrak and Caltrans. They are not intended for disclosure in a financial offering statement.

Notes:

* Proposed Long Range (2030) consolidated LOSSAN schedules (prepared November 2011) with connecting LA Bus to/from future San Joaquin service (provid by Caltrans); forecasts do NOT include impacts within local San Joaquin Valley markets resulting from improved San Joaquin service

** Includes thru SLO trips on coast train extensions to/from Bay Area

*** Includes only Metrolink service to LOSSAN markets; includes 100% of any future Metrolink trains that run through to San Diego (this includes local ridership/revenue in Coaster territory); also includes new commuter services in LOSSAN markets (Orange County, Santa Barbara, etc.)

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D.5. Ridership and Revenue Methodology and Assumptions

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Ridership and Revenue Methodology and Assumptions

The California Intercity Rail Ridership and Revenue Forecasting Model was designed for Caltrans and Amtrak to provide accurate and consistent ridership and ticket revenue forecasts in support of short and long term route planning in California. It addresses the three existing routes – Pacific Surfliner, Capitol Corridor, and San Joaquin – as well as several proposed new routes within California.

The Pacific Surfliner application of the model was originally developed before the introduction of Metrolink and Coaster service in Southern California and thus focused exclusively on the Pacific Surfliner passenger rail service and competing auto travel. In order to better support the analysis of initiatives involving Metrolink, Coaster, and Pacific Surfliner services, the model was recently expanded to explicitly represent all rail services in the Ventura – Los Angeles – San Diego corridor. At the same time, all key inputs to the model were updated to reflect the latest conditions.

Model Inputs

The study area geography provides the necessary detail to address the closer station spacing in the Pacific Surfliner corridor resulting from the addition of Metrolink stations (Ventura to Oceanside) and Coaster stations (Oceanside to San Diego). Travel survey data were assembled from available sources only; no new surveys were conducted. These travel survey data provide the basis for developing updated estimates of travel market size by mode and geography. The two main types of available survey data include:

- Automobile Surveys (on I-5 and 101)
- Rail Surveys (for Amtrak, Metrolink, and Coaster)

In addition providing a basis for the person trip estimates, the rail surveys also include questions addressing the stated intentions of passengers if their chosen service was not available. This provides a basis for quantifying the substitutability of Amtrak and commuter rail services.

Updated auto travel time, distance, and cost inputs to the model were developed for each market pair combination in the study area. The intercity and commuter rail travel characteristics are based on published timetables and pricing, ridership and revenue data. The timetables provide the rail travel time and frequency for each market. Published prices were supplemented by actual ridership and ticket revenue data to estimate average fares in each market.

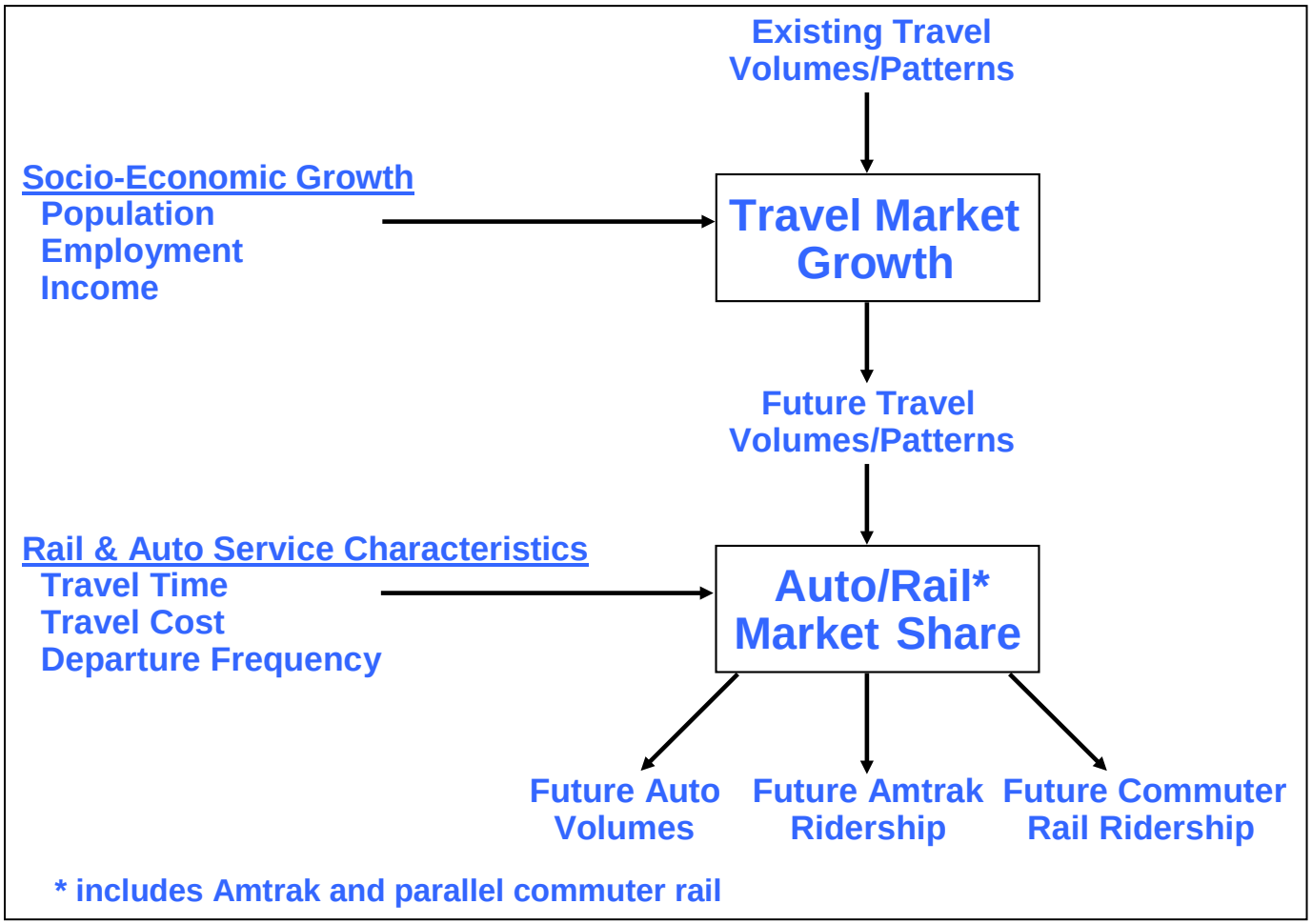
Model Structure

The travel demand model is a two-stage model system. The first stage forecasts the growth in the total number of person trips in each market and the second stage predicts the market share captured by each available mode in each market. Both stages are dependent on the service characteristics of each mode and the characteristics of the corridor population. The key market segments addressed in the forecasting model system are defined and evaluated by origin-destination market pair and trip purpose. The flow chart on the following page provides an illustrative overview of the model and its components.

The first stage addresses the growth in the total person travel volumes. This includes “natural” growth and “induced” demand. The “natural” growth component refers to changes in travel volumes due to changes in population and employment. The “induced” component refers to changes in travel volumes due to improvements (or reductions) in the level of service of all modes. “Induced” demand is captured by including a measure of the composite level of modal service within the total travel model.

The second stage of the model is the mode share component, which estimates the share of total person travel by mode. Within the Pacific Surfliner corridor, three different modes of travel are now considered: auto, Amtrak rail, and commuter rail (air is not relevant for travel within the corridor). Key variables in the mode share model continue to include:

- Line-haul travel time for all modes
- Access/egress time for rail
- Travel cost or fare
- Frequency of service for rail (including scaling by time-of-day for each train)



D.6. LOSSAN SIP Project Evaluation Criteria

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			Minutes of Delay										Number of Trains				
			Passenger Held by Passenger			Passenger Held by Freight			Total								
Ref. No.	Corridor Segment	County	Short-Term *(H:MM:SS)*	Long-Term *(H:MM:SS)*	Change in Delay (Minutes)	Short-Term *(H:MM:SS)*	Long-Term *(H:MM:SS)*	Change in Delay (Minutes)	Short-Term *(H:MM:SS)*	Long-Term *(H:MM:SS)*	Change in Delay (Minutes)	Rank in Delay Improvement	Short-Term (2014)	Long-Term (2030)	Increase in No. of Trains	% Increase	Rank in Volume Increase
1	San Luis Obispo to Goleta	San Luis Obispo	0:00:10	0:00:00	0:00:10	0:00:00	0:00:00	0:00:00	0:00:10	0:00:00	0:00:10	10	12	18	6	50.0%	10
	CTC Installation																
	Grover Beach 2nd Platform & Extension of 2nd Track																
2	San Luis Obispo to Goleta	Santa Barbara	0:42:34	0:34:25	0:08:09	0:00:22	0:00:00	0:00:22	0:42:56	0:34:25	0:08:31	4	12	18	6	50.0%	10
	Island CTC Installation																
	North Goleta Station and Siding																
	Extension of Waldorf Siding																
	Extension of Devon Siding																
	Extension of Capitan Siding																
3	Goleta to East Ventura	Santa Barbara	0:02:27	0:02:48	-0:00:21	0:00:00	0:00:00	0:00:00	0:02:27	0:02:48	-0:00:21	11	18	30	12	66.7%	5
	Construction and extension of Ortega Siding																
4	Goleta to East Ventura	Ventura	0:10:06	0:16:09	-0:06:03	0:00:00	0:00:00	0:00:00	0:10:06	0:16:09	-0:06:03	13	18	30	12	66.7%	5
	Seacliff Siding Extension																
	Seacliff Curve Realignment																
	2nd Main Track at Montalvo Wye																
	East Ventura Station Modifications																
5	East Ventura to Moorpark	Ventura	0:06:59	0:00:20	0:06:39	0:00:00	0:00:00	0:00:00	0:06:59	0:00:20	0:06:39	5	24	42	18	75.0%	4
	CP Las Posas to MP 423 2nd Main Track																
	Leesdale Siding Extension																
	Oxnard to Camarillo 2nd Main Track																
	Oxnard Station Second Platform																
6	Moorpark to Chatsworth	Ventura	0:22:59	0:01:32	0:21:27	0:00:00	0:00:00	0:00:00	0:22:59	0:01:32	0:21:27	2	32	60	28	87.5%	1
	Extension of Santa Susanna Siding through Simi Valley																
7	Moorpark to Chatsworth (No identified projects)	Los Angeles	0:04:50	0:04:12	0:00:38	0:00:00	0:00:00	0:00:00	0:04:50	0:04:12	0:00:38	8	32	60	28	87.5%	1
8	Chatsworth to Burbank Airport	Los Angeles	0:28:49	0:00:00	0:28:49	0:00:00	0:00:00	0:00:00	0:28:49	0:00:00	0:28:49	1	38	60	22	57.9%	8
	CP Raymer to CP Bernson 2nd Main Track																
	Universal Crossovers at CP Raymer																
	Van Nuys Station 2nd Platform																
9	Burbank Airport to LAUS	Los Angeles	0:59:43	0:55:14	0:04:29	0:00:00	0:00:00	0:00:00	0:59:43	0:55:14	0:04:29	7	84	124	40	47.6%	12
	Burbank Junction Curve Realignment																
10	LAUS to Fullerton (SCAX Territory Only - River Sub)	Los Angeles	0:02:40	0:01:10	0:01:30	0:00:00	0:02:10	-0:02:10	0:02:40	0:03:20	-0:00:40	12	57	100	43	75.4%	3
	LAUS Run Thru Tracks																
11	Fullerton to Orange (No identified projects)	Orange	0:00:00	0:07:09	-0:07:09	0:00:00	0:00:27	-0:00:27	0:00:00	0:07:36	-0:07:36	15	59	84	25	42.4%	13
12	Orange to Laguna Niguel	Orange	0:00:00	0:07:01	-0:07:01	0:00:00	0:00:00	0:00:00	0:00:00	0:07:01	-0:07:01	14	77	116	39	50.6%	9
	Anaheim Canyon Station Double Track (Olive Subdivision)																
	Irvine 3rd Main Track Extension																
13	Laguna Niguel to Oceanside	Orange	0:12:34	0:07:43	0:04:51	0:00:00	0:00:00	0:00:00	0:12:34	0:07:43	0:04:51	6	44	60	16	36.4%	14
	Laguna Niguel to SJC Passing Siding																
	Serra Siding Extension																
14	Laguna Niguel to Oceanside	San Diego	0:03:16	0:02:36	0:00:40	0:00:00	0:00:20	-0:00:20	0:03:16	0:02:56	0:00:20	9	44	60	16	36.4%	14
	2nd Main Track Extension north of CP Songs																
	CP San Onofre to CP Pulgas Double Track																
	CP Eastbrook to CP Shell Double Track																
15	Oceanside to San Diego	San Diego	0:25:51	0:17:12	0:08:39	0:00:00	0:00:00	0:00:00	0:25:51	0:17:12	0:08:39	3	62	98	36	58.1%	7
	Carlsbad Village Double Track																
	CP Ponto to CP Swami Double Track																
	CP Cardiff to CP Craven Double Track																
	San Dieguito Bridge Double Track																
	Sorrento to Miramar Phase 2 Double Track																
	CP Tecolote to CP Friar Double Track																

Note: Areas shaded in red show segments where delay increases. The reason for the increase is the projects identified for the segment were not sufficient to meet the overall increase in service levels. Options include additional capacity, reduction in service levels, or changes in dispatching protocols.

Ref. No.	Corridor Segment	Comments	# Miles of Additional Track	Project Readiness	Required Environ-mental Document	Community Support	Total Project Score	Ave. Segment Rank	Segment Ranking
			Qualitative Measures						
1	San Luis Obispo to Goleta							3.50	8
	CTC Installation		na	1	1	2	4		
	Grover Beach 2nd Platform & Extension of 2nd Track		3.5	1	1	1	3		
2	San Luis Obispo to Goleta							3.60	7
	Island CTC Installation		na	1	1	2	4		
	North Goleta Station and Siding		0.3	2	1	2	5		
	Extension of Waldorf Siding		1.0	1	0	2	3		
	Extension of Devon Siding		1.0	1	0	2	3		
	Extension of Capitan Siding		1.7	1	0	2	3		
3	Goleta to East Ventura							3.00	10
	Construction and extension of Ortega Siding		2.0	2	0	1	3		
4	Goleta to East Ventura	Primarily associated with movements at the Montalvo Wye since all 3 legs of the wye are assumed utilized in 2030. Congestion identified during peak periods at East Ventura						4.00	2
	Seacliff Siding Extension		1.4	2	1	2	5		
	Seacliff Curve Realignment		na	2	1	2	5		
	2nd Main Track at Montalvo Wye		1.3	1	1	1	3		
	East Ventura Station Modifications		na	1	1	1	3		
5	East Ventura to Moorpark							3.00	10
	CP Las Posas to MP 423 2nd Main Track		3.5	1	1	1	3		
	Leesdale Siding Extension		2.0	1	1	2	4		
	Oxnard to Camarillo 2nd Main Track		5.0	1	1	1	3		
	Oxnard Station Second Platform		na	1	1	0	2		
6	Moorpark to Chatsworth							4.00	2
	Extension of Santa Susanna Siding through Simi Valley		1.6	1	1	2	4		
7	Moorpark to Chatsworth (No identified projects)								
8	Chatsworth to Burbank Airport							5.00	1
	CP Raymer to CP Bernson 2nd Main Track		6.5	2	1	2	5		
	Universal Crossovers at CP Raymer		na	2	1	2	5		
	Van Nuys Station 2nd Platform		na	2	1	2	5		
9	Burbank Airport to LAUS	Train volumes low in 2030 assumptions since analysis did not account for non-revenue movements between LAUS and CMF						4.00	2
	Burbank Junction Curve Realignment		na	1	1	2	4		
10	LAUS to Fullerton (SCAX Territory Only - River Sub)							3.00	10
	LAUS Run Thru Tracks		1.5	2	0	1	3		
11	Fullerton to Orange (No identified projects)	Related to conflicts associated with Fullerton Junction							
12	Orange to Laguna Niguel	Related to conflicts near CP Maple. Still being reviewed. Most conflicts can be mitigated through dispatching changes.						4.00	2
	Anaheim Canyon Station Double Track (Olive Subdivision)		0.2	2	1	2	5		
	Irvine 3rd Main Track Extension		8,5	1	1	1	3		
13	Laguna Niguel to Oceanside							3.00	10
	Laguna Niguel to SJC Passing Siding		1.8	2	1	1	4		
	Serra Siding Extension		1.0	1	0	1	2		
14	Laguna Niguel to Oceanside							3.67	6
	2nd Main Track Extension north of CP Songs		0.8	1	0	1	2		
	CP San Onofre to CP Pulgas Double Track		5.8	2	0	2	4		
	CP Eastbrook to CP Shell Double Track		0.6	2	1	2	5		
15	Oceanside to San Diego							3.17	9
	Carlsbad Village Double Track		1.1	2	1	1	4		
	CP Ponto to CP Swami Double Track		3.5	1	1	0	2		
	CP Cardiff to CP Craven Double Track		1.5	3	1	1	5		
	San Dieguito Bridge Double Track		1.1	2	0	0	2		
	Sorrento to Miramar Phase 2 Double Track		1.8	2	0	1	3		
	CP Tecolote to CP Friar Double Track		0.9	1	1	1	3		

Note: Areas shaded in red show segments where delay increases. The reason